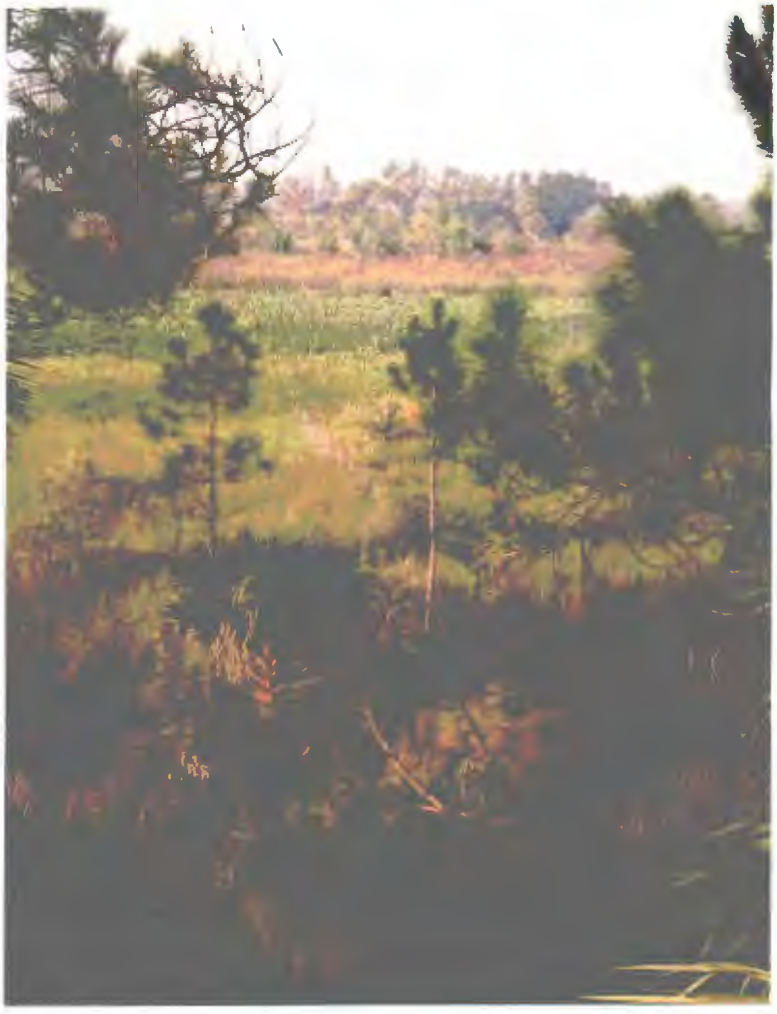
Southwest Florida
Water Management District

FDOT MITIGATION PLAN

October 30, 2001



Prepared by:

Southwest Florida Water Management District
Resource Regulation Division
Technical Services Department
2379 Broad Street
Brooksville, FL 34604-6899

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The District does not discriminate based on disability.
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Cover: Hazy sunrise over an enhanced marsh at the Boran Ranch Mitigation Bank (SW 53)

ATTACHMENTS - DOT MITIGATION PROJECTS

(Note – Click on highlighted number to transfer to project narratives, aerials, site photos)

SW 31 - Cattle Dock Point (WMD - SWIM)

SW 34 - Lake Thonotasassa (WMD - SWIM)

SW 38 - Quick Point Preserve (WMD – SWIM / Longboat Key)

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

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

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

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

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 (WMD – SWIM / Hillsb. Co. Parks)

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

SW 58 - Ledwith Lake (Alachua County / DEP / SJRWMD)

SW 59 - Hampton Tract (WMD - Land Resources)

SW 60 - Serenova Extension (WMD - Land Resources)

SW 61 - Cypress Ck. Preserve, West (Hillsborough Co. Parks)

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

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, West
(Polk Co. Nat. Resources / WMD – Land Resources)

SW 67 - Wolf Branch Ext. (WMD – SWIM / Hillsb. Co. Parks)

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

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

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 following information lists the FDOT project, proposed construction dates, wetland impact acreage, associated mitigation projects, and revisions from the 2000 plan.

The FDOT has provided an annual statewide inventory of projected construction impacts to wetlands since 1996. In May, 2001 the FDOT identified projected impacts for construction projects planned in Fiscal Years 2001/02 through 2005/06 and information regarding modifications to previously identified projects. In addition, advance notice was provided for certain large projects scheduled beyond this planning horizon so that appropriate mitigation projects can be developed. 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 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 identified 76 construction projects with wetland impacts in the SWFWMD through at least 2006. Distributed over 11 drainage basins and covering 16 counties, the total wetland impact acreage projected by FDOT during this period is approximately 276 acres. These impacts are associated with all the construction projects currently on the impact inventory (Table 1). Figure 1 locates the basins within the SWFWMD, Figures 2 and 3 depict the FDOT project locations relative to those basins.

Even though this year's plan has an increase of 13 new projects and anticipated 29 impact acres, the decrease of 27 impact acres (and associated $2.2 million in available mitigation funds) from the previous inventoried projects result in a cumulative decrease from the 2000 plan. Due to the substantial increase in DOT projects and impacts within the 2000 Inventory and the minimal 4 months to locate and design mitigation options, the mitigation for 23 projects and 66 impact acres listed in last year's plan required deferring the mitigation selection for those associated projects to this year's plan. Tables 4 and 5 depict the new and amended wetland impacts and associated funds requested for implementing the mitigation projects.

MITIGATION PROJECTS

The District mitigation plan incorporates mitigation projects developed by District staff, particularly the Land Resources Department and the Surface Water Improvement & Management Section (SWIM). Mitigation nominations are also submitted from other public agencies such as the Department of Environmental Protection (FDEP), County Governments, and private mitigation banks. These potential mitigation options are extensively 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.

Even though there is a cumulative decrease in impacts from last year's plan, the addition of new proposed impacts for this year's inventory required locating new mitigation options. There are 26 selected mitigation projects, 6 more than within the 2000 Mitigation Plan. These new projects include a proposed corridor between Brooker Creek Preserve (Pinellas County) and the Starkey Wilderness Area (WMD-Land Resources), Rutland Ranch (WMD-Land Resources), Lake Hancock Reserve, West

(Polk County & WMD – Land Resources), Wolf Branch Extension (Hillsborough County & WMD-SWIM), and the Peace River Bridge Restoration (DOT / WMD). In addition, the Fish Prairie Restoration project listed in last year's plan was replaced with the Ledwith Lake project (Alachua Co. / DEP / SJRWMD).

As noted on Table 7, to date the mitigation projects propose a cumulative 4459 acres of various mitigation activities to compensate for a total 276 acres of proposed wetland impacts associated with FDOT construction improvements. Figure 4 locates the selected mitigation projects relative to their associated basin. The mitigation project names are color-coded to match the proposed wetland impacts within the associated basins depicted on Figures 2 & 3. A basin-by-basin summary of impacts and mitigation projects is provided below and on Table 1. Tables 2, 3 summarize the mitigation project funding and Tables 6, 7 lists the various mitigation activities and acreage proposed for each mitigation project. Information (narratives, location maps, aerials, designs) concerning the mitigation projects are provided as 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 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 can receive mitigation credit for them, thus offsetting a portion of the advance funding. Of the $12 million distributed statewide, the SWFWMD received $1.9 million for SWIM projects. It is expected that savings from cost-effective mitigation projects (i.e. projects costing less than the funding available based on impact acreage) will also be 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 $6.8 million to offset the statewide $12 million advance funds. In spite of the decrease in cumulative impacts and associated funds, and the addition of 6 new projects to be used for mitigation, this savings is over $1 million more compared to last year's mitigation plan.

Any questions, comments, or suggestions on the FDOT Mitigation Plan process, associated ERP permitting, individual mitigation projects, or mitigation banking can be directed to Mark Brown at:

Southwest Florida Water Management District
Technical Services – M. Brown
2379 Broad Street
Brooksville, FL 34609-6899

1-800-423-1476 or (352) 796-7211, ext. 4488
Technical Services – M. Brown
SunCom 628-4150, FAX (352) 544-2328
e-mail: mark.brown@swfwmd.state.fl.us

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 – US 301 Project (SW 55)
Status: Mitigation project construction to be completed in September, 2001, followed by three years of maintenance & monitoring.

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: Mitigation site has been constructed & planted in 1999, additional planting proposed in 2001, currently in maintenance & monitoring period.

Project: US 41 - Bell Lake to Tower Rd.
WPI# 7115951 **FM#** 2563151
Date: June, 2001
Impacts: 0.50 acres
Mitigation: Hillsborough River Corridor (SW 63)
Status: 0.6 impact acres mitigated off the DOT program, mitigation acquisition completed 2001.

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

Hillsborough River Basin (cont'd)

Project: Interstate 4 - W. of Memorial Blvd. To W. of US 98 (Section 2)
WPI# 1147955 **FM#** 2012171
Date: October 2001
Impacts: 2.08 acres (ACOE only)
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: No Revisions

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 52, US 41 to CR 581
FM# 2563871
Date: September 2002
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from inventory

Project: SR 56 – SR 54 to Bruce B. Downs Blvd.
WPI# 7147617 **FM#** 2563871
Date: July, 1999
Impacts: 5.3 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: All mitigation proposed at Jennings Tract, transferred portion was proposed to be mitigated at Hillsborough River Corridor (SW 63)

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

Hillsborough River Basin (cont'd)

Project: Alexander Street, US 92 to Interstate 4
FM# 2578391
Date: May 2004
Impacts: 3.10 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: +1.2 acres from 2000 plan

Project: Alexander Street, On-Ramp to Westbound Interstate 4
FM# 2584491
Date: June 2004
Impacts: 1.70 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: -0.6 acres from 2000 plan

Project: SR 93 (Interstate-275), US 41 to Pasco County Line
FM# 2584131
Date: November 2007
Impacts: 7.30 acres
Mitigation: Jennings Tract, Cypress Ck. Preserve (West) (SW 61)
Status: +5.20 acres from 2000 plan, impacts could increase pending final design, expected late 2001

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: 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 Change

Project: I-4, US 27 to Osceola Avenue (Seg. 7)
WPI# 1147943 **FM#** 2012012052
Date: December, 2001
Impacts: 0.79 acres
Mitigation: Reedy Creek Mitigation Project (SW 49)
Status: New Project

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: - 0.39 acres from 2000 plan

Project: US 41 (SR 45) Shamrock to Venice Avenue
WPI# 119317 **FM#** 1980221
Date: December, 2001
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from the inventory

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: + 0.21 acres from 2000 plan

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 changes from 2000 plan

Project: SR 64 - CR 675 to East of Myakka River Bridge
WPI# 1115478
Date: June, 2000
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from Inventory

Project: SR 64 – I-75 to Lorraine Road
WPI# 1115353 **FM#** 1960221
Date: December, 2001
Impacts: 2.42 acres
Mitigation: Rutland Ranch (SW 65)
Status: New Project

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)
Status: No revisions from 2000 plan

Project: SR 776 - E. of Sunnybrooke to W. of CR 771
WPI# 1110167 **FM#** 1938131
Date: May, 2001
Impacts: 0.25 acres
Mitigation: Myakka River State Park (SW 51)
Status: No revisions from 2000 plan

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 from 2000 plan

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 from 2000

Ocklawaha River Basin

Project: SR 40 - CR 225a to SW 52nd Ave
WPI# 5113632
Date: December, 2004
Impacts: 0.02 acres, -0.08 acres from 2000 plan
Mitigation: Ledwith Lake (SW 58)
Status: Mitigation transfer from Fish Prairie Restoration

Project: SR 500 - Levy Co. Line to CR 326
WPI# 5113511
Date: January 2002
Impacts: 2.49 acres, -4.52 acres from 2000 plan
Mitigation: Ledwith Lake (SW 58)
Status: Mitigation transfer from Fish Prairie Restoration

Ocklawaha River Basin (cont.)

Project: SR 500 - CR 464 to CR 225a
WPI# 5113549
Date: September 1999
Impacts: 1.09 acres
Mitigation: Ledwith Lake (SW 58)
Status: Mitigation transfer from Fish Prairie Restoration

Project: SR 40 - CR 328 to SW 80th
WPI# 238719
Date: June, 2004
Impacts: 0.08 acres
Mitigation: Ledwith Lake (SW 58)
Status: New Project

Peace River Basin

Project: I-4 East of US 98 to East of SR 33 (Section 3)
WPI# 1147952 **FM#** 2012091
Date: March 2001
Impacts: 0.43 acres
Mitigation: Tenoroc/Saddle Creek Restoration (SW 47)
Status: -1.28 ac. from 2000 plan

Project: SR 70 - Manatee Co. Line to Peace River Relief Canal
WPI# 1110457 **FM#** 1938891
Date: October 2001
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from the inventory

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 from 2000 plan

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 from 2000 plan

Peace River Basin (cont'd)

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 from 2001 plan

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 from 2000 plan

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 from 2000 plan

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: -0.27 acres from 2000 plan

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 from 2000 plan

Project: CR 633 (Ft. Green/Ona Rd.) - Vandolah Rd. to N. of Vandolah Rd. (Segment 2)
WPI# 1121257 **FM#** 1984711
Date: October 2000
Impacts: 7.22 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: -3.6 acres from 2000 plan

Peace River Basin (cont'd)

Project: CR 633 (Ft. Green/Ona Rd.) - SR 64 to Vandolah Rd. (Seg. 3)
WPI# 1121256 **FM#** 1986371
Date: October 2003
Impacts: 5.23 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No revision from 2000 plan

Project: US 17 (SR 35) - CR 764 South to CR 764 North
WPI# 1110152 **FM#** 1937981
Date: October 2002
Impacts: 3.47 acres
Mitigation: Boran Ranch Mitigation Bank (SW 53)
Status: No revisions from 2000 plan

Project: US 98, Mount Zion Church Rd. to US 27
WPI# 1118424 **FM#** 1975321
Date: October 2001
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project taken off the Inventory

Project: I-75 Widen Bridge over Peace River
FM# 4046971
Date: August 2001
Impacts: 3.55 acres
Mitigation: Peace River Restor. (SW 69), on-site mitig. for 0.8 impact ac.
Little Pine Island Mit.Bank (SW 52), 2.75 impact ac.
Status: Mitigation decision deferred from 2000 plan

Project: US 27 – Towerview Rd. to SR 540
FM# 1975331
Date: March, 2003
Impacts: 7.00 acres
Mitigation: Lake Hancock Reserve, West (SW 66)
Status: Mitigation decision deferred from 2000 plan

Project: US 17 (SR 35) - Peace River to Tropicana Rd.
WPI# 1111277 **FM#** 1940931
Date: October 2002
Impacts: 4.42 acres, -0.4 acres from 2000 plan
Mitigation: Lake Hancock Reserve, West (SW 66)
Status: Mitigation decision deferred from 2000 plan

Peace River Basin (cont'd)

Project: US 17 (SR 35) Livingston to Hardee County Line
WPI# 1110467 **FM#** 1938991
Date: October 2002
Impacts: 11.59 acres
Mitigation: Lake Hancock Reserve, West (SW 66)
Status: New Project

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, West (SW 66)
Status: New Project

Project: US 27 - SR 544 to Blue Heron Bay
WPI# 1118571 **FM#** 1976791
Date: March, 2003
Impacts: 1.45 acres
Mitigation: Lake Hancock Reserve, West (SW 66)
Status: New Project

Tampa Bay Drainage Basin

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 from 2000 plan.

Project: SR 55 (US 19) - Drew St. to Railroad
WPI# 7117045 **FM#** 2569571
Date: October, 2001
Impacts: 0.60 acres
Mitigation: Cockroach Bay Restoration (SW 56)
Status: Impact increase by 0.1 acre.

Project: Interstate 275 - Roosevelt to Big Island Gap
WPI# 7147874 **FM#** 2588701
Date: September 2001
Impacts: 9.00 acres
Mitigation: Gateway Restoration (SW 45)
Status: Impact increase by 1.30 acres from 2000 plan.

Tampa Bay Drainage Basin (cont'd)

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 from 2000 plan

Project: Gunn Hwy., S. of Wayne Rd. to N. of Wayne Rd.
FM# 037491
Date: August 2001
Impacts: No impacts that required mitigation
Mitigation: None
Status: Project removed from the inventory.

Project: US 19, CR 816 (Alderman) to SR 582 (Tarpon)
FM# 4037701
Date: February 2002
Impacts: 0.10 acres
Mitigation: Wolf Branch Extension (SW 67)
Status: Deferred mitigation from 2000 plan.

Project: Interstate-75, SR 60 to Southbound Off-Ramp
FM# 2584241
Date: July 2002
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from the inventory

Project: SR 682 (Bayway), US 679 to West Toll Plaza
FM# 2569031
Date: August, 2003
Impacts: 0.50 acres
Mitigation: Mitigation conducted by DOT
Status: -5.1 acres from 2000 plan, project removed from the inventory

Project: SR 400 (Interstate – 4), 14th Street to 50th Street
FM# 2584011
Date: August 2003
Impacts: No impacts that require mitigation
Mitigation: None
Status: Project removed from the Inventory

Project: US 19, Coachman Rd. to Sunset Point
FM# 2568881
Date: December 2002
Impacts: 0.40 acres
Mitigation: Wolf Branch Extension (SW 67), deferred from 2000 plan

Tampa Bay Drainage Basin (cont'd)

Project: US 19 – Pasco County Line to SR 580 (sidewalk)
FM# 4051681
Date: November 2002
Impacts: 0.50 acres
Mitigation: Wolf Branch Extension (SW 67)
Status: Mitigation decision deferred from 2000 plan

Project: SR 686 (Roosevelt) at 49th Street
FM# 4062531
Date: October 2003
Impacts: 0.10 acres
Mitigation: Gateway Restoration (SW 45)
Status: No revision from 2000 plan.

Project: SR 60, Cypress St. to Fish Creek
FM# 2557031
Date: November 2004
Impacts: 17.80 acres, +2.5 acres from 2000 plan
Mitigation: Tappan Project (SW 62) (6.2 Ac.)
Wolf Branch Extension (SW 67) (11.6 Ac.)
Status: Mitigation decision deferred from 2000 plan

Project: Interstate-275, Howard Franklin to Himes Avenue
FM# 2583981
Date: November 2005
Impacts: 1.90 acres, -0.3 acres from 2000 plan.
Mitigation: Gateway Tract (SW 49)
Status: Mitigation deferred from 2000 plan.

Project: SR 60, Courtney Campbell to Fish Creek
FM# 2556301
Date: August, 2004
Impacts: 10.50 acres, -4.39 acres from 2000 plan
Mitigation: Gateway Restoration (SW 45)
Status: 1.2 acres of seagrass impacts, mitigation by DOT

Project: US 301 – Sligh Avenue to Tampa Bypass Canal
FM# 2558881
Date: October, 2005
Impacts: 7.20 acres
Mitigation: Wolf Branch Extension (SW 67)
Status: New Project

Tampa Bay Drainage Basin (cont'd)

Project: Ulmerton Road – US 19 to 49th Street
FM# 2571391
Date: August 2005
Impacts: 1.00 acres
Mitigation: Wolf Branch Extension (SW 67)
Status: New Project

Project: Himes Avenue to Hillsborough Avenue
FM# 4082011
Date: October, 2003
Impacts: 0.10 acres
Mitigation: Wolf Branch Extension (SW 67)
Status: New Project

Upper Coastal Basin

Project: SR 54 - Mitchell to Gunn Hwy.
WPI# 7115974 **FM#** 2563361
Date: May 2003
Impacts: 9.40 acres
Mitigation: Anclote Parcel (SW54)
Status: Wetland impact decreased 0.2 acre from 2000 plan, mitigation site was acquired in 2000

Project: SR 54 – North Suncoast to West of US 41
WPI# 7115977 **FM#** 2563391
Date: December, 2002
Impacts: 7.00 acres
Mitigation: Anclote Parcel (SW54)
Status: No revision from 2000 plan, mitigation site was acquired in 2000

Project: Suncoast Parkway / Ridge Road Interchange
FM# 2589581
Date: July, 2002
Impacts: 11.82 acres
Mitigation: Serenova Extension (SW 60)
Status: No revision from 2000 plan

Project: SR 60, Clearwater Harbor Bridge Replacement
FM# 2570931
Date: December 2001
Impacts: 0.20 acres
Mitigation: Gateway Restoration (SW 45) & on-site enhancement

Upper Coastal Basin (cont.)

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: Mitigation transfer from Serenova Extension

Project: US 41 – SWFWMD Entrance Rd. to Powell Road
FM# 2548221
Date: August, 2004
Impacts: 0.03 acre, -1.07 acre from 2000 plan
Mitigation: On-Site mitigation by DOT or no mitigation required
Status: Project removed from the inventory

Project: US 98 – Hernando Co. Line to US 19
Date: May 2003
FM# 2571741
Impacts: 1.50 acres, +0.10 acre from 2000 plan
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: Mitigation decision deferred from 2000 plan

Project: SR 688 (Ulmerton Road), Oakhurst Rd. to 119th Street
FM# 2570501
Date: February 2004
Impacts: 2.00 acres, +1.80 acre from 2000 plan
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: Mitigation transfer from Serenova Extension

Project: SR 52 – Moon Lake to Suncoast Parkway
FM# 2584491
Date: August 2004
Impacts: 7.20 acres, -0.10 acre from 2000 plan
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: Mitigation decision deferred from 2000 plan

Project: SR 54 - Rowan Rd. to Mitchell Bypass
FM# 2563321
Date: July, 1996
Impacts: 3.60 acres
Mitigation: Brooker-Starkey Corridor (SW 68)
Status: New Project, DOT on-site mitigation unsuccessful,
transfer & fulfill mitigation requirements on FDOT Mitigation Program

Upper Coastal Basin (cont.)

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: New Project

Withlacoochee River Basin

Project: SR 44 – CR 470 to County Line
WPI# 7119003 **FM#** 2571641
Date: December 2002
Impacts: 12.30 acres
Mitigation: Baird Tract (SW 64)
Status: Impact decreased 1.3 acres from 2000 plan

Project: SR 44 – US 41 to CR 470
WPI# 7119002 **FM#** 2571631
Date: December 2002
Impacts: 7.80 acres
Mitigation: Baird Tract (SW 64)
Status: Impact increase by 3.00 acres from 2000 plan

Project: Interstate 4 – E. of US 98 to E. of SR 33 - (Section 3)
WPI# 1147952 **FM#** 2012092
Date: October 2001
Impacts: 0.35 acres
Mitigation: Hampton Tract (SW 59) & Tenoroc (SW47)
Status: -13.50 acres from 2000 plan,
Segment design on-hold due to final decision on alignment & high speed rail issue, impacts anticipated to increase.

Project: Interstate 4 – E. of SR 33 to E. of CR 559 - (Section 4)
WPI# 1147952 **FM#** 2012142
Date: November 2001
Impacts: 7.94 acres
Mitigation: Hampton Tract (SW 59)
Status: + 1.21 acres from 2000 plan,
Segment design on-hold due to final decision on alignment & high speed rail issue, impacts anticipated to increase.

Withlacoochee River Basin (cont'd)

Project: Interstate 4 - E. of CR 559 to E. of CR 557 - (Section 5)
WPI# 1147953 **FM#** 2012152
Date: November 2001
Impacts: 10.29 acres
Mitigation: Hampton Tract (SW 59)
Status: - 0.37 acre from 2000 plan,
Segment design on-hold due to final decision on alignment & high speed rail issue, impacts anticipated to increase.

Project: Interstate 4 – E. of CR 557 to W. of US 27 - (Section 6)
WPI# 1147954 **FM#** 2012162
Date: December 2001
Impacts: 6.18 acres
Mitigation: Hampton Tract (SW 59)
Status: - 6.53 acres from 2000 plan,
Segment design on-hold due to final decision on alignment & high speed rail issue, impacts anticipated to increase.

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 revision from 2000 plan

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)
Status: New Project

The 2000 Florida Statutes

Title XXVIII
NATURAL RESOURCES; CONSERVATION, RECLAMATION, AND USE

Chapter 373
Water Resources

View Entire Chapter

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).

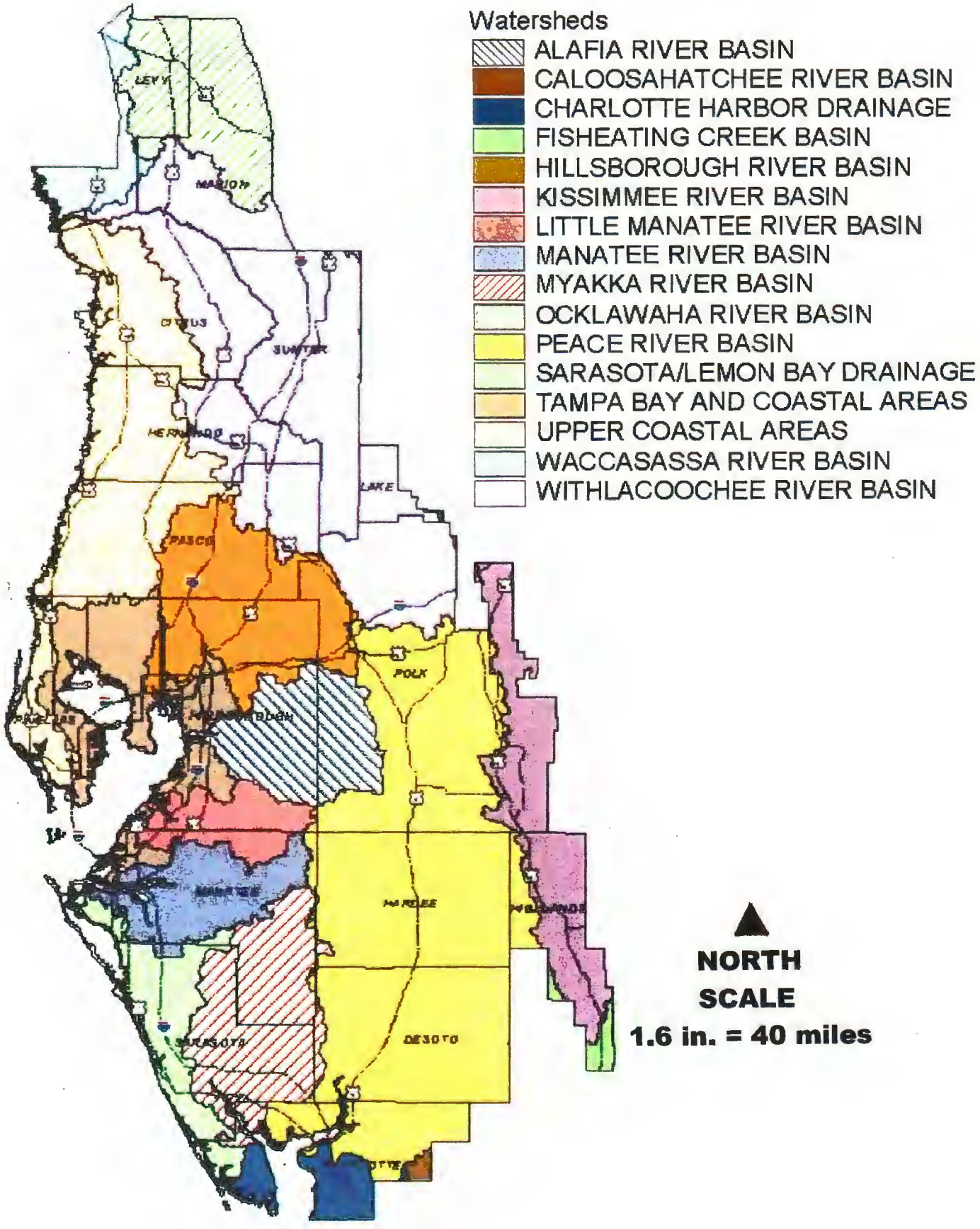
(7) Upon approval by the secretary of the Department of Environmental Protection, the mitigation plan shall be deemed to satisfy the mitigation requirements under this part and any other mitigation requirements imposed by local, regional, and state agencies for impacts identified in the inventory described 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.

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

Figure 1



FDOT Wetland Impact Inventory
(District 1)
Figure 2

County Boundaries (Purple), SWFWMD Boundaries (Blue)
Watershed / Basin Boundaries (Red)

NORTH ^ SCALE 1 in. = Approx. 30 miles

Withlacoochee River Basin

1 - Int. 4, US 98 to SR 33 (Seg. 3)
FM 2012092, 0.35 Ac.
2 - Int. 4, SR 33 to CR 559 (Seg. 4)
FM 2012142, 7.94 Ac.
3 - Int. 4, SR 559 to CR 557 (Seg. 5)
FM 2012152, 10.29 Ac.
4 - Int. 4, CR 557 to US 27 (Seg. 6)
FM 2012162, 6.18 Ac.

Kissimmee Ridge Basin

1 - US 27, Lk. Glenada to Hal McRae
FM 1945101, 0.39 ac.
2 - I-4, US 27 to Osceola County (Seg. 7)
FM 2012052, 0.79 ac.

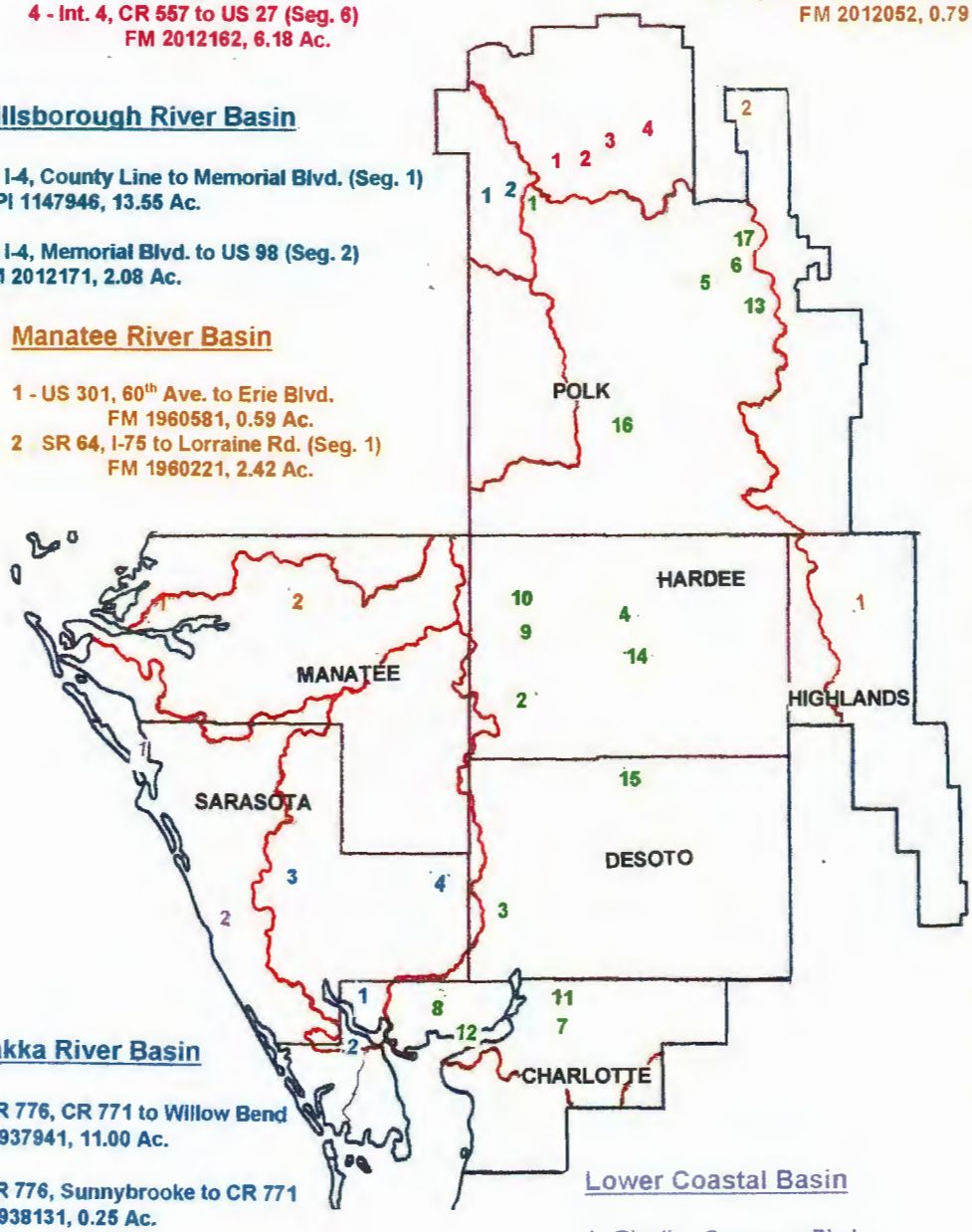
Hillsborough River Basin

1 - I-4, County Line to Memorial Blvd. (Seg. 1)
WPI 1147946, 13.55 Ac.

2 - I-4, Memorial Blvd. to US 98 (Seg. 2)
FM 2012171, 2.08 Ac.

Manatee River Basin

1 - US 301, 60th Ave. to Erie Blvd.
FM 1960581, 0.59 Ac.
2 - SR 64, I-75 to Lorraine Rd. (Seg. 1)
FM 1960221, 2.42 Ac.



Peace River Basin

1 - Int. 4, US 98 to SR 33 - Seg. 3
FM 2012091, 0.43 Ac.
2 - Ft. Green/Ona Rd., Vandolah to SR 62
FM 1986401, Seg. 1 - 2.08 Ac.
3 - SR 72, Sarasota Co. to SR 70
FM 1938890, 1.19 Ac.
4 - US 17, SR 64 to Peace River Bridge
FM 1941021, 2.30 Ac.
5 - SR 540, Thornhill Rd. to Recker Hwy.
FM 1974751, 5.87 Ac.
6 - SR 540, 9th St. to Overlook Dr.
FM 1974711, 0.41 Ac.
7 - US 17, CR 74 to CR 764 North
FM 1937911, 0.27 Ac.
8 - Trabue Harborwalk Bike Path
FM 1984711, 0.16 Ac.
9 - Ft. Green/Ona - Vandolah Rd.
FM 1986381, Seg. 2 - 7.22 Ac.
10 - Ft. Green/Ona - SR 64 to Vandolah
FM 1986371, Seg. 3 - 5.23 Ac.
11 - US 17, CR 764 S to CR 764 N
FM 1937981, 3.47 Ac.
12 - Int.-75, Peace River Bridge
WPI 4046971, 3.55 Ac.
13 - US 27, Towerview Rd. to SR 540
FM 1975331, 7.00 Ac.
14 - US 17, Peace River to Tropicana Rd.
FM 1940931, 4.42 Ac.
15 - US 17, Livingston to Hardee Co. Line
FM 1938991, 11.59 Ac.
16 - SR 60A, CR 555 to Broadway Ave.
FM 1971681, 0.46 Ac.
17 - US 27, SR 544 to Blue Heron Bay
FM 1976791, 1.46 Ac.

Myakka River Basin

1 - SR 776, CR 771 to Willow Bend
FM 1937941, 11.00 Ac.

2 - SR 776, Sunnybrooke to CR 771
FM 1938131, 0.25 Ac.

3 - SR 72, Deer Prairie to Big Slough
WPI 1119303, 0.87 Ac.

4 - SR 72, Big Slough to DeSoto C/L
WPI 1119215, 1.49 Ac.

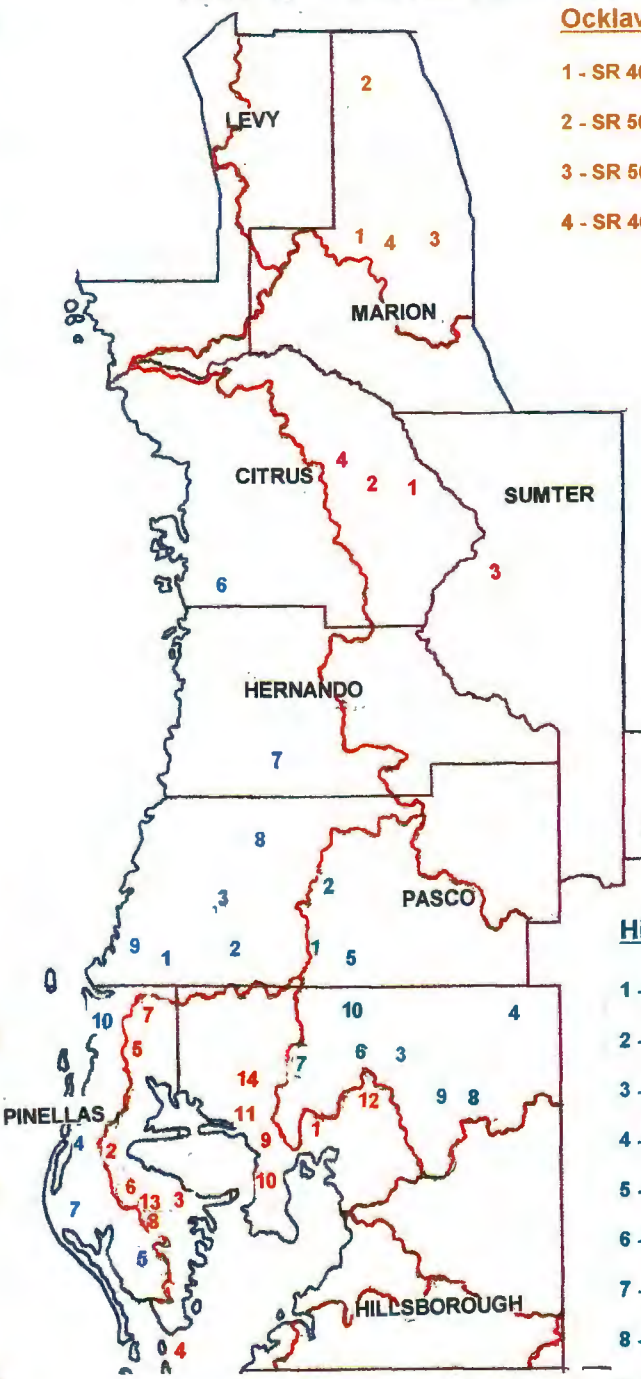
Lower Coastal Basin

1 - Ringling Causeway Blvd.
FM 1979421, 0.27 Ac.
2 - US 41, Venice Ave. to US 41 Bypass
FM 1980051, 0.32 Ac.

FDOT Wetland Impact Inventory
(District 5, District 7, Turnpike)

Figure 3

County Boundaries (Purple), SWFWMD Boundaries (Blue)
Watershed / Basin Boundaries (Red)
NORTH ^ SCALE 1 in. = Approx. 30 miles



Upper Coastal Basin

1 - SR 54, Mitchell to Gunn Hwy.
FM 2563361, 9.40 Ac.
2 - SR 54, Suncoast to US 41
FM 2563391, 7.00 Ac.
3 - Suncoast / Ridge Rd. Inter.
FM 2589581, 11.82 Ac.
4 - SR 60, Clearwater Harbor Bridge
FM 2570931, 0.50 Ac.
5 - US 19, Republic Dr. to CR 816
FM 4037711, 0.10 Ac.
6 - US 98, Hernando Co. to US 19
FM 2571741, 1.50 Ac.
7 - SR 688, Oakhurst to 119th
FM 2570501, 2.00 Ac.
8 - SR 52, Moon Lk. to Suncoast
FM 2563221, 7.30 Ac.
9 - SR 54, Rowan to Mitchell
FM 2563321, 3.60 Ac.
10 -SR 586, CR 1 to Fisher Rd.
FM 2568151, 0.10 Ac.

Ocklawaha River Basin

1 - SR 40, CR 225A to SW 52nd Ave.
FM 238762, 0.02 Ac.
2 - SR 500, Levy Co. to CR 326
FM 238641, 2.49 Ac.
3 - SR 500, CR 464 to CR 225a
FM 238719, 1.09 Ac.
4 - SR 40, CR 328 to SW 80th
FM 238719, 0.08 Ac.

Withlacoochee River Basin

1 - SR 44, CR 470 to County Line
FM 2571641, 12.30 Ac.
2 - SR 44, US 41 to CR 470
FM 2571631, 7.80 Ac.
3 - Int. 75, Lk. Panasoffkee Bridge
FM 4063291, 5.93 Ac.
4 - US 41 - Watson to SR 44
FM 2571841, 0.10 Ac.

Tampa Bay Drainage Basin

1 - SR 676, Maritime Blvd. to SR 60
FM 2567341, 1.50 Ac.
2 - US 19, Drew to Railroad
FM 2569671, 0.60 Ac.
3 - Int. 275, Roosevelt to B. Island Gap
FM 2588701, 9.00 Ac.
4 - Bunces Pass Bridge
FM 2569051, 0.60 Ac.
5 - US 19, CR 816 to SR 582
FM 4037701, 0.10 Ac.
6 - US 19, Coachman Rd. to Sunset Pt.
FM 2568881, 0.40 Ac.
7 - US 19, Pasco Co. to SR 580
FM 4051681, 0.50 Ac.
8 - SR 686 (Roosevelt) at 49th St.
FM 4062531, 0.10 Ac.
9 - SR 60, Cypress St. to Fish Cr.
FM 2567031, 17.80 Ac.
10 - Int. 275, Howard Franklin to Himes
FM 2583981, 1.90 Ac.
11 - SR 60, Courtney Campbell to Fish Cr.
FM 2566301, 10.50 Ac.
12 - US 301 - Sligh Ave. to Tampa Bypass
FM 2568881, 7.20 Ac.
13 - Ulmerton Rd. - US 19 to 49th St.
FM 2571391, 1.00 Ac.
14 - Himes Ave. at Hills. Ave.
FM 4082011, 0.10 Ac.

Hillsborough River Basin

1 - SR 54, US 41 - Cypress Creek
FM 2563431, 14.20 ac.
2 - US 41, Bell Lake to Tower Rd.
FM 2563161, 0.50 ac.
3 - B. B. Downs Bike Path (Hunter's)
FM 2578071, 0.50 ac.
4 - SR 39, Blackwater Creek Bridge
FM 2555361, 2.10 ac.
5 - SR 56, SR 54 to B.B. Downs
FM 2587341, 5.30 ac.
6 - B. B. Downs Bike Path (Amberly)
FM 2578072, 0.20 ac.
7 - SR 678 (Bearss Ave.) Florida-Neb.
FM 2568691, 0.10 ac.
8 - Alexander St., US 92 to Int.-4
FM 2578391, 3.10 ac.
9 - Alexander St., On-Ramp to Int.-4
FM 2584491, 1.70 ac.
10 - SR 93 (I-275), US 41 to Pasco. Co.
FM 2584131, 7.30 ac.
11 - B.B. Downs @ I-75 Off-Ramp
FM 4084802, 0.50 ac.

Proposed FDOT Mitigation Sites

Figure 4

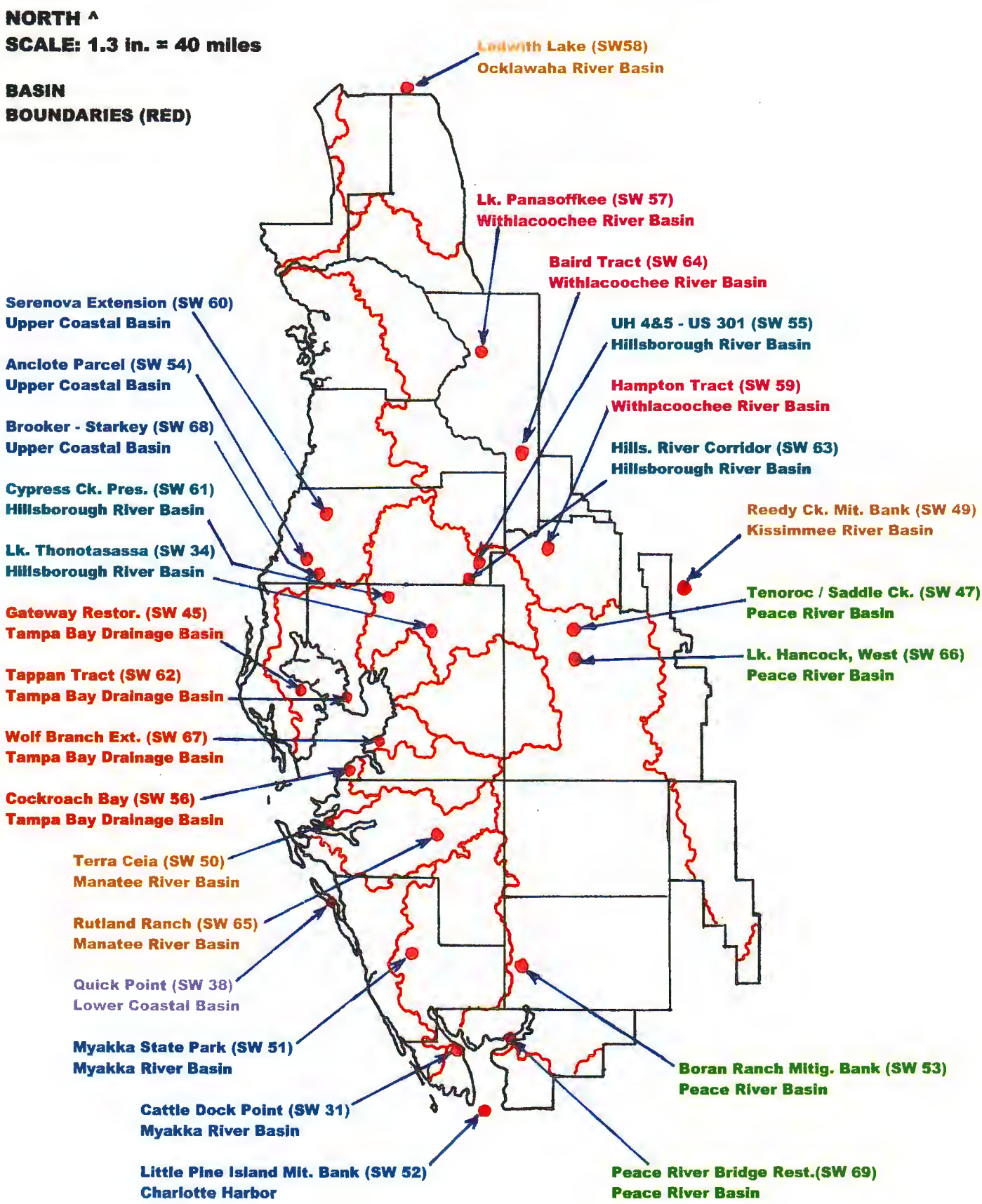


Table 1. *FDOT WETLAND IMPACT INVENTORY*

4-Oct.-01 | Mit. Transfer> | New DOT Proj> | <New DOT Proj (Deferred Mit. from Previous Plans) | <New DOT Proj (Deferring Mit. Selection to Future)

Wetland Habitat Type - Proposed Impact Acreages

Mit. Plan Year	DOT Dis.	County	Drainage Basin	WPI No. FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoirs	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 Salt Water (Ditch)	643 Wet Prairie	644 Lake Marsh	650 Non Vegetated	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
96	1	Polk	Hillsbor. River	1147946 2012081	Oct., 1997	I-4 - County Line to Memorial Blvd. -Sec. 1										6.57						6.98								13.55	WMD-Land Resources U.H.-US 301	no revisions
97	7	Pasco	Hillsbor. River	7115981 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	7115961 2563151	June, 2001	US 41- Bell Lake to Tower Road													0.50											0.50	WMD-Land Resources Hills. River Corridor	0.5 impact acres mitig. off the progam
98	7	Hillsborough	Hillsbor. River	7123684 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	1147955 2012171	Oct., 2001	I-4 West of Memorial Blvd. to west of US 98 - Sec. 2														0.45			1.63							2.08	Hills. Co. Parks (ELAPP) Jennings Tract	no revisions
99	7	Hillsborough	Hillsbor. River	7113773 2556361	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	7147617 2567341	July, 1999	SR 56, SR 54 to BB Downs														5.20		0.10								5.30	Hills. Co. Parks (ELAPP) Jennings Tract	all mitigation at Jennings Tract
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	July, 2004	Alexander Street US 92 - Interstate 4										3.10														3.10	Hills. Co. Parks (ELAPP) Jennings Tract	+1.2 ac. from 2000
00	7	Hillsborough	Hillsbor. River	2584491	Aug., 2004	Alexander St. - On-Ramp to Westbound Interstate 4										1.70														1.70	Hills. Co. Parks (ELAPP) Jennings Tract	-0.6 ac. from 2000
00	7	Hillsborough	Hillsbor. River	2584131	Nov., 2007	SR 93 (Interstate-275) US 41 - Pasco Co. Line					4.10									3.00		0.20								7.30	Hills. Co. Parks (ELAPP) Jennings Tract	+5.3 ac. from 2000
01	7	Hillsborough	Hillsbor. River	4084602	Dec., 2001	Bruce B. Downs at I-75 Off-Ramp													0.50											0.50	Hills. Co. Parks (ELAPP) Jennings Tract	2001, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**4.30**	**0.00**	**0.00**	**1.40**	**0.80**	**11.37**	**4.60**	**0.00**	**5.60**	**8.65**	**0.00**	**12.78**	**1.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**51.13**	**51.13**	
97	1	Highlands	Kissimmee Ridge	1112578 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	1147943 2012052	Dec., 2001	I-4, US 27 to Osceola County (Seg. 7)														0.79										0.79	Private Mit. Bank Reedy Ck. Mitig. Bank	2001, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.79**	**0.34**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.18**	**1.18**	
97	1	Sarasota	Lower Coastal	1119232 1979421	June, 2001	SR 789 - Ringling Causeway Blvd.																							0.27	0.27	City of Longboat Key Quick Point Nat. Preserve	-0.39 ac. from 2000
97	1	Sarasota	Lower Coastal	1119295 1980051	Sept., 2000	US 41 Bus. (SR 45) Venice Ave. to US 41 Bypass							0.32																	0.32	City of Longboat Key Quick Point Nat. Preserve	+0.21 ac. from 2000
						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**	**0.00**	**0.27**	**0.59**	**0.59**	
96	1	Manatee	Manatee River	1115399 1980581	Oct., 2000	US 301 (Ellenton) 60th Ave to Erie Road							0.18				0.41													0.59	WMD - SWIM Terra Ceia	no revisions
01	1	Manatee	Manatee River	1115353 1980221	Dec., 2001	SR 64 - I-75 to Lorraine Rd. (Seg. 1)										0.75						1.67								2.42	WMD - Land Resources Rutland Ranch	2001, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.00**	**0.00**	**0.75**	**0.41**	**0.00**	**0.00**	**0.00**	**0.00**	**1.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.01**	**3.01**	
97	1	Charlotte	Myakka River	1110148 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.) Cattle Dock Point (8.9 Ac.)	no revisions
98	1	Charlotte	Myakka River	1110167 1938131	May, 2001	SR 776 E. of Sunnybrooke W. of CR 771															0.25									0.25	DEP - State Park Myakka S.P. Restor. Proj.	no revisions
98	1	Sarasota	Myakka River	1119303 1980131	Sept., 1999	SR 72, Deer Prairie to Big Slough																0.87								0.87	DEP - State Park Myakka S.P. Restor. Proj.	no revisions
98	1	Sarasota	Myakka River	1119215 1979251	Jan., 1999	SR 72, Big Slough to DeSoto C/L								0.30								1.19								1.49	DEP - State Park Myakka S.P. Restor. Proj.	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**	**0.25**	**5.72**	**0.00**	**3.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.61**	**13.61**	
96	5	Marion	Ocklawaha	5113632 238782	Dec., 2004	SR 40-CR 225A to SW 52nd Ave.										0.02														0.02	Alachua Co./DEP/SJRWMD Ledwith Lake	-0.08 ac. from 2000 transfer mitigation
97	5	Marion	Ocklawaha	5113511 238841	Sept., 2002	SR 500 (US 27) - Levy Co. Line to CR 326															2.49									2.49	Alachua Co./DEP/SJRWMD Ledwith Lake	-4.52 ac. from 2000 transfer mitigation
97	5	Marion	Ocklawaha	5113549 238879	Sept., 1998	SR 500 (US 27) - CR 484 to CR 225a																1.09								1.09	Alachua Co./DEP/SJRWMD Ledwith Lake	mitig. transfer from Fish Prairie Restoration
01	5	Marion	Ocklawaha	238719	June, 2004	SR 40 - CR 328 to SW 80th																0.09								0.09	Alachua Co./DEP/SJRWMD Ledwith Lake	2001, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**2.49**	**1.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.68**	**3.68**	

Table 1. *FDOT WETLAND IMPACT INVENTORY*

4-Oct.-01 | Mit. Transfer> | <New DOT Proj | (Deferred Mit. from Previous Plans) | Wetland Habitat Type - Proposed Impact Acreages
New DOT Proj> | <New DOT Proj | (Deferring Mit. Selection to Future)

Mit. Plan Year	DOT Dis.	County	Drainage Basin	WPI No. FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoirs	540 Bays & Estuaries	610 Freshwater Herdwood 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 Salt Water (Ditch)	643 Wet Prairie	644 Lake Marsh	650 Non Vegetated	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
96	1	Polk	Peace River	1147952 2012091	March, 2001	I-4 West of US 96 to East of SR 33 (Sec. 3)										0.41							0.02							0.43	DEP/ FFWCC Tenoroc/Saddle Creek	-1.28 ac. from 2000 plan
97	1	Hardee	Peace River	1121259 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	1110453 1936890	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 1941021	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	1118367 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	1118363 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	1110145 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	-0.27 ac. from 2000 plan
98	1	Charlotte	Peace River	1120075 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	1121257 1986381	Oct., 2000	Ft. Green/Ona - Vandolah Rd. to North of Vandolah - Seg. 2																7.22								7.22	Private Mit. Bank Boran Ranch Mit. Bank	-3.6 ac. from 2000 plan
98	1	Hardee	Peace River	1121256 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	1110152 1937981	Oct., 2002	US 17 (SR35) CR 764 South to CR 764 North								0.15						3.32										3.47	Private Mit. Bank Boran Ranch Mit. Bank	no revisions
99	1	Charlotte	Peace River	4046971	Jan., 2002	I-75 Widen Bridge over Peace River							3.55																	3.55	Peace River Restor. (0.8 ac.) LPI Mit. Bank (2.75 ac.)	deferred mitig.
00	1	Polk	Peace River	1975331	March, 2003	US 27- Towerview Rd. to SR 540														3.00	4.00									7.00	Polk Co. Natural Resources Lk. Hancock Reserve (West)	deferred mitig.
00	1	Hardee	Peace River	1111277 1940931	Oct., 2002	US 17 (SR 35)-Peace River to Tropicana Rd.														3.00	0.49	0.93								4.42	Polk Co. Natural Resources Lk. Hancock Reserve (West)	deferred mitig.
01	1	Polk	Peace River	1110467 1938991	Oct., 2002	US 17-Livingston to Hardee County Line											0.48			6.92	0.59	0.20	3.40							11.59	Polk Co. Natural Resources Lk. Hancock Reserve (West)	2001, new project
01	1	Polk	Peace River	1118059 1971681	Sept., 2002	SR 60A (Van Fleet Dr.) CR 555 to Broadway Ave.														0.46										0.46	Polk Co. Natural Resources Lk. Hancock Reserve (West)	2001, new project
01	1	Polk	Peace River	1118571 1976791	March, 2003	US 27- SR 544 to Blue Heron Bay																1.45								1.45	Polk Co. Natural Resources Lk. Hancock Reserve (West)	2001, new project
						SUBTOTAL BY BASIN:	0.00	0.00	0.00	0.16	0.59	0.33	3.55	6.72	0.00	4.27	0.48	0.00	0.00	16.97	9.26	11.00	3.42	0.00	0.00	0.00	0.35	0.00	0.00	57.10	57.1	
97	7	Hillsborough	Tampa Bay	7113975 2557341	Jan., 2001	SR 676 - Maritime Blvd. to SR 60							1.00					0.50												1.50	WMD - SWIM Gateway Tract	no revisions
97	7	Pinellas	Tampa Bay	7117045 2569571	Oct., 2001	US 19 - Drew to Railroad											0.30					0.30								0.60	WMD - SWIM Cockroach Bay	+0.1 ac. from 2000
97	7	Pinellas	Tampa Bay	7147874 2588701	Sept., 2001	I 275 - Roosevelt to Big Island Gap							4.80					3.20				0.50		0.50						9.00	WMD - SWIM Gateway Tract	+1.30 ac. from 2000
98	7	Pinellas	Tampa Bay	7116992 2569051	Feb., 2000	SR 679 (Bayway), Bunces Pass Bridge # 150				0.10														0.50						0.60	WMD- SWIM 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	WMD - SWIM Wolf Branch Extension	deferred mitigation
00	7	Pinellas	Tampa Bay	2588681	Dec., 2002	US 19, Coachman Rd. to Sunset Point				0.30							0.10													0.40	WMD - SWIM Wolf Branch Extension	deferred mitigation
00	7	Pinellas	Tampa Bay	4051681	Nov., 2002	US 19 - Pasco County Line to SR 590 (sidewalk)											0.40							0.10						0.50	WMD - SWIM Wolf Branch Extension	deferred mitigation
00	7	Pinellas	Tampa Bay	4062531	Oct., 2003	SR 686 (Roosevelt) at 49th Street							0.10																	0.10	WMD- SWIM Gateway Tract	no revisions
00	7	Hillsborough	Tampa Bay	2557031	Nov., 2004	SR 60, Cypress St. to Fish Creek							0.30									0.80	1.90	10.80	4.00					17.80	SWIM - Tappan SWIM - Wolf Branch Exten.	deferred mitigation +2.5 ac. from 2000 plan
00	7	Hillsborough	Tampa Bay	2583981	Dec., 2006	Inter.-275, Howard Franklin to Himes Ave.							1.60										0.30							1.90	WMD - SWIM Gateway Tract	deferred mitigation -0.3 ac. from 2000 plan
00	7	Hillsborough	Tampa Bay	2556301	Aug., 2004	SR 60, Courtney Campbell to Fish Creek				2.60			4.40											3.50						10.50	WMD - SWIM Gateway Tract	-4.39 ac.; 1.2 ac. seagrass mit. off the program
01	7	Hillsborough	Tampa Bay	2558881	Oct., 2005	US 301- Sligh Avenue to Tampa Bypass Canal										3.70	1.50					2.00								7.20	WMD - SWIM Wolf Branch Extension	2001, new project
01	7	Pinellas	Tampa Bay	2571391	Aug., 2005	Ulmerton Rd. - US 19 to 49th Street																	1.00							1.00	WMD - SWIM Wolf Branch Extension	2001, new project
01	7	Hillsborough	Tampa Bay	4082011	Oct., 2003	Himes Ave. at Hillsborough Ave.											0.10													0.10	WMD - SWIM Wolf Branch Extension	2001, new project
						SUBTOTAL BY BASIN:	0.00	0.00	0.00	2.70	0.00	0.00	12.20	0.00	0.00	4.00	2.50	3.70	0.00	0.00	0.00	3.60	3.20	15.40	4.00	0.00	0.00	0.00	0.00	51.30	51.30	

Table 1. *FDOT WETLAND IMPACT INVENTORY*

4-Oct.-01 | Mit. Transfer> | New DOT Proj> | <New DOT Proj | <New DOT Proj | (Deferred Mit. from Previous Plans) | (Deferring Mit. Selection to Future)

Wetland Habitat Type - Proposed Impact Acreages

Mit. Plan Year	DOT Dis.	County	Drainage Basin	WPI No. FM No.	DOT Construction Date	Project Description	500 Open Water	510 Streams & Waterways	530 Reservoirs	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 Salt Water (Ditch)	643 Wet Prairie	644 Lake Marsh	650 Non Vegetated	911 Seagrass	Total Impacted Acreage	Mitigation Location	Remarks
97	7	Pasco	Upper Coastal	7115974 2563361	May, 2003	SR 54 - Mitchell to Gunn Hwy.									0.70	1.40			2.90			3.40	1.00							9.40	WMD - Land Resources Anclote Parcel	-0.2 ac. from 2000
98	7	Pasco	Upper Coastal	7115977 2563391	Dec., 2002	SR 54 - North Suncoast to West of US 41										1.30		0.8	3.00			0.50	1.40						7.00	WMD - Land Resources Anclote Parcel	no revisions
00	8	Pasco	Upper Coastal	2589581	Jan., 2001	Suncoast Parkway/ Ridge Road Interchange			0.15										8.19			3.48							11.82	WMD - Land Resources Serenova Extension	no revisions
00	7	Pinellas	Upper Coastal	2570931	Jan., 2002	SR 60, Clearwater Harbor Bridge Replacement							0.20											0.30					0.50	On-site Restoration and SWIM- Gateway Tract	+0.3 ac. from 2000
00	7	Pinellas	Upper Coastal	4037711	April, 2002	US 19 - Republic Drive to CR 819 (Alderman)											0.10												0.10	Pasco / WMD-Land Res. Brooker-Starkey Corridor	transfer mitigation from Seminole Ext.
00	7	Hernando	Upper Coastal	2571741	May, 2003	US 98 - Hernando Co. Line to US 19					0.30								1.20										1.50	Pasco / WMD-Land Res. Brooker-Starkey Corridor	+0.1 from 2000 Deferred mitig.
00	7	Pinellas	Upper Coastal	2570601	Feb., 2004	SR 688 (Ulmerton Rd.) Oakhurst Rd. to 118th St.														0.20		1.80							2.00	Pasco / WMD-Land Res. Brooker-Starkey Corridor	+ 0.80 ac. from 2000 transfer mitigation
00	7	Pasco	Upper Coastal	2563221	Aug., 2004	SR 52 - Moon Lake to Suncoast Parkway										3.40	0.80		2.90			0.10							7.20	Pasco / WMD-Land Res. Brooker-Starkey Corridor	-0.1 from 2000 deferred mitigation
01	7	Pasco	Upper Coastal	2563321	July, 1998	SR 54 - Rowan Rd. to Mitchell Bypass										0.10	0.20					3.30							3.60	Pasco / WMD-Land Res. Brooker-Starkey Corridor	2001, new project
01	7	Pinellas	Upper Coastal	2568151	July, 2004	SR 586 (Curlew Rd.) - CR 1 to Fisher Road											0.10												0.10	Pasco / WMD-Land Res. Brooker-Starkey Corridor	2001, new project
						SUBTOTAL BY BASIN:	**0.00**	**0.00**	**0.15**	**0.00**	**0.30**	**0.00**	**0.20**	**0.00**	**0.70**	**6.20**	**1.20**	**0.80**	**18.19**	**0.20**	**0.00**	**12.58**	**2.40**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**43.22**	43.22	
98	7	Citrus	Withlac. River	7119003 2571641	Dec., 2002	SR 44 -CR 470 to Withlacoochee River										10.70				0.20		1.40							12.30	DOF / DEP - State Forest Baird Tract	-1.3 from 2000
99	7	Citrus	Withlac. River	7119002 2571631	Dec., 2002	SR44, US 41 to CR470								3.10			3.10					1.60							7.80	DOF / DEP - State Forest Baird Tract	+3.0 from 2000
98	1	Polk	Withlac. River	1147952 2012092	Oct., 2001	I-4 East of US 98 to East of SR 33 (Sec. 3)										0.10										0.25			0.35	WMD - Land Resources Hampton Tract	-13.50 ac. from 2000
98	1	Polk	Withlac. River	1147952 2012142	Nov., 2001	I-4 East of SR 33 to East of CR 559 (Sec. 4)										0.07						0.63				7.24			7.94	WMD - Land Resources Hampton Tract	+1.21 from 2000
99	1	Polk	Withlac. River	1147953 2012152	Nov., 2001	I-4 East of SR 559 - East of CR 557 (Sec. 5)										0.03			1.22	7.71		1.33							10.29	WMD - Land Resources Hampton Tract	-0.37 from 2000
98	1	Polk	Withlac. River	1147954 2012162	Dec., 2001	I-4 East of CR 557 to West of US 27 (Sec. 6)														6.18									6.18	WMD - Land Resources Hampton Tract	-6.53 from 2000
99	5	Sumter	Withlac. River	548964 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 - State Forest Baird Tract	2001, new project
						SUBTOTAL BY BASIN:	5.93	0.00	0.00	0.00	0.00	0.00	0.00	3.10	0.00	10.90	3.10	0.00	1.22	14.09	0.00	4.96	0.10	0.00	0.00	7.49	0.00	0.00	0.00	50.89	50.89	
						GRAND TOTALS	**5.93**	**0.00**	**0.15**	**4.94**	**5.19**	**0.38**	**18.38**	**11.52**	**1.50**	**37.51**	**12.29**	**4.50**	**25.01**	**40.70**	**12.34**	**53.48**	**10.75**	**19.03**	**4.00**	**7.49**	**0.35**	**0.00**	**0.27**	**275.71**		
							5.93	0.00	0.15	4.94	5.19	0.38	18.38	11.52	1.50	37.51	12.29	4.50	25.01	40.70	12.34	53.48	10.75	19.03	4.00	7.49	0.35	0.00	0.27	275.71		

Table 2. Net funding requested by mitigation project, including all modifications and new projects. Page 1 of 2 Update 10/4/01

Mitig. Project Name	Mitig. Project	WPI #	Acreage Impacts (Previous)	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	8.92	8.92	97	$ 669,250.00	$ 669,250.00	Partial Mit. @ SW52, No Revisions	$ 686,866.00	$ -
Project Total			**8.92**	**8.92**		**$ 669,250.00**	**$ 669,250.00**	**$ -**	**$ 686,866.00**	**$ 17,616.00**
Lake Thonotasassa (SWIM)	SW 34	7115981	14.14	14.20	97	$ 511,349.00	$ 611,349.00	Impact increase, inc. maint. Costs	$ 1,106,639.00	$ 495,290.00
Project Total			**14.14**	**14.20**		**$ 511,349.00**	**$ 611,349.00**	**$ (100,000.00)**	**$ 1,106,639.00**	**$ 495,290.00**
Quick Point (SWIM)	SW 38	1119232	0.66	0.27	97	$ 52,639.00	$ 21,536.00	Impact decrease	$ 21,536.00	$ -
		1119317	0.07	-	97	$ 5,087.00	$ -	No Mitigation Required	$ -	$ -
		1119295	0.11	0.32	97	$ 8,774.00	$ 25,044.00	Impact increase	$ 25,044.00	$ -
Project Total			**0.84**	**0.59**		**$ 66,500.00**	**$ 46,580.00**	**$ 19,920.00**	**$ 46,580.00**	**$ -**
Gateway Restoration (SWIM)	SW 45	7113975	1.50	1.50	97	$ 99,500.00	$ 115,505.00	Inc. costs due to loss of 2569031	$ 115,505.00	$ -
		7147874	9.07	9.00	97	$ 602,000.00	$ 704,366.00	Inc. costs due to loss of 2569031	$ 704,366.00	$ -
		7116992	0.60	0.60	98	$ 39,000.00	$ 46,202.00	Inc. costs due to loss of 2569031	$ 46,202.00	$ -
		2570931	0.20	0.50	^00	$ 13,300.00	$ 41,140.00	Impacts increase	$ 41,140.00	$ -
		2569031	5.60	-	^00	$ 372,000.00	$ -	Mitigation by DOT	$ -	$ -
		2583981	-	1.90	^01	$ -	$ 163,590.00	Deferred mit., impacts increase	$ 163,590.00	$ -
		4051681	0.10	-	^00	$ 6,600.00	$ -	Transfer to SW 67	$ -	$ -
		4062531	0.10	0.10	^00	$ 6,600.00	$ 8,228.00	Inc. costs due to loss of 2569031	$ 8,228.00	$ -
		2556301	13.00	10.50	^00	$ 863,000.00	$ 887,754.00	Impacts decrease	$ 887,754.00	$ -
Project Total			**30.17**	**24.10**		**$ 2,002,000.00**	**$ 1,966,785.00**	**$ 35,215.00**	**$ 1,966,785.00**	**$ -**
Tenoroc / Saddle Creek (FDEP / FFWCC)	SW 47	1147952	1.71	0.43	96	$ 121,500.00	$ 33,000.00	Impacts decrease	$ 34,298.00	$ 1,298.00
		1118387	5.87	5.87	97	$ 440,250.00	$ 440,250.00	No Revisions	$ 459,404.00	$ 19,154.00
		1118363	0.41	0.41	97	$ 30,750.00	$ 30,750.00	No Revisions	$ 32,088.00	$ 1,338.00
		1118424	0.50	-	99	$ 37,500.00	$ -	No Mitigation Required	$ -	$ -
Project Total			**8.49**	**6.71**		**$ 630,000.00**	**$ 504,000.00**	**$ 126,000.00**	**$ 525,790.00**	**$ 21,790.00**
Reedy Ck. Mitig. Bank	SW 49	1112576	0.39	0.39	97	$ 14,000.00	$ 13,650.00	Decrease in $ per credit purchase	$ 31,108.00	$ 17,458.00
		1147943	-	0.79	^01	$ -	$ 30,020.00	New Project	$ 65,002.00	$ 34,982.00
Project Total			**0.39**	**0.39**		**$ 14,000.00**	**$ 43,670.00**	**$ (29,670.00)**	**$ 96,110.00**	**$ 52,440.00**
Terra Cela (SWIM)	SW 50	1115399	0.59	0.59	98	$ 47,060.00	$ 47,060.00	No Revisions	$ 47,060.00	$ -
		1115478	0.50	-	99	$ 37,500.00	$ -	No Mitigation Required	$ -	$ -
Project Total			**1.09**	**0.59**		**$ 84,560.00**	**$ 47,060.00**	**$ 37,500.00**	**$ 47,060.00**	**$ -**
Myakka River State Park (FDEP)	SW 51	1110167	0.25	0.25	98	$ 10,000.00	$ 10,000.00	No Revisions	$ 19,941.00	$ 9,941.00
		1119303	0.87	0.87	98	$ 33,000.00	$ 33,000.00	No Revisions	$ 68,089.00	$ 35,089.00
		1119215	1.49	1.49	98	$ 56,000.00	$ 56,000.00	No Revisions	$ 116,612.00	$ 60,612.00
Project Total			**2.61**	**2.61**		**$ 99,000.00**	**$ 99,000.00**	**$ -**	**$ 204,642.00**	**$ 105,642.00**
Little Pine Island Mitigation Bank	SW 52	1120075	0.16	0.16	98	$ 5,920.00	$ 5,920.00	No Revisions	$ 12,522.00	$ 6,602.00
		1110148	2.08	2.08	98	$ 76,960.00	$ 76,960.00	Partial Mit. @ SW 31, No Revisions	$ 162,787.00	$ 85,827.00
		4046971	-	2.75	^01	$ -	$ 145,750.00	Partial Mit. @ SW 69, New Project	$ 219,351.00	$ 73,601.00
Project Total			**2.24**	**4.99**		**$ 82,880.00**	**$ 228,630.00**	**$ (145,750.00)**	**$ 394,660.00**	**$ 166,030.00**
Boran Ranch Mitig. Bank	SW 53	1110457	1.00	-	97	$ 30,000.00	$ -	No Mitigation Required	$ -	$ -
		1121259	2.08	2.08	97	$ 62,400.00	$ 62,400.00	No Revisions	$ 160,166.00	$ 97,766.00
		1110453	1.19	1.19	97	$ 35,700.00	$ 35,700.00	No Revisions	$ 91,634.00	$ 55,934.00
		1111286	2.30	2.30	97	$ 69,000.00	$ 69,000.00	No Revisions	$ 180,005.00	$ 111,005.00
		1110145	0.54	0.27	98	$ 16,200.00	$ 8,100.00	Impact decrease	$ 21,536.00	$ 13,436.00
		1121257	10.82	7.22	98	$ 324,600.00	$ 216,600.00	Impact decrease	$ 565,059.00	$ 348,459.00
		1121256	5.23	5.23	98	$ 156,900.00	$ 158,900.00	No Revisions	$ 402,725.00	$ 245,825.00
		1110152	3.47	3.47	99	$ 104,100.00	$ 104,700.00	Increased costs	$ 271,572.00	$ 166,872.00
Project Total			**26.63**	**21.76**		**$ 798,900.00**	**$ 653,400.00**	**$ 145,500.00**	**$ 1,692,697.00**	**$ 1,039,297.00**
Anciote Parcel (WMD-Land Resources)	SW 54	7115977	7.00	7.00	98	$ 299,132.00	$ 299,132.00	No Revisions	$ 558,348.00	$ 259,216.00
		7115974	9.60	9.40	97	$ 410,236.00	$ 410,236.00	Impact decrease	$ 749,782.00	$ 339,546.00
Project Total			**16.60**	**16.40**		**$ 709,368.00**	**$ 709,368.00**	**$ -**	**$ 1,308,130.00**	**$ 598,762.00**
Up.Hills.4&5 (WMD-Land)	SW 55	1147946	13.55	13.55	96	$ 290,000.00	$ 290,000.00	No Revisions	$ 1,016,250.00	$ 726,250.00
Project Total			**13.55**	**13.55**		**$ 290,000.00**	**$ 290,000.00**	**$ -**	**$ 1,016,250.00**	**$ 726,250.00**
Cockroach Bay (SWIM)	SW 56	7117045	0.50	0.60	97	$ 38,500.00	$ 46,200.00	Impact increase	$ 46,200.00	$ -
Project Total			**0.50**	**0.60**		**$ 38,500.00**	**$ 46,200.00**	**$ (7,700.00)**	**$ 46,200.00**	**$ -**
Lk. Panasoffkee (SWIM)	SW 57	548964	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**
Ledwith Lake (Alachua County)	SW 58	5113632	-	0.02	98	$ -	$ 500.00	New Mitigation Project	$ 1,645.00	$ 1,145.00
		5113511	-	2.49	97	$ -	$ 66,000.00	New Mitigation Project	$ 204,680.00	$ 138,880.00
		5113549	-	1.09	97	$ -	$ 29,000.00	New Mitigation Project	$ 86,943.00	$ 57,943.00
		238719	-	0.08	^01	$ -	$ 4,500.00	New DOT Project	$ 6,582.00	$ 2,082.00
Project Total			**-**	**3.68**		**$ -**	**$ 100,000.00**	**$ (100,000.00)**	**$ 300,050.00**	**$ 200,050.00**

Table 2. Net funding requested by mitigation project, including all modifications and new projects. Update 10/4/01

Mitig. Project Name	Mitig. Project	WPI #	Impacts (Previous)	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)
Hampton Tract	SW 59	1147947	13.85	0.35	98	$ 570,000.00	$ 17,000.00	Impact Decrease	$ 27,917.00	$ 10,917.00
(WMD-Land Resources)		1147952	6.73	7.94	98	$ 277,000.00	$ 395,000.00	Impact Decrease	$ 633,326.00	$ 238,326.00
		1147953	10.66	10.29	99	$ 440,000.00	$ 498,700.00	Impact Decrease	$ 820,772.00	$ 322,072.00
		1147954	12.71	6.18	98	$ 523,000.00	$ 300,000.00	Impact Decrease	$ 492,942.00	$ 192,942.00
Project Total			**43.95**	**24.76**		**$ 1,810,000.00**	**$ 1,210,700.00**	**$ 599,300.00**	**$ 1,974,957.00**	**$ 764,257.00**
Serenova Extension	SW 60	2583111	0.20	-	^00	$ 15,800.00	$ -	DOT Project Removed	$ -	$ -
(WMD - Land Resources)		2589581	11.82	11.82	^00	$ 936,298.00	$ 942,810.00	oss of other proj., Inc. acquis. Cost	$ 942,810.00	$ -
		4037711	0.10	-	^00	$ 7,920.00	$ -	Transfer to SW 68	$ -	$ -
		2548221	1.00	-	^00	$ 79,200.00	$ -	No Mitigation Required	$ -	$ -
		2570501	0.20	-	^00	$ 15,800.00	$ -	Transfer to SW 68	$ -	$ -
Project Total			**13.32**	**11.82**		**$ 1,055,018.00**	**$ 942,810.00**	**$ 112,208.00**	**$ 942,810.00**	**$ -**
Cypress Ck. Preserve	SW 61	7123664	0.50	0.50	98	$ 34,000.00	$ 21,204.00	ddit. Mitig. Credit, less $ per impact	$ 38,502.00	$ 17,298.00
(Hills. Co. Parks & Rec.)		1147955	2.08	2.08	98	$ 143,100.00	$ 88,210.00	ddit. Mitig. Credit, less $ per impact	$ 160,166.00	$ 71,956.00
		7113773	2.10	2.10	99	$ 142,000.00	$ 89,059.00	ddit. Mitig. Credit, less $ per impact	$ 164,352.00	$ 75,293.00
		2587341	4.30	5.30	^00	$ 293,000.00	$ 224,766.00	ddit. Mitig. Credit, less $ per impact	$ 422,749.00	$ 197,983.00
		2583871	0.20	-	^00	$ 13,600.00	$ -	No Mitigation Required	$ -	$ -
		2578072	0.20	0.20	^00	$ 13,600.00	$ 8,482.00	ddit. Mitig. Credit, less $ per impact	$ 159,528.00	$ 151,046.00
		2558591	0.10	0.10	^00	$ 6,300.00	$ 4,240.00	ddit. Mitig. Credit, less $ per impact	$ 7,976.00	$ 3,736.00
		2578391	0.90	3.10	^00	$ 61,400.00	$ 131,467.00	Impacts Increase	$ 247,268.00	$ 115,801.00
		2584491	2.30	1.70	^00	$ 157,000.00	$ 72,095.00	ddit. Mitig. Credit, less $ per impact	$ 135,599.00	$ 63,504.00
		2584131	2.00	7.30	^00	$ 136,000.00	$ 339,271.00	Impacts Increase	$ 638,112.00	$ 298,841.00
		4084602	-	0.50	^01	$ -	$ 21,206.00	New Project	$ 41,141.00	$ 19,935.00
Project Total			**14.68**	**22.88**		**$ 1,000,000.00**	**$ 1,000,000.00**	**$ -**	**$ 2,015,393.00**	**$ 1,015,393.00**
Tappan Tract - SWIM	SW 62	2557031	-	6.20	^00	$ -	$ 460,000.00	Partial Mit. @ SW 67	$ 510,142.00	$ 50,142.00
Project Total			**-**	**6.20**		**$ -**	**$ 460,000.00**	**$ (460,000.00)**	**$ 510,142.00**	**$ 50,142.00**
Hills. River Corridor	SW 63	2587341	1.00	-	^00	$ 54,800.00	$ -	Impacts Transfer to SW 61	$ -	$ -
(WMD - Land Resources)		7115951	1.10	0.50	97	$ 60,200.00	$ 20,000.00	Imp. Decrease, Partial Mit. By DOT	$ 39,882.00	$ 19,882.00
Project Total			**2.10**	**0.50**		**$ 115,000.00**	**$ 20,000.00**	**$ 95,000.00**	**$ 39,882.00**	**$ 19,882.00**
Baird Tract	SW 64	2571641	13.60	12.30	98	$ 960,000.00	$ 795,522.00	Impacts Decrease	$ 981,097.00	$ 185,575.00
(FDOF, FDEP)		2571631	4.80	7.80	99	$ 340,000.00	$ 504,478.00	Impacts Increase	$ 622,159.00	$ 117,681.00
		2571841	-	0.10	^01	$ -	$ 6,468.00	New Project	$ 8,228.00	$ 1,760.00
Project Total			**18.40**	**20.10**		**$ 1,300,000.00**	**$ 1,300,000.00**	**$ -**	**$ 1,603,256.00**	**$ 303,256.00**
Rutland Ranch (WMD-Land)	SW 65	1115353	-	2.42	^01	$ -	$ 190,000.00	New Project	$ 199,120.00	$ 9,120.00
Project Total			**-**	**2.42**		**$ -**	**$ 190,000.00**	**$ (190,000.00)**	**$ 199,120.00**	**$ 9,120.00**
Lk. Hancock Reserve, West	SW 66	1975331	-	7.00	^01	$ -	$ 216,292.00	New Project	$ 575,967.00	$ 359,675.00
(Polk County Nat. Res.)		1940931	-	4.42	^01	$ -	$ 136,573.00	New Project	$ 363,682.00	$ 227,109.00
		1938991	-	11.59	^01	$ -	$ 358,118.00	New Project	$ 953,637.00	$ 595,519.00
		1971681	-	0.46	^01	$ -	$ 14,213.00	New Project	$ 37,849.00	$ 23,636.00
		1976791	-	1.45	^01	$ -	$ 44,804.00	New Project	$ 119,307.00	$ 74,503.00
Project Total			**-**	**24.92**		**$ -**	**$ 770,000.00**	**$ (770,000.00)**	**$ 2,050,442.00**	**$ 1,280,442.00**
Wolf Branch Extension	SW 67	4037701	-	0.10	^00	$ -	$ 8,228.00	Deferred Mitigation from 2000	$ 8,228.00	$ -
(WMD-SWIM)		2568881	-	0.40	^00	$ -	$ 32,887.00	Deferred Mitigation from 2000	$ 32,887.00	$ -
		4051681	-	0.50	^00	$ -	$ 41,109.00	Transfer from SW 45	$ 41,109.00	$ -
		2557031	-	11.60	^00	$ -	$ 960,757.00	Partial Mit. @ SW 62	$ 960,757.00	$ -
		2558881	-	7.20	^01	$ -	$ 608,746.00	New Project	$ 608,746.00	$ -
		2571391	-	1.00	^01	$ -	$ 84,548.00	New Project	$ 84,548.00	$ -
		4082011	-	0.10	^01	$ -	$ 8,455.00	New Project	$ 8,455.00	$ -
Project Total			**-**	**20.90**		**$ -**	**$ 1,764,730.00**	**$ (1,764,730.00)**	**$ 1,764,730.00**	**$ -**
Brooker-Starkey Corridor	SW 68	2571741	-	1.50	^00	$ -	$ 119,646.00	Deferred Mitigation from 2000	$ 119,646.00	$ -
(Pasco Co. / WMD-Land)		2570501	-	2.00	^00	$ -	$ 159,528.00	Mit. Transfer (SW 60), Impact Inc.	$ 159,528.00	$ -
		4037711	-	0.10	^00	$ -	$ 7,976.00	Mit. Transfer (SW 60)	$ 7,976.00	
		2563221	-	7.20	^00	$ -	$ 574,301.00	Deferred Mitigation from 2000	$ 574,301.00	$ -
		2563321	-	3.60	^01	$ -	$ 287,150.00	New Project	$ 287,150.00	$ -
		2568151	-	0.10	^01	$ -	$ 7,976.00	New Project	$ 7,976.00	$ -
Project Total			**-**	**14.50**		**$ -**	**$ 1,156,577.00**	**$ (1,156,577.00)**	**$ 1,156,577.00**	**$ -**
Peace River Bridge Rest. (WMD)	SW 69	4046971	-	0.80	^01	$ -	$ 60,000.00	New Project, Partial Mit. @ SW 52 On-Site Restoration @ SW 69	$ 63,811.00	$ 3,811.00
Project Total			**-**	**0.80**		**$ -**	**$ 60,000.00**	**$ (60,000.00)**	**$ 63,811.00**	**$ 3,811.00**
GRAND TOTAL			**224.55**	**275.71**		**$ 11,748,068.00**	**$ 15,359,842.00**	**$ (3,613,784.00)**	**$ 22,232,579.00**	**$ 6,872,737.00**

Table 3. Net funding requested by mitigation project, only for amended and new DOT projects.

Update 10/4/01

Mitig. Project Name	Mitig. Project	WPI #	Acreage Impacts (Previous)	Acreage Impacts (Current)	Plan Year	Previous Cost Estimate	Proposed Requested Funds	Remarks & Fund Allocation (Fund Shortage in Parenthesis)	Available Funds	Available Funds Minus Proposed Mitig. Cost (Surplus Funds)
Lake Thonotasassa (SWIM)	SW 34	7115981	14.14	14.20	97	$ 511,349.00	$ 611,349.00	Impact increase, inc. maint. Costs	$ 1,106,639.00	$ 495,290.00
Project Total			**14.14**	**14.20**		**$ 511,349.00**	**$ 611,349.00**	**$ (100,000.00)**	**$ 1,106,639.00**	**$ 495,290.00**
Quick Point (SWIM)	SW 38	1119232	0.66	0.27	97	$ 52,639.00	$ 21,536.00	Impact decrease	$ 21,536.00	$ -
		1119317	0.07	-	97	$ 5,087.00	$ -	DOT Project Removed	$ -	$ -
		1119295	0.11	0.32	97	$ 8,774.00	$ 25,044.00	Impact increase	$ 25,044.00	$ -
Project Total			**0.84**	**0.59**		**$ 66,500.00**	**$ 46,580.00**	**$ 19,920.00**	**$ 46,580.00**	**$ -**
Gateway Restoration (SWIM)	SW 45	7113975	1.50	1.50	97	$ 99,500.00	$ 115,505.00	Inc. costs due to loss of 2569031	$ 115,505.00	$ -
		7147874	9.07	9.00	97	$ 602,000.00	$ 704,366.00	Inc. costs due to loss of 2569031	$ 704,366.00	$ -
		7116992	0.60	0.60	98	$ 39,000.00	$ 46,202.00	Inc. costs due to loss of 2569031	$ 46,202.00	$ -
		2570931	0.20	0.50	^00	$ 13,300.00	$ 41,140.00	Impacts increase	$ 41,140.00	$ -
		2569031	5.60	-	^00	$ 372,000.00	$ -	Mitigation by DOT	$ -	$ -
		2583961	-	1.90	^01	$ -	$ 163,590.00	Deferred mit., impacts increase	$ 163,590.00	$ -
		4051681	0.10	-	^00	$ 6,600.00	$ -	Transfer to SW 67	$ -	$ -
		4062531	0.10	0.10	^00	$ 6,600.00	$ 8,228.00	Inc. costs due to loss of 2569031	$ 8,228.00	$ -
		2556301	13.00	10.50	^00	$ 863,000.00	$ 887,754.00	Impacts decrease	$ 887,754.00	$ -
Project Total			**30.17**	**24.10**		**$ 2,002,000.00**	**$ 1,966,785.00**	**$ 35,215.00**	**$ 1,966,785.00**	**$ -**
Tenoroc / Saddle Creek (FDEP / FFWCC)	SW 47	1147952	1.71	0.43	96	$ 121,500.00	$ 33,000.00	Impacts decrease	$ 34,298.00	$ 1,298.00
		1118424	0.50	-	99	$ 37,500.00	$ -	No Mitigation Required	$ -	$ -
Project Total			**2.21**	**0.43**		**$ 159,000.00**	**$ 33,000.00**	**$ 126,000.00**	**$ 34,298.00**	**$ 1,298.00**
Reedy Ck. Mitig. Bank	SW 49	1112576	0.39	0.39	97	$ 14,000.00	$ 13,650.00	Decrease in $ per credit purchase	$ 31,108.00	$ 17,458.00
		1147943	-	0.79	^01	$ -	$ 30,020.00	New Project	$ 65,002.00	$ 34,982.00
Project Total			**0.39**	**1.18**		**$ 14,000.00**	**$ 43,670.00**	**$ (29,670.00)**	**$ 96,110.00**	**$ 52,440.00**
Terra Ceia (SWIM)	SW 50	1115478	0.50	-	99	$ 37,500.00	$ -	No Mitigation Required	$ -	$ -
Project Total			**0.50**	**0.00**		**$ 37,500.00**	**$ -**	**$ 37,500.00**	**$ -**	**$ -**
Little Pine Island Mit. Bk.	SW 52	4046971	-	2.75	^01	$ -	$ 145,750.00	Part. Mit. @ SW 69, New Project	$ 219,351.00	$ 73,601.00
Project Total			**-**	**2.75**		**$ -**	**$ 145,750.00**	**$ (145,750.00)**	**$ 219,351.00**	**$ 73,601.00**
Boran Ranch Mit. Bank	SW 53	1110145	0.54	0.27	98	$ 16,200.00	$ 8,100.00	Impact decrease	$ 21,536.00	$ 13,436.00
		1110457	1.00	-	97	$ 30,000.00	$ -	No Mitigation Required	$ -	$ -
		1121257	10.82	7.22	98	$ 324,600.00	$ 216,600.00	Impact decrease	$ 565,059.00	$ 348,459.00
		1110152	3.47	3.47	99	$ 104,100.00	$ 104,700.00	Increased costs	$ 271,572.00	$ 166,872.00
Project Total			**15.83**	**10.96**		**$ 474,900.00**	**$ 329,400.00**	**$ 145,500.00**	**$ 858,167.00**	**$ 528,767.00**
Anclote (WMD-Land)	SW 54	7115974	9.60	9.40	97	$ 410,236.00	$ 410,236.00	Impact decrease	$ 749,782.00	$ 339,546.00
Project Total			**9.60**	**9.40**		**$ 410,236.00**	**$ 410,236.00**	**$ -**	**$ 749,782.00**	**$ 339,546.00**
Cockroach Bay (SWIM)	SW 56	7117045	0.50	0.60	97	$ 38,500.00	$ 46,200.00	Impact increase	$ 46,200.00	$ -
Project Total			**0.50**	**0.60**		**$ 38,500.00**	**$ 46,200.00**	**$ (7,700.00)**	**$ 46,200.00**	**$ -**
Ledwith Lake (Alachua County)	SW 58	5113632	-	0.02	98	$ -	$ 500.00	New Mitigation Project	$ 1,645.00	$ 1,145.00
		5113511	-	2.49	97	$ -	$ 66,000.00	New Mitigation Project	$ 204,880.00	$ 138,880.00
		5113549	-	1.09	97	$ -	$ 29,000.00	New Mitigation Project	$ 86,943.00	$ 57,943.00
		238719	-	0.08	^01	$ -	$ 4,500.00	New DOT Project	$ 6,582.00	$ 2,082.00
Project Total			**-**	**3.68**		**$ -**	**$ 100,000.00**	**$ (100,000.00)**	**$ 300,050.00**	**$ 200,050.00**
Hampton Tract (WMD-Land Resources)	SW 59	1147947	13.85	0.35	98	$ 570,000.00	$ 17,000.00	Impact decrease	$ 27,917.00	$ 10,917.00
		1147952	6.73	7.94	98	$ 277,000.00	$ 395,000.00	Impact increase	$ 633,326.00	$ 238,326.00
		1147953	10.66	10.29	99	$ 440,000.00	$ 498,700.00	Impact decrease	$ 820,772.00	$ 322,072.00
		1147954	12.71	6.18	98	$ 523,000.00	$ 300,000.00	Impact decrease	$ 492,942.00	$ 192,942.00
Project Total			**43.95**	**24.76**		**$ 1,810,000.00**	**$ 1,210,700.00**	**$ 599,300.00**	**$ 1,974,957.00**	**$ 764,257.00**
Serenova Extension (WMD - Land Resources)	SW 60	2583111	0.20	-	^00	$ 15,800.00	$ -	DOT Project Removed	$ -	$ -
		2589581	11.82	11.82	^00	$ 936,298.00	$ 942,810.00	Loss other proj., Inc. acquis. Cost	$ 942,810.00	$ -
		4037711	0.10	-	^00	$ 7,920.00	$ -	Transfer to SW 68	$ -	$ -
		2548221	1.00	-	^00	$ 79,200.00	$ -	No Mitigation Required	$ -	$ -
		2570501	0.20	-	^00	$ 15,800.00	$ -	Transfer to SW 68	$ -	$ -
Project Total			**13.32**	**11.82**		**$ 1,055,018.00**	**$ 942,810.00**	**$ 112,208.00**	**$ 942,810.00**	**$ -**
Cypress Ck. Preserve (Hills. Co. Parks & Rec.)	SW 61	7123664	0.50	0.50	98	$ 34,000.00	$ 21,204.00	Addit. Mit. Credit, less $ per impact	$ 38,502.00	$ 17,298.00
		1147955	2.08	2.08	98	$ 143,100.00	$ 88,210.00	Addit. Mit. Credit, less $ per impact	$ 160,166.00	$ 71,956.00
		7113773	2.10	2.10	99	$ 142,000.00	$ 89,059.00	Addit. Mit. Credit, less $ per impact	$ 164,352.00	$ 75,293.00
		2587341	4.30	5.30	^00	$ 293,000.00	$ 224,766.00	Addit. Mit. Credit, less $ per impact	$ 422,749.00	$ 197,983.00
		2563871	0.20	-	^00	$ 13,600.00	$ -	No Mitigation Required	$ -	$ -
		2578072	0.20	0.20	^00	$ 13,600.00	$ 8,482.00	Addit. Mit. Credit, less $ per impact	$ 159,528.00	$ 151,046.00
		2558591	0.10	0.10	^00	$ 6,300.60	$ 4,240.00	Addit. Mit. Credit, less $ per impact	$ 7,976.00	$ 3,736.00
		2576391	0.90	3.10	^00	$ 61,400.00	$ 131,467.00	Impacts increase	$ 247,268.00	$ 115,801.00
		2584491	2.30	1.70	^00	$ 157,000.00	$ 72,095.00	Addit. Mit. Credit, less $ per impact	$ 135,599.00	$ 63,504.00
		2584131	2.00	7.30	^00	$ 136,000.00	$ 339,271.00	Impacts increase	$ 638,112.00	$ 298,841.00
		4084602	-	0.50	^01	$ -	$ 21,206.00	New Project	$ 41,141.00	$ 19,935.00
Project Total			**14.68**	**22.88**		**$ 1,000,000.00**	**$ 1,000,000.00**	**$ -**	**$ 2,015,393.00**	**$ 1,015,393.00**

Table 3. Net funding requested by mitigation project, only for amended and new DOT projects. **Update 10/4/01**

Mitig. Project Name	Mitig. Project	WPI #	Impacts (Previous)	Impacts (Current)	Plan Year	Previous Cost Estimate	Proposed Requested Funds	Remarks/Fund Allocation (Fund Shortage-Parenth.)	Available Funds	Proposed Mitig. Cost (Surplus Funds)
Tappan Tract - SWIM	**SW 62**	2557031	-	6.20	^00	$ -	$ 460,000.00	Partial Mit. @ SW 67	$ 510,142.00	$ 50,142.00
Project Total			**-**	**6.20**		**$ -**	**$ 460,000.00**	**$ (460,000.00)**	**$ 510,142.00**	**$ 50,142.00**
Hills. River Corridor	**SW 63**	2587341	1.00	-	^00	$ 54,800.00	$ -	Impacts Transfer to SW 61	$ -	$ -
(WMD - Land Resources)		7115951	1.10	0.50	97	$ 60,200.00	$ 20,000.00	Imp. Decrease, Partial Mit. By DOT	$ 39,882.00	$ 19,882.00
Project Total			**2.10**	**0.50**		**$ 115,000.00**	**$ 20,000.00**	**$ 95,000.00**	**$ 39,882.00**	**$ 19,882.00**
Baird Tract	**SW 64**	2571641	13.60	12.30	98	$ 960,000.00	$ 795,522.00	Impacts Decrease	$ 981,097.00	$ 185,575.00
(FDOF, FDEP)		2571631	4.80	7.80	99	$ 340,000.00	$ 504,478.00	Impacts Increase	$ 622,159.00	$ 117,681.00
		2571841	-	0.10	^01	$ -	$ 6,468.00	New Project	$ 8,228.00	$ 1,760.00
Project Total			**18.40**	**20.10**		**$ 1,300,000.00**	**$ 1,300,000.00**	**$ -**	**$ 1,603,256.00**	**$ 303,256.00**
Rutland Ranch (WMD-Land)	**SW 65**	1115353	-	2.42	^01	$ -	$ 190,000.00	New Project	$ 199,120.00	$ 9,120.00
Project Total			**-**	**2.42**		**$ -**	**$ 190,000.00**	**$ (190,000.00)**	**$ 199,120.00**	**$ 9,120.00**
Lk. Hancock Reserve, West	**SW 66**	1975331	-	7.00	^01	$ -	$ 216,292.00	New Project	$ 575,967.00	$ 359,675.00
(Polk County Nat. Res.)		1940931	-	4.42	^01	$ -	$ 136,573.00	New Project	$ 363,682.00	$ 227,109.00
		1938991	-	11.59	^01	$ -	$ 358,118.00	New Project	$ 953,637.00	$ 595,519.00
		1971681	-	0.46	^01	$ -	$ 14,213.00	New Project	$ 37,849.00	$ 23,636.00
		1976791	-	1.45	^01	$ -	$ 44,804.00	New Project	$ 119,307.00	$ 74,503.00
Project Total			**-**	**34.92**		**$ -**	**$ 770,000.00**	**$ (770,000.00)**	**$ 2,050,442.00**	**$ 1,280,442.00**
Wolf Branch Extension	**SW 67**	4037701	-	0.10	^00	$ -	$ 8,228.00	Deferred Mitigation from 2000	$ 8,228.00	$ -
(WMD-SWIM)		2568881	-	0.40	^00	$ -	$ 32,887.00	Deferred Mitigation from 2000	$ 32,887.00	$ -
		4051681	-	0.50	^00	$ -	$ 41,109.00	Transfer from SW 45	$ 41,109.00	$ -
		2557031	-	11.60	^00	$ -	$ 980,757.00	Partial Mit. @ SW 62	$ 980,757.00	$ -
		2558881	-	7.20	^01	$ -	$ 608,746.00	New Project	$ 608,746.00	$ -
		2571391	-	1.00	^01	$ -	$ 84,548.00	New Project	$ 84,548.00	$ -
		4082011	-	0.10	^01	$ -	$ 8,455.00	New Project	$ 8,455.00	$ -
Project Total			**-**	**20.90**		**$ -**	**$ 1,764,730.00**	**$ (1,764,730.00)**	**$ 1,764,730.00**	**$ -**
Brooker-Starkey Corridor	**SW 68**	2571741	-	1.50	^00	$ -	$ 119,646.00	Deferred Mitigation from 2000	$ 119,646.00	$ -
(Pasco Co. / WMD-Land)		2570501	-	2.00	^00	$ -	$ 159,528.00	Mit. Transfer (SW 60), Impact Inc.	$ 159,528.00	$ -
		4037711	-	0.10	^00	$ -	$ 7,976.00	Mit. Transfer (SW 60)	$ 7,976.00	
		2563221	-	7.20	^00	$ -	$ 574,301.00	Deferred Mitigation from 2000	$ 574,301.00	$ -
		2563321	-	3.60	^01	$ -	$ 287,150.00	New Project	$ 287,150.00	$ -
		2568151	-	0.10	^01	$ -	$ 7,976.00	New Project	$ 7,976.00	$ -
Project Total			**-**	**14.50**		**$ -**	**$ 1,156,577.00**	**$ (1,156,577.00)**	**$ 1,156,577.00**	**$ -**
Peace River Bridge Rest.	**SW 69**	4046971	-	0.80	^01	$ -	$ 60,000.00	New Project, Partial Mit. @ SW 52	$ 63,811.00	$ 3,811.00
(WMD)								On-Site Restoration @ SW 69		
Project Total			**-**	**0.80**		**$ -**	**$ 60,000.00**	**$ (60,000.00)**	**$ 63,811.00**	**$ 3,811.00**
GRAND TOTAL			**166.63**	**217.69**		**$ 8,994,003.00**	**$ 12,607,787.00**	**$ (3,613,784.00)**	**$ 17,745,082.00**	**$ 5,137,295.00**

Southwest Florida Water Management District
FY 2001-2002 DOT Regional Mitigation Plan

Table 4 - Amended DOT Impacts and Associated Mitigation 10/04/2001

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	$ 511,349.00	$ 611,349.00	Rest./Enhance.	59.0	59.0	
1119232	0.66	0.27	SW 38-Quick Point	$ 52,639.00	$ 21,536.00	Restoration	1.5	1.0	
1119317	0.07	-	SW 38-Quick Point	$ 5,087.00	$ -	Restoration	0.3	-	
1119295	0.11	0.32	SW 38-Quick Point	$ 8,774.00	$ 25,044.00	Restoration	1.0	1.8	
7113975	1.50	1.50	SW 45-Gateway	$ 99,500.00	$ 115,505.00	Rest./Enhance.	5.0	5.0	
7147874	9.07	9.00	SW 45-Gateway	$ 602,000.00	$ 704,366.00	Rest./Enhance.	28.1	33.5	
7116992	0.60	0.60	SW 45-Gateway	$ 39,000.00	$ 46,202.00	Rest./Enhance.	1.2	1.2	
2570931	0.20	0.50	SW 45-Gateway	$ 13,300.00	$ 41,140.00	Rest./Enhance.	0.4	1.0	
2569031	5.60	-	SW 45-Gateway	$ 372,000.00	$ -	NA	11.2	-	
4051681	0.10	0.50	SW 45-Gateway (Trans. to SW 67)	$ 6,600.00	$ 41,109.00	NA	0.2	-	
4062531	0.10	0.10	SW 45-Gateway	$ 6,600.00	$ 8,228.00	Rest./Enhance.	0.4	0.4	
2556301	13.00	10.50	SW 45-Gateway	$ 863,000.00	$ 887,754.00	Rest./Enhance.	31.8	39.3	
1147952	1.71	0.43	SW 47-Tenoroc	$ 121,500.00	$ 33,000.00	Rest./Enhance.	4.0	2.0	
1118424	0.50	-	SW 47-Tenoroc	$ 37,500.00	$ -	Rest./Enhance.	1.5	-	
1112576	0.39	0.39	SW 49-Reedy Ck.	$ 14,000.00	$ 13,650.00	Rest./Enhance.	2.0	2.0	0.4
1115478	0.50	-	SW 50-Terra Ceia	$ 37,500.00	$ -	NA	2.0	-	
1110145	0.54	0.27	SW 53-Boran Ranch Mit. Bank	$ 16,200.00	$ 8,100.00	Rest./Enhance.	1.5	0.8	0.3
1110457	1.00	-	SW 53-Boran Ranch Mit. Bank	$ 16,200.00	$ -	Rest./Enhance.	3.0	-	
1121257	10.82	7.22	SW 53-Boran Ranch Mit. Bank	$ 324,600.00	$ 216,600.00	Rest./Enhance.	10.8	7.2	7.2
1110152	3.47	3.47	SW 53-Boran Ranch Mit. Bank	$ 104,100.00	$ 104,700.00	Rest./Enhance.	10.5	10.5	
7115974	9.60	9.40	SW 54-Anclote Parcel	$ 410,236.00	$ 410,236.00	Acquis./Enhance.	82.0	82.0	
7117045	0.50	0.60	SW 56-Cockroach Bay	$ 38,500.00	$ 46,200.00	Creation	1.0	1.0	
1147947	13.85	0.35	SW 59-Hampton Tract	$ 570,000.00	$ 17,000.00	Enhancement	317.0	16.0	
1147952	6.73	7.94	SW 59-Hampton Tract	$ 277,000.00	$ 395,000.00	Enhancement	242.0	353.0	
1147953	10.66	10.29	SW 59-Hampton Tract	$ 440,000.00	$ 498,700.00	Enhancement	384.0	457.0	
1147954	12.71	6.18	SW 59-Hampton Tract	$ 523,000.00	$ 300,000.00	Enhancement	457.0	274.0	
2583111	0.20	-	SW 60-Serenova Extension	$ 15,800.00	$ -	NA	3.5	-	
2589581	11.82	11.82	SW 60-Serenova Extension	$ 936,298.00	$ 942,810.00	Enhancement	202.5	200.0	
4037711	0.10	-	SW 60-Serenova Extension	$ 7,920.00	$ -	NA	1.7	-	
2548221	1.00	-	SW 60-Serenova Extension	$ 79,200.00	$ -	NA	17.1	-	
2570501	0.20	-	SW 60-Serenova Extension	$ 15,800.00	$ -	NA	3.4	-	

Southwest Florida Water Management District
FY 2001-2002 DOT Regional Mitigation Plan

Table 4 - Amended DOT Impacts and Associated Mitigation 10/04/2001

DOT WPI	Prev. Ac.	Curr. Ac.	Mitigation Project	Cost Estimate (Previous)	Cost Estimate (Current)	Mitig. Type	Prev. Mitig.	Curr. Mitig.	Mitig. Credits
7123664	0.50	0.50	SW 61-Cypress Ck. Preserve	$ 34,000.00	$ 21,204.00	Acquis./Enhance.	9.8	7.5	
1147955	2.08	2.08	SW 61-Cypress Ck. Preserve	$ 142,000.00	$ 89,059.00	Acquis./Enhance.	40.8	12.5	
7113773	2.10	2.10	SW 61-Cypress Ck. Preserve	$ 142,000.00	$ 89,059.00	Acquis./Enhance.	41.2	40.0	
2587341	4.30	5.30	SW 61-Cypress Ck. Preserve	$ 294,600.00	$ 224,766.00	Acquis./Enhance.	94.2	71.0	
2563871	0.20	-	SW 61-Cypress Ck. Preserve	$ 13,600.00	$ -	NA	4.0	0.0	
2578072	0.20	0.20	SW 61-Cypress Ck. Preserve	$ 13,600.00	$ 8,482.00	Acquis./Enhance.	4.0	3.5	
2558591	0.10	0.10	SW 61-Cypress Ck. Preserve	$ 6,300.00	$ 4,240.00	Acquis./Enhance.	2.0	1.5	
2578391	0.90	3.10	SW 61-Cypress Ck. Preserve	$ 61,300.00	$ 131,467.00	Acquis./Enhance.	17.7	32.0	
2584491	2.30	1.70	SW 61-Cypress Ck. Preserve	$ 157,000.00	$ 72,095.00	Acquis./Enhance.	45.1	15.5	
2584131	2.00	7.30	SW 61-Cypress Ck. Preserve	$ 136,000.00	$ 339,271.00	Acquis./Enhance.	39.2	106.0	
7115951	1.10	0.50	SW 63-Hills River Corridor	$ 60,200.00	$ 20,000.00	Acquis./Enhance.	20.6	10.0	
2587341	1.00	-	SW 63-Hills River Corridor	$ 54,800.00	$ -	NA	9.4	-	
2571641	13.00	12.30	SW 64-Baird Tract	$ 960,000.00	$ 795,522.00	Enhancement	1122.0	933.0	
2571631	4.80	7.80	SW 64-Baird Tract	$ 340,000.00	$ 504,478.00	Enhancement	396.0	580.0	
TOTALS	**166.03**	**138.83**		**$ 8,980,603.00**	**$ 7,825,040.00**		**3732.6**	**3360.2**	**7.90**
NET DIFF.		**-27.2**			**$ (1,155,563.00)**		**Acres**	**Acres**	**Credits**
								-184.0	

Average Mitig. Ratio: 24 mitigation acres : 1 impact acre

Average Mitig. Cost: $56,108 per impact acre, $2318 per mitigation acre

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

Table 5 - New DOT Impacts and Associated Mitigation 10/04/2001

DOT FM /District	Const. Date	FLUCCS	Acres	Total Acres	Mitigation Project	Cost Estimate (Current)	Mitig. Type	Mitig. Acres	Mitig. Credits
2583981 / 7	Dec-06	612	1.60	1.90	SW 45-Gateway	$ 163,590.00	Mangrove Enh.	4.2	
		641x	0.30				Saltmarsh Rest.	10.3	
							Upland Enh.	1.5	
2012052 / 1	Dec-01	621	0.79	0.79	SW 49-Reedy Mit. Bank	$ 30,020.00	Enh./Rest.	2.0	
4046971 / 1	Jan-02	911	2.75	2.75	SW 52-LPI Mit. Bank	$ 145,700.00	Enh./Rest.	6.0	2.75
238762 / 5	Dec-04	618	0.02	0.02	SW 58-Ledwith Lake	$ 500.00	Acquis./Enh.	1.0	
238641 / 5	Jun-02	640	2.49	2.49	SW 58-Ledwith Lake	$ 66,000.00	Acquis./Enh.	110.0	
238679 / 5	Jun-99	641	1.09	1.09	SW 58-Ledwith Lake	$ 29,000.00	Acquis./Enh.	47.0	
238719 / 5	Jun-04	641	0.08	0.08	SW 58-Ledwith Lake	$ 4,500.00	Acquis./Enh.	2.0	
4084602 / 7	Dec-01	621	0.50	0.50	SW 61-Cypress Ck.	$ 21,206.00	Enh./Rest.	8.3	
2557031 / 7	Nov-04	612	0.30	6.20	SW 62-Tappan Tract	$ 460,000.00	Mangrove Enh.	0.8	
		642x	4.00				S.Marsh (C&E)	4.3	
							T.Pool (C&E)	1.1	
							Saltern Enh.	0.5	
		641x	1.90				F.Marsh Create	0.5	
							Hammock Enh.	1.2	
2571841 / 7	Nov-04	641x	0.10	0.10	SW 64-Baird Tract	$ 6,468.00	Enh./Rest.	1.0	
1960221 / 1	Dec-01	617	0.75	2.42	SW 65-Rutland Ranch	$ 190,000.00	Marsh Enhance.	11.1	
		641	1.67				Flatwood Enh.	12.0	
1975331 / 1	Mar-03	630	3.00	7.00	SW 66-Lk. Hancock	$ 216,292.00	Forest Wet. Rest.	11.0	
							Forest Wet. Enh.	6.0	
		640	4.00				Marsh Enhance.	34.0	
							Upland Enh.	6.0	
1940931 / 1	Oct-02	630	3.00	4.42	SW 66-Lk. Hancock	$ 936,298.00	Forest Wet. Rest.	11.0	
							Forest Wet. Enh.	6.0	
		640	0.49				Marsh Enhance.	13.0	
		641	0.93				Upland Enh.	5.0	
1938991 / 1	Oct-02	618	0.48	11.59	SW 66-Lk. Hancock	$ 358,118.00	Forest Wet.Rest.	26.0	
		630	6.92				Forest Wet. Enh.	15.0	
		640	0.79				Marsh Enhance.	35.0	
		641x	3.40				Upland Enh.	6.0	
1971681 / 1	Sep-02	630	0.46	0.46	SW 66-Lk. Hancock	$ 14,213.00	Forest Wet. Rest.	7.0	
							Forest Wet. Enh.	5.0	
1976791 / 1	Mar-03	641	1.45	1.45	SW 66-Lk. Hancock	$ 44,804.00	Marsh Enhance.	13.0	
							Upland Enh.	5.0	

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

Table 5 - New DOT Impacts and Associated Mitigation 10/04/2001

DOT FM /District	Const. Date	FLUCCS	Acres	Total Acres	Mitigation Project	Cost Estimate (Current)	Mitig. Type	Mitig. Acres	Mitig. Credits
4037701 / 7	Apr-02	618	0.10	0.10	SW 67-Wolf Branch	$ 8,228.00	Wet.Shrub Enh.	0.3	
2568881 / 7	Dec-02	617	0.30	0.40	SW 67-Wolf Branch	$ 32,887.00	Pine/Hamm. Enh.	9.0	
		618	0.10				Wet.Shrub Enh.	0.3	
4051681 / 7	Nov-02	618	0.40	0.50	SW 67-Wolf Branch	$ 41,109.00	Wet.Shrub Enh.	0.9	
		642	0.10						
2557031 / 7	Nov-04	641	0.80	11.60	SW 67-Wolf Branch	$ 980,757.00	F.Marsh Rest.	2.0	
		642	10.80				S.Marsh Creat.	7.0	
							Wolf Br. Enh.	1.4	
							Hammock (C&E)	10.4	
2558881 / 7	Oct-05	617	3.70	7.20	SW 67-Wolf Branch	$ 608,746.00	Pine/Hamm. Enh.	24.0	
		618	1.50						
		641	2.00				F.Marsh Enh.	4.0	
2571391 / 7	Aug-05	641x	1.00	1.00	SW 67-Wolf Branch	$ 84,548.00	Hammock Enh.	2.0	
4082011 / 7	Oct-03	618	0.10	0.10	SW 67-Wolf Branch	$ 7,976.00	Pine/Hamm. Enh.	2.0	
2571741 / 7	May-03	610	0.30	1.50	SW 68-Brooker-Starkey	$ 119,646.00	Acq./Rest./Enh.	0.5	
		621	1.20					2.5	
2570501 / 7	Feb-04	630	0.20	2.00	SW 68-Brooker-Starkey	$ 159,528.00	Acq./Rest./Enh.	0.4	
		641	1.80					3.0	
4037711 / 7	Apr-02	618	0.10	0.10	SW 68-Brooker-Starkey	$ 8,228.00	Acq./Rest./Enh.	0.3	
2563221 / 7	Aug-04	617	3.40	7.20	SW 68-Brooker-Starkey	$ 574,301.00	Acq./Rest./Enh.	7.0	
		618	0.80					2.0	
		621	2.90					6.0	
		641	0.10					0.2	
2563321 / 7	Jul-96	617	0.10	3.60	SW 68-Brooker-Starkey	$ 287,150.00	Acq./Rest./Enh.	0.3	
		618	0.20					0.5	
		641	3.30					7.0	
2568151 / 7	Jul-04	618	0.10	0.10	SW 68-Brooker-Starkey	$ 7,976.00	Acq./Rest./Enh.	0.3	
TOTALS			**78.66**	**78.66**		**$ 5,644,957.00**		**522.1**	**2.75**

Average Mitig. Ratio: 6.6 mitigation acres : 1 impact acre
Average Mitig. Cost: $71,764 per impact acre, $10,812 per mitigation acre

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations,** **Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Cattle Dock Point (SW 31) (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 ac.**	Mangrove (Creation) - 1.3 ac. Marsh (Fresh) Enhancement - 0.1 ac. Open Water / Bay Enhance - 19.6 ac. Marsh (Salt) Creation - 9.5 ac. Upland Habitat (Creation) - 4.6 ac. **Total - 35 ac.**	Cattle Dock Point (Phase II) is an expansion of adjacent restoration phase covering over 10 acres.
Lake Thonotasassa (SW 34) (WMD-SWIM) Hillsborough Basin -Hillsborough Co.	Pasco Co. Inland Pond - 0.77 ac. Scrub-Shrub - 4.06 ac. Cypress - 4.63 ac. Marsh (Fresh) - 4.68 ac. **Total - 14.20 ac.**	Marsh (Fresh) Enhance - 14 ac. Marsh Restoration - 45 ac. Cypress Plantings Throughout **Total - 59 ac.**	The Lk. Thonotasassa project has been constructed and currently within the 3 years of maintenance & monitoring; wetland impacts will not occur until late 2000.
Quick Point (SW 38) (Longboat Key / WMD-SWIM) Lower Coastal - Sarasota Co.	Sarasota Co. Seagrass - 0.27 ac. Mangrove - 0.32 ac. **Total - 0.59 ac.**	Seagrass Restoration - 1.5 ac. Inland Pond - 0.3 ac. Mangrove Enhancement - 1.0 ac. **Total - 2.8 ac.**	Quick Point Preserve is a total 34-acre tract with other restoration activities funded by various sources.
Gateway Restoration (SW 45) (WMD-SWIM / Pinellas Co.) Tampa Bay Drainage Basin - Pinellas Co.	Hillsborough & Pinellas Co. Mangrove - 11.92 ac. Exotic Hardwood - 3.72 ac. Marsh (Salt) - 4.5 ac. Bay & Estuary - 2.9 ac. Marsh (Fresh) - 0.73 ac. Ditch (Fresh) - 0.30 ac. **Total - 24.1 ac.**	Mangrove Enhancement - 35.0 ac. Marsh (Salt) Restoration - 41.8 ac. Bay & Estuary - 9.5 ac. Upland Habitat Restoration - 10.10 ac. **Total - 96.4 ac.**	This phase of Gateway covers a total 176-acres, portion of adjacent several hundred acres of estuary restoration & enhancement.
Tenoroc / Saddle Ck. (SW 47) (DEP / FFWCC) Peace River - Polk Co.	Polk Co. Forest (Fresh) - 5.54 ac. Marsh (Fresh) - 1.17 ac. **Total - 6.71 ac.**	Forested Wetland Creation - 15 ac. Marsh (Fresh) Creation - 5 ac. **Total - 20 ac.**	The creation & restoration of wetland habitat at Tenoroc is part of an overall habitat & watershed management plan that covers over 6,000 acres.

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

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. Bay Swamp - 0.05 ac. Marsh (Fresh) - 0.34 ac. Hardwood Forest - 0.79 ac. **Total - 1.18 ac.**	Forested Wetland Enhancement & Upland Habitat Restoration **Total - purchase 1.18 credits = 4 ac.**	The mitigation bank covers over 3,500-acres of wetland and upland enhancement & restoration.
Terra Ceia Restoration (SW 50) (WMD - SWIM) Manatee River Basin - Manatee Co.	Manatee Co. Mangrove - 0.18 ac. **Total - 0.59 ac.**	Mangrove Enhancement - 4.0 ac. Saltwater Wetland Enhance - 3.0 ac. Upland Habitat Enhancement - 3.0 ac. **Total - 10.0 ac.**	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) - 2.31 ac. **Total - 2.61 ac.**	Stream Swamp Enhancement - 7.0 ac. Marsh (Fresh) Enhancement - 27.0 ac. Marsh (Fresh) Restoration - 1.5 ac. **Total - 35.5 ac.**	The project includes removal of a railroad grade berm that alters the the hydrology of substantial wetland acreage.
Little Pine Island **Mitigation Bank (SW 52)** (Private Mitgation Bank) Charlotte Harbor - Lee Co.	Charlotte Co. Bay & Estuary - 2.24 ac. Mangrove - 2.75 **Total - 4.99 ac.**	Saltwater Marsh Restoration & Mangrove Enhancement **Total - purchase 4.99 credits = 10 ac.**	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 ac.**	Forested Upland Pres. - 29.88 ac. Marsh Preservation - 33.48 ac. Marsh Enhance. - 23.74 ac. Marsh Restor. - 6.09 ac. **Total - 21.76 credits = 93.2 ac.**	The mitigation bank includes 132 wetland acres and 272 upland acres (total 404 acres), construction complete, currently maintenance & monitoring.
Anclote Parcel (SW 54) (WMD - Land Resources) Upper Coastal Basin - Pasco Co.	Pasco Co. Pond - 0.70 ac. Mixed Hardwood - 2.70 ac. Scrub-Shrub - 0.80 ac. Cypress - 5.90 ac. Marsh (Fresh) - 6.30 ac. **Total - 16.40 ac.**	Acquisition & enhancement of 185-acres that includes mixed hardwood swamp, cypress swamp, pine flatwoods, and oak hammocks. **Total - 185 ac.**	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.

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations,** **Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Upper Hills. - US 301 (SW 55) (WMD - Land Resources) Hillsborough Basin - Pasco Co.	Polk Co. Mixed Hardwood - 6.57 ac. Marsh (Fresh) - 6.98 ac. **Total - 13.55 ac.**	Cypress & Mixed Hardwood Enhancement & Restorat. - 101.3 ac. Marsh & Shrub Enhance.- 8.7 ac. **Total - 120 ac.**	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 (SW 56) (WMD - SWIM / Hills. Parks) Tampa Bay Basin - Hills. Co.	Pinellas Co. Shrub - 0.3 ac. Marsh (Fresh) - 0.3 ac. **Total - 0.6 ac.**	Marsh (Fresh) Creation - 1.0 ac. **Total - 1.0 ac.**	Entire site covers 700 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. **Total - 5.93 ac.**	Lake Enhancement - 75 ac. **Total - 75 ac.**	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 ac.**	Acquisition & enhance 160-acre marsh **Total - 160 ac.**	Site is a 2200-acre marsh proposed for public acquisition, within a proposed east-west corridor from Ocala Nat. Forest to Wacasassa River.
Hampton Tract (SW 59) (WMD - Land Resources) Withlacoochee Basin - Polk Co.	Polk Co. Forested - 15.33 Marsh - 9.43 ac. **Total - 24.76 ac.**	Mixed Forest Enhancement - 683 ac. Cypress Enhancement - 368 ac. Wet Prairie Enhancement - 12 ac. Hydric Pine Flatwood Enhance - 19 ac. Marsh Enhancement - 4 ac. Marsh Restoration - 14 ac. **Total - 1100 ac.**	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.

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations,** **Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Serenova Extension (SW 60) (WMD - Land Resources) Upper Coastal - Pasco Co.	Pasco, Pinellas, Hernando Co. Open Water - 0.15 ac. Cypress - 8.19 ac. Marsh (Fresh) - 3.48 ac. **Total - 11.82 ac.**	Acquisition, Enhancement, Management Oak Hammocks - 46 ac. Pine Flatwoods - 85 ac. Mixed Forested Wetlands - 43 ac. Cypress - 19 ac. Marsh (Fresh) - 3 ac. Open Water - 4 ac. **Total - 200 ac.**	This tract is adjacent to the Serenova Tract & Starkey Wilderness Area, a 15,000-acre parcel of native habitat owned by the WMD, deeded as mitigation for wetland impacts associated with construction of the Suncoast Expressway.
Cypress Ck. Preserve (SW 61) (Hillsborough Co. Parks & Rec.) Hillsborough Basin - Hillsbor. Co.	Hillsborough, Pasco, Polk Co. Hardwood (Fresh) - 4.30 ac. Stream Swamp - 1.40 ac. Mixed Hardwood - 3.20 ac. Mixed Forest - 4.65 ac. Willow - 0.50 ac. Cypress - 0.50 ac. Marsh (Fresh) - 1.10 ac. Ditch (Fresh) - 2.08 ac. **Total - 14.68 ac.**	Acquisition, Enhancement, Management Mixed Forest Wetland - 145.3 ac. Upland Hardwood Hammock - 98.2 ac. Pine Flatwoods - 19.0 ac. Palmetto Prairie - 15.3 ac. Pine Flatwood Restoration - 20 ac. **Total - 298 ac.**	This parcel acquisition is adjacent to several hundred acres of native habitat owned and managed by Hills. Co. Parks (ELAPP).
Tappan Tract (SW 62) (WMD - SWIM) Tampa Bay Drainage Basin - Hillsborough County	Hillsborough Co. Mangrove - 0.3 ac. Ditch (Salt) - 4.0 ac. Ditch (Fresh) - 1.9 ac. **Total - 6.2 ac.**	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 ac.**	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 - 1.10 ac. Mixed Forest - 1.00 ac. **Total - 2.10 ac.**	Acquisition & Preservation - Forest Floodplain - 10.0 ac. **Total - 10 ac.**	Acquiring this parcel will almost connect separate WMD-owned parcels covering several thousand acres along the Hillsborough River.

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations,** **Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Baird Tract (SW 64) (DEP / DOF) Withlacoochee Basin - Sumter Co.	Citrus Co. Forest - 14.0 ac. Shrub - 3.1 ac. Marsh (Fresh) - 3.1 ac. **Total - 18.40 ac.**	Marsh Enhancement - 970 ac. Forested Wetland Enhance. - 548 ac. **Total - 1518 ac.**	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 - 3.56 ac. Shrub - 1.39 ac. Marsh - 4.61 ac. Open Water - 1.6 ac. **Total - 11.16 ac.**	Marsh Enhancement - 86 ac. Upland Restoration - 17 ac. Upland Enhancement - 12 ac. **Total - 115 ac.**	The South Tract of Rutland Ranch covers 900 acres, enhancement includes several heavily drained marshes.
Lk. Hancock Res., West (SW 66) (Polk Co. Nat. Res./WMD-Land Res.)	Polk Co. Mixed Forest - 13.38 ac. Shrub -0.48 ac. Marsh - 11.06 ac. **Total - 24.92 ac.**	Mixed Forested Restore - 55 ac. Mixed Forest Enhance - 32 ac. Marsh Enhance - 95 ac. Upland Restore - 22 ac. **Total - 204 ac.**	The Lake Hancock Reserve covers 1000 acres, this western project is part of a total 500 acres of anticipated wet. enhancement & restoration associated with filling the Banana Lk. Canal.
Wolf Branch Ext. (SW 67) (WMD - SWIM, Hills. Co. Parks) Tampa Bay Drainage, Hills. Co.	Hillsborough Co. Marsh (Fresh) - 2.0 ac. Marsh (Salt) - 10.9 ac. Ditch (Fresh) - 1.0 ac. Shrub - 2.2 ac. Mixed Hardwood - 4.0 ac. **Total - 20.1 ac.**	Marsh (Fresh) Enhance - 7.0 ac. Marsh (Fresh) Restore - 2.5 ac. Marsh (Salt) Create - 7.0 ac. Wolf Branch Enhance - 1.4 ac. Hammock Enhance - 13.9 ac. Shrub Enhancement - 1.5 Flatwood & Hammock Creation - 37 ac. **Total - 70 Ac.**	This site is an extension of the Wolf Branch Restoration Project (1200-acres, SWIM / Hills. Co.).

Table 6 - DOT Mitigation Projects - Compensation Summaries, Updated 10/4/01

Mitigation Project **Agency Representative** **Watershed Basin, County**	**DOT Impacts** **Wetland Locations,** **Type & Acreage**	**Proposed Mitigation** **Type & Acreage**	**Remarks**
Brooker Creek Corridor to Starkey Wilderness Area (SW 68) (Pinellas, Hills., Pasco Co., WMD-Land Resources) Upper Coastal Basin, Pasco Co.	Pasco & Pinellas Co. Forest - 8.3 ac. Marsh - 5.2 ac. Shrub - 1.2 ac. **Total - 14.7 ac.**	Acquisition, Restoration, Management Upland Restoration & Wetland Preservation - **Total 30 ac.**	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 & Saltmarsh 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 ac.**	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 7 - Mitigation Projects - Habitat Types & Acreages Page 1 of 2 Update 10/4/01

Mitigation Projects DOT Wetland Impact Acres	Forest Wetland Enhance. (Fresh)	Forest Wetland Restor. (Fresh)	Forest Wetland Preserv. (Fresh)	Non-Forest Wetland Enhance. (Fresh)	Non-Forest Wetland Restor. (Fresh)	Non-Forest Wetland Preserv. (Fresh)	Mangrove Wetland Enhance. (Salt)	Mangrove Wetland Restor. (Salt)	Non-Forest Wetland Restor. (Salt)	Forest Upland Enhance.	Forest Upland Restor.	PROJECT's MITIG. ACREAGE
SW 31-Cattle Dock					0.1			1.3	29		4.60	35.0
8.92												
SW 34-Lk. Thono				14.0	45.0							59.0
14.2												
SW 38-Quick Point							1.0		1.8			2.8
0.59												
SW 46-Gateway							35.0		51.3		10.10	96.4
24.1												
SW 47-Teneroc		15.0				5.0						20.0
6.71												
SW 49-Reedy Ck.	2.0										2.00	4.0
1.18												
SW 50-Terra Ceia							4.0		3.0	3.0		10.0
0.59												
SW 51-Myakka S.P.	7.0				27.0	1.5						35.5
2.61												
SW 52-LPI Mit. Bk.								4.0				4.0
4.99												
SW 53-Boran Ranch				23.7	6.1	33.5				29.9		93.2
21.76												
SW 54-Anclote				130.0		6.0				49.0		185.0
16.4												
SW 55-UH 301	110.0	10.0										120.0
13.55												
SW 56-Cockroach					1.0							1.0
0.6												
SW 57-Lk. Panas.					75.0							75.0
5.93												

Table 7 - Mitigation Projects - Habitat Types & Acreages **Page 2 of 2** **Update 10/4/01**

Mitigation Projects DOT Wetland Impact Acres	Forest Wetland Enhance. (Fresh)	Forest Wetland Restor. (Fresh)	Forest Wetland Preserv. (Fresh)	Non-Forest Wetland Enhance. (Fresh)	Non-Forest Wetland Restor. (Fresh)	Non-Forest Wetland Preserv. (Fresh)	Mangrove Wetland Enhance. (Salt)	Mangrove Wetland Restor. (Salt)	Non-Forest Wetland Restor. (Salt)	Forest Upland Enhance.	Forest Upland Restorat.	PROJECT's MITIG. ACREAGE
SW 58 - Ledwith Lk. 3.68						160.0						160.0
SW 59-Hampton 24.76	1070.0			30.0								1100.0
SW 60-Serenova 11.82			62.0			7.0				131.0		200.0
SW 61-Cypress Ck. 14.68			243.5							34.3	20.00	297.8
SW 62-Tappan 6.2					0.55		0.77		5.9		1.20	8.42
SW 63-Hills. Corrid. 2.1			10.0									10.0
SW 64-Baird Tract 18.4	548.0			970.0								1518.0
SW 65-Rutland Rch. 11.16				86.0						12.0	17.00	115.0
SW 66-Lk. Hancock 24.92	32.0	55.0		95.0							22.00	204.0
SW 67-Wolf Branch 20.1				7.0	2.5				8.4	15.4	37.00	70.3
SW 68-Brook/Stark 14.7			10.0								20.00	30.0
SW 69-Peace River 3.31							2.06	2.51				4.57
TOTALS 275.7	1769.0	80.0	325.5	1355.7	157.3	213.0	42.8	7.8	99.4	274.6	133.90	4459.0
Cumulative Impact Acreage												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 Basin Water Body(s): Myakka River/Charlotte Harbor SWIM water body? (Y/N) Y
Impact Acres/Types: WPI 1110148 2.08 ac. 540 (Fluccs code)— Mitigated at Little Pine Island Mit. Bank
1.93 ac. 612 (Fluccs code)
3.66 ac. 641 (Fluccs code)
3.33 ac. 642 (Fluccs code)
TOTAL: 11.00 Acres ---- 8.92 Acres mitigated at Cattle Dock Point

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation X Restoration X Enhancement Mitigation Area: **35.1 Acres**
SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) Y
Mitigation Bank? (Y/N) N If yes, give FDEP/WMD mit bank permit #: _____ COE # _____
Drainage Basin(s): Myakka River Drainage Basin Water Body(s): Myakka River/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 (refer to 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 (construction commences Fall, 2001). 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), bay bottom platforms (18.50 acres), and the 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).

D. **Brief explanation of how this work serves to offset the impacts of the specified DOT project(s):** The created intertidal marsh, open water channels, and bay bottom platforms **(total 24.89 acres)** will compensate for the saltwater marsh impact **(3.33 acres)**. The freshwater marsh (actually oligohaline) impacts **(3.66 acres)** will be compensated with the enhancement of freshwater marsh and high marsh **(total 4.35 acres)**. The mangrove impacts **(1.93 acres)** will be compensated with the enhancement of mangrove habitat **(1.25 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 **(total 4.57 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 acres)** will be mitigated with similar habitat credit purchased 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:** 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 4 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 (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 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.**

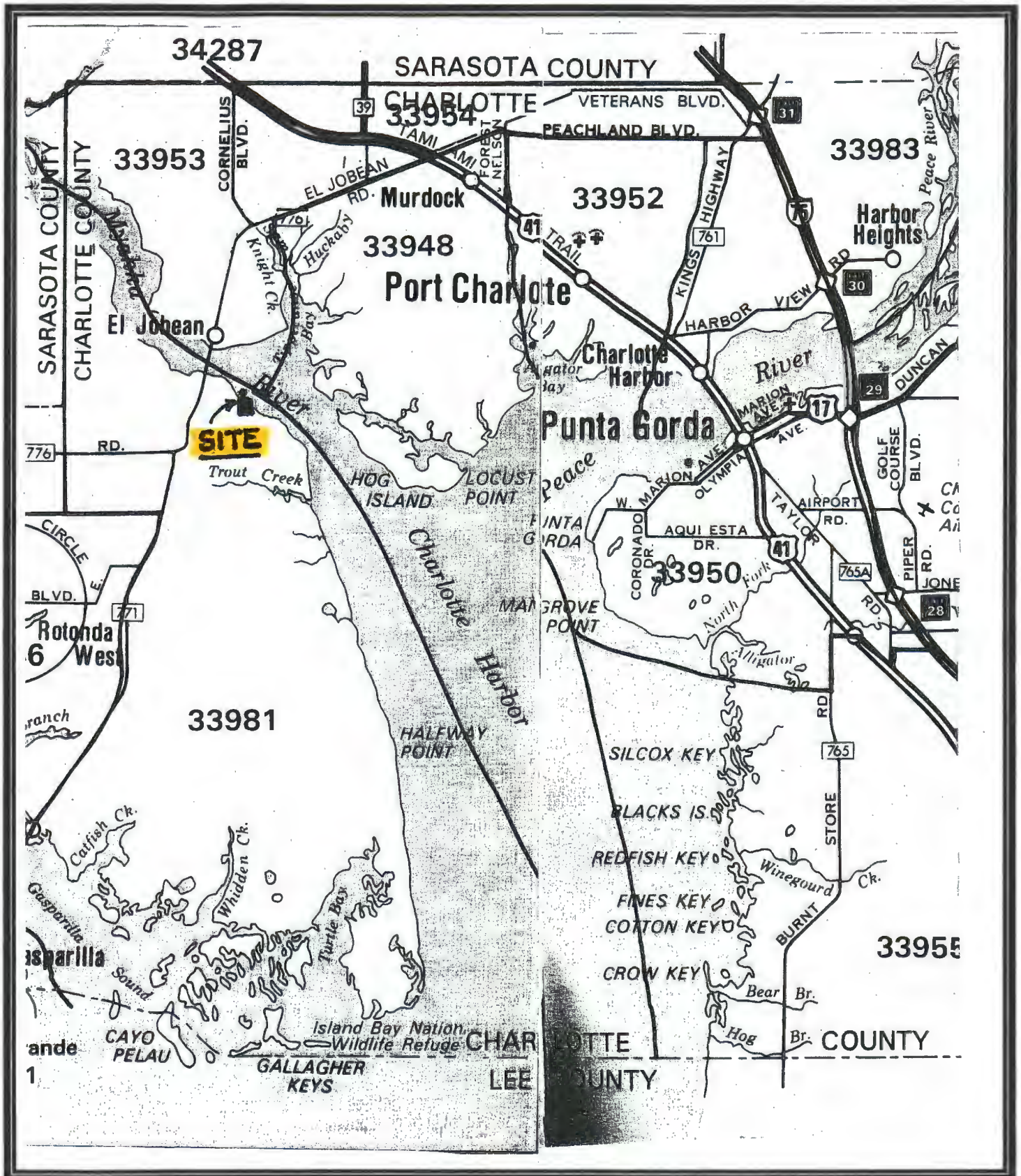
__x__ 3. Location map and design drawings of existing and proposed conditions. **Figs. A & B - Location Map, Fig. E for proposed conditions.**

__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 September, 2001. Construction will be conducted in the fall and winter 2001, with expected completion by early 2002, followed by a minimum 3 years of maintenance & monitoring.**

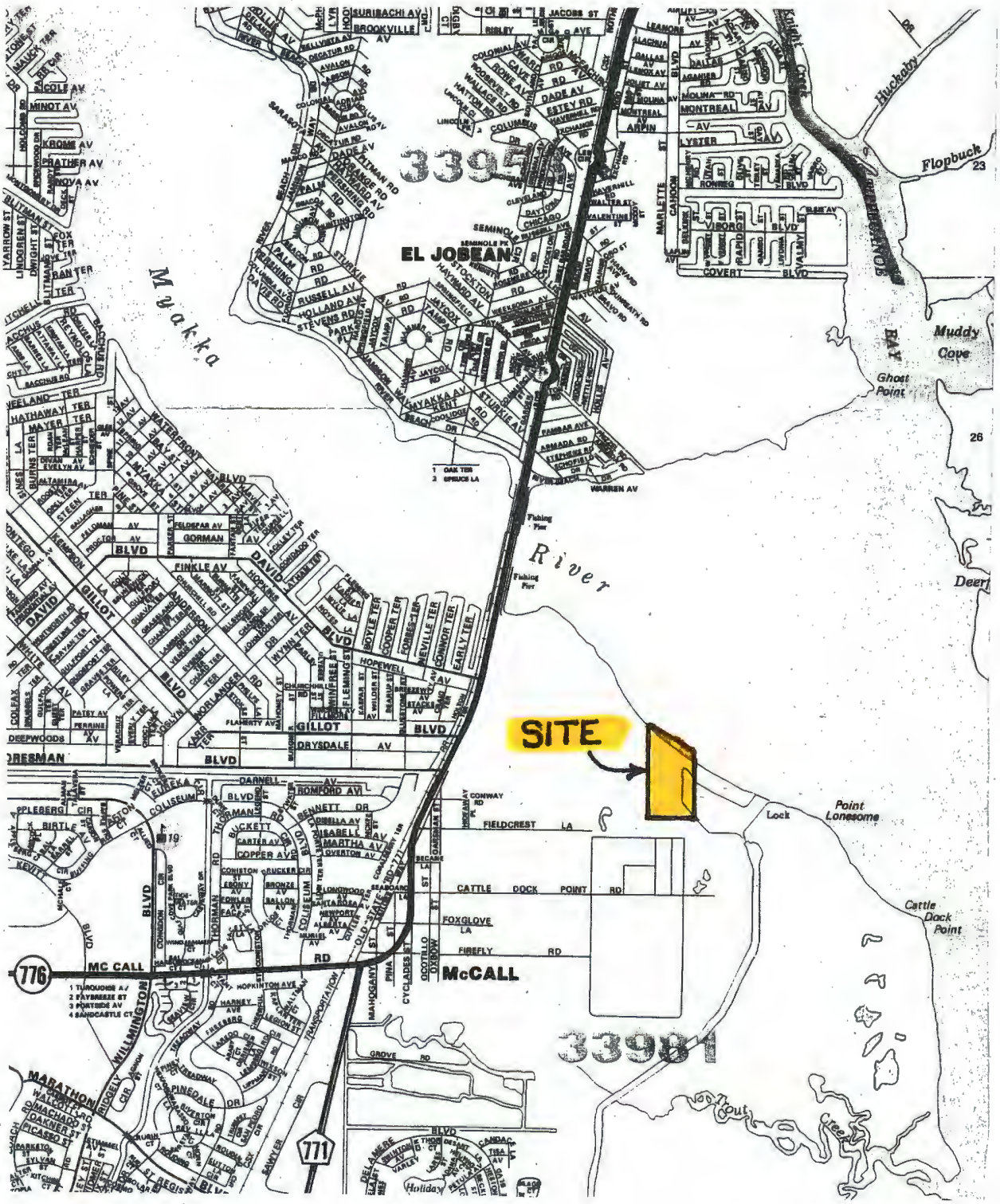
__x__ 5. Proposed success criteria and associated monitoring plan. **The success criteria will reflect a minimum 70% coverage of desirable species in the project area. The monitoring is expected to be semi-annual for three years to evaluate species survival, percent cover, invasive exotic plants, and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



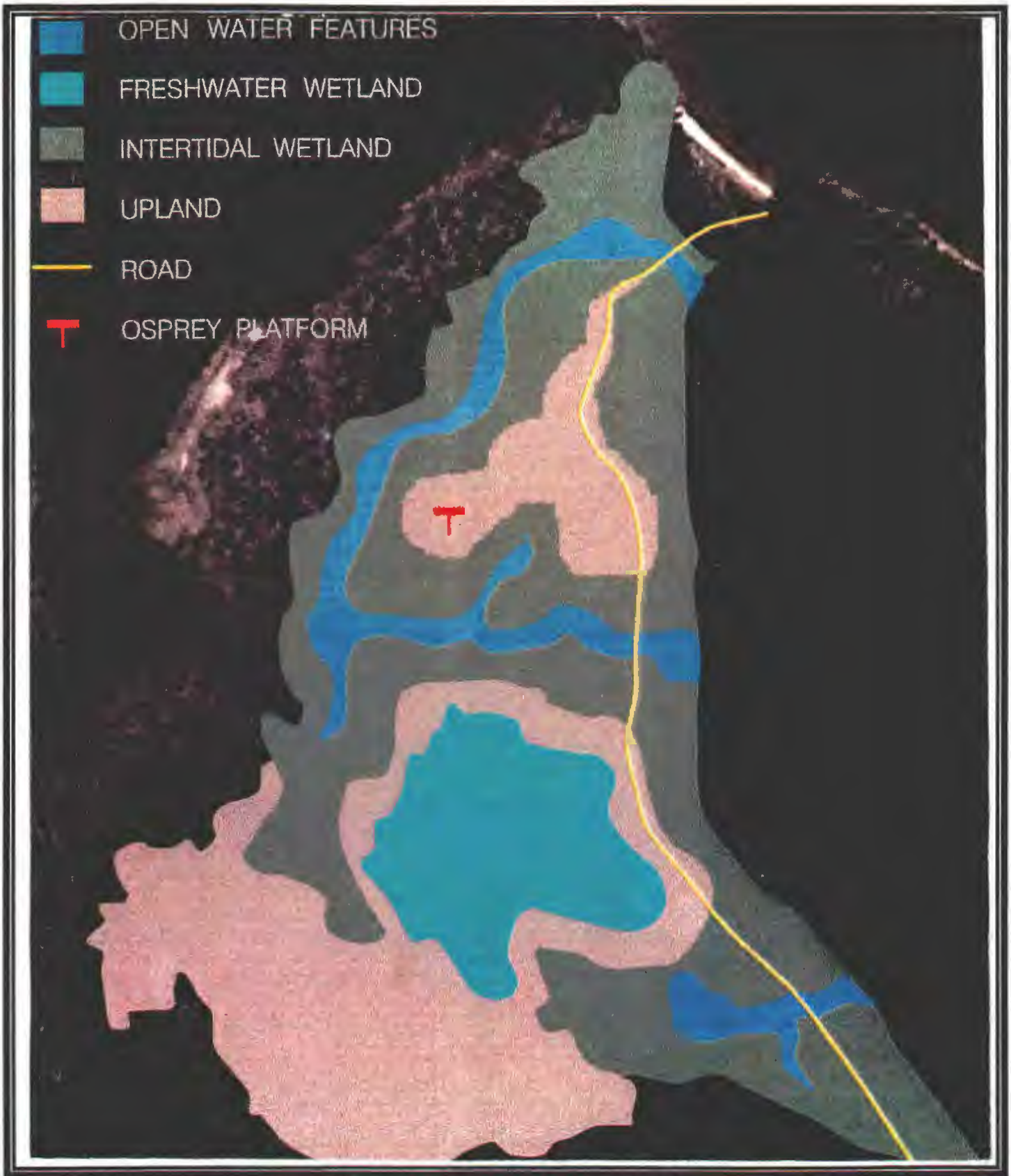
FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**CATTLE DOCK POINT** **RESTORATION** **(SW 31)**	**FIGURE A** **VICINITY MAP**



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: Forest Turbiville, SWIM Environmental Scientist Phone Number: (813) 985-7481 ext. 2213

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/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) 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 brackets the low flow islands; (4) The marsh restoration area was graded to proper elevation and planted with herbaceous vegetation & scattered trees; (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 berm(s) separating the north and south cells from Lake Thonotosassa was 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. Construction was completed in late 1999, and will be followed by a minimum of three years maintenance & monitoring. Supplemental planting is proposed for the fall, 2001 to provide cover for areas where initial herb mortality occurred.

Mitigation Project - Lk. Thonotassassa Shoreline Restoration, Page 2 of 2

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

Contact Name: Forest Turbiville, SWIM Environmental Scientist Phone Number: (813) 985-7481 ext. 2213

Entity responsible for monitoring and maintenance: Southwest Florida Water Management District, Operations Dept.

Proposed timeframe for implementation: Commence: January, 1998 Complete: Construction completed in 1999, minimum of three years of maintenance & monitoring.

Project cost: $611,349 (total)

Attachments:

✓ 1. Detailed description of existing site and proposed work. **Refer to text under Comment C, site photographs.**

✓ 2. Recent aerial photograph with date and scale. **Figure D-1995 Infrared Aerial, Figure E - Summer, 1999, Aerial photograph during site construction.**

✓ 3. Location map and design drawings of existing and proposed conditions. **Figs. A, B, C.**

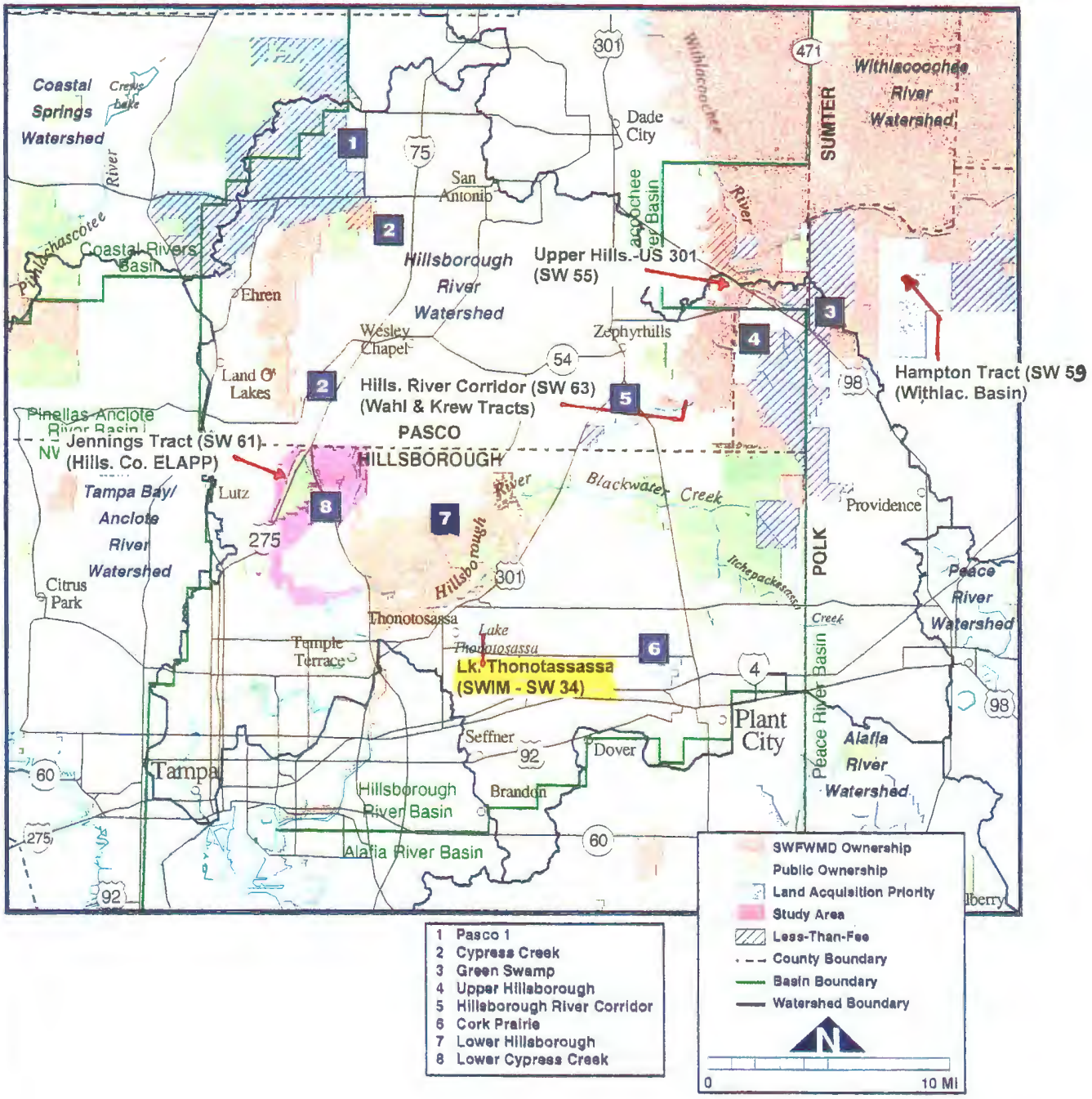
✓ 4. Detailed schedule for work implementation, including any and all phases. **Refer to text under Comment C.**

✓ 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, 2001 to guarantee the percent coverage of desirable species.**

✓ 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.**

✓ 7. Itemized cost estimate. **Design & Permitting - $90,000, Construction - $240,122, Planting - $181, 227, Supplemental Planting - $80,000, Maintenance & Monitoring - $20,000**

✓ 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**

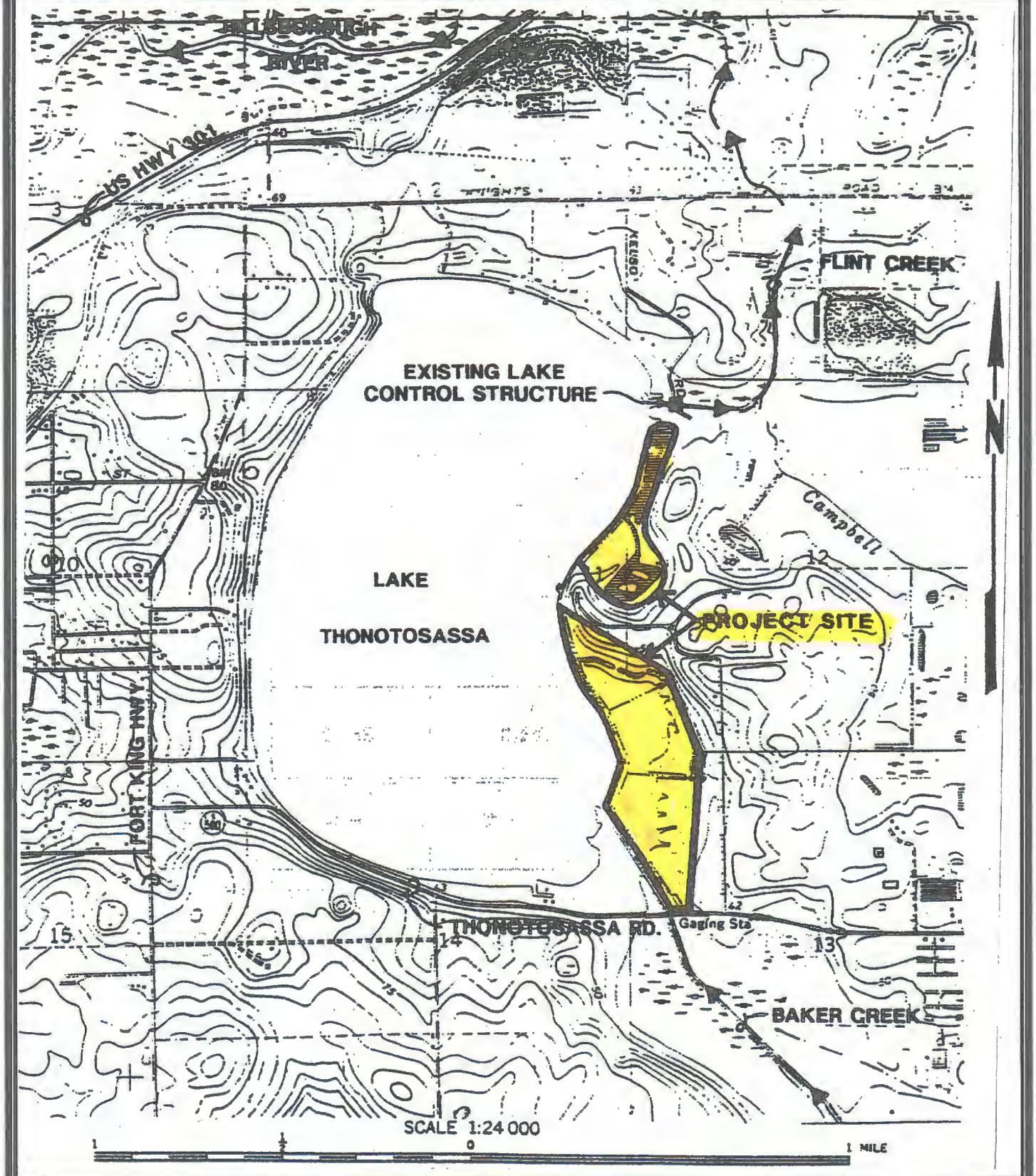
WETLAND RESTORATION IN THE LAKE THONOTOSASSA WATERSHED

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

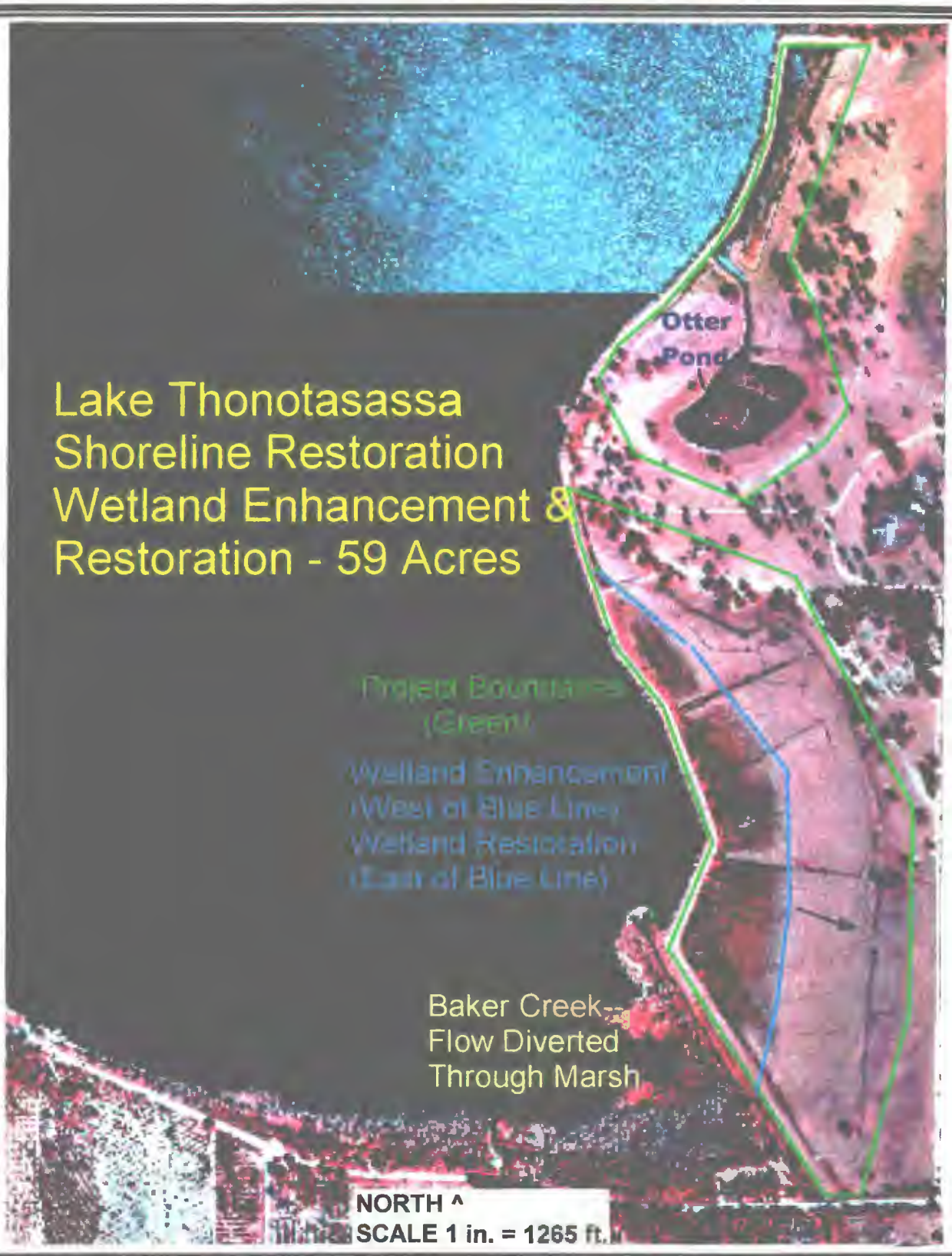
PROJECT CONSTRUCTION PLANS

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(ies): Sarasota County Location (central lat/long): 27 degrees, 20 min., 15 sec., 82 degrees, 35 min., 00 sec.
Sec./T/R: 24,25/36S/17E

IMPACT INFORMATION

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

Acres and Types of impact to be offset: 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: **2.5 ac.**
SWIM project? (Y/N)N Aquatic Plant Control project? (Y/N)N Exotic Plant Control Project? (Y/N) __Y__
Mitigation Bank? (Y/N) __N__ If yes, give DEP/WMD mit bank permit #: _____ COE # _____
Drainage Basin(s) (names): Lower Coastal Water Body(s): Sarasota Bay SWIM water body? (Y/N) Y

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 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 seagrasses 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 . 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.

Mitigation Project – Quick Point Nature Preserve

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 adjacent CR 789 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) or Mark Hammond (SWFWMD-SWIM 813-985-7481, ext. 2200)
Entity responsible for monitoring and maintenance: Town of Longboat Key
Proposed timeframe for implementation: Commence: October, 1998 Complete: July, 2002 (Mangrove Enhancement & Seagrass Planting)

Project cost: $46,580 (total); attach itemized cost estimate
Design - $3,000
Enhancement (Mangrove Area, 1.0 acres) - $4,000
Planting (Seagrass Area, 1.5 acres) - $37,080
Maintenance & Monitoring - $5,500

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 2001. The mangrove enhancement activities will be conducted during winter 2000-2001, either by the construction crews from the SWFWMD Operations Dept. and/or the Parks Dept.**

from the City of Longboat Key.

Mitigation Project – Quick Point Nature Preserve

Seagrass planting will be conducted in the Spring–Summer, 2002. 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. A local nursery contractor specifically grows seagrass plugs that are planted using a stainless steel rotary drum mounted on a pontoon boat. The drum rotates and installs the plugs 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 (bridge construction commencing anticipated summer, 2001). 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 semi-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 in the past (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, that area will also be evaluated for potential seagrass planting.**

__X__ 6. Long-term maintenance plan. **Maintenance will be conducted as needed during the first three years, proposed bi-monthly inspections to control exotics/nuisance species during the first year, and every quarter afterward for the minimum three years of monitoring.**

__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. Through the end of 2001, the number 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.**

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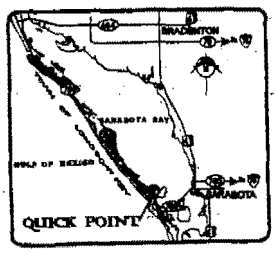


Quick Point Nature Preserve
100 Gulf of Mexico Drive
Longboat Key, Florida 34228

For more information contact:
TOWN OF LONGBOAT KEY
501 Bay Isles Road
Longboat Key, Florida 34228
941-316-1959

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, sandy trenches that cause irreversible damage.

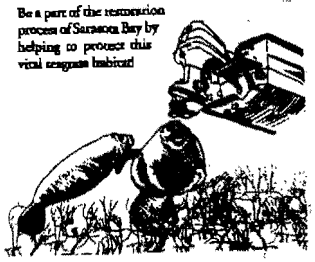
What you can do to avoid running through grass beds with your motorboat?

- *Keep track of the tides,
  even at high tides some beds are vulnerable.
- *Look for buoys,
  which mark the edges of some grass beds.
- *Read navigation charts.
  Seagrass is shown as light green or with "Grs."
- *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.

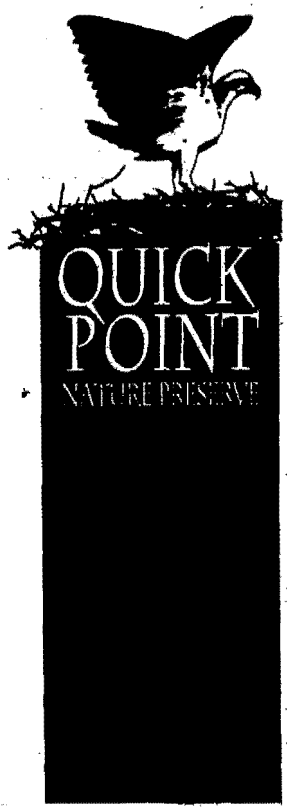
Certain measures have been having a significant beneficial impact for the restoration of Sarasota Bay, for example wastewater and stormwater treatment technologies. But furthering the restoration goals depends on each one of you making a difference.

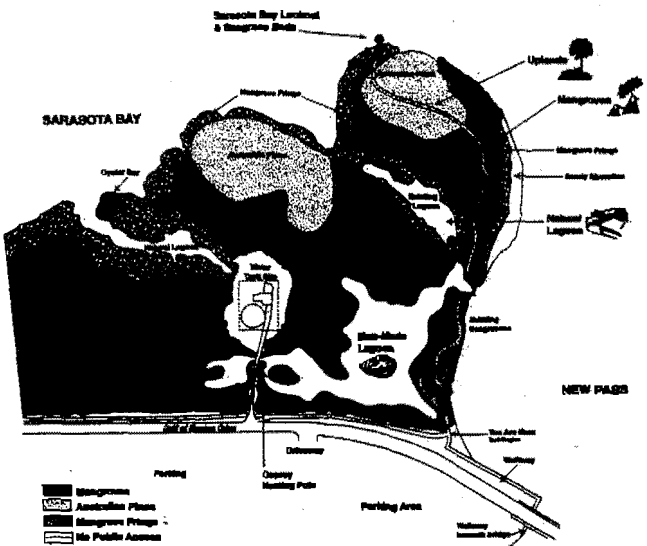
Here's a couple suggestions to get you started:

- *Get involved in community plantings and exotic removal projects.
- *Get involved in Adopt-a-Shore 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) 316-1959
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





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

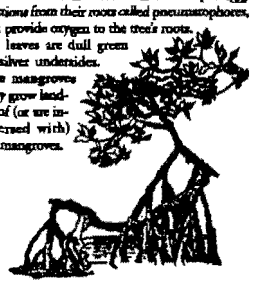
This pristine mangrove lagoon area was present 100 years ago and still serves today as a serene natural setting of mangroves for utilization by shore birds and human enjoyment. The natural lagoon area also serves as vital habitat for juvenile fish and crabs just like the new man made lagoon.

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 crisscrossing 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 protection, 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 twiggy projections from their roots called pneumatophores, which provide oxygen to the tree's roots. Their leaves are dull green with silver undersides. White mangroves usually grow landward of (or are interspersed with) black mangroves.



UPLANDS

There are two large areas at the Quick Point site that are the result of previous dredge spoil depositions. 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 grasslike of Sarasota Bay have supported a rich array of wildlife. Unfortunately, though, the bay had lost about 30 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.

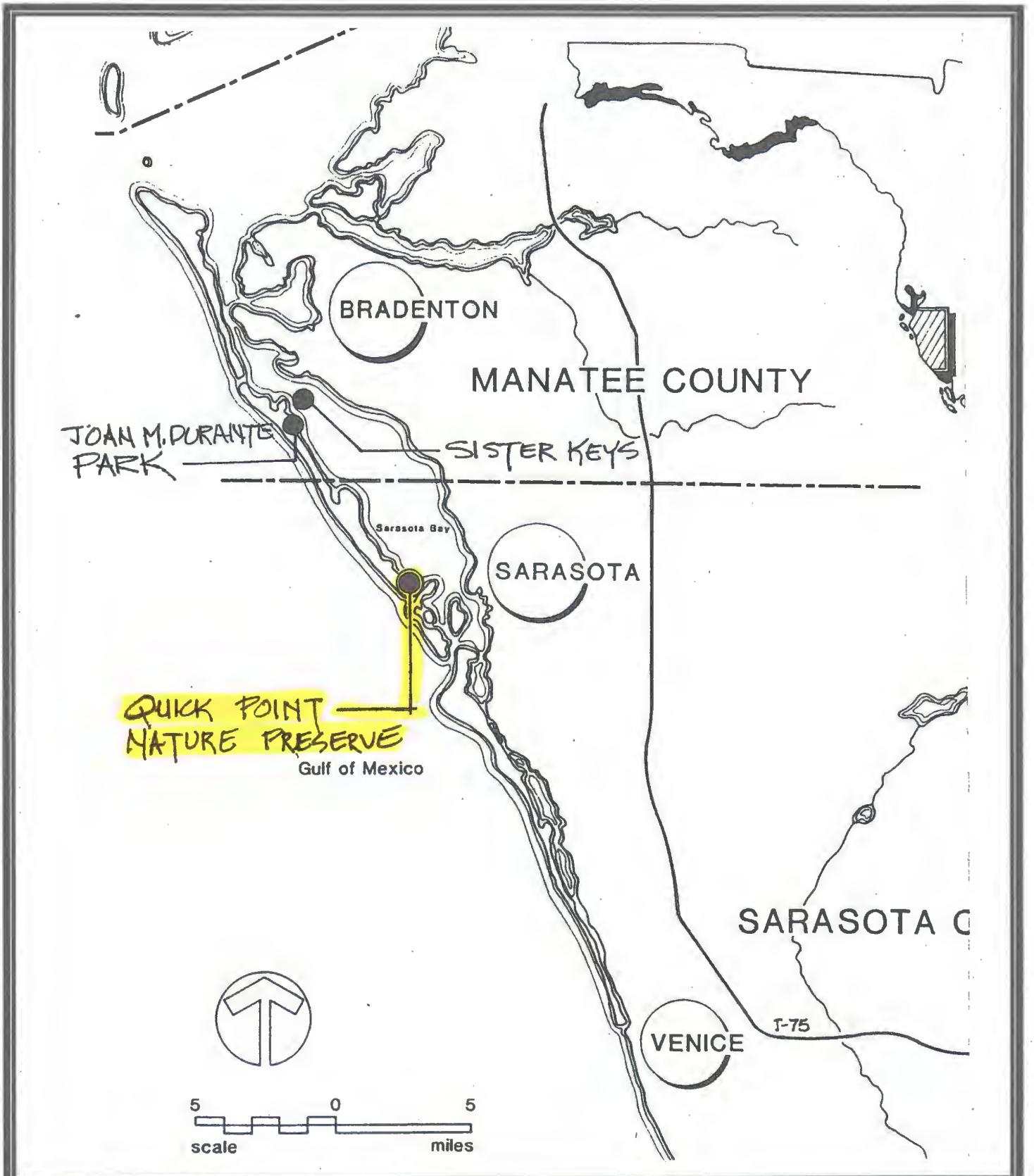
Because of its high environmental value and importance to the Sarasota Bay ecosystem, management of the land should emphasize preservation of valuable habitat and improvement and protection of altered habitat. Areas where we would recommend that specific land management techniques be applied are:

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.

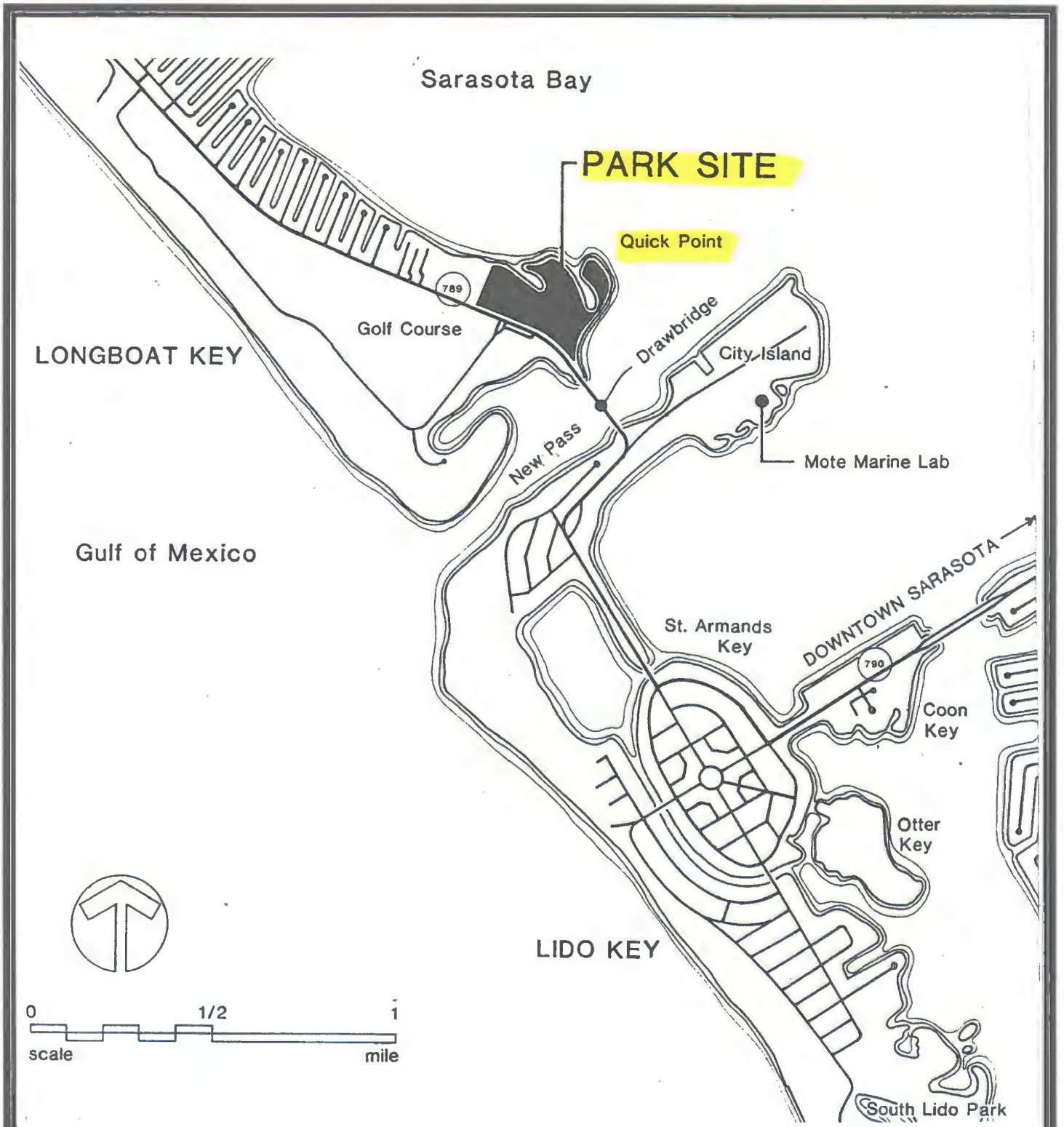
2. Bay Shoreline Much of the Quick Point property is naturally stabilized and protected through a mature mangrove growth fringe. However, portions of the eastern shoreline have experienced sever erosion, probably due to boat wake. This area should be re-established with mangroves and salt marsh grasses 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**



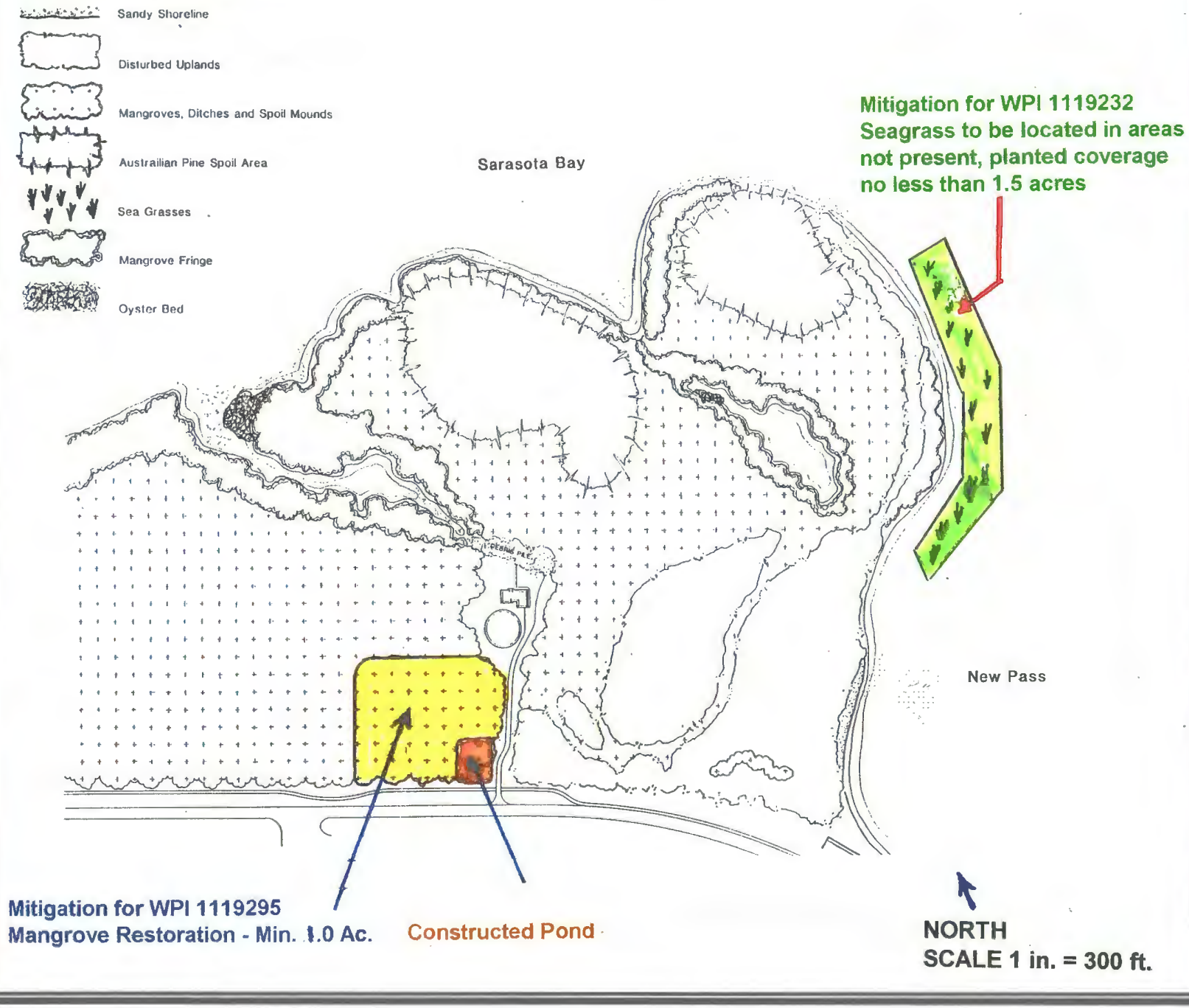
FDOT - District 1 MITIGATION SITE (Lower Coastal Basin)	**QUICK POINT NATURE PRESERVE (SW 38)**	**FIGURE B SITE LOCATION**

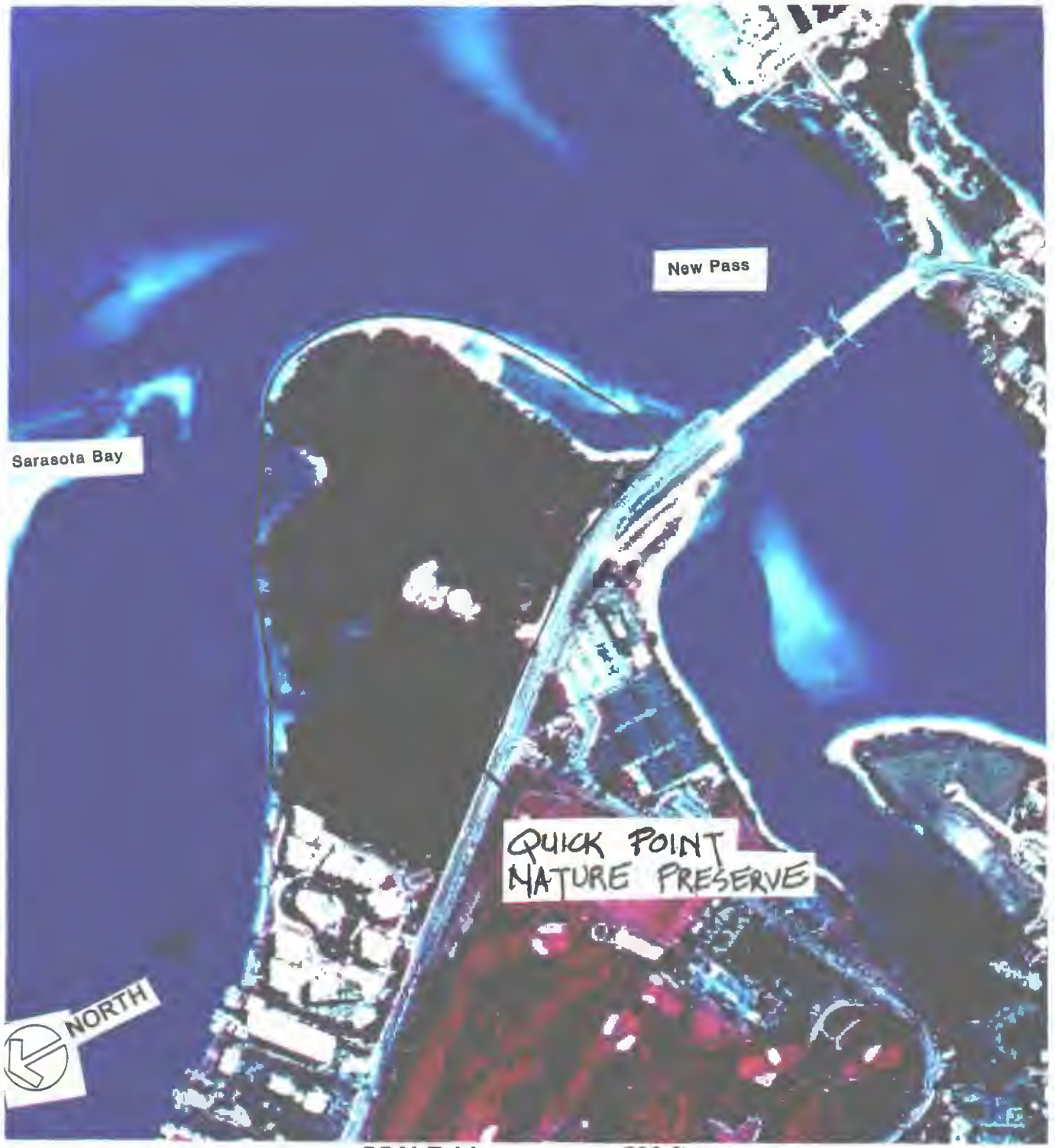
FDOT - District 1
MITIGATION SITE
(Lower Coastal Basin)

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: Forest Turbiville, SWIM Environmental Scientist Phone No: (813) 985-7481 ext. 2213

County(ies): Pinellas Location: Sec. 12, T30S, R16E

IMPACT INFORMATION

(1) WPI: 7116992 FM: 2569051, SR 679 (Bayway), Bunces Pass Bridge	DEP #:52-0148752-001	COE #:199100289
(2) WPI: 7147874 FM: 2569571, I-275-Roosevelt to Big Island Gap	ERP #: 43001034.001	COE #: 19940253 (IP-ES)
(3) FM: 2556301, SR 60, Courtney Campbell to Fish Creek	ERP #: _____	COE #: _____
(4) FM: 2570931, SR 60, Clearwater Harbor Bridge Replacement	ERP #: 44021540.000	COE #: 200024966 (IP-TF)
(5) FM: 4062531, SR 686 (Roosevelt) at 49th Street	ERP #: _____	COE #: _____
(6) WPI: 7113975 FM: 2557341, SR 676-Maritime Blvd. to SR 60	ERP #:4313736.01	COE #: 199400606
(7) FM: 2583981, I-275, Howard Franklin to Himes Ave.	ERP #: _____	COE #: _____

Drainage Basin(s): 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

Impact Acres/ Type:

(1) WPI 7116992
- 0.10 ac. 540 (Fluccs code)
- 0.50 ac. 642 (Fluccs code)
- TOTAL 0.60 ac.

(2) WPI 7147874
- 4.80 ac. 612 (Fluccs code)
- 3.20 ac. 619 (Fluccs code)
- 0.50 ac. 641 (Fluccs code)
- 0.50 ac. 642 (Fluccs code)
- TOTAL 9.00 ac.

(3) WPI 2556301
- 2.60 ac. 540 (Fluccs code)
- 4.40 ac. 612 (Fluccs code)
- 3.50 ac. 642 (Fluccs code)
- TOTAL 10.50 ac.

(4) FM 2570931 TOTAL 0.50 ac. 540 (Fluccs code)

(5) FM 4062531 TOTAL 0.10 ac. 612 (Fluccs code)

(6) WPI 7113975
- 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 24.1 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration X Enhancement ___ Preservation Mitigation Area: **96.4 ac.**

Project Site: 176 Acres - Preservation of mangroves (42 acres) not included in the mitigation acreage.

Mitigation:	Saltwater Marsh Restoration	41.8 Acres (Fluccs 642)
	Open Water Inlets & Lagoons	9.50 Acres (Fluccs 540)
	Mangrove Enhancement	35.0 Acres (Fluccs 612)
	Upland Enhancement	10.10 Acres
	Mitigation Area	**96.4 Acres**

SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N Drainage Basin(s) (names): Tampa Bay Drainage Basin SWIM water body? (Y/N) Y

Project Description

A. Overall project goal: To restore and enhance coastal habitats along publicly-owned parcels within the Gateway corridor south of the Howard Franklin Bridge in Pinellas County. The project will remove extensive exotic vegetation that has invaded the entire site, regrade the majority of the non-wetland portions 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 impacted upland will have eradication of 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 the backfilling of the mosquito ditches, exposing the roots of the Brazilian pepper on the spoil mounds to saltwater which will result in their mortality. 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 mosquito ditching, urban development, and highway construction (Figures B & C). The majority of 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's vegetative, soil, hydrologic, and grade elevations have been evaluated and first phase design has been completed (Attachment E). After the second phase design, permit applications will be prepared and submitted to the appropriate agencies. After the permits are issued, construction activities will be conducted by either the SWFWMD Operations Dept. or a WMD selected contractor. Removal of exotic vegetation will be followed by excavation and grading of a majority of the disturbed filled uplands to appropriate intertidal elevations. Once the wetland grades are established, the area will be planted with high marsh, low marsh, and transitional native vegetation and open water components within the intertidal areas. There will also be restored upland habitat, and enhancement of the existing mangrove habitat through backfilling spoil into the mosquito ditches.

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 much larger acreage than the similar proposed habitat impacts, 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 (24.1 acres) are proposed to be mitigated with habitat enhancement and restoration covering 96.4 acres, a cumulative mitigation ratio of 4:1.

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 currently not available within the Tampa Bay 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 : Gateway Restoration is a SWIM project.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District - Operations Dept, or a designated Contractor
Contact Name: Forest Turbiville, SWFWMD-SWIM, Environmental Scientist Phone Number: (813) 985-7481, ext. 2213

Entity responsible for monitoring and maintenance: Southwest Florida Water Management District
Proposed timeframe for implementation: Commence: Design underway Complete: Construction complete, December, 2002

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 Attachment 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). **Attached Table 3 depicts each of the proposed wetland impacts and associated types of mitigation.**

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 are presently covered with exotic species, primarily Brazilian pepper and Melaleuca.

As depicted on the attached 30% 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 piles are 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, using construction equipment results 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 part of an experimental procedure, 35-acres of mangrove habitat will be selected to 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 expose the pepper roots to salt water. The salt water will result in Brazilian pepper mortality, and the pepper debris will decay in place. Once the pepper decease and fall, the regeneration of mangrove saplings will displace the 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 contract for the design and construction management has been implemented and the second phase design is nearing complete (Attachment E). Permit applications will then be submitted and permits should be issued by mid-2002. The construction will be conducted by a Contractor rather than the WMD, so bid applications will be prepared and a Contractor selected by the end of 2002. Construction is anticipated to be complete in 8-12 months, essentially by mid- 2003. A minimum 3-year period of maintenance & monitoring will extend beyond the construction 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 DEP (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 replacement of plants that didn't survive the initial 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 a licensed herbicide applicator. Maintenance will be conducted as needed, expected to be monthly for the first year after

planting, and at least quarterly 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.

The success criteria will be stipulated in the permit conditions and will reflect a minimum 90% survivorship for planted material for one year after planting and a total 85% cover of planted and recruited desirable species. A monitoring plan will be included with the design plans that will adequately monitor the site with the use of transects and quadrats. The natural recruitment and generation of mangroves are anticipated to occur within portions of the planted salt marsh habitat.

ATTACHMENT D - Gateway Tract Design

The Gateway Tract - 60% Design plans are attached.

DOT Mitigation @ Gateway

DOT Project	Impact Ac.	Habitat Type	Mitig. Ratio	Mitig. Ac.	Mitigation Type
Bunces Pass	0.10	540 - Bay & Estuar.	2:1	0.20	Open Water Restoration
Bridge **(Site 1,2)**	0.50	642-Salt Marsh	2:1	1.00	Salt-Marsh Restoration
TOTAL	**0.60**		**2:1**	**1.20**	
I-275 Roosevelt	4.80	612-Mangrove	5.2:1	14.80*	Mangrove Enhancement
To B. Island				1.70	Open Water Restoration
(Site 3)				8.60	Upland Enhancement
	3.20	619-Ex. Hardwood	2:1	6.40	Salt-Marsh Restoration
	0.50	642-Saltmarsh	2:1	1.00	Salt-Marsh Restoration
	0.50	641-Freshmarsh	2:1	1.00	Salt-Marsh Restoration
TOTAL	**9.00**		**3.7:1**	**33.5**	
SR 60-Courtney	2.60	540-Bay & Estuar.	2.9:1	6.6	Open Water Restoration
Campbell to				0.9	Salt-Marsh Restoration
Fish Creek	4.40	612-Mangroves	4.8:1	11.60	Mangrove Enhancement
(Site 4)				9.70	Salt-Marsh Restoration
TOTAL	3.50	642-Salt-Marsh	3:1	10.5	Salt-Marsh Restoration
	10.50		**3.7:1**	**39.30**	
SR 60,	0.50	540-Bay & Estuar.	2:1	1.00	Open Water Restoration
Clearwater					
Bridge					
(Site 5)					
TOTAL	**0.50**		**2:1**	**1.00**	
SR 686,	0.10	612-Mangrove	4:1	0.40	Mangrove Enhancement
Roosevelt					
(Site 6)					
TOTAL	**0.10**		**4:1**	**0.40**	
SR 676	1.00	612-Mangrove	4:1	4.00	Mangrove Enhancement
Maritime Blvd.	0.50	619-Ex. Hardwood	2:1	1.00	Saltmarsh Restoration
(Site 7)					
TOTAL	**1.50**		**3.3:1**	**5.00**	
I-275, Howard	1.60	612-Mangrove	9:1	4.20	Mangrove Enhancement
Franklin - Himes				10.30	Salt-Marsh Restoration
(Site 8)	0.30	641x-Fresh Ditch	3:1	1.50	Upland Enhancement
TOTAL	**1.90**		**8.4:1**	**16.00**	
	24.1 Ac.		**4:1**	**96.4 Ac.**	

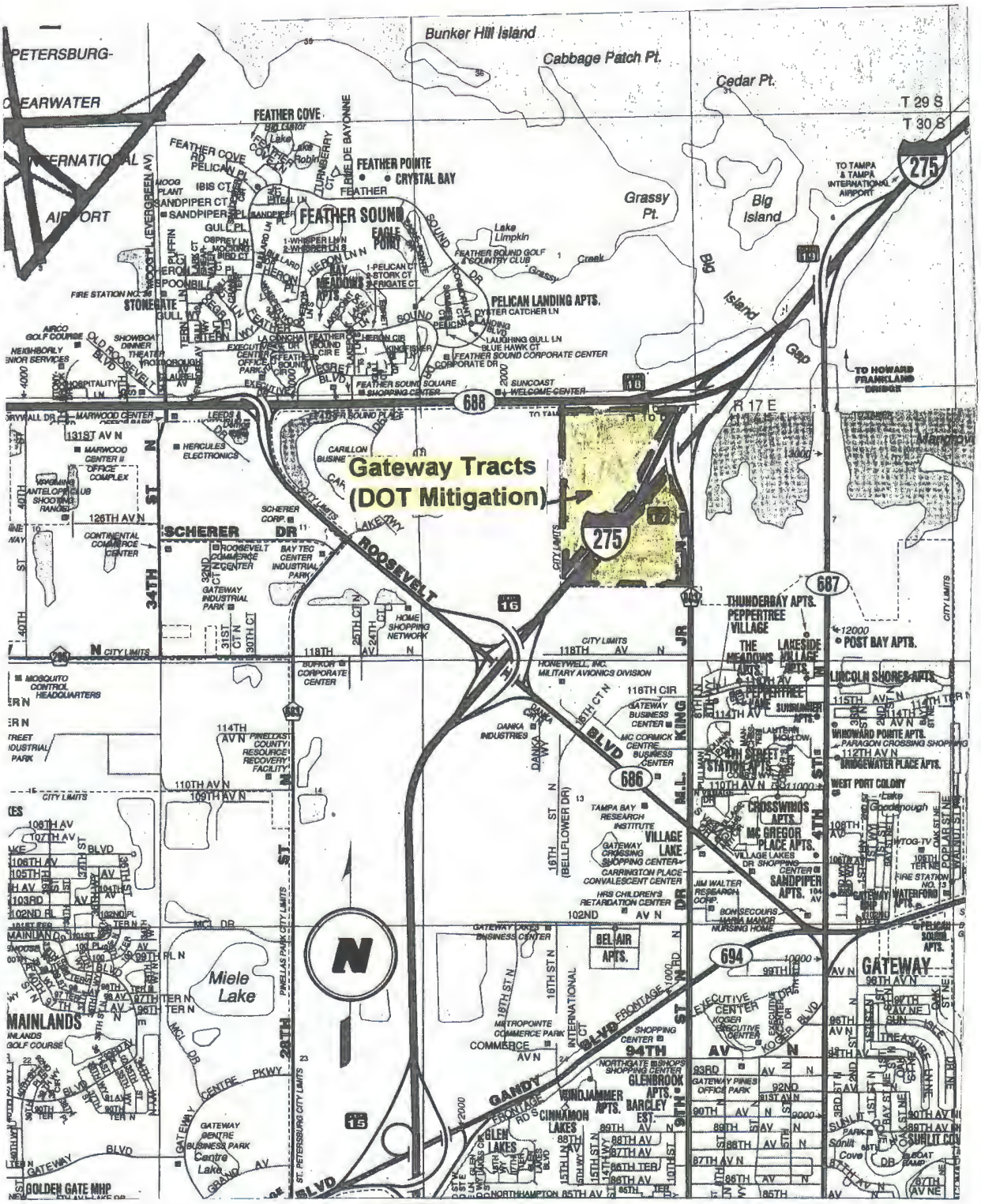
DOT Mitigation @ Gateway

FDOT Wetland Impact

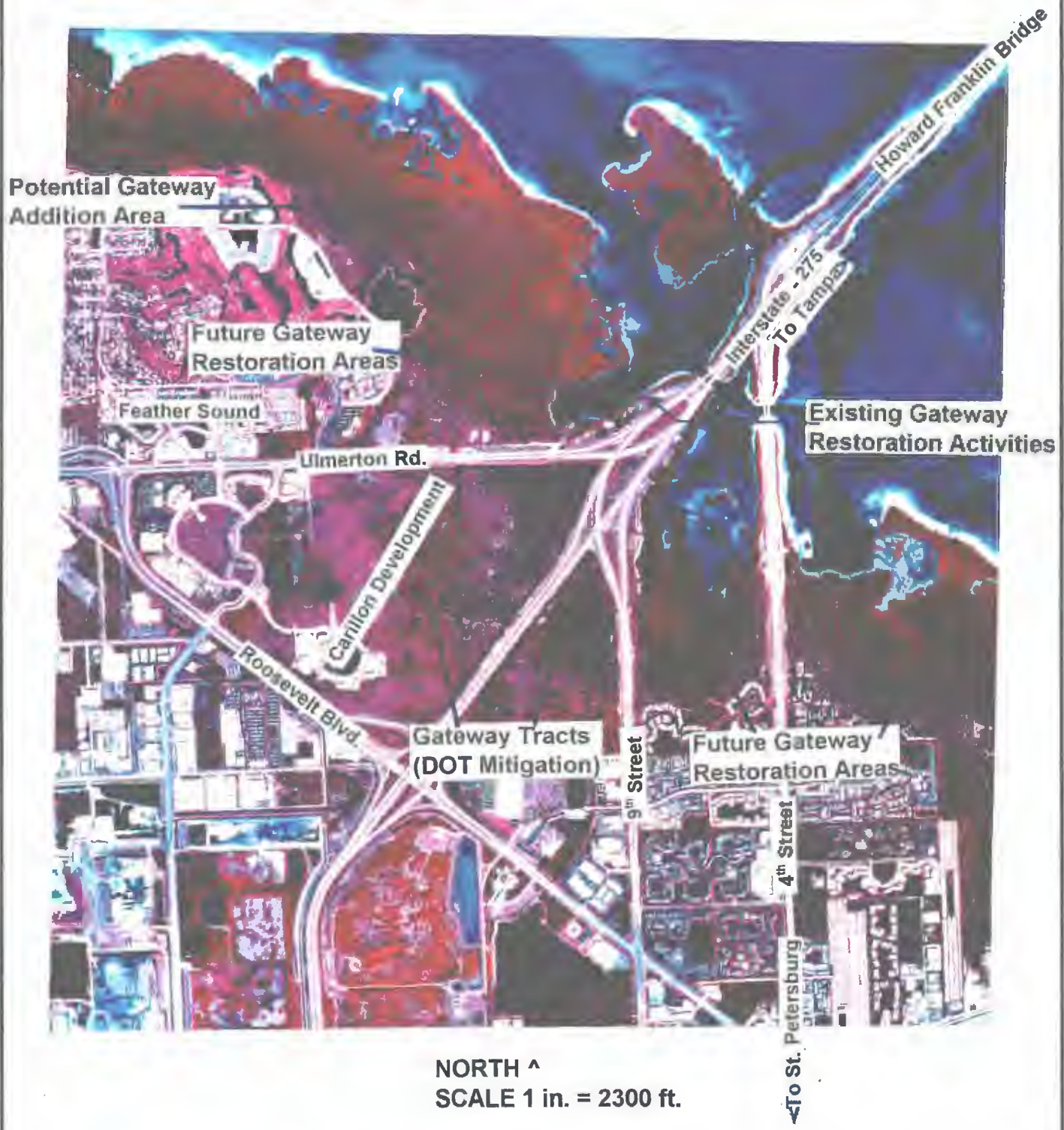
540-Bay & Estuary	2.90 Acres
612-Mangrove	11.92 Acres
619-Exotic Hardwood	3.72 Acres
641-Freshwater Marsh	0.73 Acres
641x-Freshwater Ditch	0.30 Acres
642-Saltwater Marsh	4.50 Acres
TOTAL	**24.1 Acres**

Mitigation Acreage

Open Water	9.50 Acres
Mangrove Enhancement	35.0 Acres
Saltwater Marsh	41.8 Acres
Upland Enhancement	10.10 Acres
TOTAL	**96.40 Acres**



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



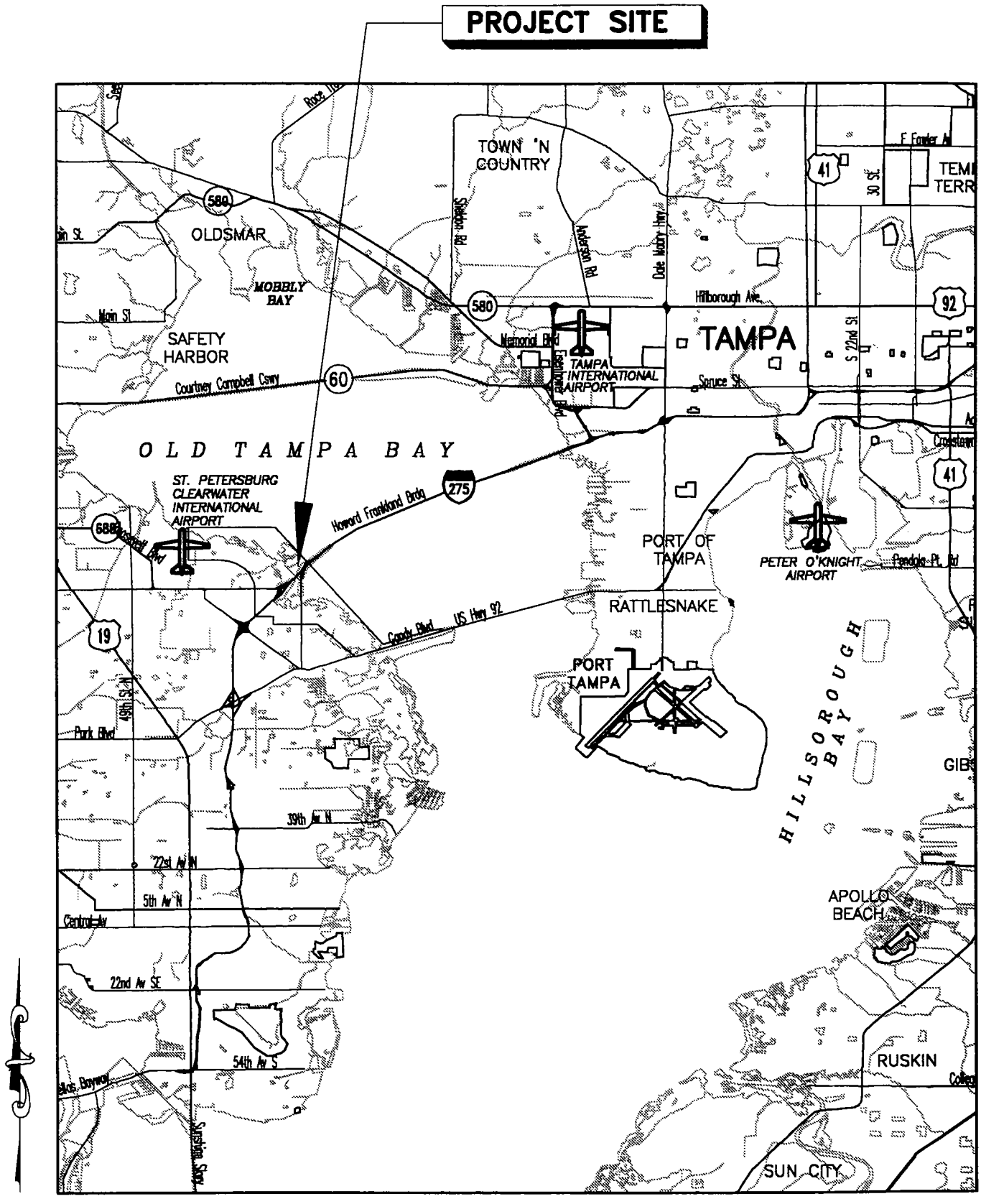
FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	GATEWAY TRACT (SW 45)	FIGURE B INFRARED AERIAL (1995)

Gateway Tract Mitigation/Restoration Acreages

Habitat/Planting Zone			North Side	South Side	Total
Saltwater Marsh		To Be Preserved	2.50	0.23	2.73
Mangrove Swamp		To Be Preserved	63.74	28.27	92.01
Cedar/Orchid Island		To Be Preserved	0.12	0.00	0.12
Zone 1	Open Water	To Be Created	7.55	4.24	11.79
Zone 2	Smooth Cordgrass	To Be Created	29.40	11.02	40.42
Zone 3	Marshhay Cordgrass	To Be Created	6.00	8.41	14.41
Zone 4	Sand Cordgrass Seaside Paspalum Needle Rush	To Be Created	0.00	3.38	3.38
Zone 5	Uplands	Nuisance Species To Be Removed	2.10	9.13	11.23
		TOTAL	111.41	64.68	176.09

NOTE: Acreages are preliminary and subject to change based on proposed construction plans for Interstate 275, Ulmerton Road, and 9th Street.

Attachment "D"



PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

LOCATION MAP

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

SHEET 1 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

M. STURGILL C100003796.01
R:\GATEWAY\COVER.DWG 07/12/00 11:48

GENERAL NOTES

1. ALL ELEVATIONS ARE IN FEET AND REFER TO THE NATIONAL GEODETIC DATUM (NGVD) OF 1929.
2. HORIZONTAL AND VERTICAL CONTROL IS BASED ON PHOTO INTERPRETED DATA PROVIDED BY THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
3. THE LOCATION OF THE EXISTING UTILITIES IS APPROXIMATE. UTILITIES WERE LOCATED BASED ON THE BEST AVAILABLE RECORD DRAWING AND SURVEY INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION AND SIZE OF THE UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES IN THE AREA BEFORE BEGINNING CONSTRUCTION.
4. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING EROSION AND TRANSPORT OF SEDIMENT TO INLETS, SURFACE DRAINS AND OFFSITE AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
5. ALL WORK IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL PERMITS FOR THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINE RESULTING FROM VIOLATION OF PERMIT CONDITIONS.
6. THE CONTRACTOR IS TO CONTROL FUGITIVE DUST ORIGINATING FROM THE PROJECT SITE DURING CONSTRUCTION BY WATERING OR OTHER METHODS AS REQUIRED.
7. SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12" OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE REMOVED AND PLACED IN UPLAND AREAS.
8. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES SHALL BE USED AS NECESSARY DURING CONSTRUCTION TO RETAIN SEDIMENT ON SITE. THESE MANAGEMENT PRACTICES SHALL MEET THE MINIMUM REQUIREMENTS OF FDOT INDEX NO.S 102 THROUGH 104.
9. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS (FEDERAL, STATE, AND LOCAL) FOR THE PROPOSED CONSTRUCTION PRIOR TO ANY CONSTRUCTION ACTIVITY.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL CONSTRUCTION STAKES, PRIOR TO STARTING ANY CONSTRUCTION. ANY QUESTIONS RAISED RELATIVE TO THE ACCURACY OF IMPROVEMENT INSTALLATION SHALL NOT BE RAISED SUBSEQUENT TO COMPLETION OF THE WORK UNLESS ALL SURVEY STAKES ARE MAINTAINED INTACT. SHOULD SUCH STAKES NOT BE PRESENT AND VERIFIED AS TO THEIR ORIGIN, NO CLAIM FOR ADDITIONAL COMPENSATION FOR CORRECTION SHALL BE PRESENTED TO ANY PARTY AND SUCH WORK SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
11. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES AND REGULATIONS AS SET FORTH BY O.S.H.A. URS GREINER AND THE OWNER WILL NOT BE RESPONSIBLE FOR JOB SITE SAFETY PROCEDURES.
12. ANY PLANNED OR PROPOSED ALTERATIONS OR ADDITIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY THE OWNER AND/OR ENGINEER.
13. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITY SERVICES DURING CONSTRUCTION.
14. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN FOR APPROVAL BY THE ENGINEER, PRIOR TO COMMENCING CONSTRUCTION ON THE PROPOSED IMPROVEMENTS.
15. ALL QUANTITIES LISTED ON THE PLANS ARE ESTIMATES ONLY. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE QUANTITIES AND BASE HIS BID ON HIS ESTIMATE.
16. THE CONTRACTOR SHALL CALL "SUNSHINE ONE CALL" NOT LESS THAN 48 HOURS, OR MORE THAN 5 WORKING DAYS PRIOR TO START OF CONSTRUCTION, PHONE NUMBER 1-800-432-4770.

WETLAND PLANTING NOTES

1. THE CONTRACTOR SHALL ACQUAINT HIMSELF WITH EXISTING SITE FEATURES, AND GRADING PLANS IN THE VICINITY OF THE PLANTING AREAS IN ORDER TO PRECLUDE ANY MISUNDERSTANDING AND/OR POTENTIAL CONFLICTS, AND TO ENSURE A TROUBLE FREE INSTALLATION.
2. THE CONTRACTOR SHALL ASSURE THAT ALL WORKMEN EMPLOYED BY HIM ARE COMPETENT, CAREFUL, RELIABLE, AND HAVE SUFFICIENT SKILL AND EXPERIENCE TO PROPERLY PERFORM THE ASSIGNED WORK. ALL WORKMEN ASSIGNED TO PLANTING WORK, SUCH AS OBTAINING DESIGN ELEVATIONS; OPERATING NECESSARY EQUIPMENT; INSTALLING PLANT MATERIAL ACCORDING TO DESIGN; AND IDENTIFYING NUISANCE/EXOTIC VEGETATION; SHALL HAVE HAD SUFFICIENT EXPERIENCE AND LICENSURE (WHERE APPLICABLE) IN SUCH WORK TO PERFORM IT PROPERLY AND SATISFACTORILY; AND SHALL MAKE DUE AND PROPER EFFORT TO EXECUTE THE WORK IN THE MANNER PRESCRIBED IN THE PLANS AND SPECIFICATIONS.
3. THE WORK SHALL CONSIST OF FURNISHING AND INSTALLING THE COMPLETE PLANT MATERIALS AS SPECIFIED AND SHOWN ON THE PLANS, THE WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR, EQUIPMENT, MATERIALS, AND APPLIANCES REQUIRED FOR THE INSTALLATION AS SHOWN ON THE PLANS. THE WORK SHALL INCLUDE THE MAINTENANCE OF ALL PLANTS AND PLANTING AREAS UNTIL ACCEPTANCE BY THE ENGINEER AND/OR THE AUTHORITY AND THE FULFILLMENT OF CONTRACTOR'S GUARANTEE PROVISIONS AS SPECIFIED.
4. THE CONTRACTOR SHALL GUARANTEE 100% SURVIVORSHIP OF ALL PLANT MATERIAL FOR A PERIOD OF ONE CALENDAR YEAR (ESTABLISHMENT PERIOD) FROM DATE OF FINAL ACCEPTANCE BY THE ENGINEER AND/OR THE OWNER.
5. THE WORK SHALL ALSO INCLUDE THE WATERING AND MAINTENANCE OF ALL PLANTS AND PLANTING AREAS TO ENSURE SURVIVAL UNTIL THE PLANTS ARE ESTABLISHED, FOR ONE CALENDAR YEAR FROM DATE OF FINAL ACCEPTANCE BY THE ENGINEER AND/OR THE OWNER AND THE FULFILLMENT OF THE CONTRACTOR'S GUARANTEE PROVISIONS ARE COMPLETED AS SPECIFIED.
6. NO WETLAND PLANTING SHALL OCCUR PRIOR TO AUTHORIZATION IN WRITING BY THE ENGINEER OR THE OWNER.
7. ALL PLANT MATERIAL OBTAINED FROM NURSERY STOCK SHALL BE FLORIDA GRADE NO. 1 OR BETTER, AS SPECIFIED IN "GRADES AND STANDARDS FOR NURSERY PLANTS", PARTS I AND II, BY DIVISION OF PLANT INDUSTRY, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, AND SHALL CONFORM TO CURRENT AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS FOR NURSERY STOCK.
8. IN THE EVENT ANY PLANT MATERIAL IS NOT AVAILABLE AS SPECIFIED OR IN THE QUANTITY NECESSARY TO PERFORM THE WORK, THE CONTRACTOR SHALL SUBMIT ALTERNATE SPECIES TO THE ENGINEER FOR APPROVAL, PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
9. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ADDITIONAL MATERIALS FOR PLANTING:
   14-14-14 TIME RELEASE 100% ORGANIC FERTILIZER - APPROXIMATE PROPORTION OF 1/4 CUP PER 1-GALLON PLANT. FERTILIZER IS TO BE MIXED WITH SOIL PRIOR TO INSTALLING PLANTS.
10. PLANT MATERIAL SHALL BE INSTALLED NO LATER THAN 24 HOURS AFTER DELIVERY TO THE SITE. IF NECESSARY, PLANT MATERIAL CAN BE TEMPORARILY STORED ON SITE, BUT ALL PLANT MATERIAL SHALL BE KEPT WATERED AND AND SHADED. THE ENGINEER OR OWNER MUST BE CONTACTED AND MUST APPROVE ANY TEMPORARY STORAGE BEYOND 24 HOURS FOLLOWING PLANT MATERIAL RECEIPT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND CONTROLLING NUISANCE/EXOTIC SPECIES FROM THE TIME PRIOR TO PLANTING UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED METHOD AND MATERIALS FOR CONTROLLING NUISANCE/EXOTIC SPECIES, SCHEDULED INSPECTIONS, AND DISPOSAL SITE LOCATION IN WRITING TO THE ENGINEER OR THE OWNER PRIOR TO INSTALLATION OF PLANT MATERIAL.
12. NUISANCE/EXOTIC SPECIES REMOVED FROM THE SITE SHALL BE DISPOSED OF AT AN OFF-SITE LOCATION IN AN ACCEPTABLE MANNER THAT WILL NOT RESULT IN RE-INFESTATION OF THE SITE.
13. THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO DESIRABLE VEGETATION THAT OCCUR AS A RESULT OF HIS CONTROLLING NUISANCE/EXOTIC PLANTS. REPLACEMENT OF PLANT MATERIAL SHALL BE AT NO EXPENSE TO THE OWNER.
14. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES FOR THE BID ITEMS CONTAINED UNDER WETLAND PLANTING.

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PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

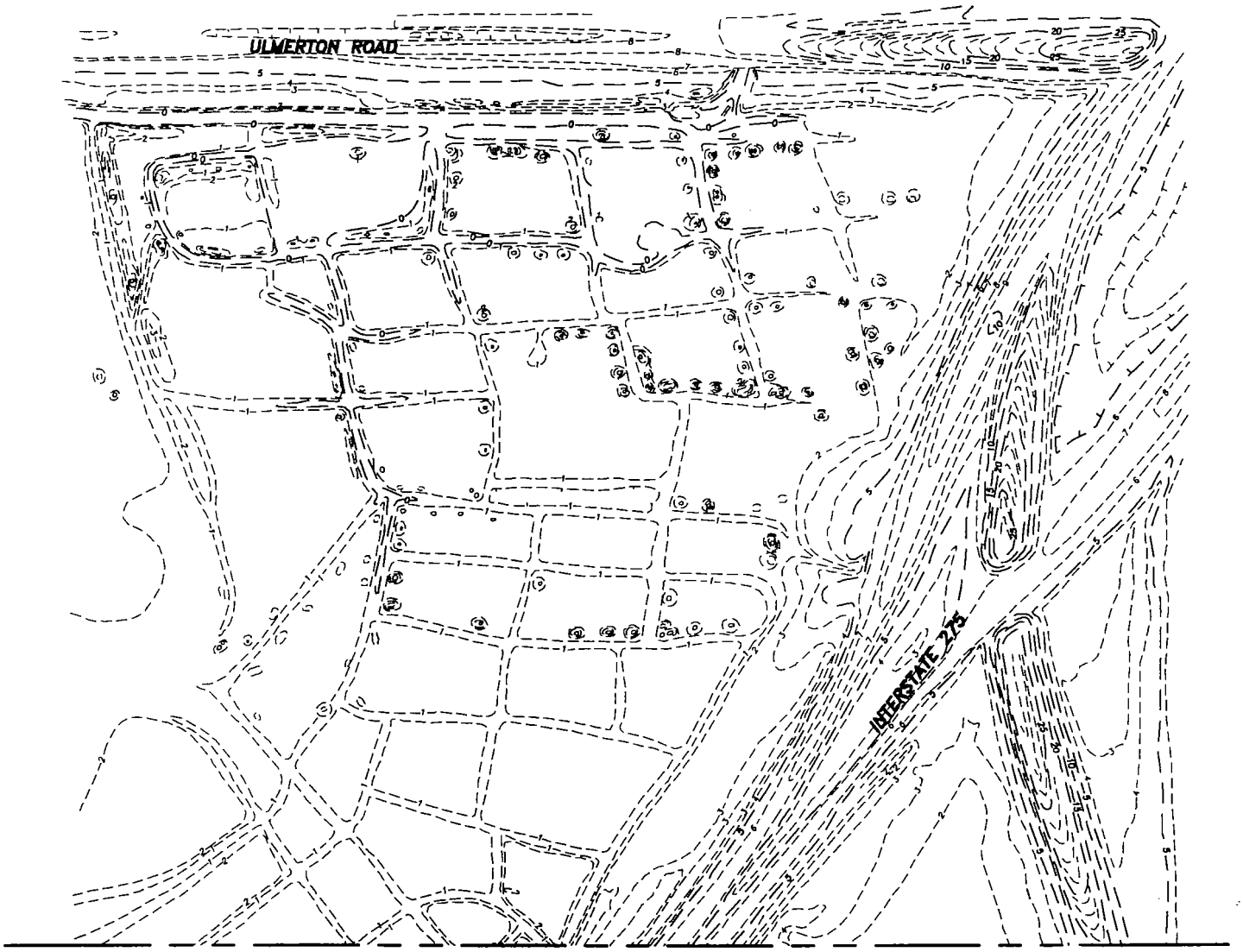
GENERAL NOTES

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

SHEET 2 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.



MATCH LINE SEE SHEET 4

0 100 200 400
Scale in feet

LEGEND

---1---	EXISTING 1 FOOT CONTOUR
— —5— —	EXISTING 5 FOOT CONTOUR

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

EXISTING CONDITIONS

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

SHEET 3 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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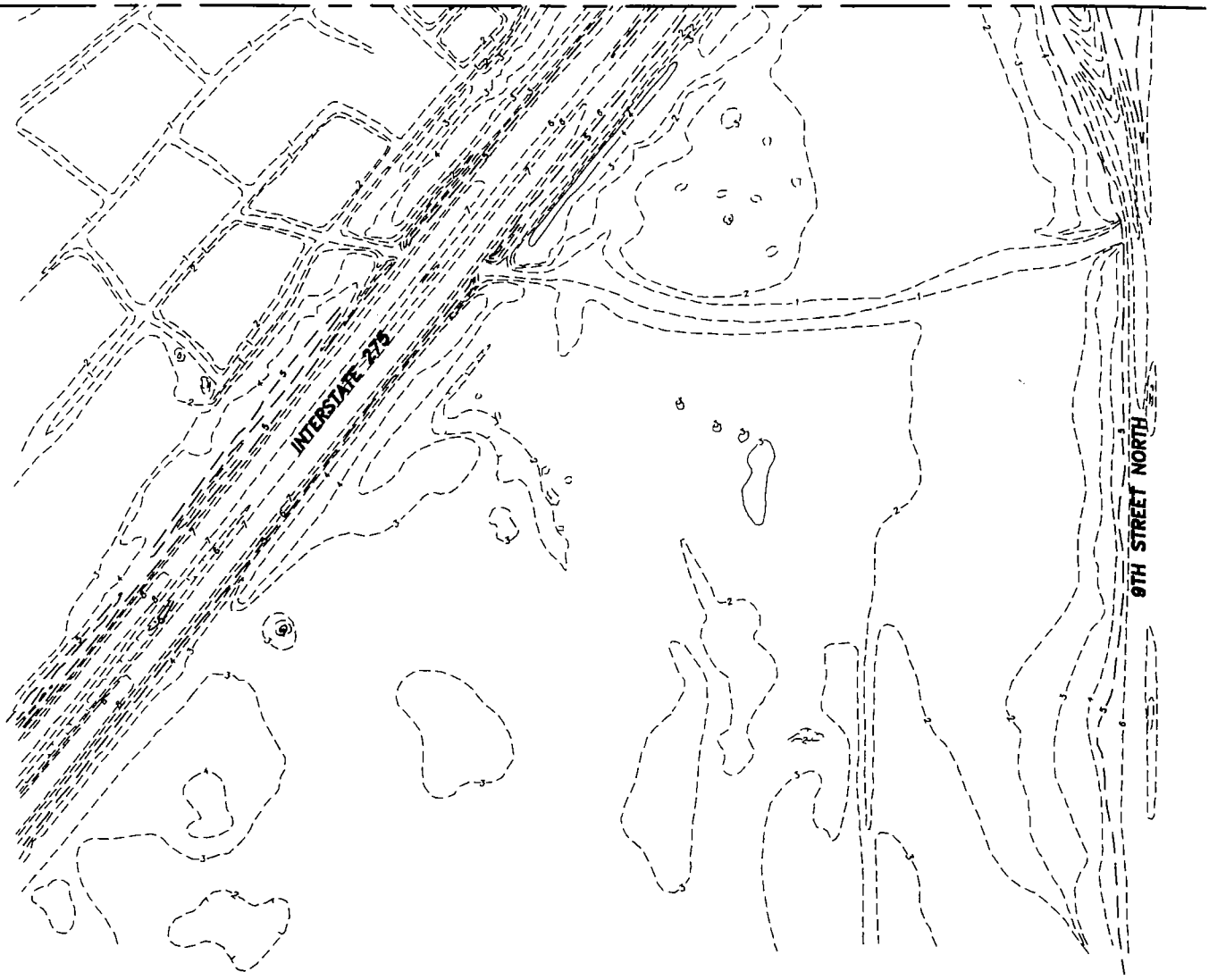
MATCH LINE SEE SHEET 3



0 100 200 400
Scale in feet

LEGEND

---1---	EXISTING 1 FOOT CONTOUR
— —5— —	EXISTING 5 FOOT CONTOUR

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

EXISTING CONDITIONS

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

SHEET 4 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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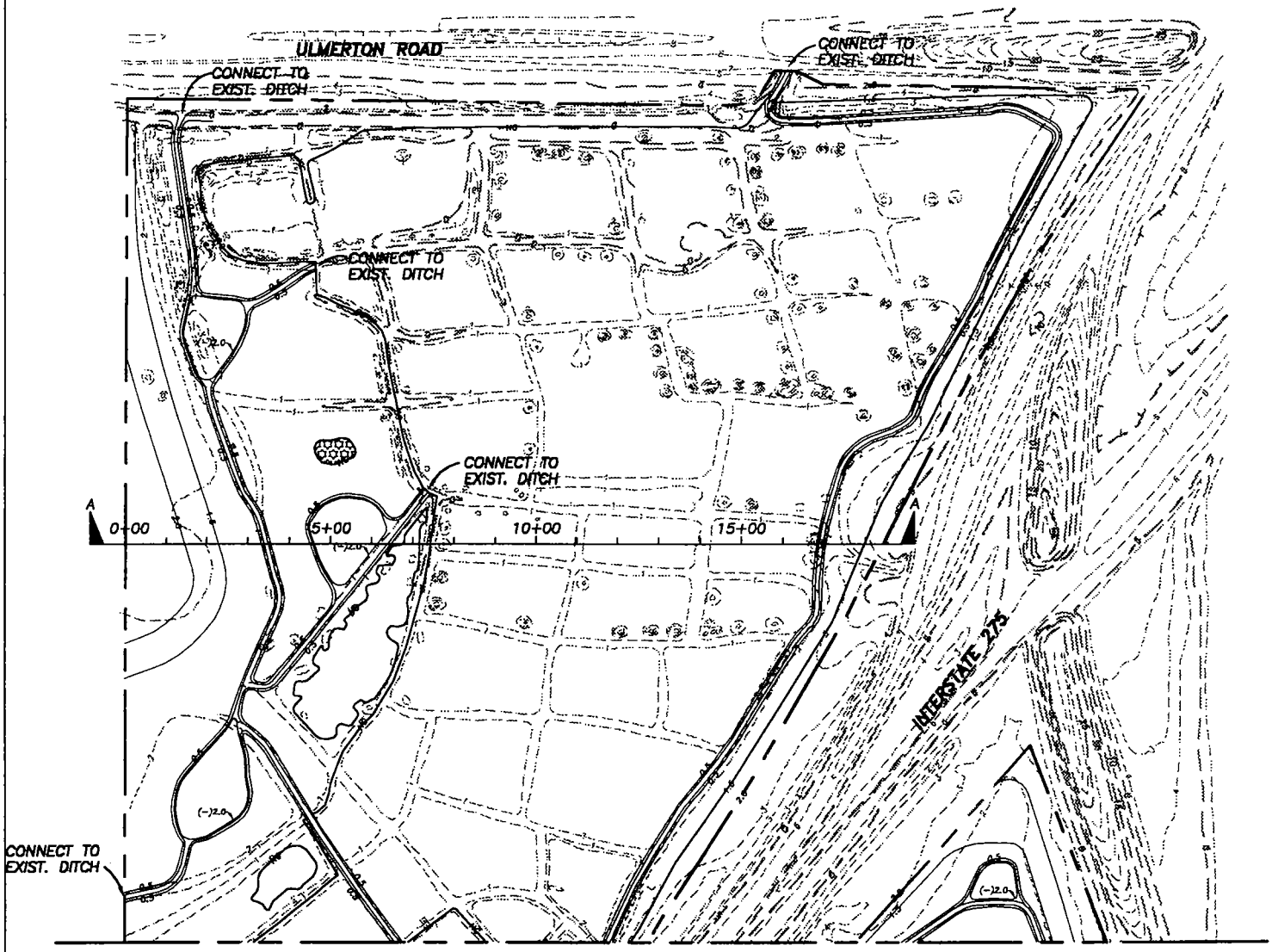

MATCH LINE SEE SHEET 6

0 100 200 400

Scale in feet

LEGEND

——1——	EXISTING 1 FOOT CONTOUR
— —5— —	EXISTING 5 FOOT CONTOUR
—— - ——	PROPOSED CENTER LINE OF CHANNEL
——2.0——	PROPOSED CONTOUR
A A	CROSS SECTION LOCATION

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

GRADING PLAN

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

SHEET 5 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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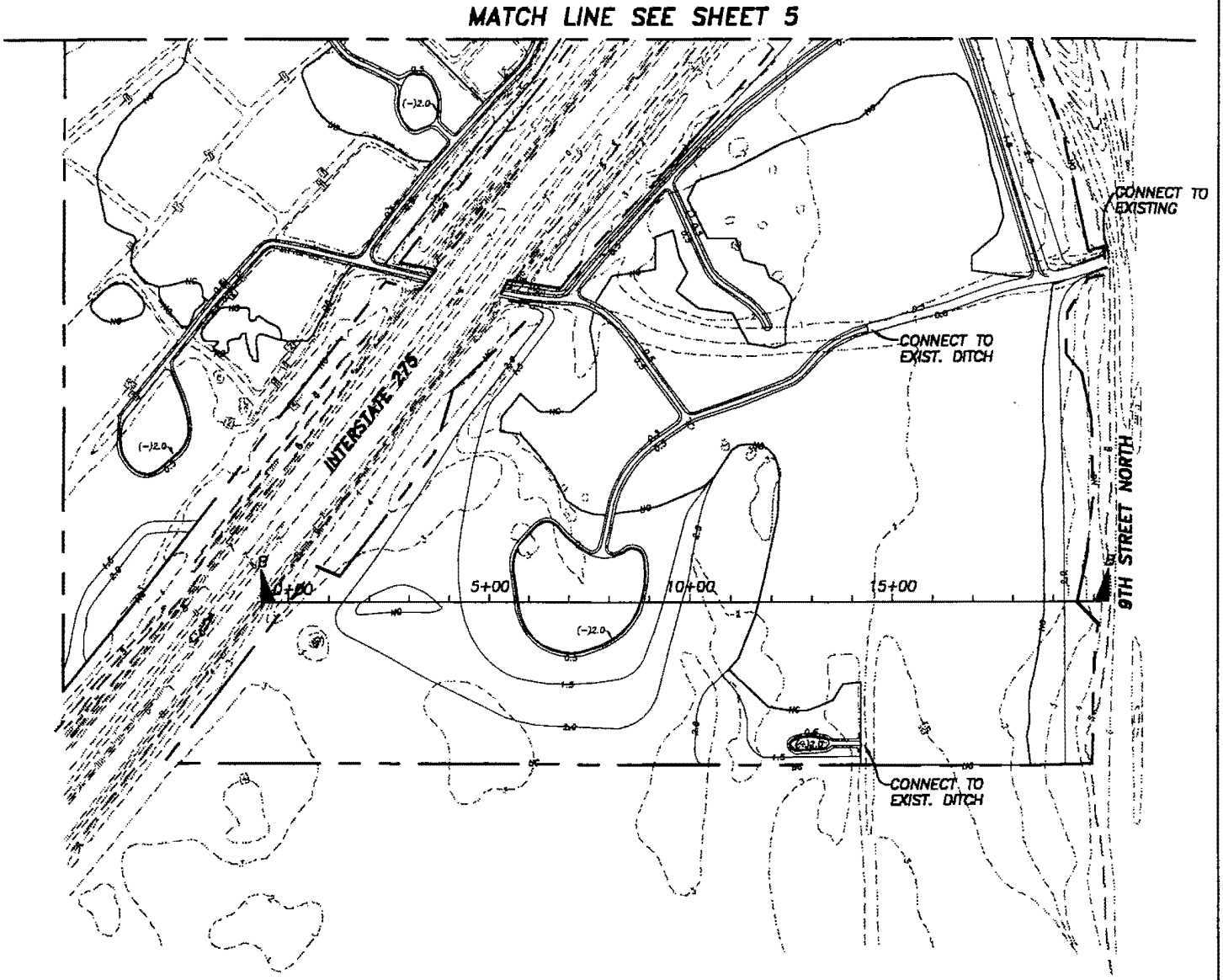

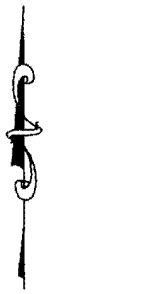

0 100 200 400
Scale in feet

LEGEND

1	EXISTING 1 FOOT CONTOUR
5	EXISTING 5 FOOT CONTOUR
	PROPOSED CENTER LINE OF CHANNEL
2.0	PROPOSED CONTOUR
A A	CROSS SECTION LOCATION

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

GRADING PLAN

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

SHEET 6 OF 12 DATE: July 2000

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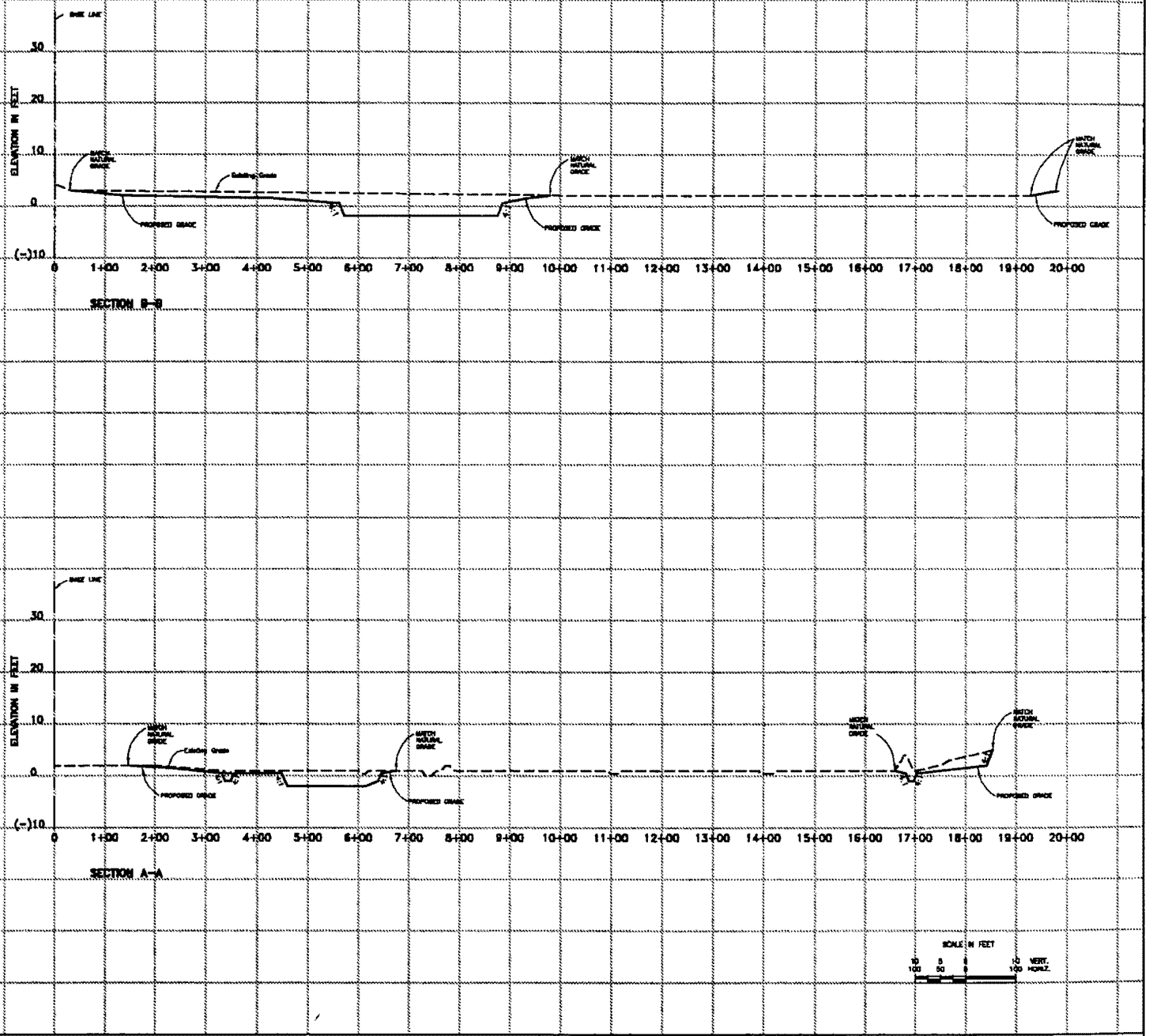

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

CROSS SECTIONS

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

SHEET 7 OF 12 DATE: July 2000

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MATCH LINE SEE SHEET 9

0 100 200 400

Scale in feet

LEGEND

- SALTWATER MARSH (642) TO BE PRESERVED
- MANGROVE SWAMP (612) TO BE PRESERVED
- CEDAR/ORCHID ISLAND TO BE PRESERVED
- ZONE 1 (EL. (−)2.0 TO 0.5) OPEN WATER & WATER WAY TO BE CREATED
- ZONE 2 (EL. 0.5 TO 1.5) TO BE PLANTED
- ZONE 3 (EL. 1.5 TO 2.0) TO BE PLANTED
- ZONE 4 (EL. 2.0 TO NG) TO BE PLANTED
- ZONE 5 NUISANCE SPECIES TO BE REMOVED

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

PLANTING PLAN

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

SHEET 8 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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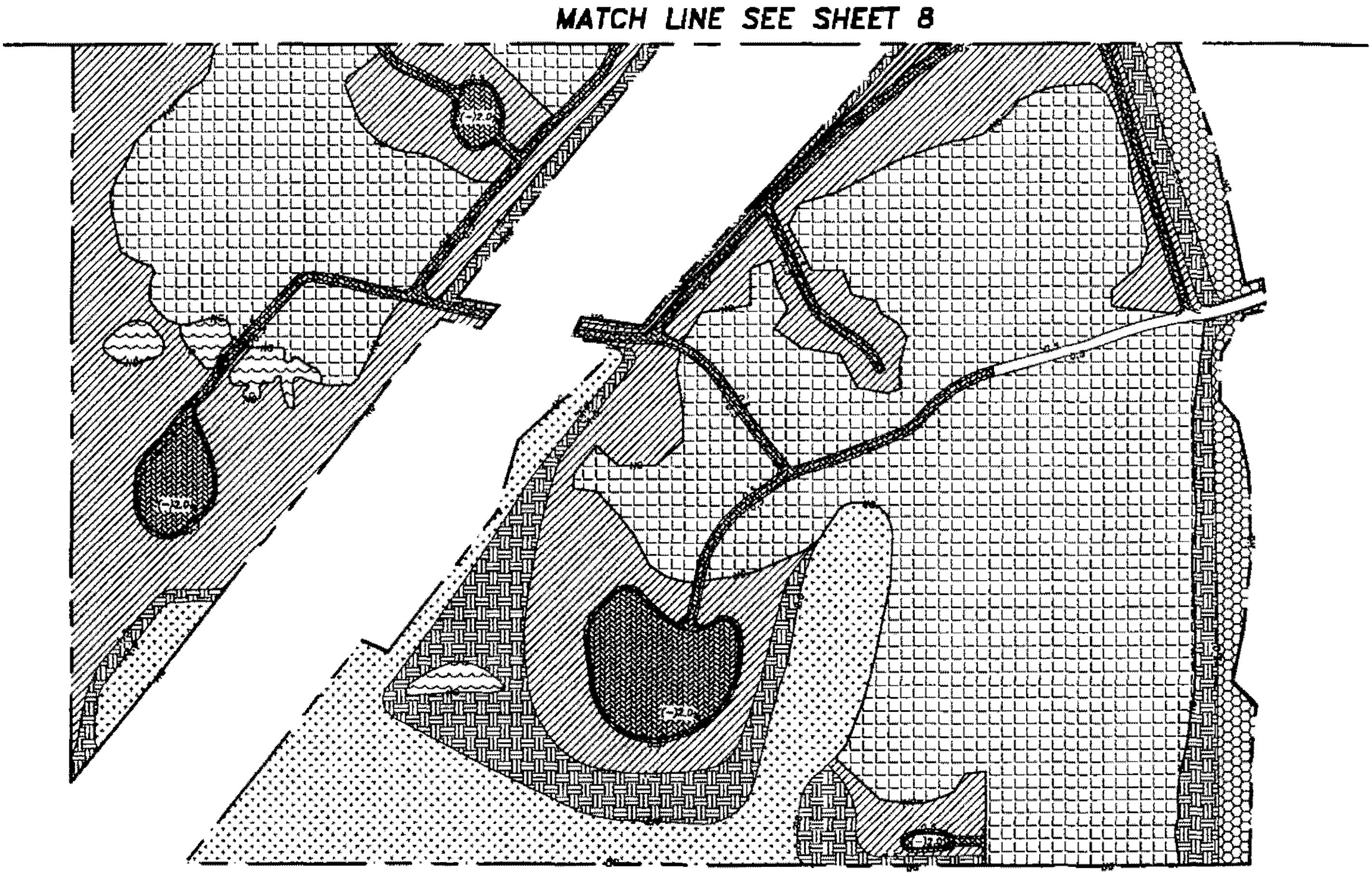

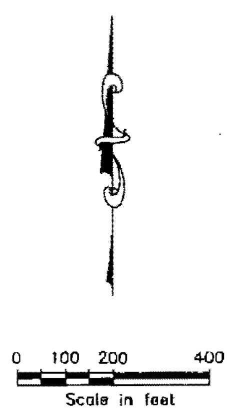

LEGEND

- SALTWATER MARSH (642) TO BE PRESERVED
- MANGROVE SWAMP (612) TO BE PRESERVED
- CEDAR/ORCHID ISLAND TO BE PRESERVED
- ZONE 1 (EL. (−)2.0 TO 0.5) OPEN WATER & WATER WAY TO BE CREATED
- ZONE 2 (EL. 0.5 TO 1.5) TO BE PLANTED
- ZONE 3 (EL. 1.5 TO 2.0) TO BE PLANTED
- ZONE 4 (EL. 2.0 TO NG) TO BE PLANTED
- ZONE 5 NUISANCE SPECIES TO BE REMOVED

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

PLANTING PLAN

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

 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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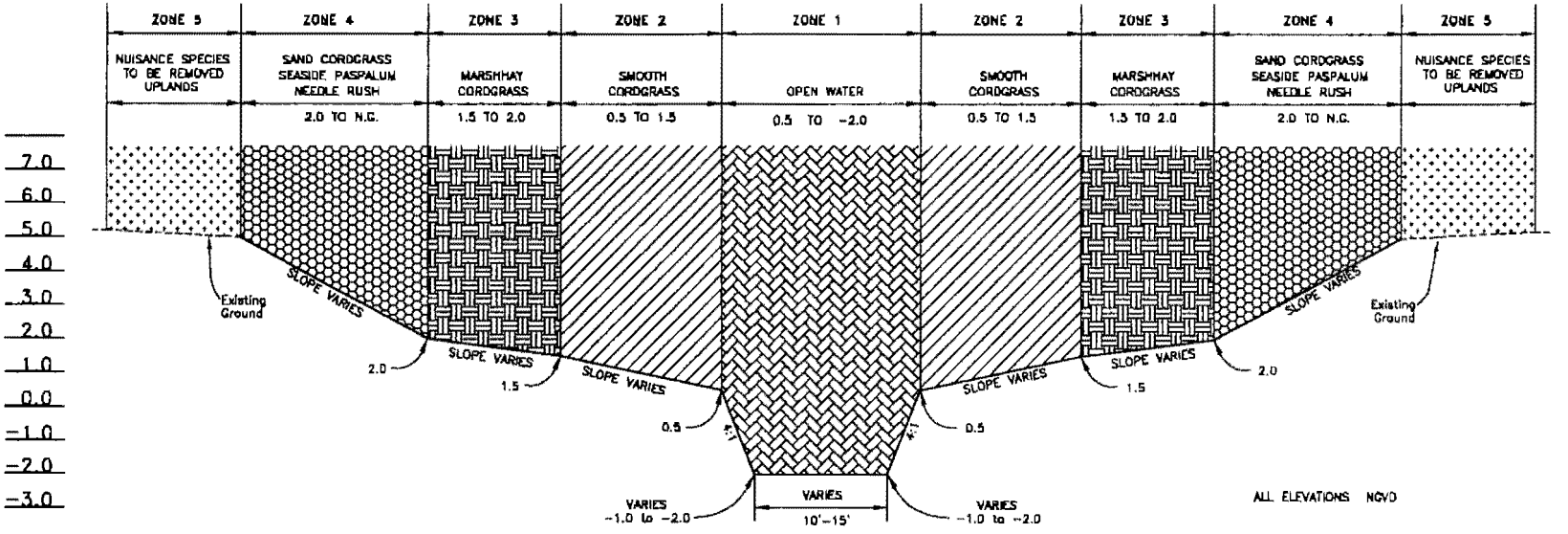
PLANTING SPECIFICATIONS

PATTERN	ZONE	NORTH SIDE ACREAGE	SOUTH SIDE ACREAGE	SCIENTIFIC NAME	COMMON NAME	PLANTING ELEVATION	PLANT SIZE	NORTH SIDE QUANTITIES	SOUTH SIDE QUANTITIES
	1	7.55	4.24		Open Water	−2.0 TO 0.5			
	2	29.40	11.02	Sporting alterniflora	Smooth Cordgrass	0.5 TO 1.5	2" pots, min. 6 shoots, 3' o.c.	143,051	53,800
	3	6.00	8.41	Sporting patens	Marshhay Cordgrass	1.5 TO 2.0	2" pots, min. 12 shoots, 3' o.c.	29,382	41,109
	4	0	3.38	Sporting bakeri Paspalum distichum Juncus romerianus	Sand Cordgrass Seaside Paspalum Needle Rush	2.0 TO N.G. 2.0 TO N.G. 2.0 TO N.G.	1 gal. pots, well rooted, 4' o.c. 2" plugs, well rooted, 3' o.c. 2" plugs, min. 8 shoots, 3' o.c.		3,179 5,602 5,602
	5	2.10	9.13		Nuisance Species	UPLANDS	Nuisance Species to be removed		
							Total:	172,433	109,292



TYPICAL PLANTING SECTION

N.T.S.

PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

PLANTING SPECIFICATIONS

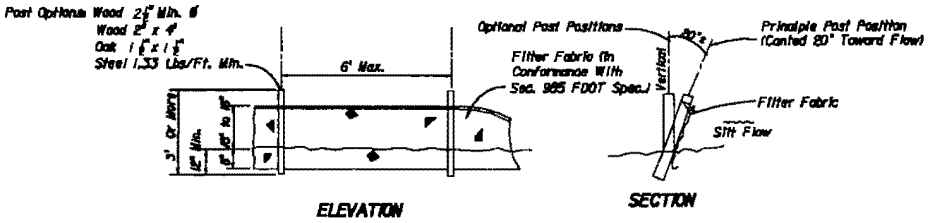
IN: TAMPA BAY
AT: ULMERTON ROAD & I-275
COUNTY OF: PINELLAS
APPLICATION BY: SWFWMD

STATE OF: FLA.

SHEET 10 OF 12

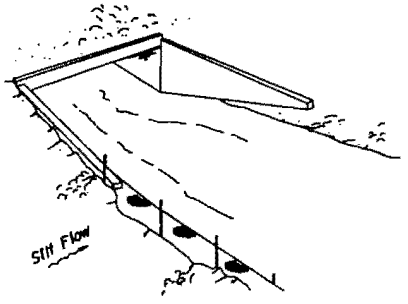
DATE: July 2000

Prepared by: URS Greiner Woodward Clyde Inc.

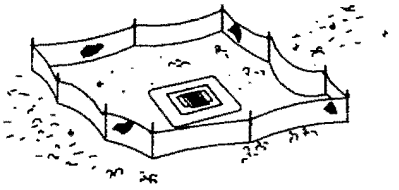


Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

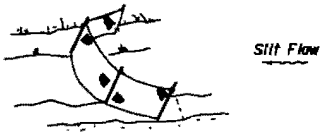
TYPE III SILT FENCE



Type III Silt Fence



Type III Silt Fence Protection Around Ditch Bottom Inlets.



Note: Spacing for Type III Fence to be in accordance with Chart I, Sheet 1 of 3 and ditch installations at drainage structures Sheet 2 of 3.

Type III Silt Fence

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS

BALED HAY OR STRAW BARRIERS & SILT FENCES

FDOT INDEX 102
SCALE: N.T.S.

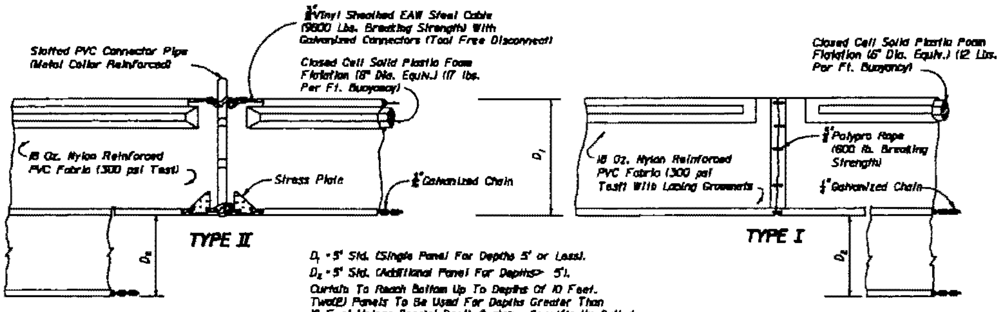
PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

MISCELLANEOUS DETAILS

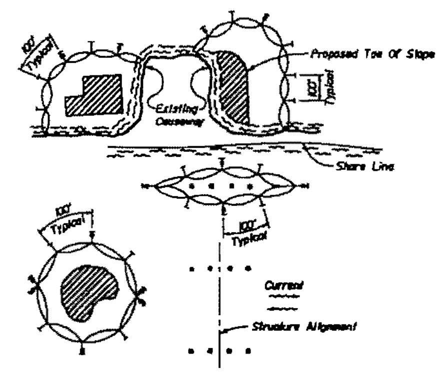
IN: TAMPA BAY
AT: ULMERTON ROAD & I-275
COUNTY OF: PINELLAS STATE OF: FLA.
APPLICATION BY: SWFWMD

SHEET 11 OF 12 DATE: July 2000



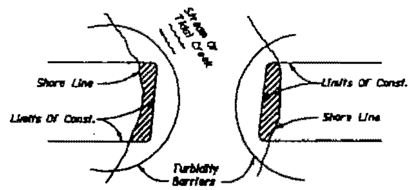
D_1 = 5' Std. (Single Panel For Depths 5' or Less).
D_2 = 5' Std. (Additional Panel For Depths > 5').
Curtain To Reach Bottom Up To Depths Of 10 Feet.
Two(2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.

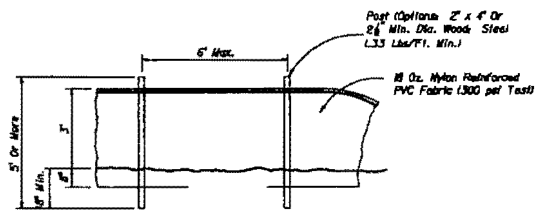
NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



LEGEND

- • Pile Locations
- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action





STAKED TURBIDITY BARRIER

NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the Standard Specifications.

Note:
Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the pay item(s) established in the plans for Floating Turbidity Barrier and/or Staked Turbidity Barrier. Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

GENERAL NOTES

1. Floating turbidity barriers are to be paid for under the contract unit price for Floating Turbidity Barrier, LF.
2. Staked turbidity barriers are to be paid for under the contract unit price for Staked Turbidity Barrier, LF.

FLOATING TURBIDITY BARRIER DETAIL

FDOT INDEX 103
SCALE: N.T.S.

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PURPOSE: MITIGATION/RESTORATION
DATUM: NGVD 1929

SWFWMD
GATEWAY TRACT

MISCELLANEOUS DETAILS

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

SHEET 12 OF 12 DATE: July 2000

FOR PERMIT PURPOSES ONLY

Prepared by: URS Greiner Woodward Clyde, Inc.

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 (Tallahassee) Phone No: (904) 488-8217

County(ies): Polk Location: Sections 25,26,27,28,33,34,35,36 T27S, R24E; Sections 1,2,3,4,11 T28S, R24E; Sections 29,30,31,32 T27S, R25E

IMPACT INFORMATION

(1) WPI: 1147952, FM: 2012091, Int.- 4, US 98 to SR 33 (Sec. 3)**	ERP #:	COE #:
(2) WPI: 1118367, FM: 1974751, SR 540, Thornhill Rd. to Recker Hwy.	ERP #: 4401612.00	COE #: 199401950
(3) WPI: 1118363, FM: 1974711, SR 540, 9th St. to Overlook Dr.	ERP #: 4417859.00	COE #: 199403139

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

Impact Acres / Types:

(1) WPI 1147952
0.41 ac. – 617 (Fluccs code)
0.02 ac. – 641x(Fluccs code)
TOTAL 0.43 Acres

(2) WPI 1118367
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) WPI 1118363
0.06 ac. -- 640 (Fluccs code)
0.35 ac. – 644 (Fluccs code)
TOTAL 0.41 Acres

TOTAL: 6.71 ac.

**Note: This project also has wetlands impacts 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 X Restoration Enhancement Preservation Mitigation Area: **20 acres**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) 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 of wetland & upland habitat on land previously altered by phosphate mining. Establishment of hydrologic, vegetative, and wildlife corridors through Tenoroc Management Area. Establishment of appropriate water quantity and quality of water flow to Saddle Creek will be achieved, thus enhancing headwater flows to the Peace River.

B. Brief description of current condition: Abandoned and partially reclaimed phosphate mined land made up of various landscape features by various clay/sand disposal methods. Tenoroc contains numerous public fishing lakes (Figures E & F -State Fish Management Area) 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 Tenoroc Management area is over 6,000 acres within the southern half of a 12,000-acre mined area (Figure B) that has been evaluated for various forms of enhancement and restoration for several years. Currently, the potential surface water outflow of this portion of the watershed is significantly impounded and produces minimal discharge to Upper Saddle Creek, a headwater contributor to the Peace River.

C. Brief description of proposed work: Regrading areas to restore hydrologic and vegetative connections to various mined and natural wetland systems. These connections will be incorporated into wetland and wildlife corridors to compensate for proposed DOT wetland impacts. In addition, upland habitat conditions will be enhanced and restored, including removal & maintenance to control exotic & nuisance species. The entire watershed is currently being incorporated into a surface water modeling plan to evaluate the hydrologic restoration components.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): All the proposed wetland impacts will occur within the upper watershed of the Peace River in Polk County. The majority of the proposed wetland impacts (5.54 of the total 6.71 acres) will be to forested wetland systems. Those wetland impacts will be mitigated by the creation of forested wetland creek corridors **(minimum 15 acres of forested wetland creation)** within reclaimed uplands (capped clay-settling areas). The non-forested wetland impacts will be mitigated with the creation of marshes **(minimum 5 acres of marsh creation)** with forested wetland tributary corridors to other creek floodplain wetlands. These corridor designs may be incorporated and extended onto adjacent property (Figs. B-D).

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 mitigation bank 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 associated of the proposed impacts in the upper basin, the restoration plan associated with Tenoroc will more appropriately compensate for those impacts. Boran Ranch is predominantly a non-forested restoration project and even though primarily proposed to mitigate for DOT marsh impacts, is also proposed for some forested wetland mitigation credits within the lower portions of the Peace 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 : Currently, there is not an ongoing SWIM freshwater wetland project in the Peace River Basin.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by FDEP
Contact Name: Bud Cates (FDEP) Phone Number: (904) 488-8217
Entity responsible for monitoring and maintenance: DEP/FFWCC

Proposed timeframe for implementation: Commence: 1998 Complete: 2002 (phased construction commences)
Project cost: $504,000 (total) Construction, maintenance & monitoring for minimum three years.
Long-term management & maintenance to be conducted by FDEP/FFWCC.

Attachments

__X__ 1. Detailed description of existing site and proposed work. **Refer to previous description, additional information is included in the Phase I site assessment by FDEP.**

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

__X__ 3. Location map and design drawings of existing and proposed conditions. **Refer to Figs. A-C for location, design plans will be finalized in early 2002.**

__X__ 4. Detailed schedule for work implementation, including any and all phases. **Design & permitting will be finalized in early 2002, construction commences in late 2002.**

__X__ 5. Proposed success criteria and associated monitoring plan. **Success criteria & monitoring plan will be finalized as part of the final design phase. Anticipated monitoring plan will include vegetative transects within proposed restored and created wetlands. In addition to the proposed wetland mitigation associated with the referenced roadway projects, wetland creation & restoration at Tenoroc will also mitigate wetland impacts associated with the construction of the Polk Parkway. Therefore, the Tenoroc design will include monitoring (hydrologic, vegetative, wildlife) of created wetlands for an area larger than the 20-acres of mitigation proposed for these DOT projects. It is possible the actual mitigation area will extend north onto the Williams Property (Figs B-D). If so, the same restoration conditions and preservation (via conservation easements) will be implemented as part of the design.**

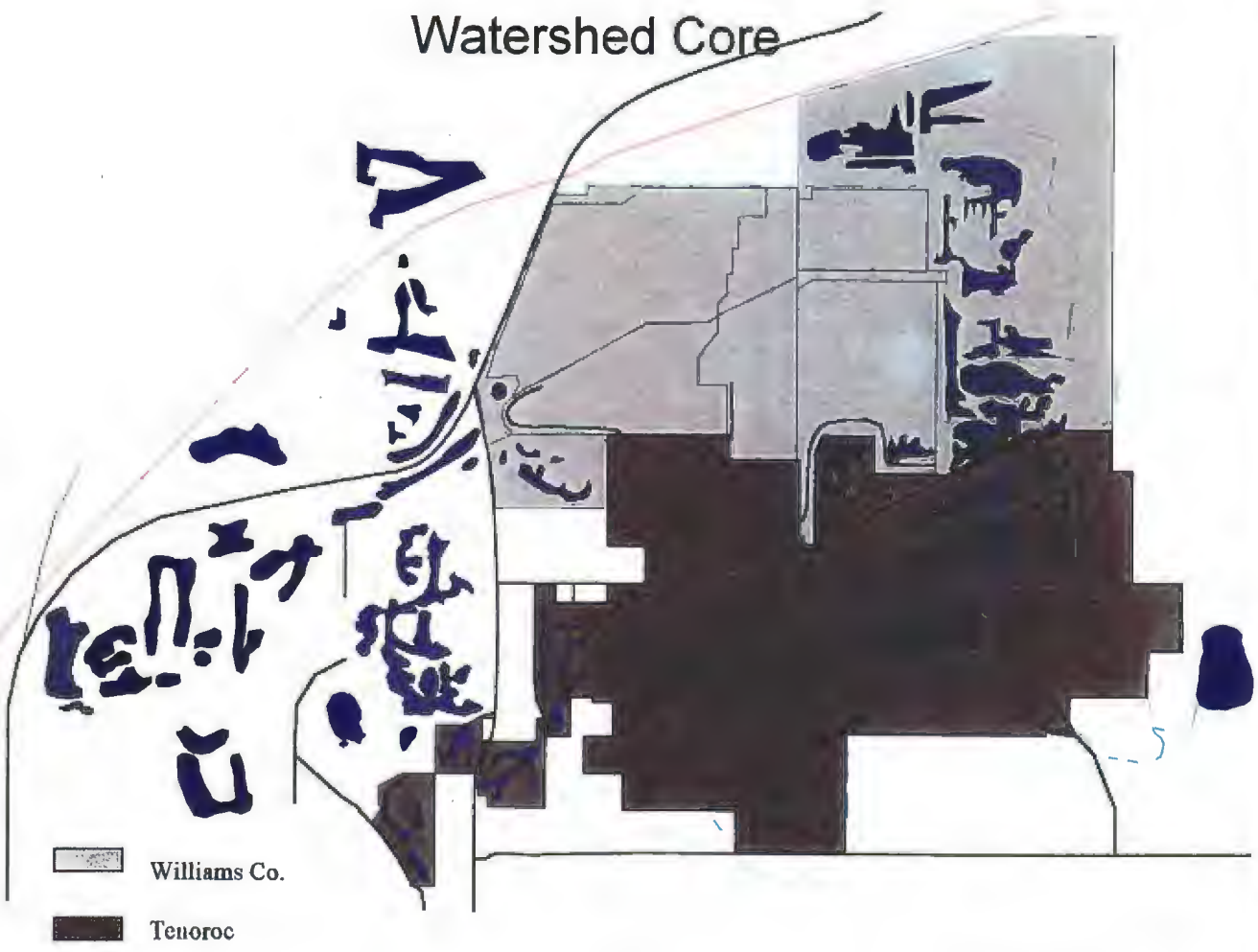
__X__ 6. Long term maintenance plan. **A maintenance plan will be finalized as part of the design phase, will include various mechanical, herbicide, and prescribed burn methods to control nuisance/exotic species for a minimum of three years. A long-term management program will be established & implemented by the Florida Fish & Wildlife Conservation Commission.**

__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. It is noted the I-4, Segment 3 impacts will probably be revised again for the 2002 DOT Mit. Plan. As of the fall, 2001, highway design has been halted pending final decisions on the proposed R/W criteria and high speed rail issues.**

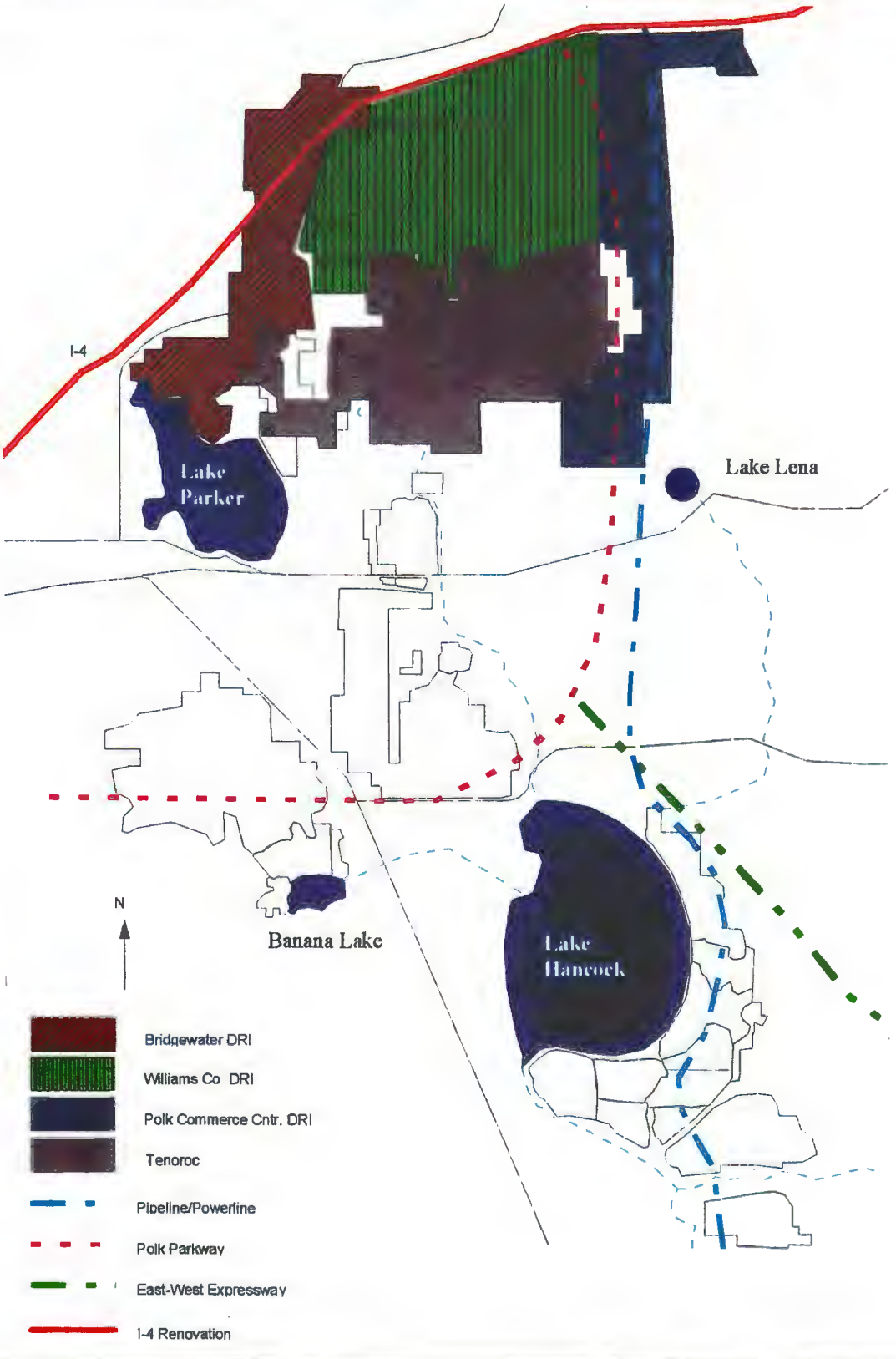
FDOT - District 1
MITIGATION SITE
(Peace River Basin)

TENOROC / SADDLE CK.
RESTORATION PROJECT
(SW 47)

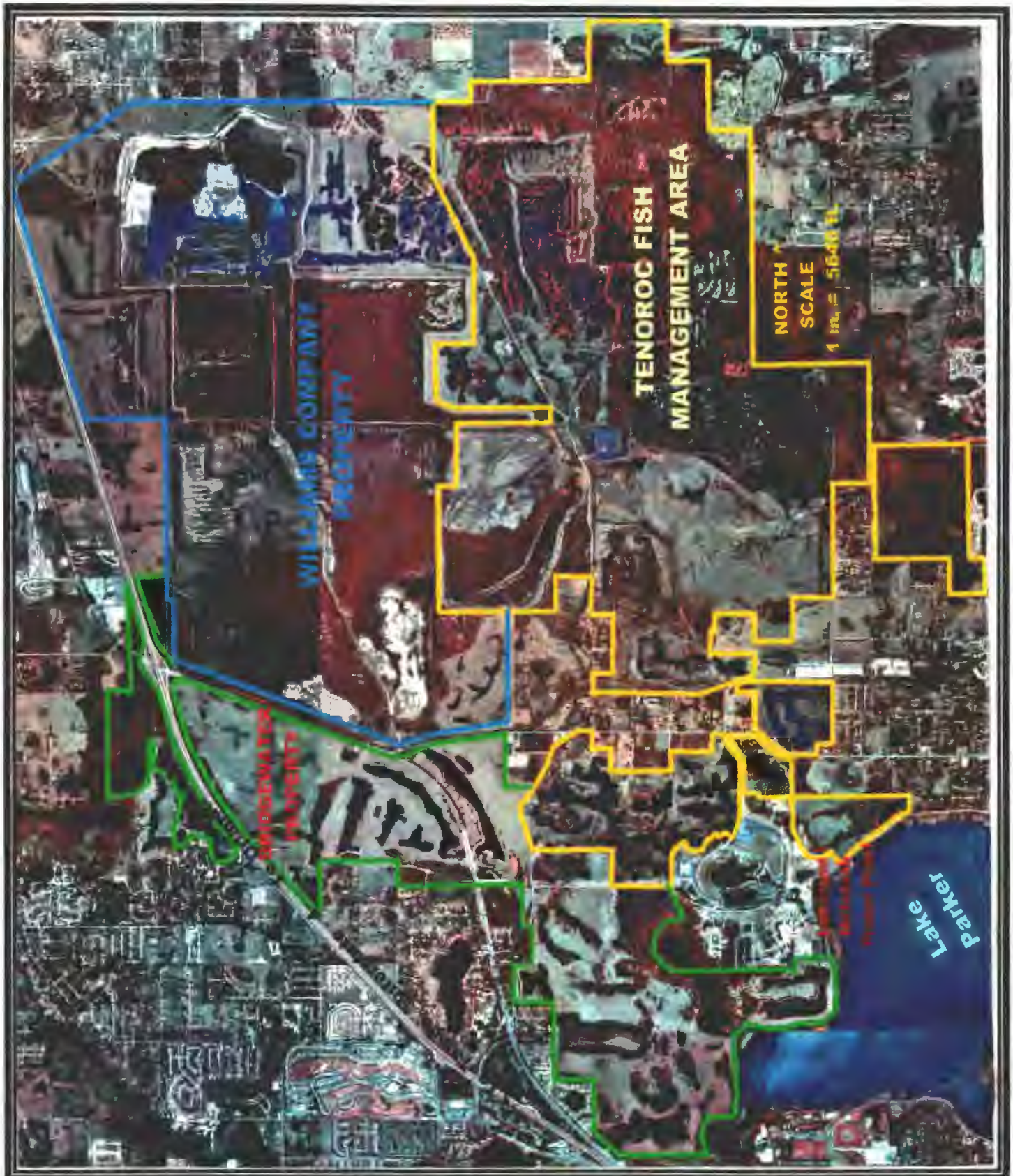
FIGURE A
LOCATION MAP



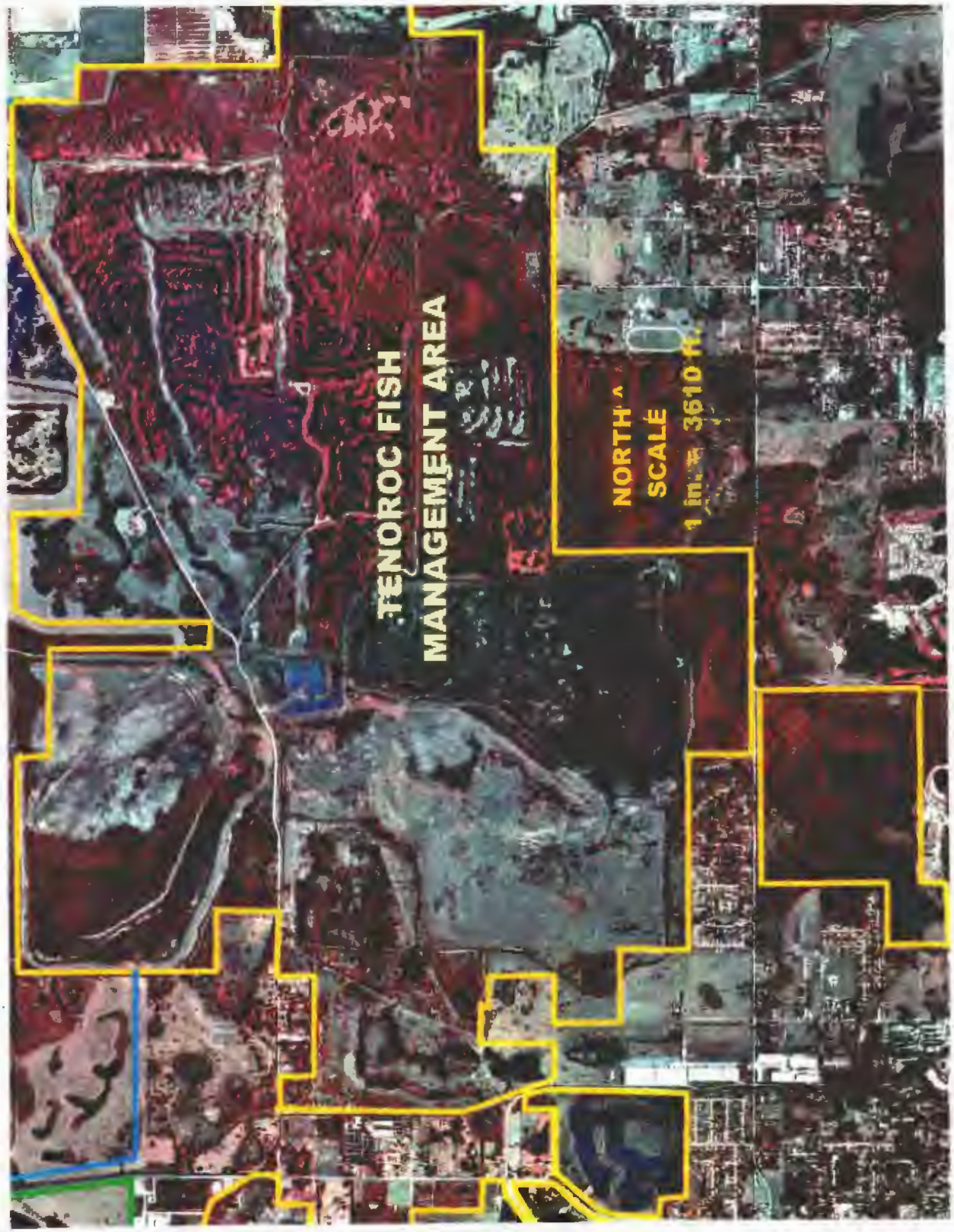
FDOT - District 1 **MITIGATION SITE** **(Peace River Basin)**	**TENOROC / SADDLE CK.** **RESTORATION PROJECT** **(SW 47)**	**FIGURE B** **SADDLE CREEK** **WATERSHED CORE**



FDOT - District 1 MITIGATION SITE (Peace River Basin)	**TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)**	**FIGURE C PROPOSED DEVELOPMENT PROJECTS**



FDOT - District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)	FIGURE D INFRARED AERIAL (1995) UPPER SADDLE CREEK BASIN



FDOT - District 1 MITIGATION SITE (Peace River Basin)	TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)	FIGURE E INFRARED AERIAL (1995) TENOROC FISH MANAGEMENT AREA

FDOT - District 1 MITIGATION AREA (Peace River Basin)	TENOROC / SADDLE CK. RESTORATION PROJECT (SW 47)	FIGURE F LAKES & SURFACE WATER FLOW MAP

Due to variation in past mine reclamation methods, Tenoroc has a range in landscapes. From steep embankments associated with previous clay settling berms, flat terrain within capped clay settling ponds, and several open water lakes that are recognized for supporting excellent fish habitat.

However, with flat terrains, poor drainage features, restrictive soil percolation, and contributing seed sources, the vegetative species generated in the capped settling areas (as seen above) are often exotic (particularly Brazilian pepper & cogan grass) or undesirable species. By reconstructing contours to allow meandering creeks and retention marshes, upland and wetland habitat communities will be created within the capped areas that replicate native ecosystem communities.

FDOT - District 1 Mitigation Site (Peace River Basin)	**TENOROC / SADDLE CREEK (SW 47)**

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: Mitigation Credit Sales, Inc. Phone No: 407-275-5825
County(ies): Polk, Osceola Location: Sec. 7,17,20,29,31,32 T26S, R28E

IMPACT INFORMATION

DOT : WPI 1112576, US 27-Lake Glenada to Hal McRae ERP #: 4412845.06 COE #: 199342314
WPI 1147943, I-4, US 27 to Osceola County (Seg. 7) ERP #:_____ COE #: _____
Drainage Basin(s) (names): Kissimmee Ridge Water Body(s): None SWIM water body? (Y/N) N

Impact Acres / Types: WPI 1112576 0.34 ac. 640 (Fluccs code) WPI 1147943 0.79 ac. 630 (Fluccs code)
0.05 ac. 611 (Fluccs code)
TOTAL : 0.39 ac. **TOTAL 1.18 Acres**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _X_ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **1.18 Credits**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

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

Project Description

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

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.

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 adequately compensates for the proposed wetland impacts.

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

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: Mitgation Credit Sales, Inc. – Debbie Chunn Phone No: 407-275-5825

Entity responsible for monitoring and maintenance: Reedy Creek Mitigation Bank
Proposed timeframe for implementation: Commence: _____ Complete: Currently Maintenance & Monitoring
Project cost: WPI 1112576 - $ 13,650 (total); ($35,000 cost/credit x 0.39 impact acres)
WPI 1147943 - $ 30,020 (total); ($38,000 cost/credit x 0.79 impact acres)
TOTAL $43,670

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.**

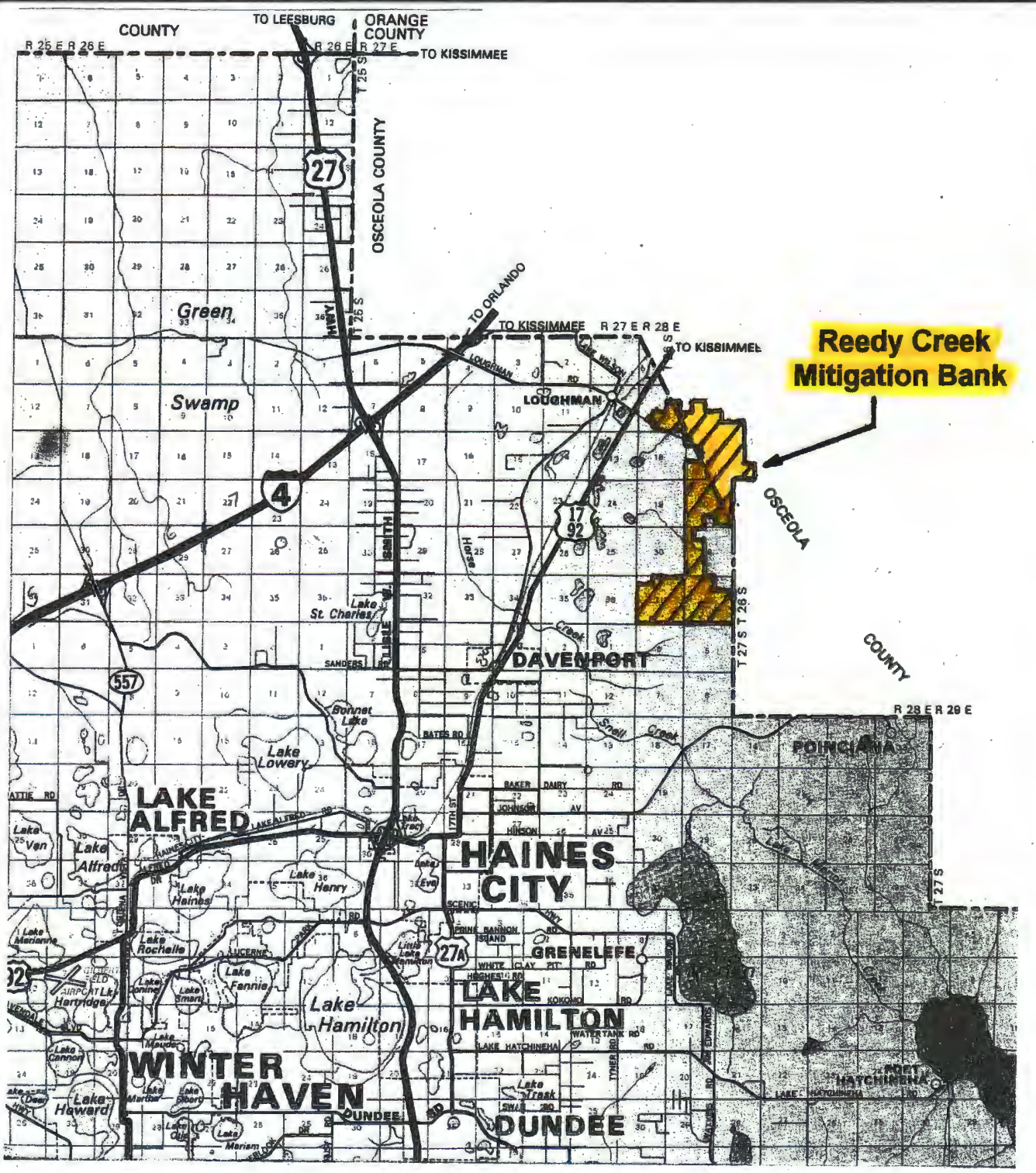
__X__3. Location map and design drawings of existing and proposed conditions. **Figure A – Location Map, Figure B depicts wetland enhancement & preservation, upland restoration areas.**

__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.**

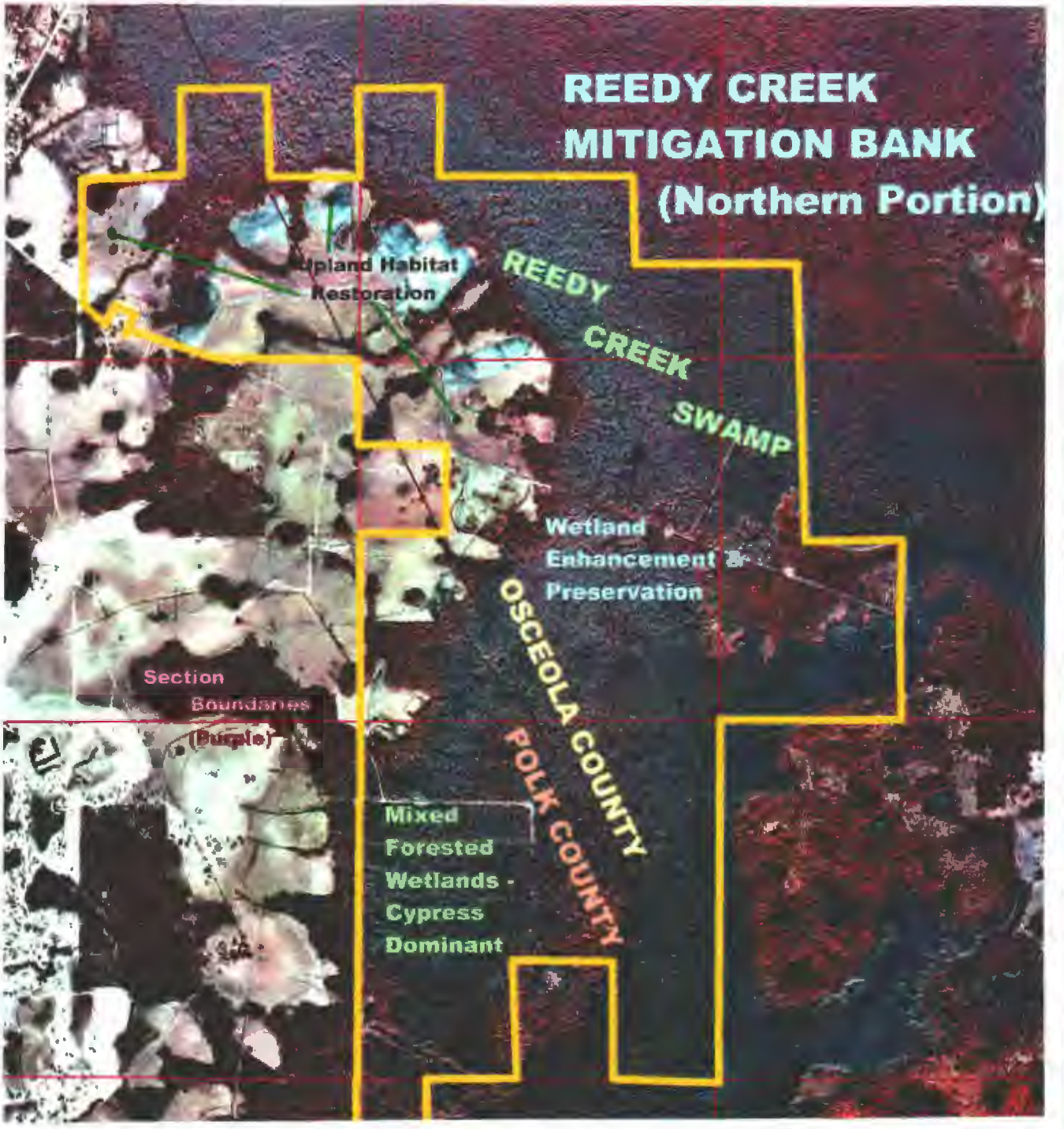
__X__6. Long term maintenance plan. **Reference permit conditions.**

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



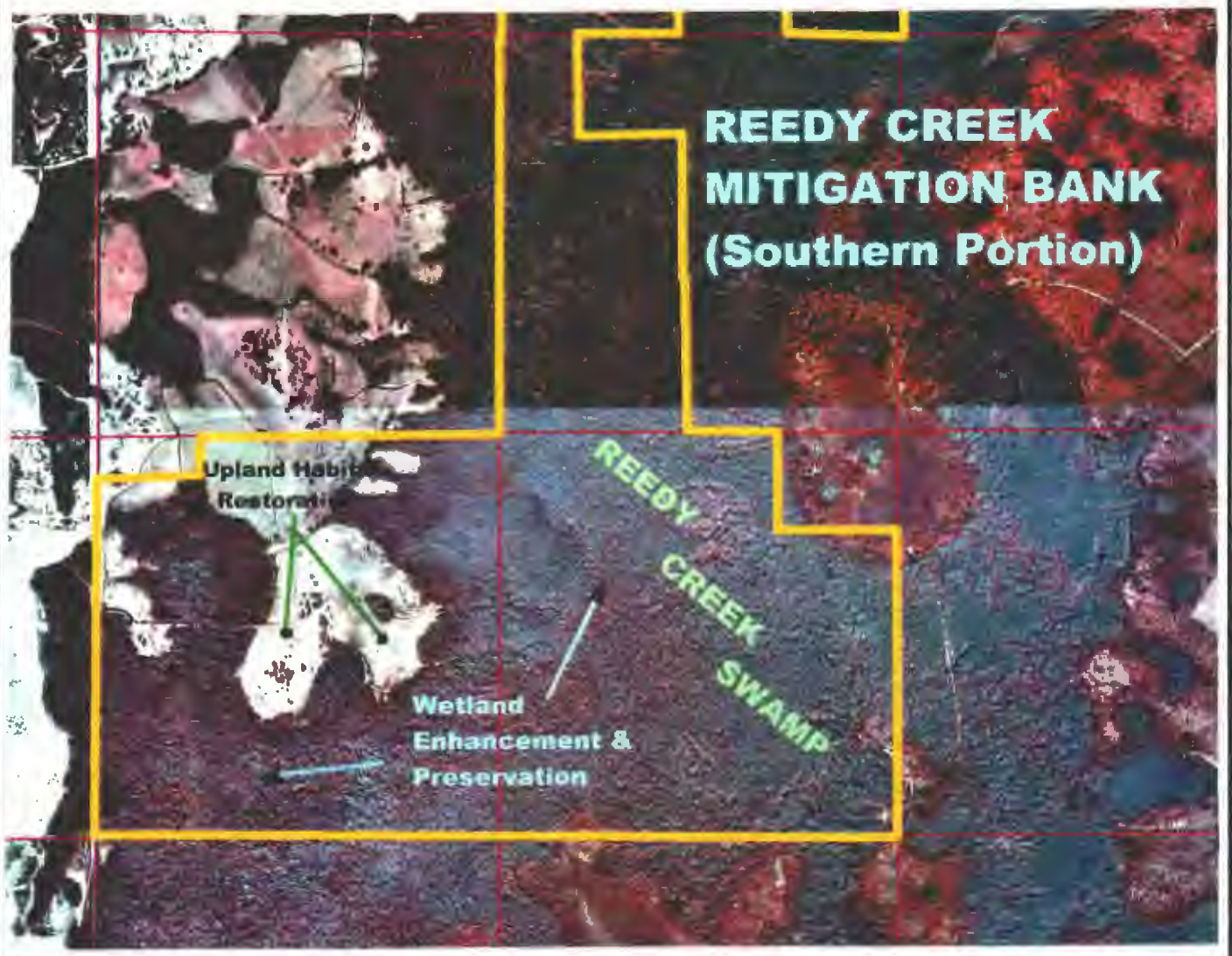
NORTH ^ SCALE 1 in. = 3 miles

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. Environmental Scientist Phone No: (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/N) 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: **10 acres**

SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) Y

Mitigation Bank? (Y/N) N Drainage Basin(s): Manatee River Basin

Water Body(s): Manatee River, Tampa Bay, Terra Ceia Bay SWIM water body? (Y/N) Y

Project Description

A. **Overall project goals:** Restoration and enhancement of various types of saltwater wetlands and upland habitat within a 1700-acre publicly-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 (refer to 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. Once permitted, the disturbed uplands and wetlands will have exotic/nuisance vegetation removed, and where needed, graded to appropriate elevations to restore appropriate native habitats. Once grades are established, the area will be planted with native species. This will include various upland & wetland habitats, including those needed to mitigate the proposed DOT wetland impacts. 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, 3 acres of saltwater wetland creation and enhancement north of the mangrove area, and 4 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 marsh 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, 3 acres of saltwater wetland enhancement and creation, and 3 acres of upland habitat enhancement/restoration** will be conducted by removing exotic/nuisance vegetation. 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, restoration, and creation activities will result in a cumulative ratio of 19:1 compared to the proposed impacts, and will adequately 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 publicly-owned land in need of major habitat restoration & enhancement.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Southwest Florida Water Management District or designee
Contact Name: Brandt F. Henningsen, Ph.D., Sr. Environmental Scientist Phone Number: (813) 985-7481 ext. 2202
Entity responsible for monitoring and maintenance: Southwest Florida Water Management District or designee
Proposed time frame for implementation: Commence: Design in 2000-2001 Complete: December 2002
Project cost: $ 46,175 (total); attach itemized cost estimate

Mangrove Enhancement & Creation (exotics/nuisance species removal - 3 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**

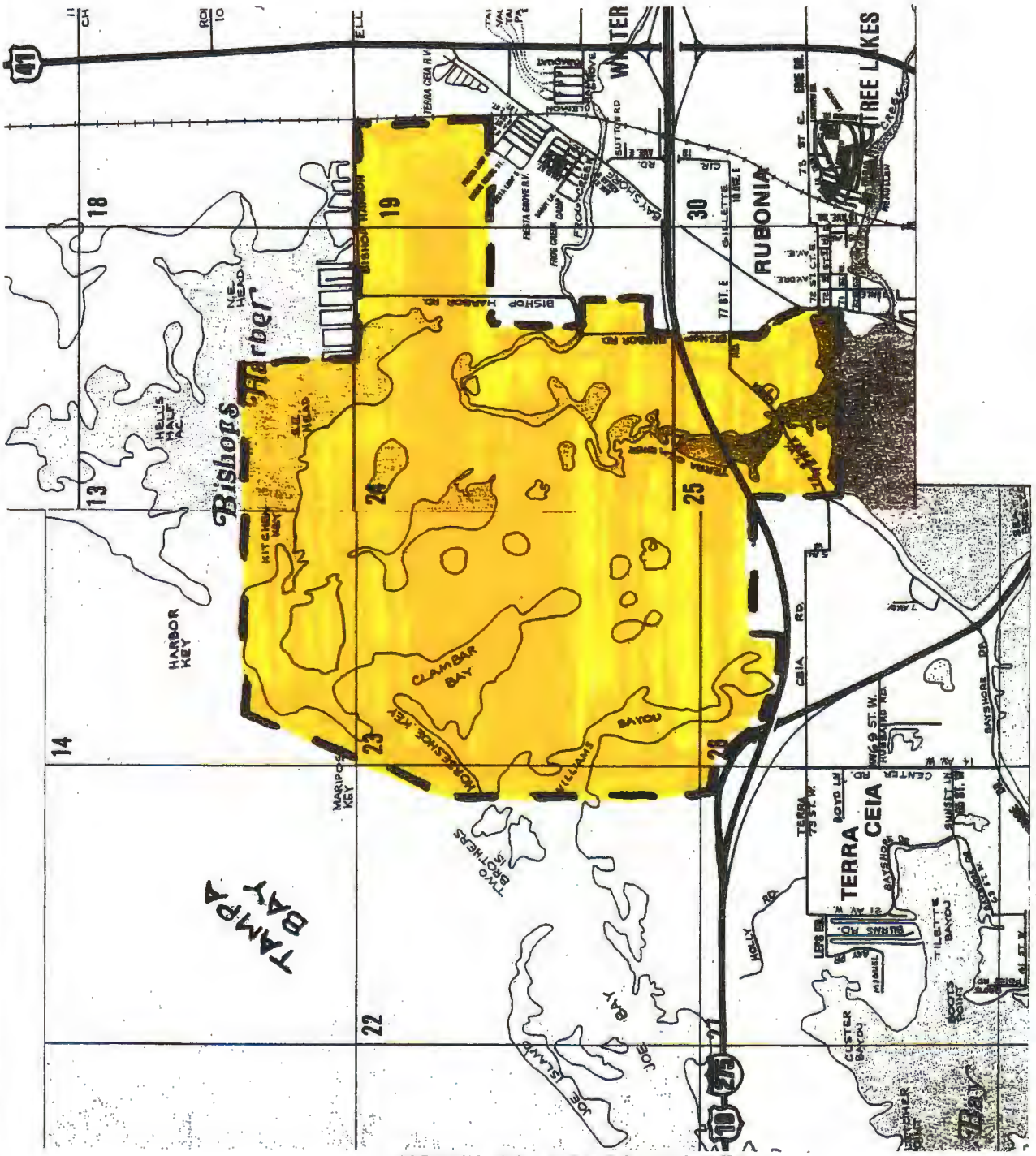
x 3. Location map and design drawings of existing and proposed conditions. **Fig. A - Location Map, design drawings will be included in the 2002 plan.**

x 4. Detailed schedule for work implementation, including any and all phases. **Final design & permitting will be conducted in 2001, construction commencement in 2002.**

x 5. Proposed success criteria and associated monitoring plan. **The success criteria will include less than 10% cover of exotic/nuisance vegetation for the minimum 3 acre area providing mitigation for DOT wetland impacts. The monitoring is expected to be 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.**

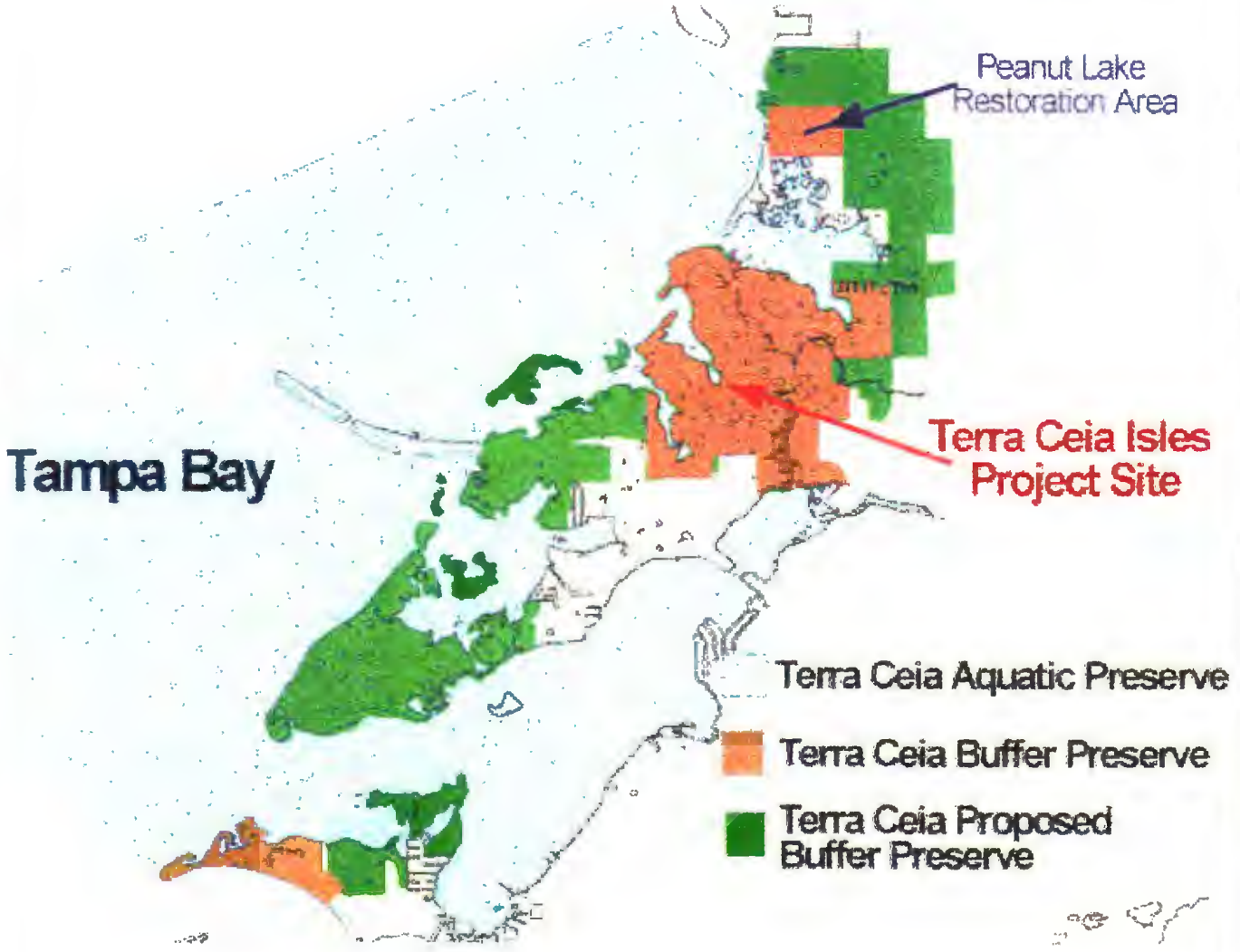
x 6. Long term maintenance plan.
The mitigation is associated with a larger restoration objectives for land purchased by the District. The maintenance of the project is expected to be done by the SWFWMD with assistance from FDEP staff. The maintenance will be primarily related to control of invasive 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). **Refer to response to Comment D. It is noted that this SWIM project was also intended to mitigate for 0.50 acre impact associated with another DOT project (WPI 1115478, SR 64 - CR 675 to East of Myakka River Bridge). This DOT project was permitted without requiring mitigation and removed from the impact inventory prior to the 2001 DOT mit. plan. However, due to the large-scale restoration opportunities at Terra Ceia, proposed saltwater wetland impacts associated with future DOT projects in the Manatee River Basin will also be evaluated and probably proposed for mitigation through restoration activities proposed at Terra Ceia.**



< 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 (central lat/long): 27*13'48"N 82*13'16"W Central Railroad Grade
27*13'24"N 82*11'52"W Central Deer Prairie Slough

IMPACT INFORMATION

DOT (WPI): 1119215, FM 1979251, SR 72 (Big Slough – DeSoto C/L) ERP#: 4318471.00 COE #: 199802683
DOT (WPI): 1119303, FM 1980131, SR 72 (Deer Prairie-Big Slough) ERP#: 4418399.00 COE #: 199802683
DOT (WPI): 1110167, FM 1938131, SR776 (Sunnybrooke, W. of CR 771) ERP#: 4405004.00 COE#: 199500040

Drainage Basin(s): Myakka River Water Body(s):Big Slough Deer Prairie Slough SWIM water body? (Y/N) 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)
WPI 1110167 0.25 ac. 640 (Fluccs code)
TOTAL: 2.61 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation **1.5 ac.** Restoration **34 ac.** Enhancement ___ Preservation Mitigation Area: **35.5 acres**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N If yes, give DEP/WMD mit bank permit #: _____ COE # _____
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 surficial 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 other 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. 3) As depicted on Figure E, additional enhancement was originally proposed by replacing 3 culverts with 9 culverts in the South Deer Prairie Slough. However, after additional evaluation, it was determined the culvert replacement was not required for

hydrologic enhancement. However, 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 2.31 acres of proposed marsh habitat impacts, a cumulative mitigation ratio of 12:1 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 not any 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 Belina Perry, Park Biologist Phone Number: 941-361-6511

Entity responsible for monitoring and maintenance: Same
Proposed timeframe for implementation: Commence: Spring, 2001 Complete: Spring, 2001 (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**

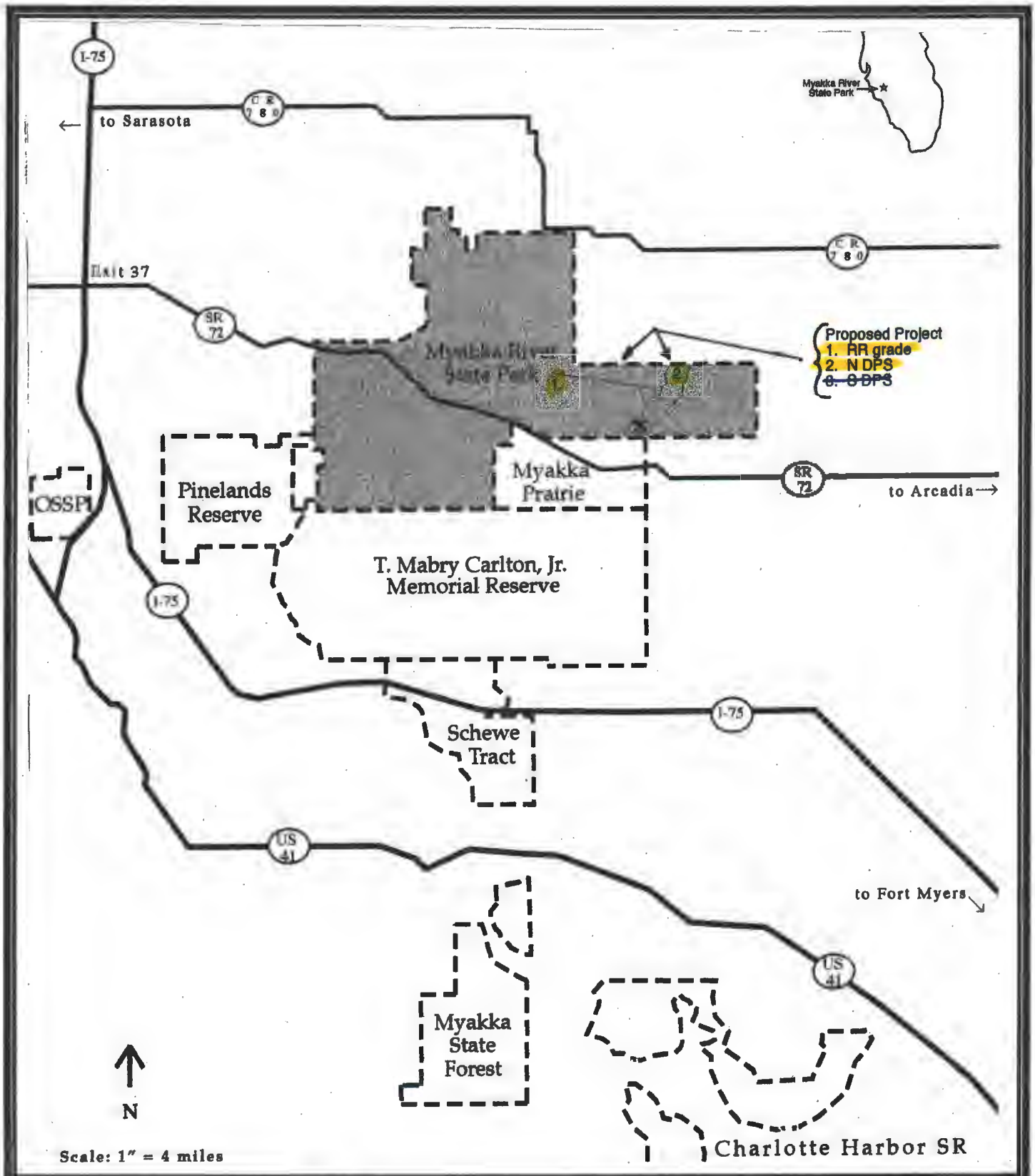
_X_ 3. Location map and design drawings of existing and proposed conditions. **Fig. C – Design Drawings**

_X_ 4. Detailed schedule for work implementation, including any and all phases. **Construction, Spring 2001; followed by 2 years of annual monitoring reports to document site conditions.**

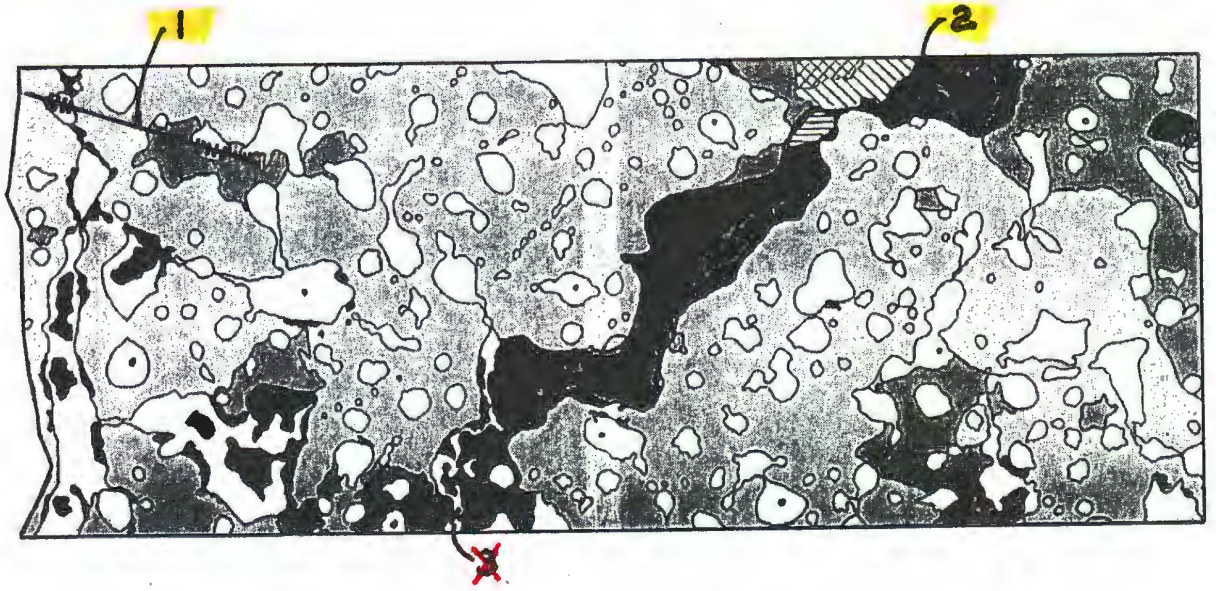
__X__ 5. Proposed success criteria and associated monitoring plan. **Success criteria for the marsh restoration, minimum of 70% vegetative coverage (outer 30 ft. adjacent to vehicular crossing area approx. 15 ft. wide) within 2 years after construction & less than 10% exotic/nuisance species. For the 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 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).**

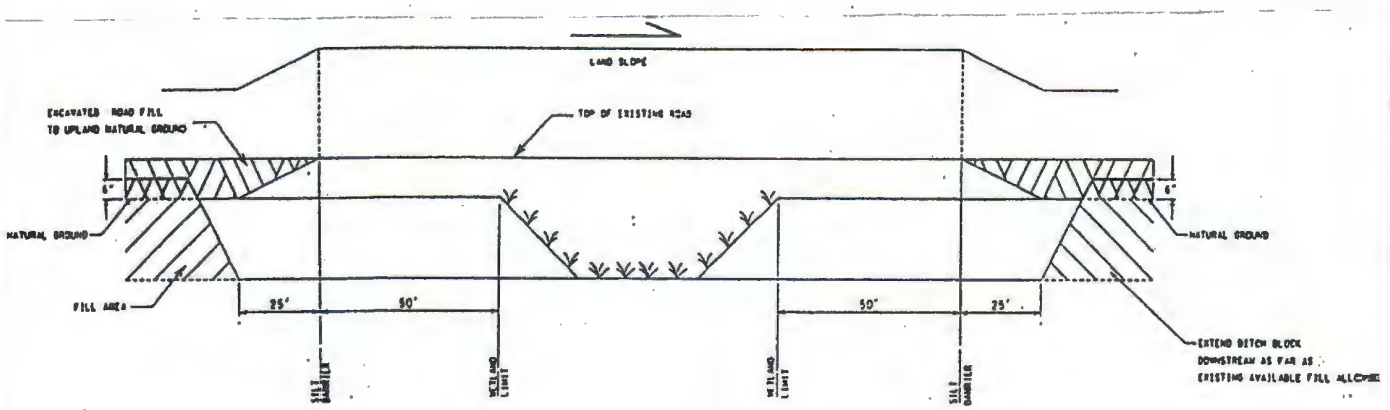
__X__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).**Refer to previous response under Comment D. Even though this restoration activity is extensive relative to the proposed wetland impacts, it has been determined that eliminating the entire railroad 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.**



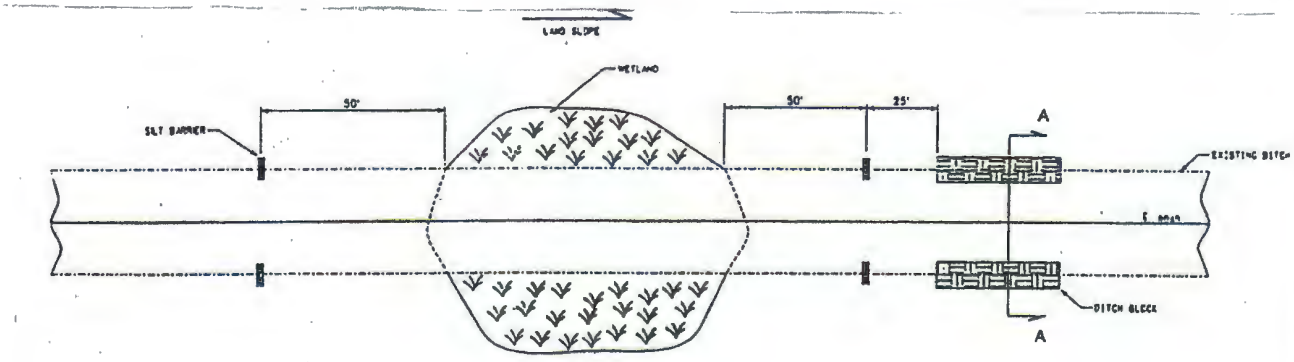
FDOT - District 1 **MITIGATION SITE** **(Myakka River Basin)**	**MYAKKA STATE PARK** **(SW 51)**	**FIGURE A** **LOCATION MAP**



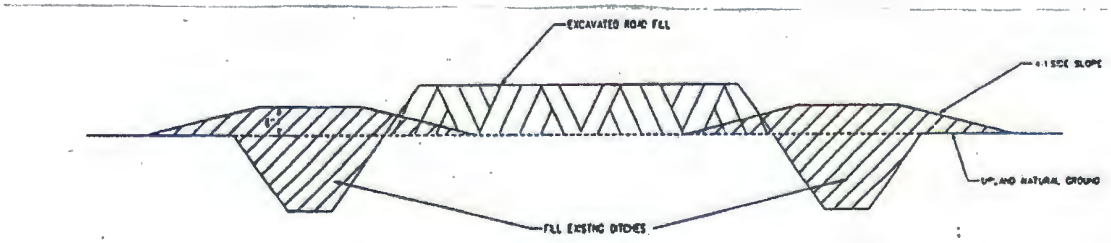
FDOT - District 1 MITIGATION SITE (Myakka River Basin)	**MYAKKA STATE PARK (SW 51)**	**FIGURE B HABITAT MAP & RESTORATION AREAS**



DITCH PROFILE N.T.S.

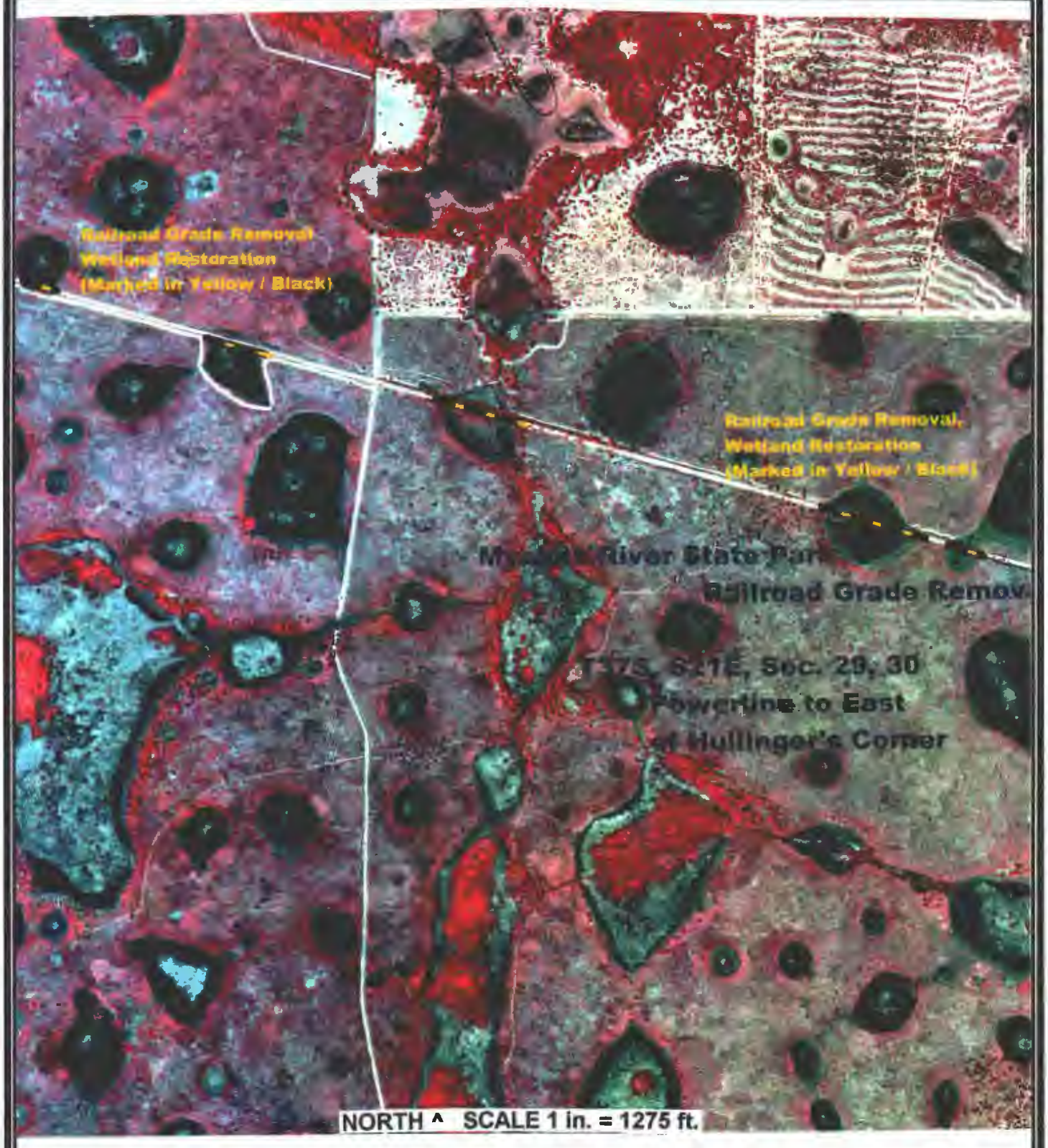


ROAD PLAN VIEW N.T.S.

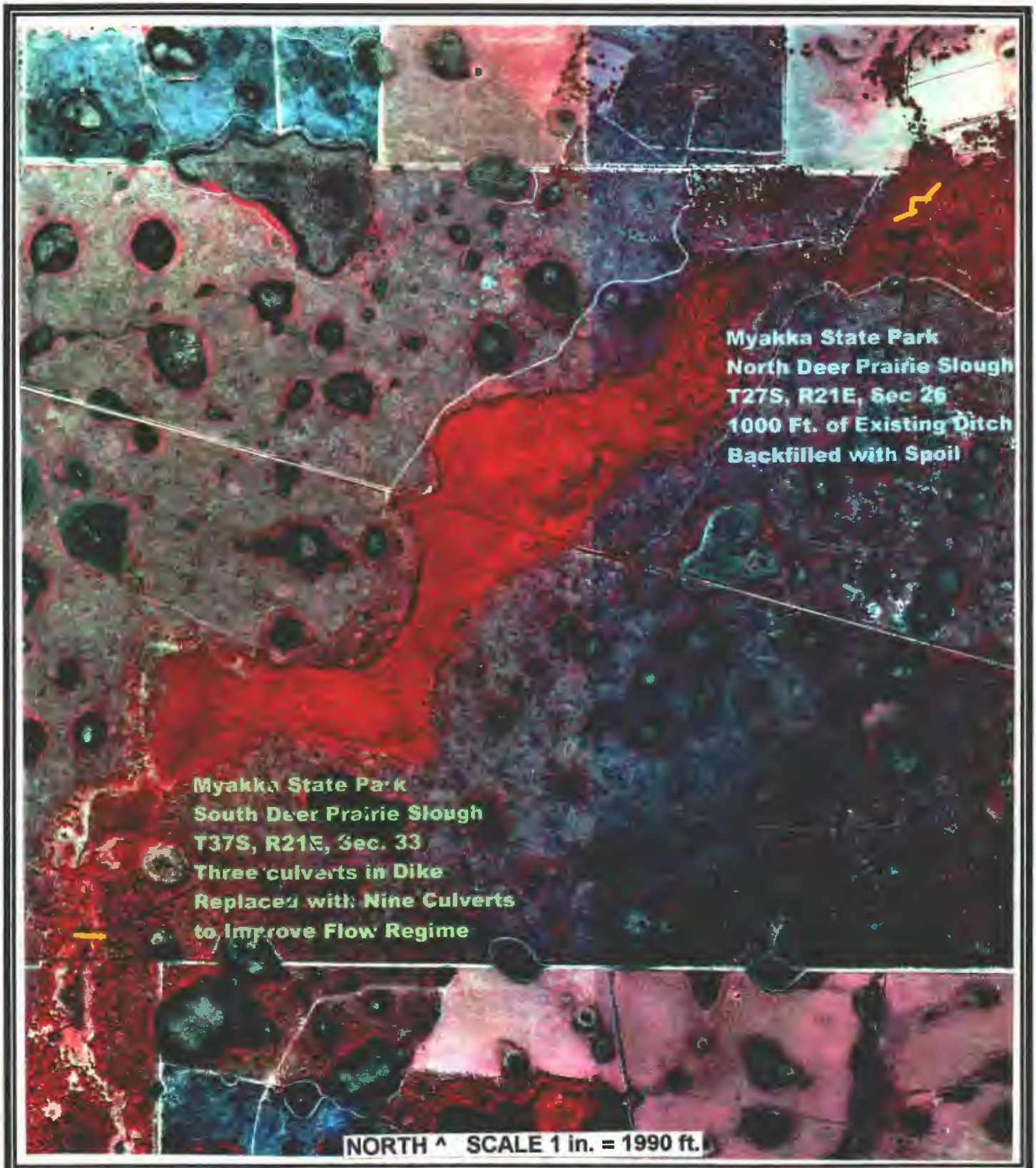


TYPICAL SECTION A-A N.T.S.

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

DOT:	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

Drainage Basin(s): Myakka River (1110148), Peace River (1984711, 4046971) Water Body(s):SWIM water body? (Y/N) Y

Impact Acres / 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)	**TOTAL:**	**4.99 Acres**

*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."

** Note - This roadway project has an additional 8.92 acres of wetland impacts that being mitigated through restoration activities at "SW 31-Cattle Dock Point."

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _x__ Restoration _x__ Enhancement ___ Preservation Mitigation Area: **4.99 Credits***
* Note - The quantity of credits required to compensate for the 2.75 acres of mangrove impact (FM 4046971) has not been determined as of the September, 2001. At the most, 2.75 credits will be required to be purchased.

SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) Y
Mitigation Bank? (Y/N) Y If yes, give DEP/WMD mit bank permit #: 362434779 COE # _____
Drainage Basin(s):Charlotte Harbor Water Body(s):Charlotte Harbor SWIM water body? (Y/N) 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, as needed, 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.

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 include mangroves associated with the widening of the I-75 Bridge over the Peace River, within close proximity where the Peace River connects with Charlotte Harbor (Figure A, Location Map & Mitigation Service Area). Since the I-75 Bridge is within the lower Peace River basin, on-site mangrove restoration (SW-69) is required to adequately compensate for wetland impacts in the basin (cumulative impacts) with a portion of the mangrove impacts being mitigated in the mitigation bank. The other proposed impacts include open water bay & estuaries (Fluccs 540), a portion of the total proposed impacts that also require compensation within the Myakka River basin (SW 31) in order to adequately address cumulative impacts. Little Pine Island adequately and appropriately compensates for the proposed wetland impacts.

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, that project will be partially mitigating for WPI 1110148, a roadway project within a few miles and similar habitat impacts as the proposed restoration components of Cattle Dock Point. In order to complete the project objectives of Cattle Dock Point and provide for some restoration at Little Pine Island, it was determined the proposed wetland impacts within the basin could be compensated through use of a SWIM project and a private mitigation bank.

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 for implementation: Commence: 1996 Complete: When the seven phases meet permit success criteria

Project cost: $232,630 (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 + $4000 (Impact Assessment) = $149,750

* Note - The total impact acreage to be mitigated on-site (SW 69) and at the mit. bank, quantity of credits, and cost associated with conducting the functional assessment of the impact at the I-75 Bridge have not been determined by September, 2001. Therefore, these costs are only estimates.

Mitigation Project - Little Pine Island Mitigation Bank, Page 3 of 3

Attachments

__x__ 1. Detailed description of existing site and proposed work. **Refer to previous discussion & permits.**

__x__ 2. Recent aerial photograph with date and scale. **Attached aerial and site photographs.**

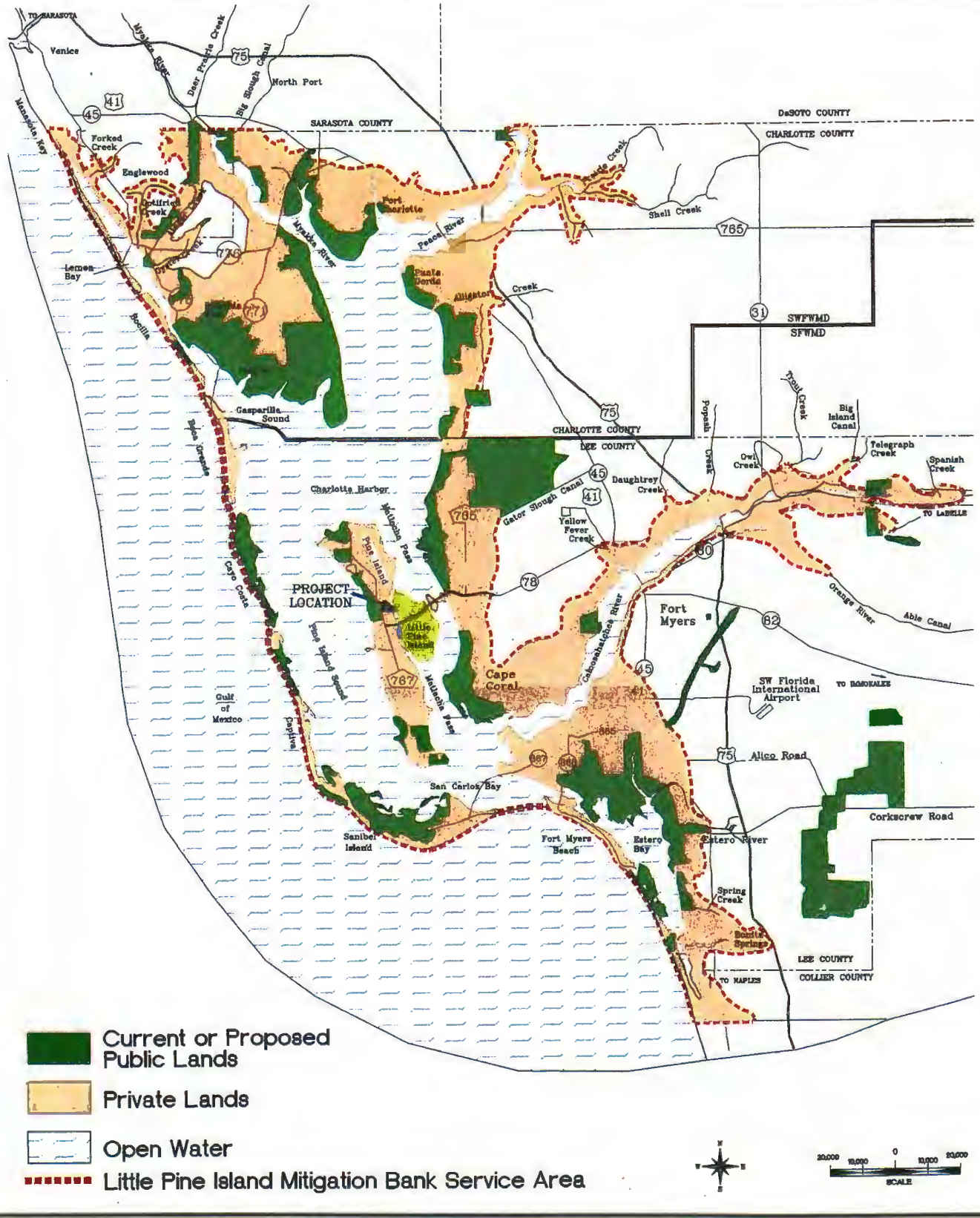
__x__ 3. Location map and design drawings of existing and proposed conditions. **Figure A - Location Map, Figures B & C - cross section drawings of existing vegetative conditions and proposed ditch blocks.**

__x__ 4. Detailed schedule for work implementation, including any and all phases. **Construction activities are ongoing for seven phases until complete.**

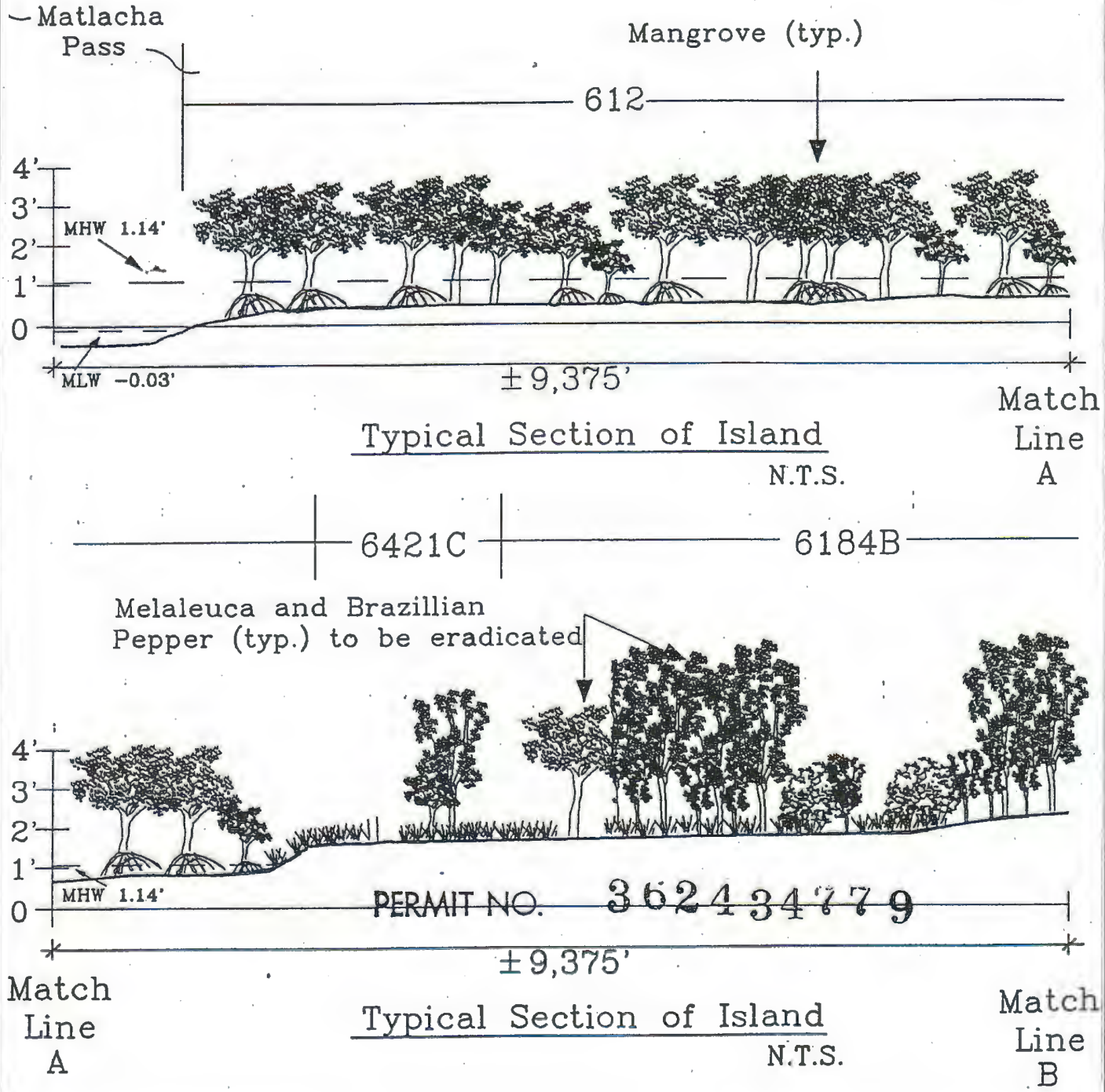
__x__ 5. Proposed success criteria and associated monitoring plan. **The monitoring plan includes an extensive quantitative analysis procedure that includes hydrologic, vegetative, and wildlife evaluation as stipulated in the permit. The success criteria requires percent cover, presence, and richness of various flora and fauna species, also stipulated in the permit.**

__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.**

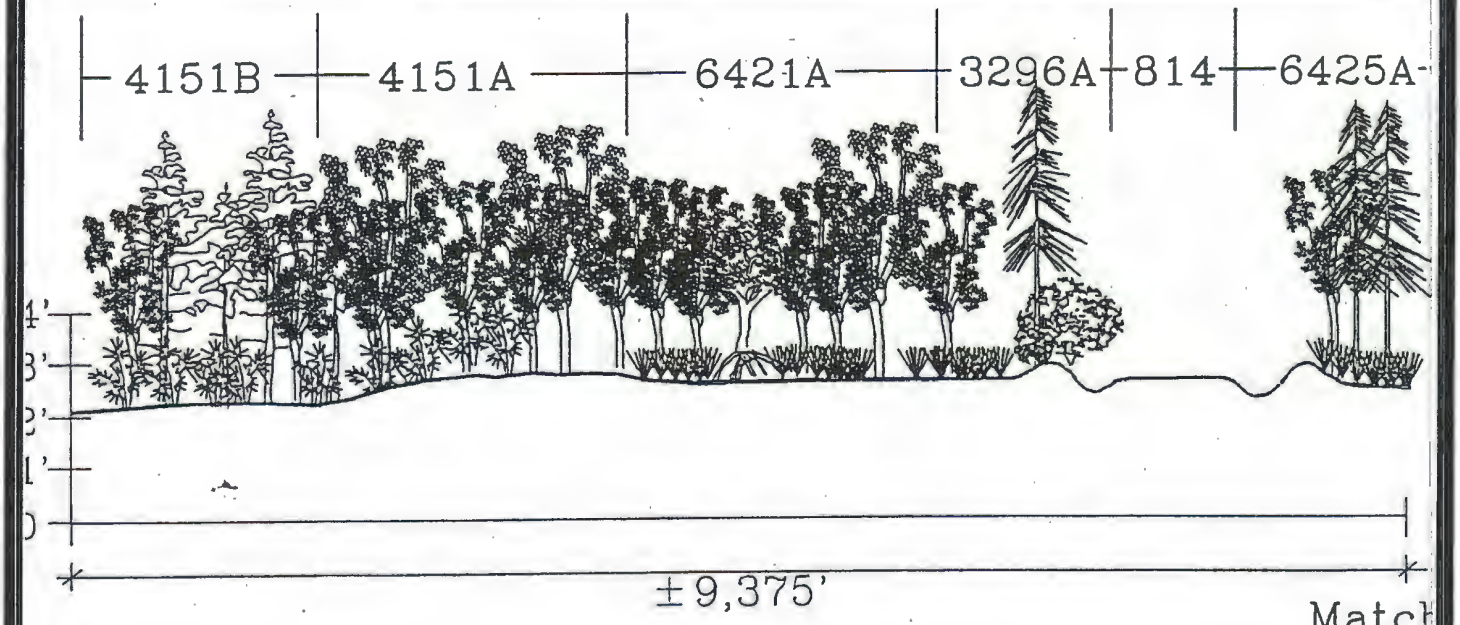
__x__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).**Refer to previous discussion under Comment D.**



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

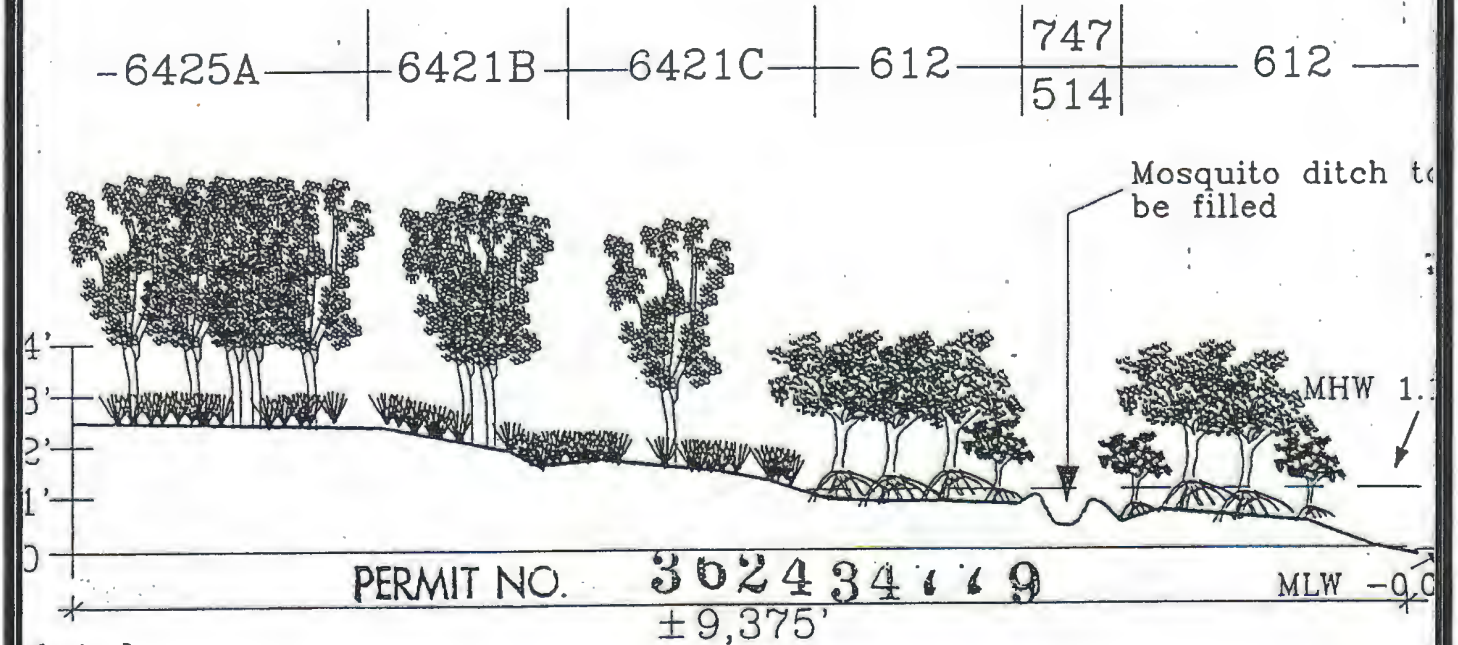


FDOT - District 1 MITIGATION AREA (Charlotte Harbor)	**LITTLE PINE ISLAND MITIGATION BANK (SW 52)**	**FIGURE B TYPICAL VEGETATIVE CROSS SECTION**



Typical Section of Island

N.T.S.



Typical Section of Island

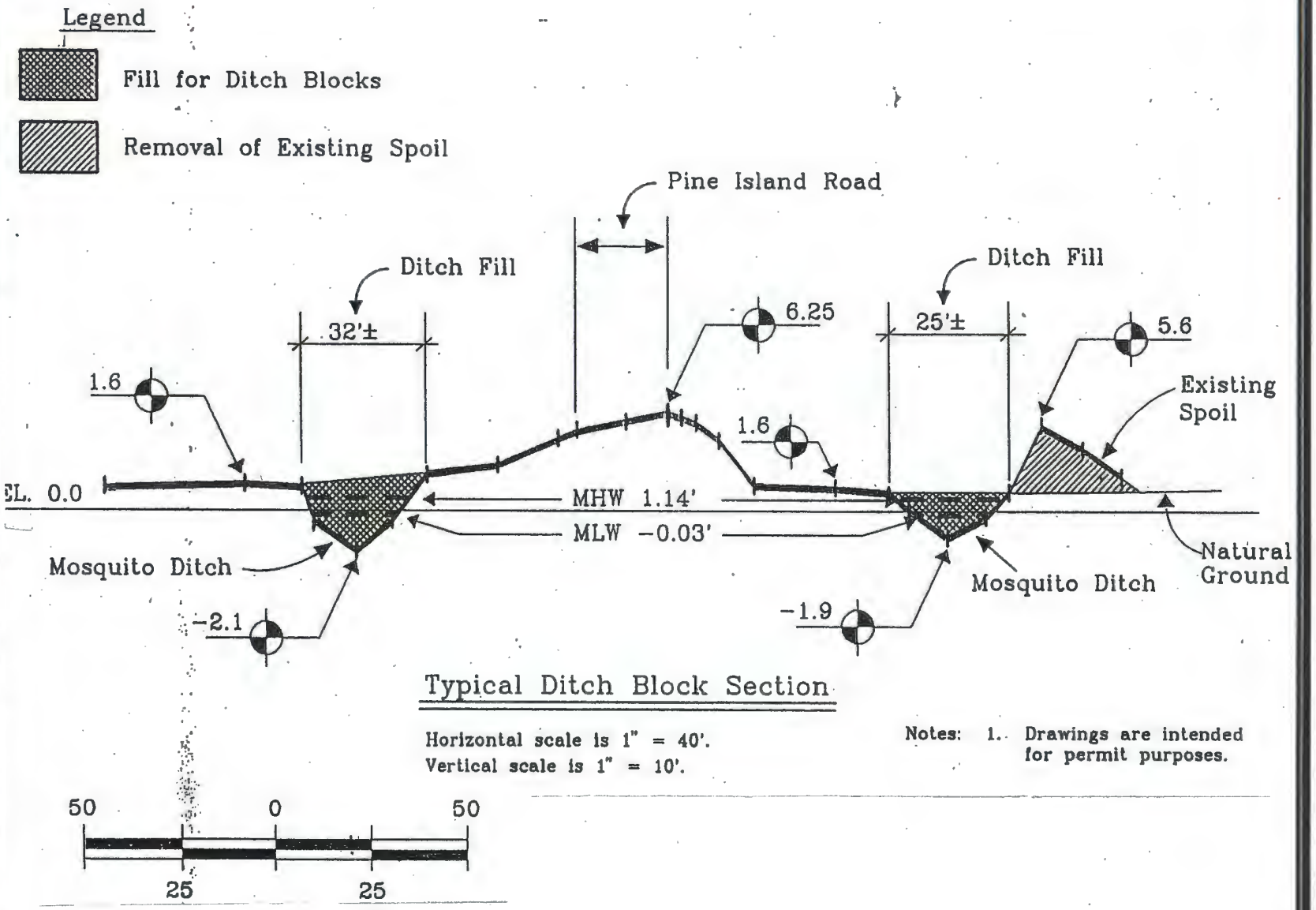
N.T.S.

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, Florida Environmental, Inc. Phone No: (941) 624-2911

County: DeSoto Location: Section 29, T38S, R23E

IMPACT INFORMATION

(1) WPI 1121259, FM 1986401, Ft.Green/Ona Rd.-Vandolah to SR 62 (Seg. 1) ERP #:4317734.00 COE #:199801201

(2) WPI 1110453, FM 1938851, SR 72 – Sarasota Co. Line to SR 70 ERP #:4317646.00 COE#: 199801103

(3) WPI 1111286, FM 1941021, US 17 (SR 35)-SR 64 to Peace River Bridge ERP #:4316955.00 COE#:199500627

(4) WPI 1110145, FM 1937911, US 17 (SR 35)-CR 74 to CR 764 North ERP #:4413562.02 COE #:199500627

(5) WPI 1121257, FM 1986371, Ft.Green/Ona Rd.-Vandolah to N.Vandolah (Seg. 2) ERP #:4317734.01 COE #:199801201

(6) WPI 1121256, FM 1986371, Ft.Green/Ona Rd.-SR 64 to Vandolah (Seg. 3) ERP #:_____ COE #: _____

(7) WPI 1110152, FM 1937981, US 17 (SR 35)-CR 764 S. to CR 764 N. *ERP #:4413562.02 COE #:199500267

* Permits expired, new applications to be submitted, anticipated same wetland impacts.

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

(1) WPI 1121259 – 2.08 ac. - 617 (Fluccs code)
(2) WPI 1110453 - 1.19 ac. – 615 (Fluccs code)
(4) WPI 1110145 – 0.27 ac. – 630 (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.

(3) WPI 1111286 – 1.84 ac. – 615 (Fluccs code)
0.46 ac. – 641 (Fluccs code)
TOTAL 2.30 ac.
(5) WPI 1121257 – 7.22 ac. – 641 (Fluccs code)
(7) WPI 1110152 - 0.15 ac. – 615 (Fluccs code)
3.32 ac. – 630 (Fluccs code)
TOTAL 3.47 ac.

TOTAL - 21.76 acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _x_ Restoration _x_ Enhancement _x_ Preservation Mitigation Area: **93.2 acres**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) _N Exotic Plant Control Project? (Y/N) _N
Mitigation Bank? (Y/N) _Y If yes, give DEP/WMD mit bank permit #: 4914074.04_ COE # _199601134
Drainage Basin(s) (names): Peace River Basin_ Water Body(s): un-named SWIM water body? (Y/N) 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.

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).

D. 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. Approximately half of the proposed wetland impacts will be to marsh systems (11.8 of the total 21.76 acres) will be mitigated with wetland preservation (3.34 credits, 33.48 acres), marsh enhancement area I (2.37 credits, 23.74 acres), marsh restoration area 2 (1.51 credits, 1.51 acres), and wet prairie restoration area 2 (4.58 credits, 4.58 acres). The 9.96 acres of forested wetland impacts will be mitigated with forested upland preservation (9.96 credits, 29.88 acres). The cumulative impacts (21.76 acres) compared to the compensation (93.2 acres) results in an average mitigation acreage ratio of 4.3-to-1.

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.

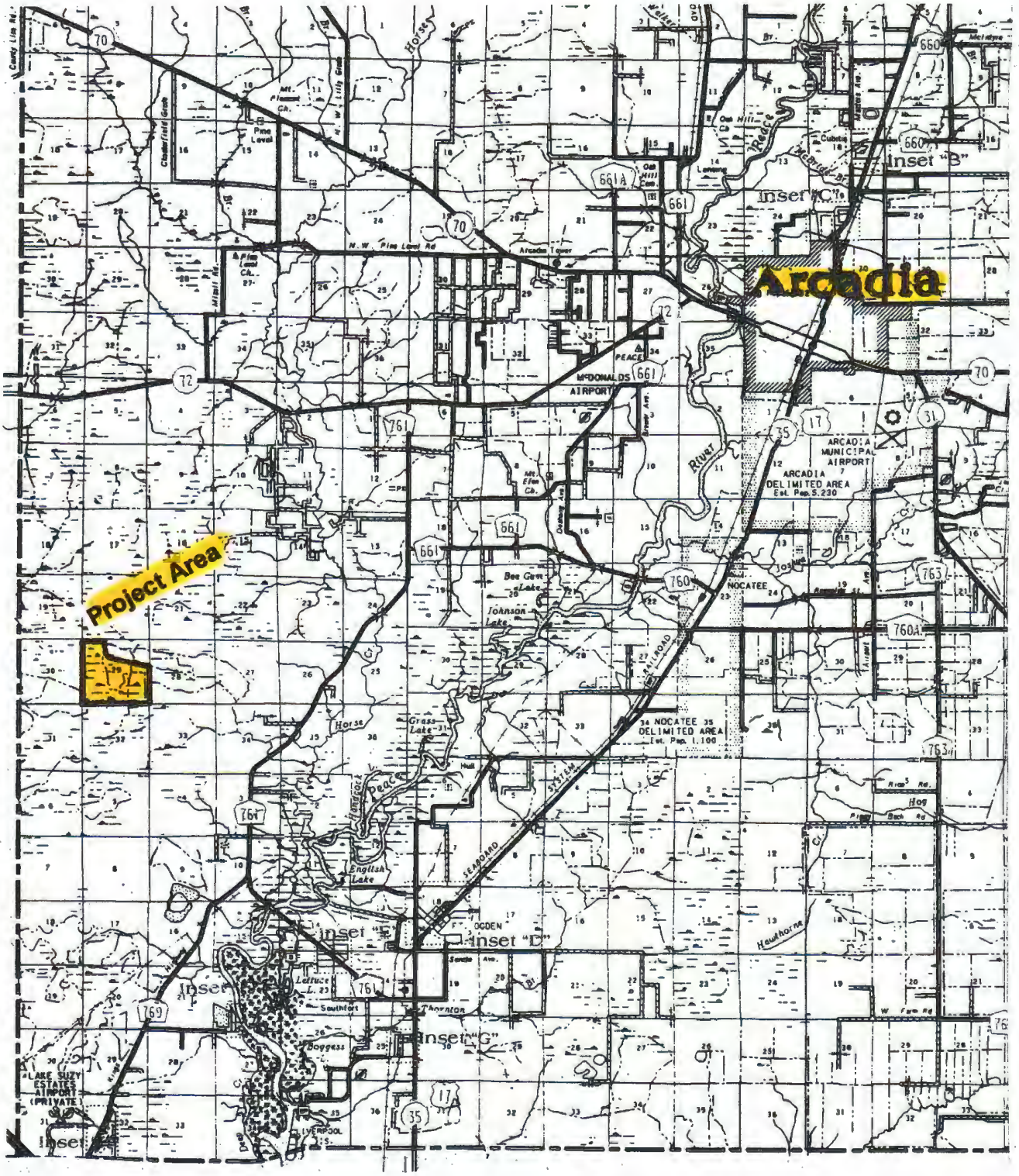
F. Brief explanation of why a SWIM project was/was not chosen as mitigation, in whole or in part, including a discussion of cost, if the anticipated impacts are located within a SWIM water body: No SWIM projects are available or currently proposed within the drainage basin to offset the specific impacts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

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Boran Ranch Mitigation Bank
Contact Name: Don Ross, President, Florida Environmental, Inc. Phone Number: (941) 624-2911
Entity responsible for monitoring and maintenance: Same
Proposed timeframe for implementation: Commence: 1998 Complete: Construction complete, currently monitoring in 2000.
Project cost: $652,800; 21.76 credits x $30,000 per credit

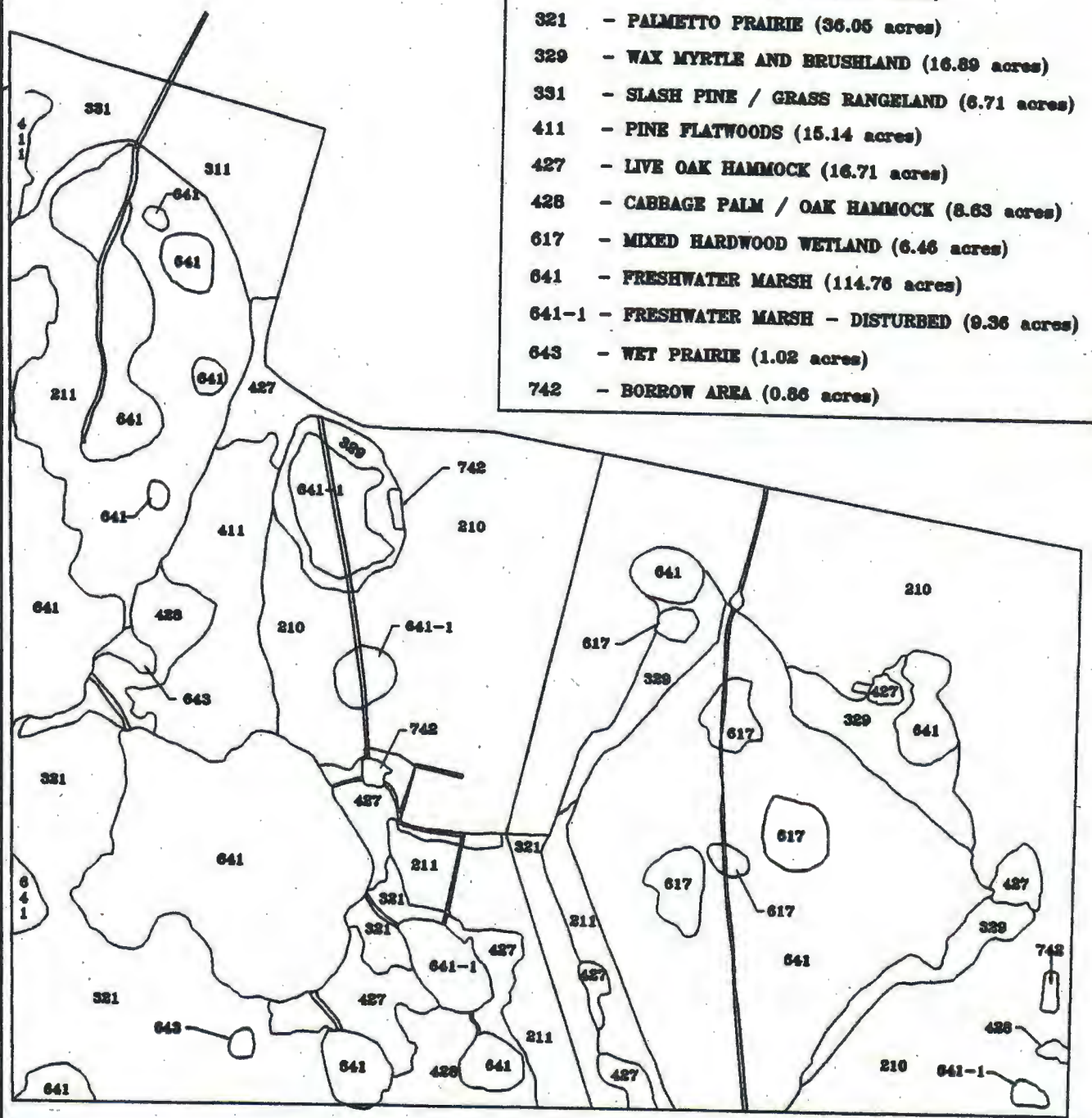
Attachments

__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 Figure 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

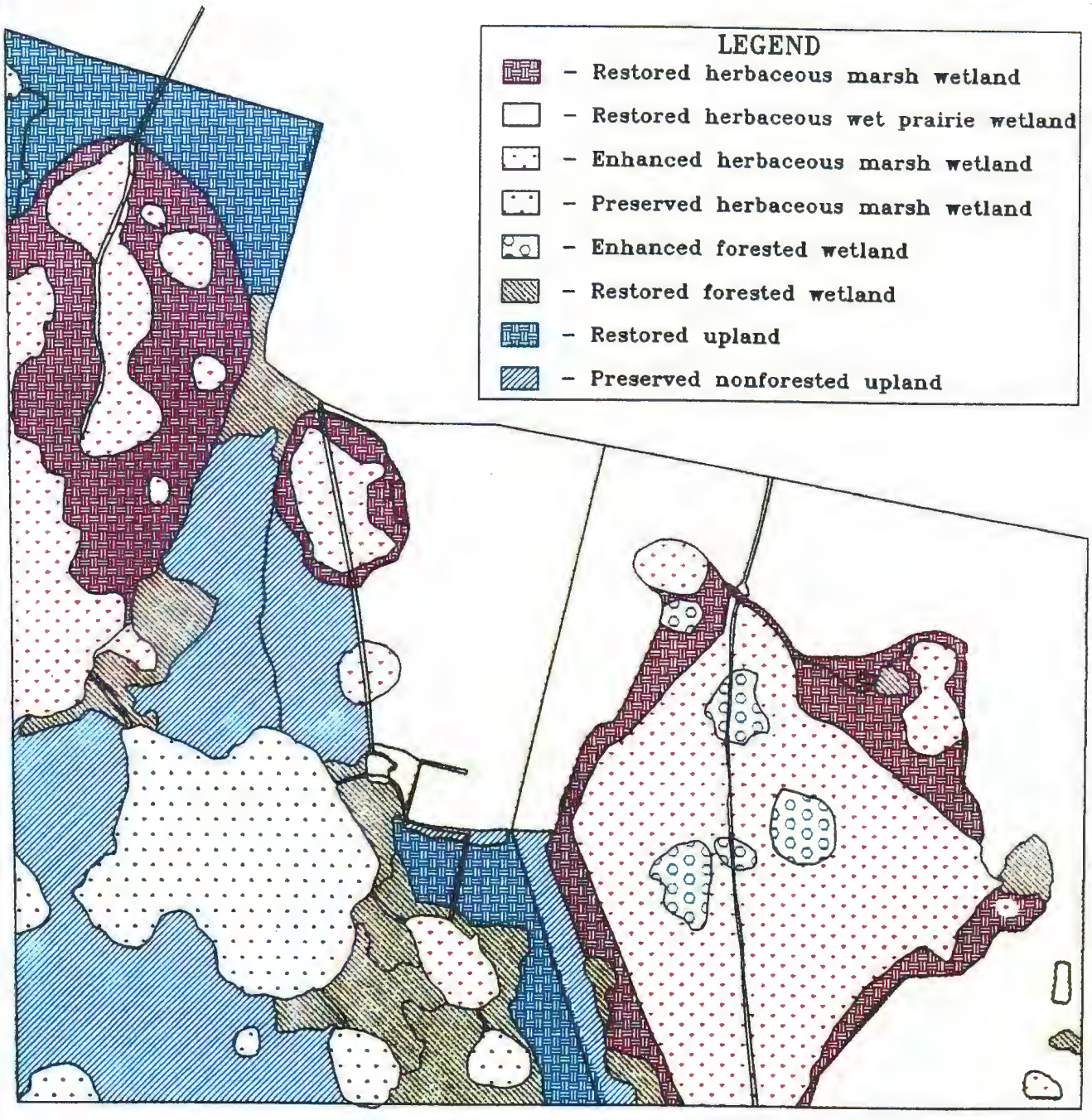
210	- CROP AND PASTURELAND (118.11 acres)
211	- IMPROVED PASTURE (41.24 acres)
311	- GRASS RANGELAND (10.43 acres)
321	- PALMETTO PRAIRIE (36.05 acres)
329	- WAX MYRTLE AND BRUSHLAND (16.89 acres)
331	- SLASH PINE / GRASS RANGELAND (6.71 acres)
411	- PINE FLATWOODS (15.14 acres)
427	- LIVE OAK HAMMOCK (16.71 acres)
428	- CABBAGE PALM / OAK HAMMOCK (8.63 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

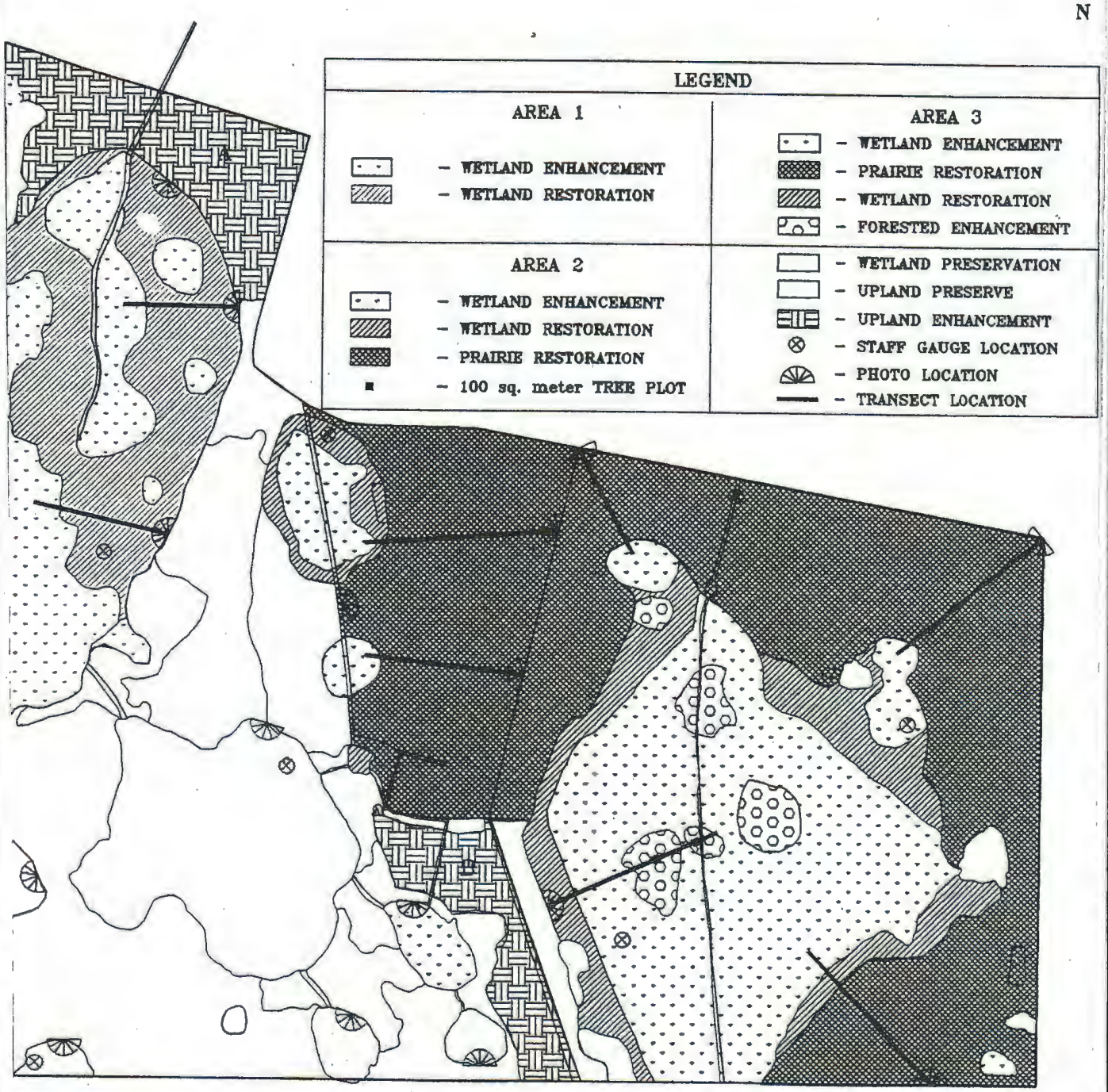
FDOT - District 1 MITIGATION AREA (Peace River Basin)	BORAN RANCH MITIGATION BANK (SW 53)	FIGURE C INFRARED AERIAL (1995)

SCALE 1 in. = 750 ft.

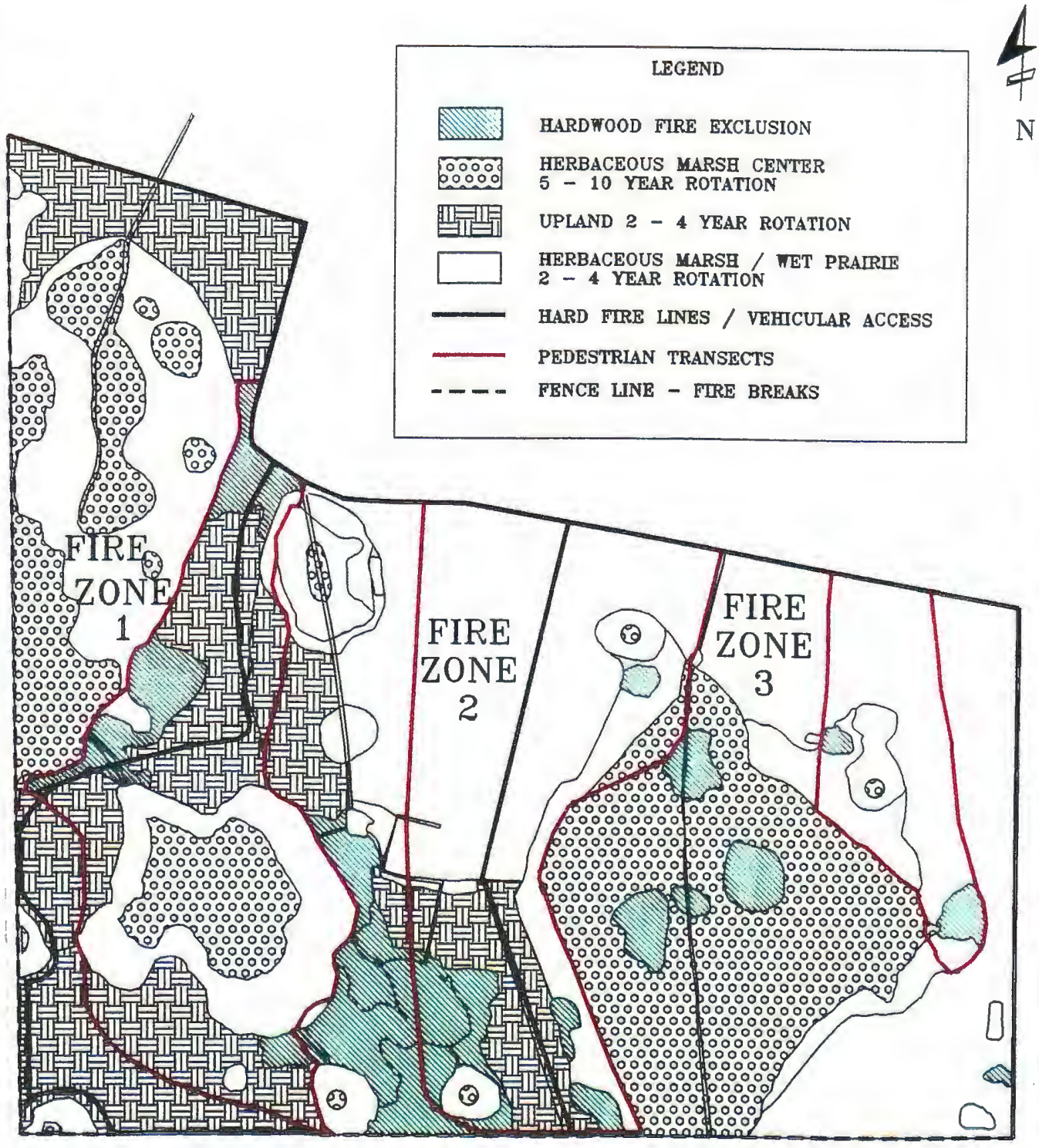
N



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

DOT (WPI): 7115974 (FM) 2563361 - SR 54 Mitchell to Gunn ERP #: _____ COE #: _____
(WPI): 7115977 (FM) 2563391 - SR 54 Suncoast to US 41 ERP #: 4316251 COE #: _____

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

WPI: 7115974 - SR 54 (Mitchell to Gunn)
- 0.70 ac. 616 (Fluccs code)
- 1.40 ac. 617 (Fluccs code)
- 2.90 ac. 621 (Fluccs code)
- 3.40 ac. 641 (Fluccs code)
- 1.00 ac. 641x (Fluccs code)

TOTAL: 9.40 Acres

WPI: 7115977 - SR 54 (Suncoast to US 41)
- 1.30 ac. 617 (Fluccs code)
- 0.80 ac. 619 (Fluccs code)
- 3.00 ac. 621 (Fluccs code)
- 0.50 ac. 641 (Fluccs code)
- 1.40 ac. 641x (Fluccs code)

TOTAL 7.00 ac.

TOTAL: 16.40 acres

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

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, pine flatwoods, and oak hammocks. This includes creation of 6.3 acres of freshwater marsh (with a perimeter 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 because of the higher quantity of proposed marsh impacts. The southern 103-acres mitigates for WPI 7115977. 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 an undisturbed condition except for a borrow pit (which has been converted to a marsh and cypress fringe). Wetland and upland habitat is adjacent to the Anclote River floodplain, high quality habitat and abundant wildlife use. The mixed forested wetland habitat (135 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) will be filled to provide marsh habitat surrounded by a perimeter of cypress. The adjacent public property covers over 15,000 acres of native habitat, the majority purchased and providing mitigation for wetland impacts associated with constructing the Suncoast Parkway.

C. **Brief description of proposed work:** Acquisition and enhancement of the 185-acre parcel through fee simple purchase by the SWFWMD (completed 2000). Construct 6.3 acres of freshwater marsh by filling and planting an existing borrow pit (currently under maintenance and monitoring). The uplands will be enhanced by implementing a prescribed burn management plan.

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). The acquisition, preservation, and enhancement of this 185-acre tract mitigates the 16.60 acres of proposed wetland impact at a cumulative ratio of 11:1.

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: Clark Hull, Environmental Program Director Phone Number: (352) 796-7211 ext. 4302

Entity responsible for monitoring and maintenance: Southwest Florida Water Management District

Proposed timeframe for implementation: Commence: July 1999 Acquired: April, 2000

Project cost: $ 709,368 (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.**

__X__ 2. Recent aerial photograph with date and scale. **Refer to Fig. D (1995 Infrared)**

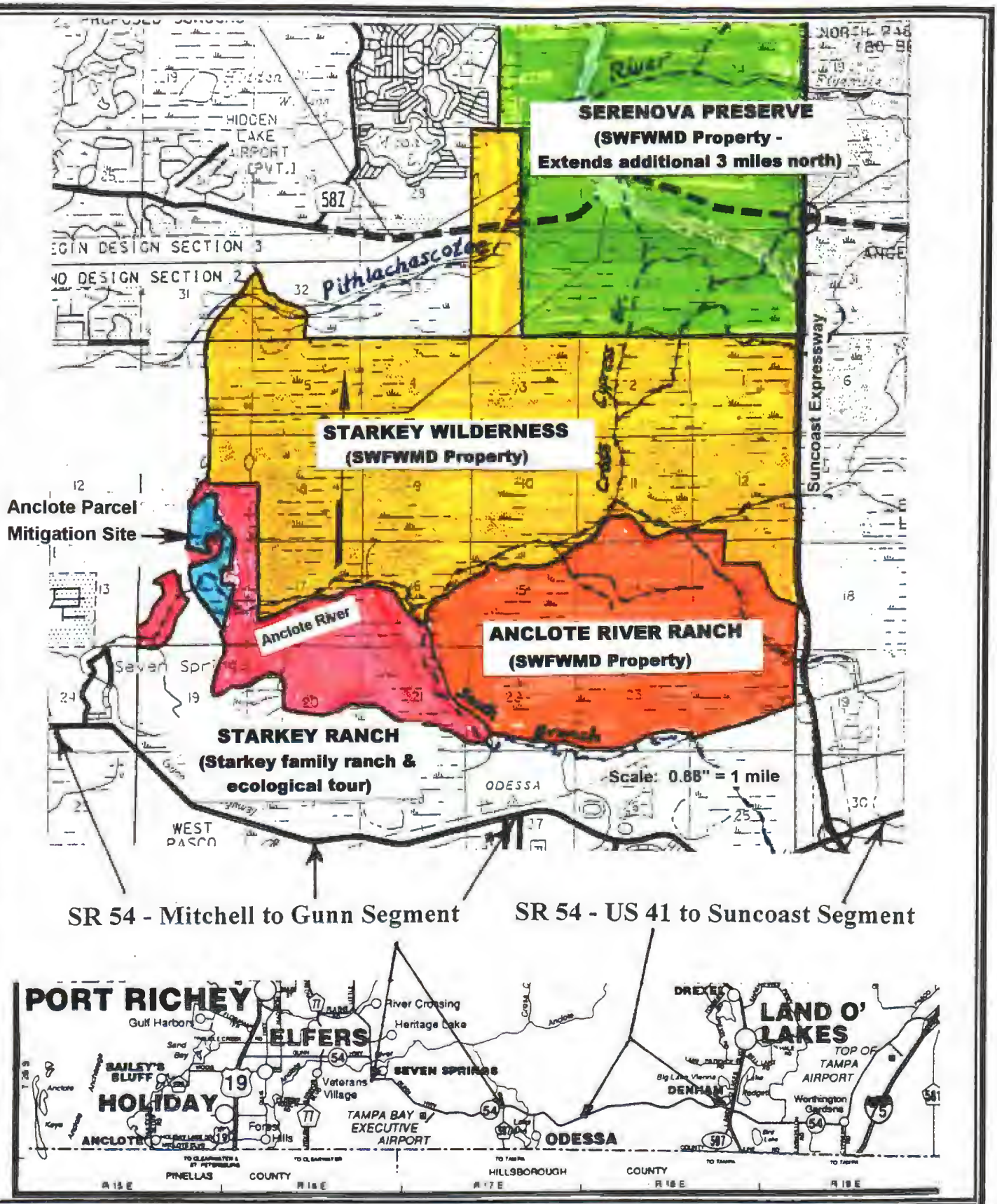
__X__ 3. Location map and design drawings of existing and proposed conditions. **Fig. A - Location Map, Figure D.**

__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).**

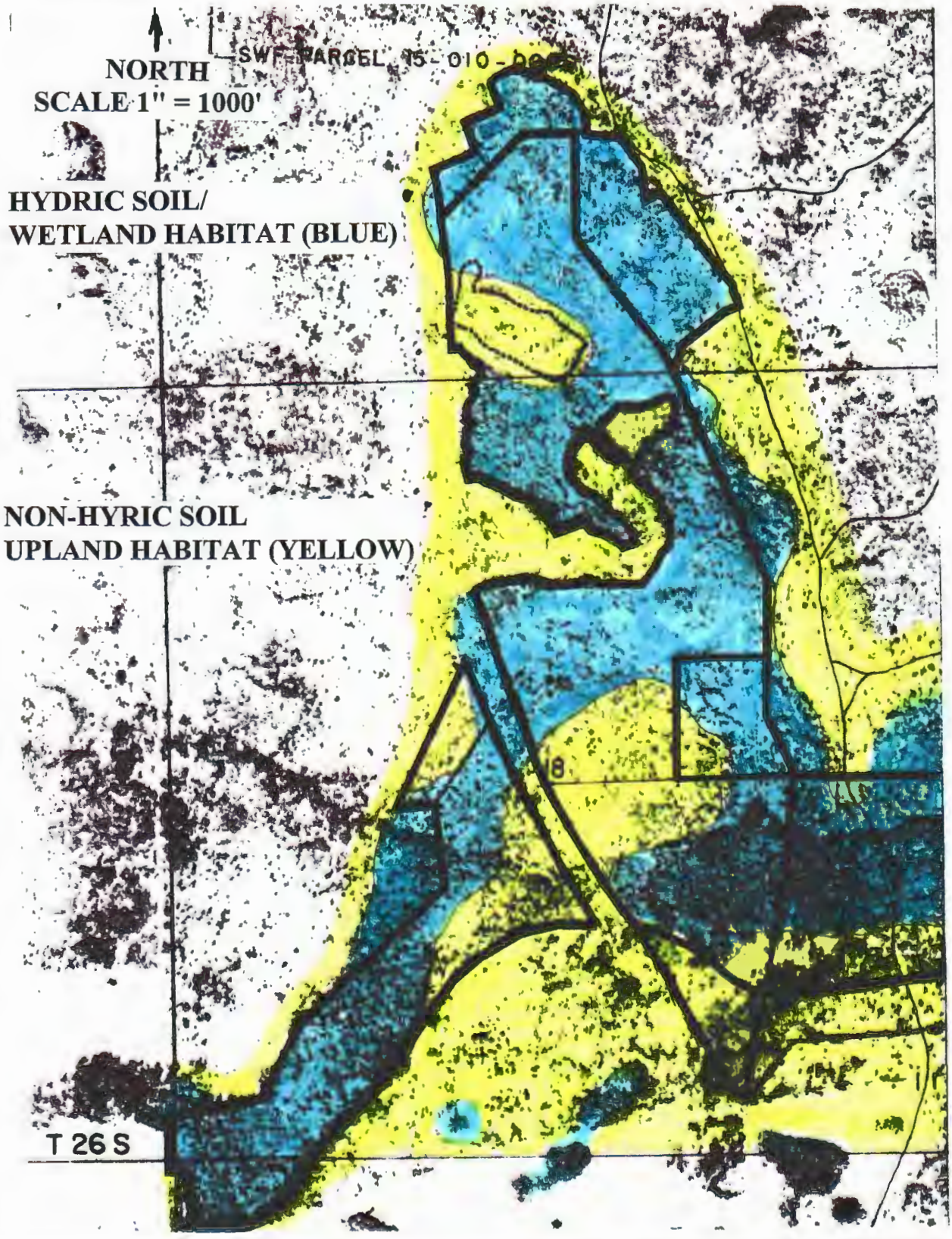
__X__ 5. Proposed success criteria and associated monitoring plan. **The native habitat is high quality that doesn't require success criteria & monitoring, the creation of marsh & cypress habitat has success criteria & monitoring associated with the permitting of the Starkey Blvd. mitigation plan.**

__X__ 6. Long term maintenance plan. **Prescribed management plans to be conducted in conformity with the adjacent SWFWMD property (Starkey Wilderness Preserve, Anclote River Ranch, Serenova Preserve).**

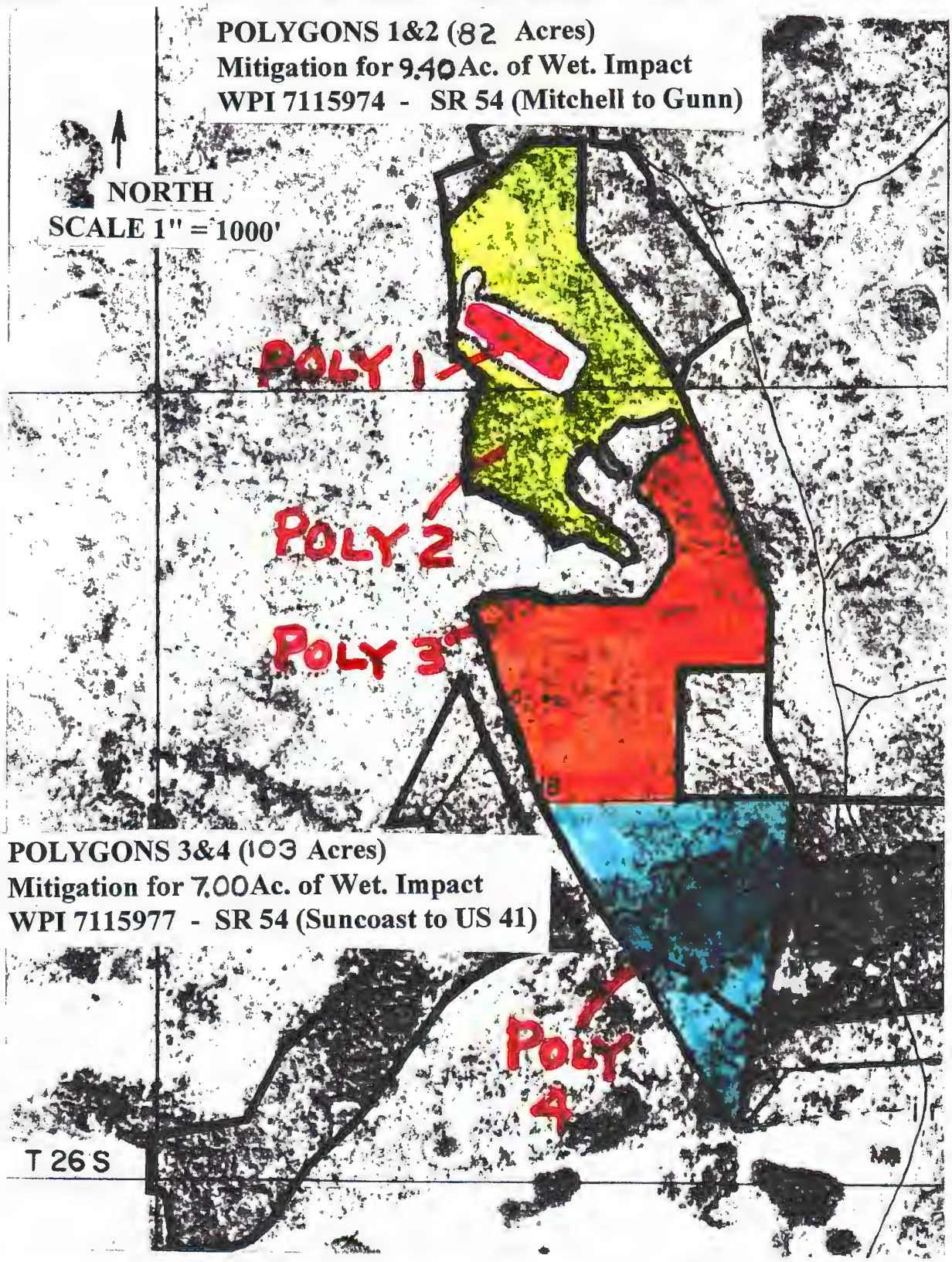
__X__ 7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s). **Refer to previous text concerning mitigation site and SR 54 impacts.**



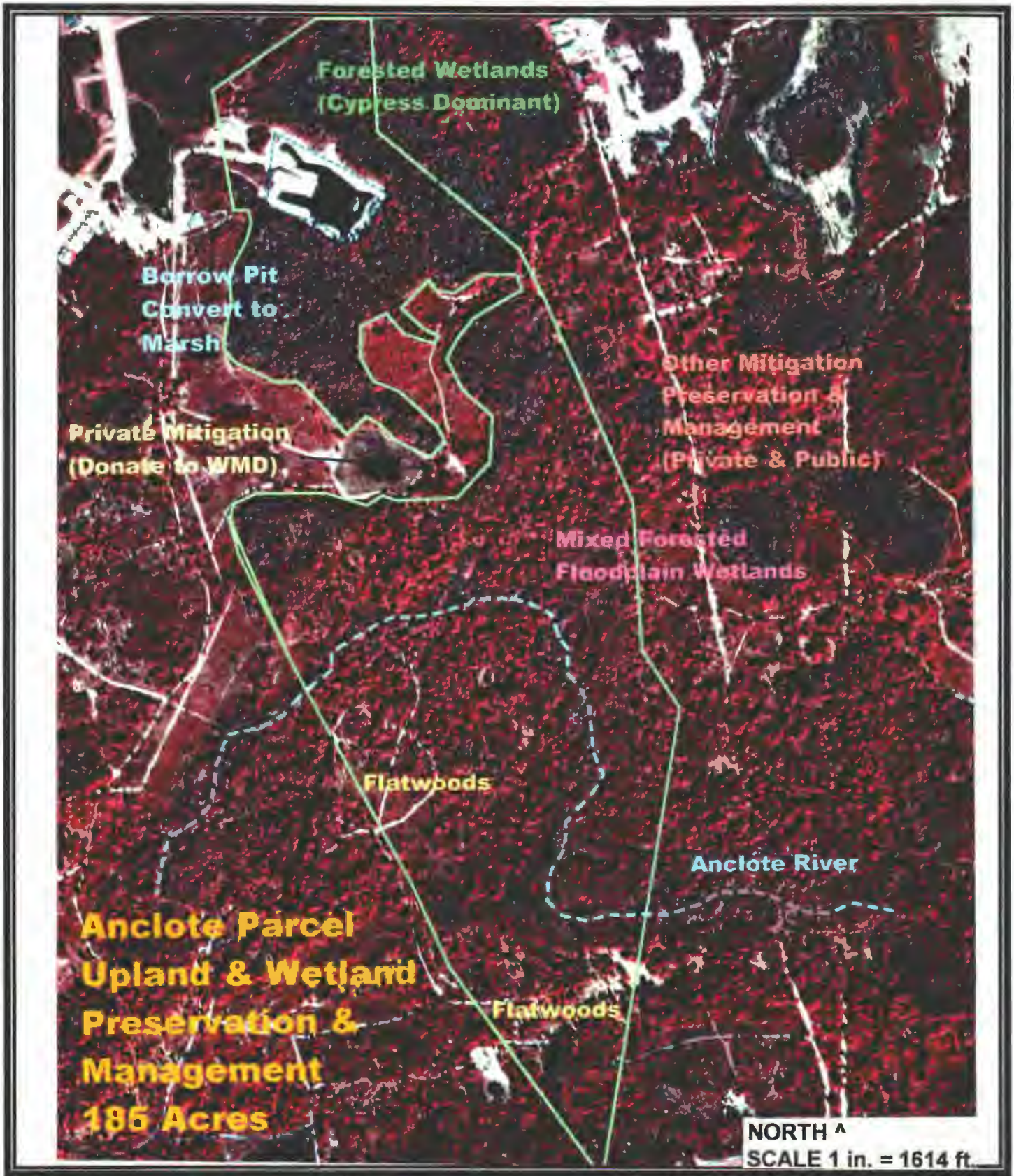
SWFWMD-FDOT MITIGATION SITE	ANCLOTE RIVER TRACT PASCO COUNTY	FIGURE A LOCATION MAP



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 - US 301** 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

DOT : WPI: 1147946 FM: 2012081 (Int.-4, County Line Rd. to Memorial., Seg.1) ERP #: 4311869.09 COE #: 199501846
Drainage Basin(s) (names): Hillsborough River Water Body(s) (names):none SWIM water body? (Y/N) 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? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) N Drainage Basin(s): Hillsborough River Water Body(s):Hillsborough River SWIM water body? (Y/N) N

Project Description

A. Overall project goal: Restore hydrological conditions to wetlands adjacent to the Hillsborough River floodplain, to grade a fill road and adjacent large ditches to hydrologically and vegetatively restore historic forested and marsh wetlands.

B. Brief description of current condition: The Upper Hillsborough – US 301 Tract project area covers 302 acres (Figure A-D), 15 wetland segments covering 110 acres have substantial opportunities for hydrologic enhancement and restoration (Fig. D). Large ditches (and adjacent levee fill road) constructed adjacent to a series of wetlands effectively maintains 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) have been impacted by construction of a levee fill road, and adjacent large ditches that connect and drain wetlands directly into the Hillsborough River floodplain. The wetlands exhibit various signs of decreased water levels such as treefall, tree thinning, soil loss, upland species encroachment, and changes in plant species composition (site photos).

C. Brief description of proposed work: Over 1.3 miles of the ditch was filled from removal of levee road in September, 2001. The restored wetland grade will be planted with cypress to restore 10 wetland acres within the former ditches. Additional cypress planting will be conducted within a couple former cypress systems (Wetlands 2 and 4) that have less than 5% canopy cover due to treefall associated with soil loss. Primary vegetative generation is anticipated through natural recruitment from the hydrologically restored 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 grade elevation within each of those wetlands. The enhanced wetlands will be evaluated and the monitor wells measured on a quarterly basis for a minimum of three years post-construction (earthwork completed in September, 2001). Two additional deep monitor wells were installed within two wetlands along the project boundary, one within the mixed forested wetland associated with the Hillsborough River floodplain, another within a cypress strand along the southwest corner (Fig. D depicts all monitor well locations). These monitor wells were installed to measure hydrologic conditions of two different wetland systems within the headwater area of the Hillsborough River, and will be used in association with this project to evaluate trends in groundwater conditions.

Mitigation Project – Upper Hillsborough 3 & 4

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Restoring these wetlands to natural vegetative and hydrologic conditions will result in an improvement in wetland functions comparable to those lost due to road construction in the same drainage basin. The majority of wetland impact areas associated with the I-4 (Seg. 1) widening were low quality systems within an area of industrial facilities. The majority of the marsh impacts were conveyance swales and remnants of historically larger systems. On-site mitigation options along I-4 in western Polk County were evaluated and conceptually designed around industrial facilities, eventually disregarded when off-site options were considered to be a much better ecological alternative. The Wetland Rapid Assessment Procedure (WRAP) evaluated the potential enhancement opportunities at this project site and determined an ecological increase ("lift") associated with the 120 acres of wetland enhancement and restoration is estimated to be 18.5 functional units. This equates to a 15% increase in wetland functions and values over existing conditions. The wetland impacts associated with the I-4, Segment 1 construction resulted in a loss of 13.55 acres. Even those impacts already occurred before the implementation of WRAP analysis, observation of those impact prior to permitting indicated those wetland impact areas exhibited WRAP scores that equate to 50-75% of the optimum value (13.55 units). With that in mind, the proposed increase in mitigation value (18.5 units) will be approximately twice as many units as the functions and values exhibited by the wetland impact areas. Therefore, the temporal loss of the wetland impacts will be adequately compensated by the increase in wetland mitigation functions and values.

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: Southwest Florida Water Management District, Operations Div. (Completed const. 9/01)

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

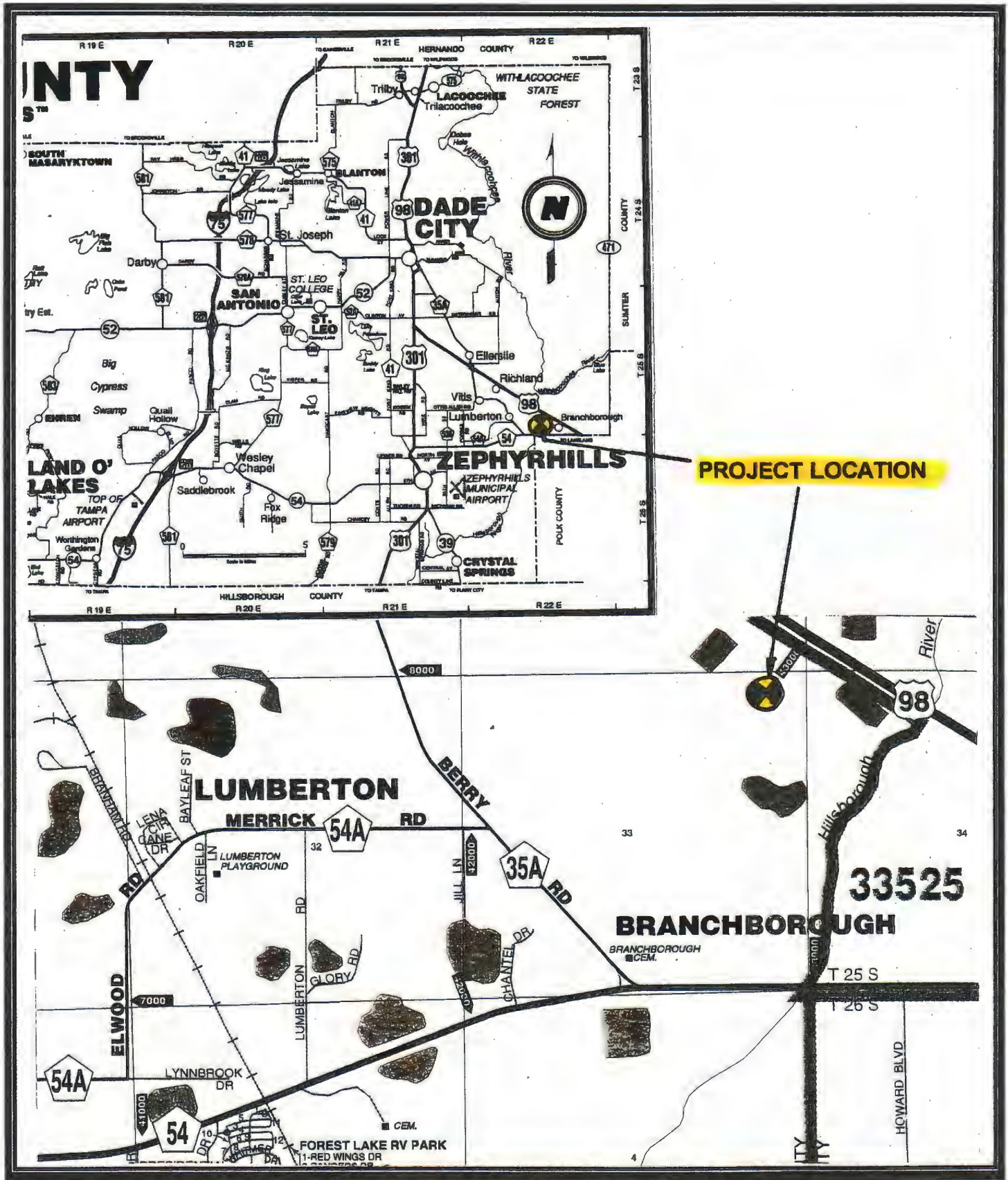
Entity responsible for monitoring and maintenance: Contractors to the Southwest Florida Water Management District

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

Project cost: $290,000.00 (total); attach itemized cost estimate
Design & Permitting $90,000
Construction & Planting $170,000
Maintenance & Monitoring $30,000

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 11 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.**

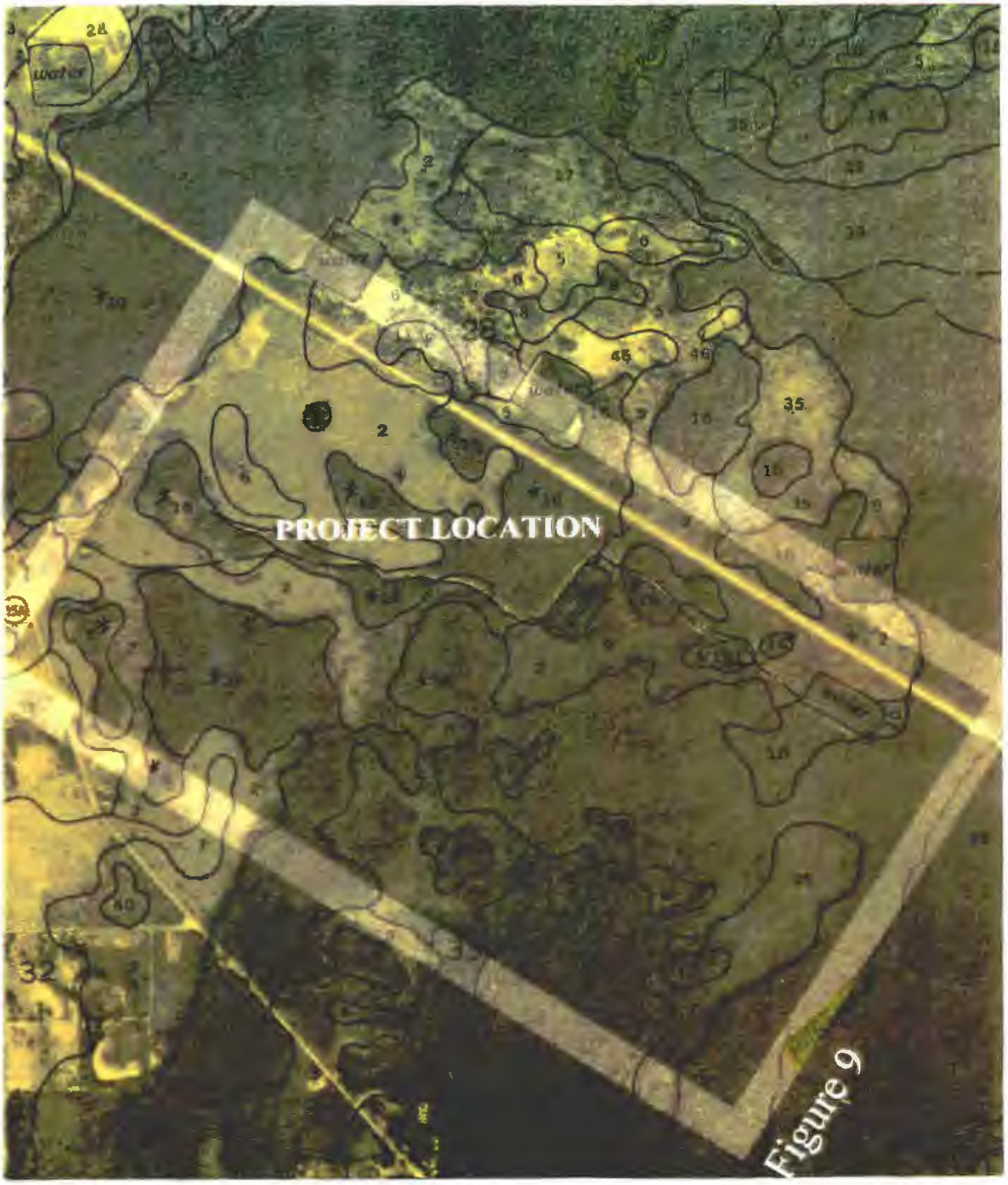


FDOT - District 1 **MITIGATION AREA** **(Hillsborough River Basin)**	**UPPER HILLS. 4 & 5 -** **US HWY. 301** **(SW 55)**	**FIGURE A** **PROJECT LOCATION**

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 ^

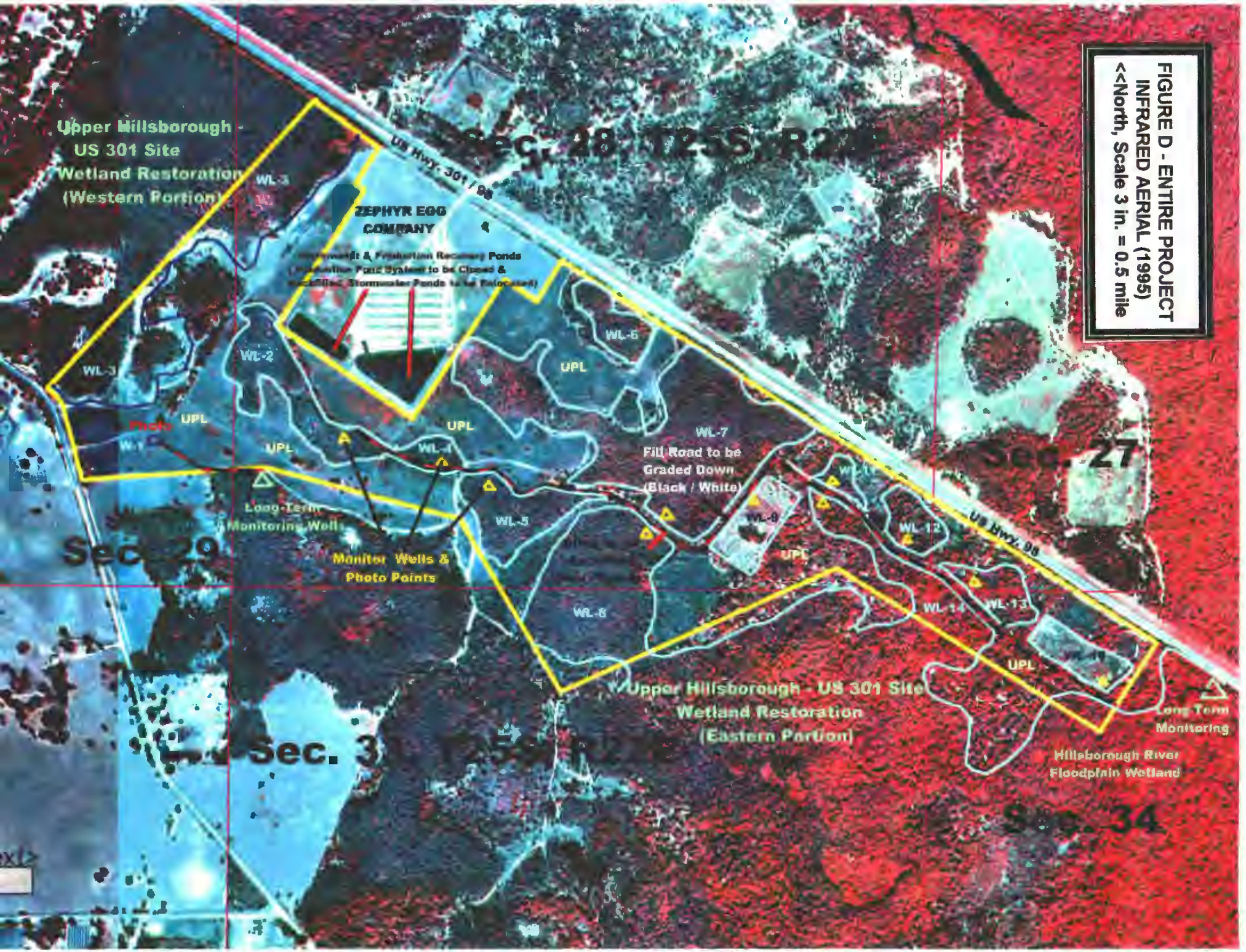
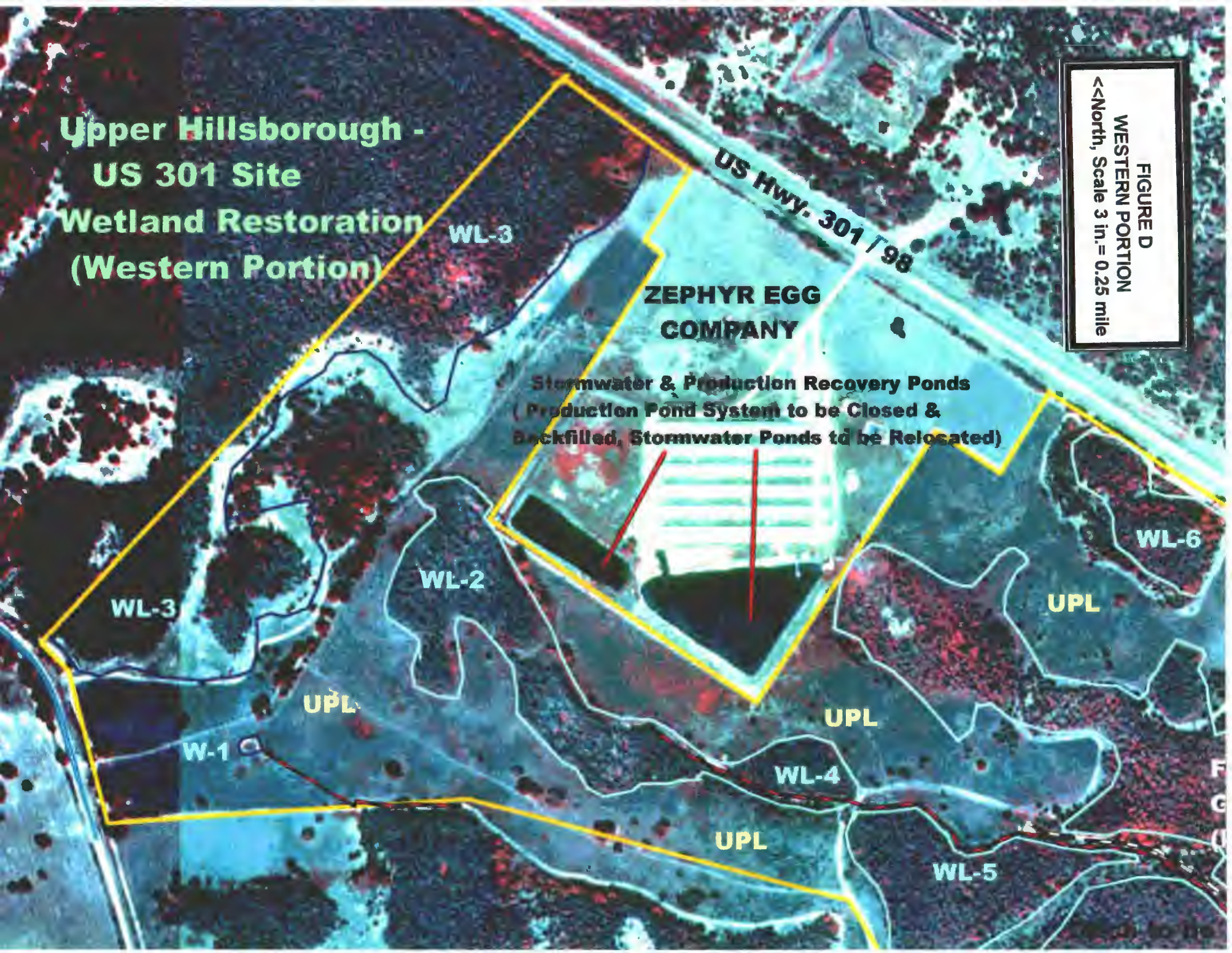
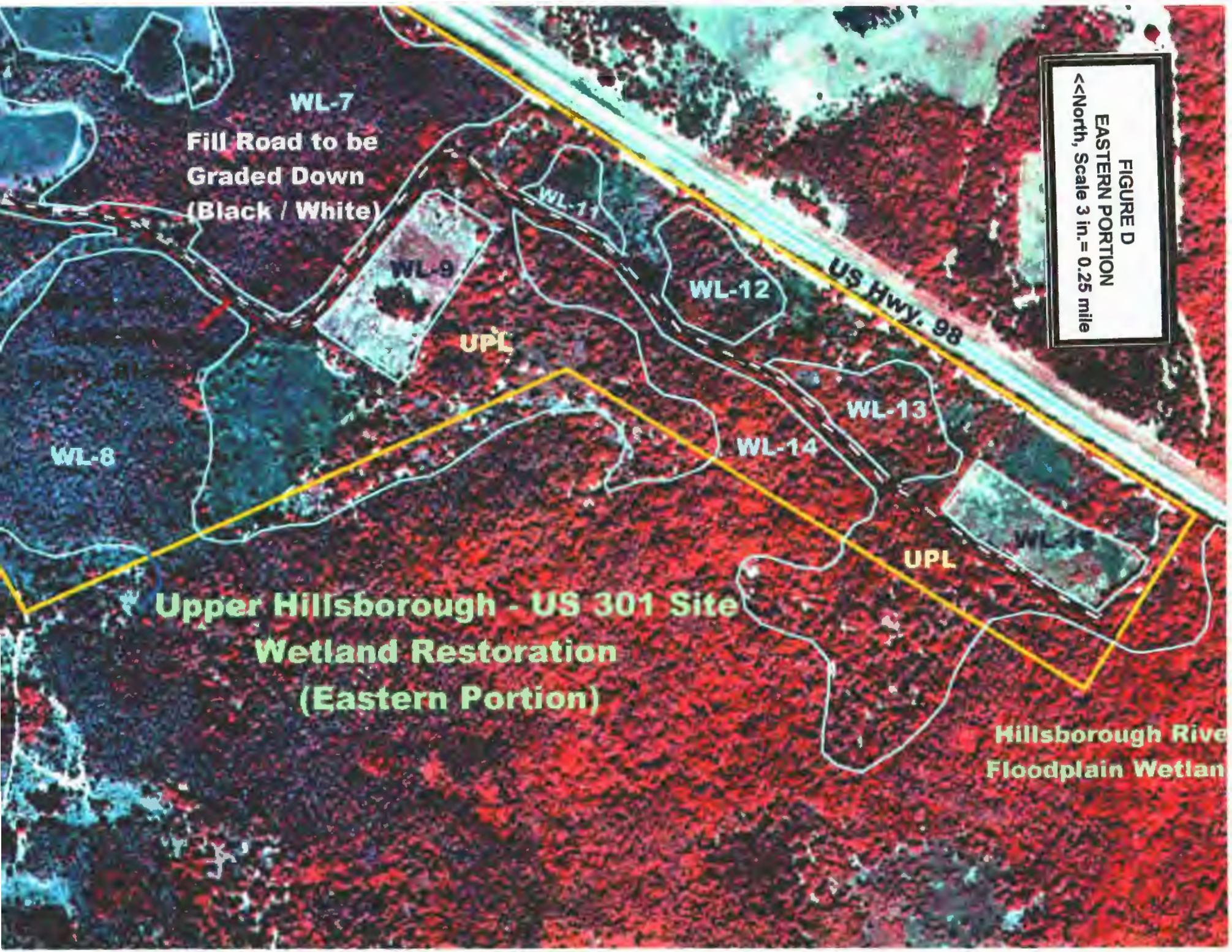


FIGURE D - ENTIRE PROJECT
INFRARED AERIAL (1995)
<<North, Scale 3 in. = 0.5 mile
Upper Hillsborough
US 301 Site
Wetland Restoration
(Western Portion)
US Hwy. 301 / 98
ZEPHYR EGG
COMPANY
WL-3
WL-2
WL-1
WL-4
WL-5
WL-6
WL-7
WL-8
WL-9
WL-12
WL-13
WL-14
UPL
Photo
Long-Term
Monitoring Wells
Monitor Wells &
Photo Points
Fill Road to be
Graded Down
(Black / White)
Sec. 9
Sec. 3
Sec. 27
Sec. 34
US Hwy. 98
Upper Hillsborough - US 301 Site
Wetland Restoration
(Eastern Portion)
Long Term
Monitoring
Hillsborough River
Floodplain Wetland


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


WL-7
Fill Road to be
Graded Down
(Black / White)
WL-9
WL-11
WL-12
US Hwy. 98
UPL
WL-13
WL-14
WL-8
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** Project Number: **SW 56**

Project Manager: Brandt Henningson, PhD. SWIM Environmental Scientist Phone No: (813) 985-7481 ext. 2202

County(ies): Hillsborough Location : Sec. 21, T32S, R18E

IMPACT INFORMATION

DOT: WPI: 7117045, FM: 2569571, US 19 - Drew to Railroad ERP #: 4411760 COE #:199400606

Drainage Basin(s): Tampa Bay Drainage Basin Water Body(s): None SWIM water body? N

Impact Acres / Types:

WPI: 7117045 0.30 ac. 618 (Fluccs code)

0.30 ac. 641 (Fluccs code)

TOTAL: **0.60 Acres**

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation Mitigation Area: **1.0 ac.**

SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N Drainage Basin(s): Tampa Bay Drainage Water Body(s):Tampa Bay, Cockroach Bay

SWIM water body? Y

Project Description

A. **Overall project goals:** Create and restore wetland and upland habitat in cooperation with a multi-agency restoration effort on property (total 700 acres) acquired by Hillsborough County for restoration. The SWFWMD is responsible for the wetland creation & restoration aspects, other agencies and organizations (particularly Hills. Co. Parks & Rec.) are involved with the upland restoration and long-term management of the site.

B. **Brief description of current condition:** The entire area is presently made up of fallow and active farm fields that are being invaded by exotic vegetation and undergoing secondary succession (Figure B). For the small area proposed for DOT mitigation, a heavily disturbed upland area will be utilized to create freshwater marsh habitat. The wetland has extensive coverage of Brazilian pepper with Australian pine, wax myrtle, and salt-bush (Photos 1, 2). As noted on the difference between the 1958 and 1989 Soil Surveys (Fig. C), the site doesn't have hydric soils and was historically farmed but allowed to go fallow, allowing the nuisance and exotic species to heavily invade.

C. **Brief description of proposed work:** Construct a palustrine wetland habitat as part of series of freshwater to saltwater wetland habitat leading toward Cockroach Bay and Tampa Bay. The minimum of one-acre marsh constructed to mitigate the proposed wetland impact will have commonly planted species such as sand cordgrass, soft rush, pickerelweed, arrowhead, and bulrush. A wax myrtle fringe will be planted to provide a buffer and cover for wildlife use.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The proposed wetland impacts include low quality palustrine wetlands, including 0.3 acre willow/elderberry, and 0.3 acre of freshwater marsh. The proposed 1.0-acre creation of freshwater marsh habitat and shrub buffer will adequately mitigation for these DOT impacts. This creation effort will be further buffered with the creation and restoration of surrounding wetland and upland habitat.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: At the time of the mitigation project selection, the Tampa Bay Mitigation Bank had not received the necessary permits. As of September, 2001, the mitigation bank is anticipated to receive ERP approval from the Governing Board however USACOE approval has not been received.

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 activities of the project. Hillsborough County Parks and Recreation is responsible for the stormwater and upland restoration phases. Because of the extensive planning and evaluation of the restoration potential, and since it is co-located with an on-going restoration effort, and because Hillsborough County purchased the land specifically for restoration, this mitigation portion is 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 finished early 2001 Complete: December 2002
Project cost: $ 46,200 (total); attach itemized cost estimate
$20,000 for design, permitting and construction management
$26,000 for construction, revegetation and monitoring

Attachments

x 1. Detailed description of existing site and proposed work. **Existing site conditions include agricultural row crop activities and a low quality shrub area (site photos) that will be graded in order construct and create freshwater wetland habitat.**

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, design drawings will be finalized by early 2002.**

__x__ 4. Detailed schedule for work implementation, including any and all phases.

Due to the extensive design effort associated with the entire Cockroach Bay restoration, additional site salinity data has been required to determine the extent of freshwater and various saltwater wetland creation and restoration components. This has delayed the design phases however the additional data was critical to ensure the various restoration segments will function as proposed. The final design for all segments of the Cockroach Bay plan should be complete by early, 2002, followed by 4-6 months for permitting, and construction commencing late 2002 or early 2003.

__x__ 5. Proposed success criteria and associated monitoring plan.

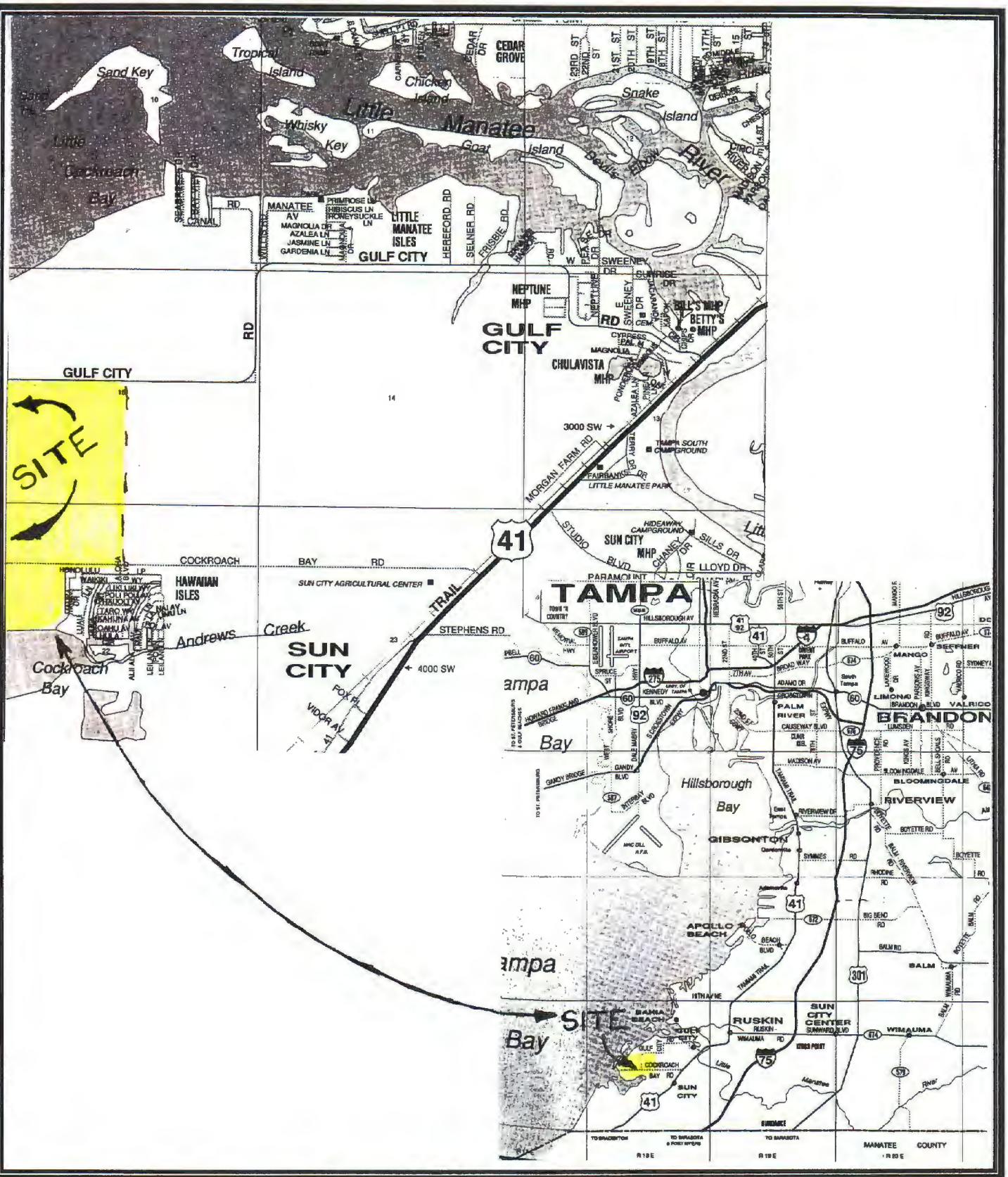
The success criteria will be specified in the permit conditions and reflect an 85 percent coverage of desirable vegetation. The monitoring is expected to be annual for a minimum of three years to to examine species survival, coverage, wildlife use, exotic/nuisance species coverage, and recommend actions needed to ensure or enhance success.

__x__ 6. Long term maintenance plan.

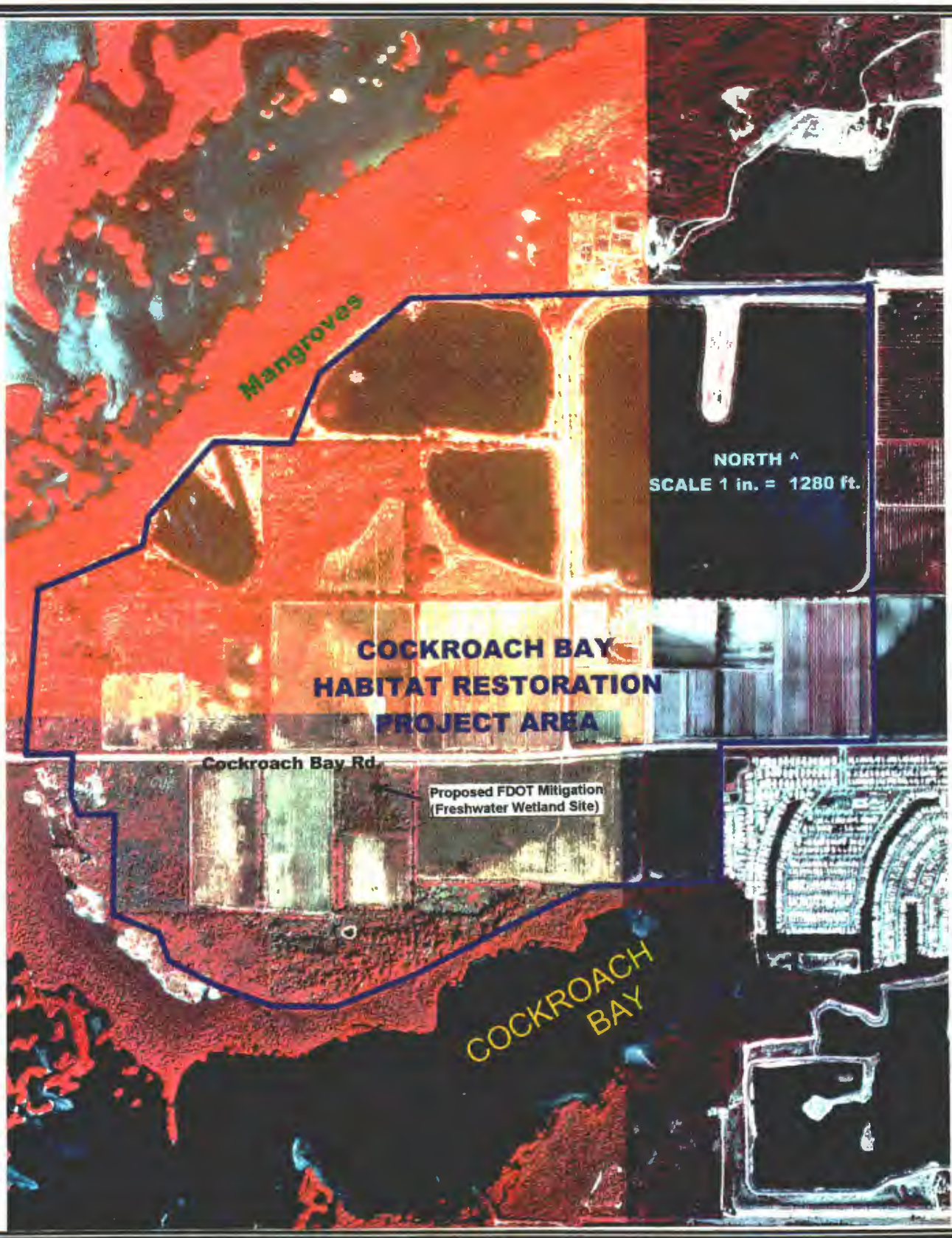
The mitigation is associated with larger restoration objectives for land purchased by Hillsborough County. The maintenance of the project is expected to be done by Hillsborough County staff with assistance from the SWFWMD. The maintenance will primarily be related to control of invasive exotic vegetation (less than 10% cover) with a more intensive effort the first couple years after planting to allow for the plants to become established 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).

Refer to previous discussion under Comment D.



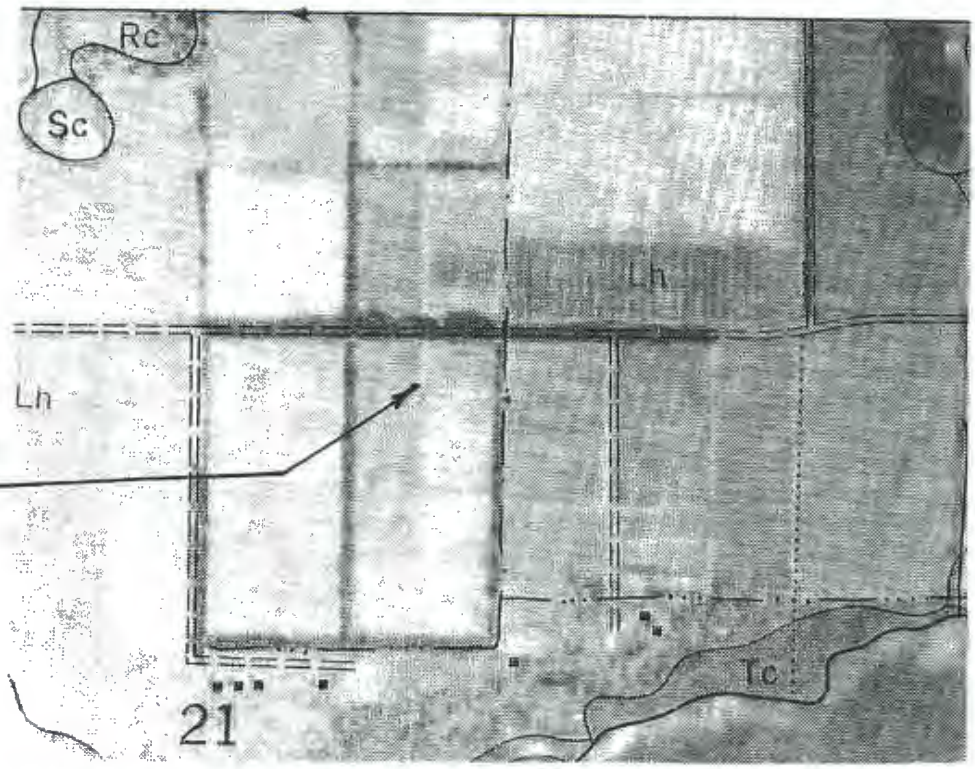
FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**COCKROACH BAY** **RESTORATION** **(SW 56)**	**FIGURE A** **LOCATION MAP** **Scale 1.8 in. = 1 mile**



FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	COCKROACH BAY RESTORATION (SW 56)	FIGURE B INFRARED AERIAL (1995)

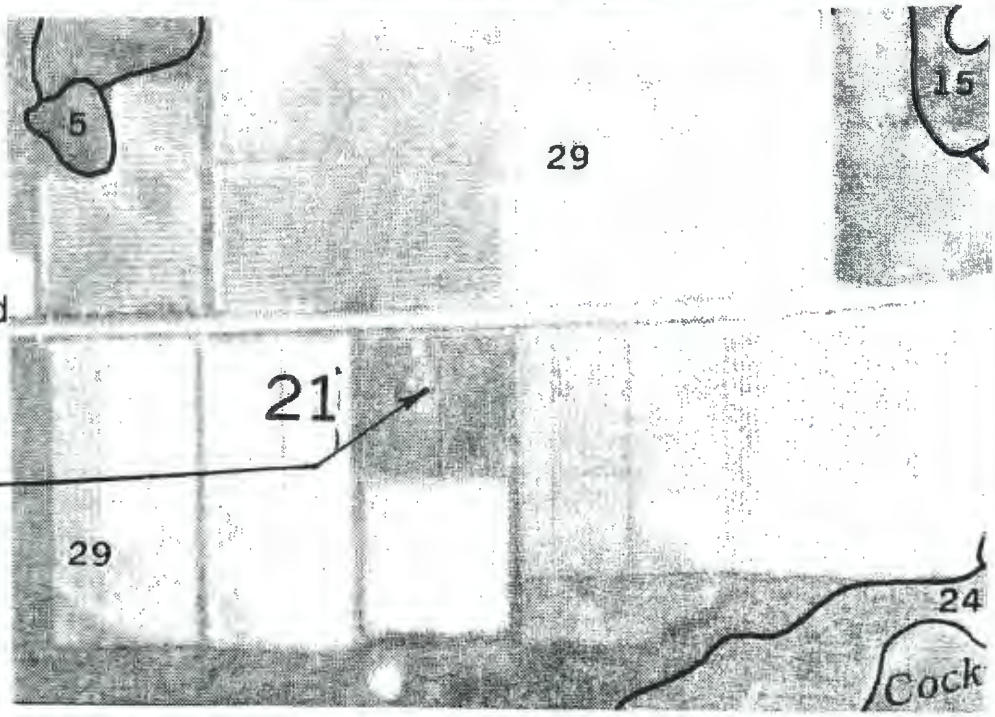
1958 Soil Survey
(1948 Aerial)

Lh - Leon fine sand
(Non-hydric soil)
Site under row crop
use.



1989 Soil Survey
(1982 Aerial)

29 - Myakka fine sand
(Non-hydric soil)
Site gone fallow,
exotic /nuisance
species dominate.



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

Photo 1 - Historically an area used for row crops, the proposed freshwater wetland site has converted to extensive cover of exotic and nuisance species such as Brazilian pepper, dog fennel, ruderal grass species, and Australian pine (background left).

Photo 2 -View of the same area, connecting to right side of the Photo 1. Desirable species such as wax myrtle and scattered cabbage palm can be incorporated into the creation and restoration project.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Cockroach Bay Restoration (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) (names): Withlacoochee River Water Body(s) (names):Lake Panasoffkee SWIM water body? (Y/N) Y

Acres and Types of impact to be offset: 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/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) 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, 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 includes 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.

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 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 a proposed mitigation bank 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 : Lake Panasoffkee is a SWIM project, if the entire project scope will be constructed, the total budget will be approx. $26 million, the State Legislature awarded $5 million to the project in 1999.

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: Contractor selected by the SWFWMD
Contact Name: Lizanne Garcia – SWFWMD- SWIM Environmental 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 each of 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.**

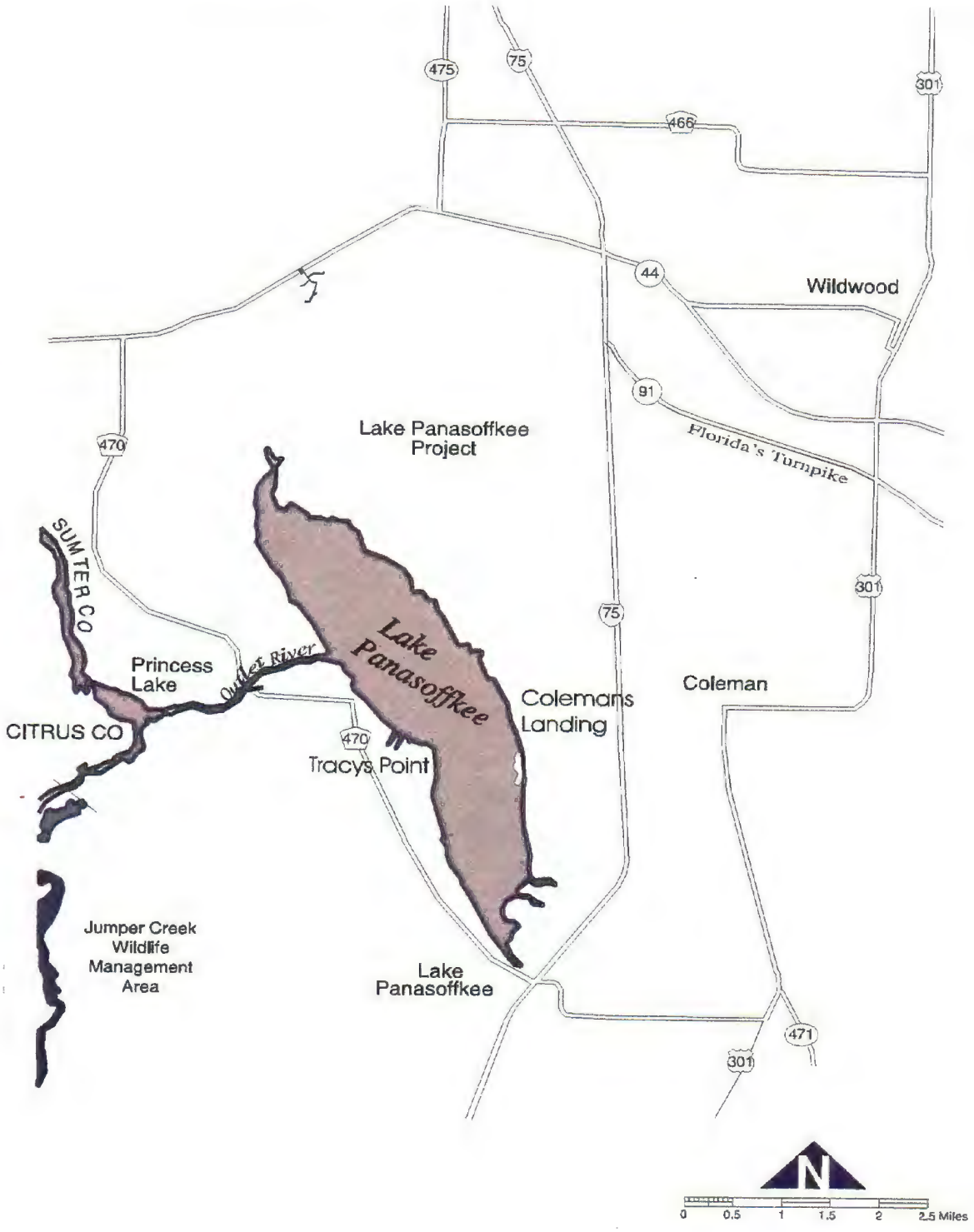
__X__3. Location map and design drawings of existing and proposed conditions. **Figure A-Location Map & Attachment A.**

__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 July 2001 and continue through December 2003.

__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).
Response 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(ies): Alachua Location: Sections 1, 2 T12S, R19E

IMPACT INFORMATION

(1) WPI 5113632 FM 238762 - SR 40, CR 225A to SW 52nd St. ERP #: _____ COE #: _____

(2) WPI 5113511 FM 238641 - SR 500 (US 27), Levy Co. to SR 326 ERP #: _____ COE #: _____

(3) WPI 5113549 FM 238678 - SR 500 (US 27), SR 326 to CR 225A ERP #: 438697.01 COE #: 199702099 (NW-XX)

(4) FM 238719 – SR 40, SR 328 to SW 80th ERP #: 44022268.00 COE #: _____

Drainage Basin(s) (names): Ocklawaha River Basin Water Body(s):None SWIM water body? (Y/N) N

Acres and Types of Impact:

(1) WPI 5113632 - 0.02 ac. 617 (Fluccs code)

(2) WPI 5113511 - 2.49 ac. 640 (Fluccs code)

(3) WPI 5113549 - 1.09 ac. 641 (Fluccs code)

(4) FM 238719 – 0.08 ac. 641 (Fluccs code)

TOTAL: - 3.68 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement _X_ Preservation Mitigation Area: **160 ac.**

SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N Drainage Basin(s): Ocklawaha River (also referred to as Florida Ridge Basin)

Water Body(s): Ledwith Lake SWIM water body? (Y/N) N

Project Description

A. **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 basin where the proposed DOT wetland impacts will occur. Preservation through acquisition is the best alternative toward protecting this important water resource, particularly considering the lack of other large wetland systems within the majority of this basin. This acquisition is a joint effort between Alachua County, FDEP, SJRWMD, and the Conservation Trust for Florida.

B. **Brief description of current condition:** Ledwith Lake is a 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 (refer to site descriptions in Attachment A).

FDOT Mitigation Project – Ledwith Lake

C. Brief description of proposed work: Ledwith Lake is part of a proposed east-west corridor 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 hydrologic 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 community. Other enhancement opportunities include the elimination of cattle grazing within the marsh prairie, which has allowed some encroachment of nuisance vegetation along the perimeter, particularly dog fennel.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): Essentially all the DOT wetland impacts (3.66 of the 3.68 acres) are proposed to occur to marsh habitat. Preservation and possible enhancement of a portion (160 acres) of a high quality marsh prairie (total 2200 acres) will result in a proposed wetland mitigation ratio of 44:1. Considering the high quality of the marsh with minimal requirements for enhancement, this ratio is within the normal 10-60:1 range for enhancement of wetland habitat. 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. As noted in the attached information, other mitigation nominations within the same basin (Fish Prairie Restoration, DEP - Carr Family Farm) and within Marion County did not achieve successful negotiations with the landowners.

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.

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, 2002

Project cost: $100,000 (total); Acquisition (160 acres) – Long-term management conducted by Alachua Co. and FDEP

FDOT Mitigation Project – Ledwith Lake

Attachments

__X__ 1. Detailed description of existing site and proposed work. **Refer to Attachment A - Existing site conditions are described in reports prepared by Ms. Fay Baird, M.S. (Hydrology), Dr. Paul Spitzer (Wildlife), and Dr. David Hall (Vegetation). There are no proposed work activities at this time. If the hydrologic study of Ledwith & Levy Lake determine that 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, 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.**

Attachment A

May 1, 2001

To: **Alachua County Forever**
From: **Fay Baird, M.S.**
Subject: **Zetrouer property water resources considerations**

As a water resources scientist and a citizen of south-central Alachua County, I am pleased to offer some comments about this property, which has been nominated for acquisition by Alachua County Forever.

The Zetrouer property is located in south-central Alachua County in an area that is underlain by a thin layer of the Hawthorn Formation, a deposit of clays, clayey sands and sediments (Clark et al., 1964, Williams et al. 1977). The Hawthorn Formation constitutes the confining layer of the Floridan Aquifer in this vicinity. The property lies within the "perforated zone"of the Hawthorn Formation, an area one to five miles in width that roughly parallels Interstate 75 (Macesich, 1988). Within the perforated zone, the Hawthorn Formation is interrupted by karst features, including caves and sinkholes, which can provide direct connections to the Floridan Aquifer. Regional groundwater flow here is generally from northeast to southwest (ACDEP, 1996).

During a site visit to the Zetrouer property in April of 2001, three shallow sinkholes less than 50 feet wide and less than 10 feet deep were noted near unpaved roads on the property. Inspection of the U.S. Geological Survey topographic map of the area reveals numerous small circular ponds and depressions that were not inspected during the site visit, which appear to be karst features. A more intensive natural features inventory of the property would probably reveal more small ponds, wetlands, and sinkholes. In addition a small cave is located on the Zetrouer property in Marion County, in an area with geology similar to that on the Alachua County side.

Ledwith Prairie, a freshwater marsh, is the most significant surface water feature on the property. It is one of the largest intact wetlands in Alachua County: 2200 acres, with 1560 acres in Alachua County and the remainder in Marion County. Ledwith Prairie comprises approximately 1200 acres of the 2222-acre Alachua County portion of the Zetrouer property. Its two major inflow tributaries, from Moore's Pond and Fish Prairie, flow into the prairie on the south side. Ledwith drains intermittently to the north through a manmade connection to Levy Prairie, from there to Kanapaha Prairie, and ultimately to Pearson Sink.

Unlike its neighbors Levy Prairie to the north and Fish Prairie/Moore's Pond in Marion County to the south, Ledwith has not been extensively modified by ditching and draining. It therefore offers outstanding flood protection and water quality improvement functions. It is unknown whether there are sinkholes within the prairie which could form direct connections to the Floridan Aquifer, but this seems possible based on the geology of the area and other similar "highland marshes" in the vicinity such as Tuscawilla Prairie and Orange Lake.

Suggested scores for water resource protection (1=low, 5=high)

A. Degree of vulnerability of drinking water aquifer

Suggested score = 5. As mentioned previously, the property is located in the "perforated zone" of the Hawthorn Formation. The karst features noted throughout the upland portions of the property provide potential pathways for surface waters to percolate into the Floridan aquifer. In addition, Ledwith Prairie drains intermittently to the north to Levy Prairie, from there to Kanapaha Prairie, and ultimately to Pearson Sink, making it a stream-to-sink system.

The top of the Floridan aquifer (Ocala limestone) is located around 40 feet above sea level (Clark et al. 1964; ACDEP, 1996). Land surface elevations at the Zetrouer property range from 66 ft above sea level in Ledwith Prairie to 86 feet at the southwestern corner of the Alachua County portion of the site. In this area the Hawthorn Formation is approximately 20 feet thick (ACDEP, 1996), which suggests that the bottom of Ledwith Prairie is not far from the top of the Hawthorn Formation.

Even under its current predominantly agricultural/silvicultural uses, there is slight potential for aquifer contamination because of the frequency of karst features and their ability to provide direct hydrologic connections between surface water and groundwater. Preservation of the property for low-impact recreation, limited agriculture (grazing, silviculture) and/or conservation would greatly reduce the possibility of future uses that would conflict with maintaining aquifer protection here. Increased human activities associated with potential allowable development or higher-impact agricultural uses would increase the possibility of contamination from use of conventional household chemicals, agricultural fertilizers and pesticides, and septic tanks.

B. Groundwater Recharge Function

Suggested score = 5. The Alachua County Local Government Map Atlas published by the St. Johns River Water Management District (SJRWMD, 1996) shows that the Zetrouer property is located in an area characterized by high Floridan Aquifer recharge, 12 or more inches per year. This is the highest category of recharge used by SJRWMD in the map atlas. In addition, the surface water basin in which Ledwith Prairie is located is a stream-to-sink system. Based on the local geology, it is possible that sinkholes occur in Ledwith Prairie itself, which would provide an even more direct connection to the Floridan Aquifer.

C. Potential for protecting surface water features (quality)

Suggested score = 3. The property includes Ledwith Prairie (2222 acres total both on and off site) and a smaller shallow-marsh pond known as Mud Pond, estimated at 300 acres in size, of which about 200 acres is located on the Zetrouer property. There are also smaller unnamed streams on the property. Intact wetlands have the potential to

provide pollution attenuation, mostly based on the presence of deep organic soil deposits such as those found in prairies. Since Mud Pond and Ledwith Prairie are relatively intact, their pollution attenuation abilities are likely to be high, although there are no nearby large lakes or rivers whose protection would be enhanced by such attenuation.

D. Potential for serving flood management functions

Suggested score = 5. The SJRWMD Map Atlas's Flood Protection map for Alachua County shows all of Ledwith Prairie, Mud Prairie, and an unnamed wetland north of Mud Prairie as undeveloped floodplain. The sheer size of Ledwith Prairie and the lack of ditching or draining activity there give it a significant flood storage function compared to other nearby prairies which have been hydrologically modified.

The present owner, International Property Services Corp., reports a total of 1396 acres of wetland on the property. Of this acreage it is estimated that 1200 acres is Ledwith Prairie and the remainder (approximately 200 acres) is Mud Pond and associated wetlands. Since both Ledwith Prairie and Mud Pond are largely unaltered, they have excellent flood storage potential. Three inches of direct rainfall onto the surface of Ledwith Prairie would occupy a total of 555 acre-feet of storage, of which approximately 300 acre-feet would be on the Zetrouer portion of the prairie.

When outflow eventually occurs from Ledwith, the outflow enters Levy Prairie and eventually flows from there to Kanapaha Prairie. Ledwith's location in the upper reaches of this surface water drainage basin enhances the basin's flood storage capability, since more flood storage in upper reaches increases flood protection in downstream reaches (which are themselves floodprone, in this case).

Thank you for the opportunity to submit my comments on this nomination.

Fay Baird

Fay Baird, M.S.
P.O. Box 1082
Micanopy, FL 32667
352-466-3801

References cited:

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Williams, K.E., D. Nicol and A.F. Randazzo, 1977. The geology of the western part of Alachua County, Florida. Report of Investigations No. 85, Bureau of Geology, Tallahassee, FL.

STATEMENT OF PAUL R. SPITZER, PH.D., REGARDING LEDWITH LAKE

AND THE ASSOCIATED ZETROUVER PROPERTY, ALACHUA COUNTY, FLORIDA

I am a professional ecologist based at the Cooperative Oxford Laboratory in Oxford, MD. I recently made three visits to this property, on March 28, March 30, and April 9, 2001. I spent a total of 14 hours carrying out biological survey. Most of this was on foot, as the property is extremely pleasant walking. A few hours were spent watching waterbird movements and behavior at Ledwith Lake--a significant portion of each visit.

MY OVERALL IMPRESSION IS THAT THIS PLACE STILL RESEMBLES ALACHUA COUNTY AS WILLIAM BARTRAM SAW IT. It does so far more than any other local site I visited--and I was on William's trail, reading the appropriate sections of his "Travels" (1791) during my visit. It also resembles Alachua County as Prof. Archie Carr saw it (see "A Naturalist in Florida"), except for probable declines in snakes and possibly other reptiles such as tortoises. Grazing by cattle has left the forest understory quite open, so all is walkable. The lake edge is very interesting walking for a naturalist, and with calf-high rubber boots one can wander through the outer fringe of aquatic vegetation (much of it bulrush I think)--please see photo #1.

THE LAKE'S STABLE HYDROLOGY AND ABUNDANT WATER STAND IN CONTRAST TO MANY (MOST?) OTHER LOCAL SITES. For example, on the open pool by the northwest shoreline (seen distantly in photo #2) I noted young alligators in the company of a small female about 4-5 feet long, some vocalizing, one riding on her back. Such successful reproduction must be locally rare given the recent dry cycle? On my third visit, at least two males were bellowing in the distance.

The lake's birdlife was also impressive, with many similarities to the reports of Bartram (see, for instance, the article in March 2001 National Geographic Magazine). Important bird observations were discussed with Mr. Steve Nesbitt, Florida F & W Cons. Comm., Gainesville, tel 352-955-2230. Steve is an authority who has worked on regional waterbird conservation for over 25 years. I suggest him as a source of perspective on the value of Ledwith Lake as a preserve, and urge you to take him out there.

I watched the lake from the open area next to the wooden Rayoneer fence line, where a Zetrouver road reaches the NW lakeshore. The lake's size and vegetation growth made precise counts and observations difficult. To compensate I climbed with telescope on top of a simple tin-roofed shelter, and the additional six feet of elevation was very helpful. For more detailed study, I suggest a simple wooden "deerstand" platform 20 to 40 feet up in a lakeside tree, with ladder access. For public appreciation, a more formal, elaborate, and expensive viewing platform would be appropriate

7 to 10+ Wood Storks were using the lake on each visit. This endangered species is the subject of intense interest and management in the southeastern U.S. (See the cover story in Smithsonian Mag. 31,#11: pp. 72-81. February 2001.) Steve says there is a historic annual breeding colony in the Micanopy area at "River Styx", usually 100-225 pairs. Because of drought it was inactive last year and will probably be inactive this year. Around 10:30 AM on April 9th I watched 4 storks rise and soar away in their classic fashion, but saw no sign of regular "commuters". Steve emphasized that Ledwith is an energetically favorable commute to the colony.

(2)

2 or 3 pairs of Sandhill Cranes were using the lake on each visit. They showed evidence of territorial defense and breeding activity by "unison calling" and dancing. Steve confirmed my numbers as typical of the breeding season, and stated that larger numbers might winter on the lake and/or roost there during the winter season. He also mentioned that one of the introduced Whooping Cranes was present for 2 or 3 weeks about a month ago (conversation of April 16th).

On each visit: 50-60 Great Egrets, 5-15 Little Blue Herons, and 5-10 Great Blue Herons were observed. 15-25 Wood Ducks were observed, Steve says they probably breed in some abundance. On my first visit, flocks totalling 15-20 Mottled/Black Ducks were flying around the lake. Steve emphasized that they winter there, along with Blue-winged Teal and Rick-necked Ducks. My Anhinga count is uncertain because of vegetation--roughly 15 birds on each visit. 2+ Bald Eagles were soaring, perching, and hunting around the lake. Steve said 2 pairs nest in the area, and a third pair nests near the (dry) Levy Lake.

Waterbird diversity reflects the lake's pleasing habitat diversity, with patches of open water and a mosaic of aquatic plant species at various depths. Some of the vegetation appears to form a floating mat.

In addition to eagles, raptors were well represented on the property: Red-shouldered Hawk, Red-tailed Hawk, Sharp-shinned Hawk, Marsh Hawk. Swallow-tailed Kite was seen feeding on the canopy of dense forest along Rt. 234 (I think?--the dirt road near where it crosses the drain connection to Moores Pond) as one approaches the property, and doubtless uses the property.

Red-headed Woodpeckers were common in the open pine-oak habitat (see photo *3), and were very vocal with lots of interesting and entertaining social behavior. Pileated Woodpeckers favored the deeper forest (note tree size in photo *4). They were common, and we may have found an active nest cavity.

Snipe, Yellowlegs, and Meadowlarks were feeding in the wetter grazed areas. Sometimes they fed in the extensive pig diggings (photo *3). These maintain some habitat diversity, and are thus desirable from that point of view. However, pigs may be active snake predators--I don't know anything about that.

Many of the forest groves are huge and magnificent (photo *4), with old oaks and hickories predominant. They support typical breeding passerines such as Crested Flycatcher, Yellow-throated Vireo, Red-eyed Vireo, Parula Warbler, and Summer Tanager. All of these were singing and were fairly common.

I encountered an assortment of wildflower species, which may persist because grazing pressure is only moderate to light. I emphasize that William Bartram also encountered a grazed system, both cattle and horses. One of his Seminole hosts was known as "Cowkeeper". Periodic burns were also present at that time.

To re-emphasize, the walking throughout the property is delightful. Calf-high rubber boots allow easy access to wet areas. They would also afford some snake protection--but no snakes of any sort were encountered. I am told they are greatly reduced from former numbers.

(3)

THE FUTURE:

This property will make a great naturalist's preserve, including some sort of observation tower by the lake. Walking exploration should be encouraged. Ongoing management (such as continuation of modest, carefully monitored grazing) will be essential. I would discuss that with Steve Nesbitt, among others.

Acquisition of at least some adjoining Rayoneer land is desirable if financially feasible. It would be a shame to alter the wild aspect of the immediate lakeshore with houses or ranchettes on that property. Right now, much of the site still feels like William Bartram or Cowkeeper could walk by at any time.

Any restoration of Levy Lake will also enhance this property's value to wildlife. The more habitat options there are, the more big mobile charismatic birds such as wood storks, egrets/herons, anhingas, ducks, shorebirds, cranes, and raptors are likely to be abundant.

I had a splendid visit, and I am grateful for my time on the property

Paul Spitzer April 21, 2001

Paul R. Spitzer, Ph.D.

Cooperative Oxford Laboratory

904 South Morris St.

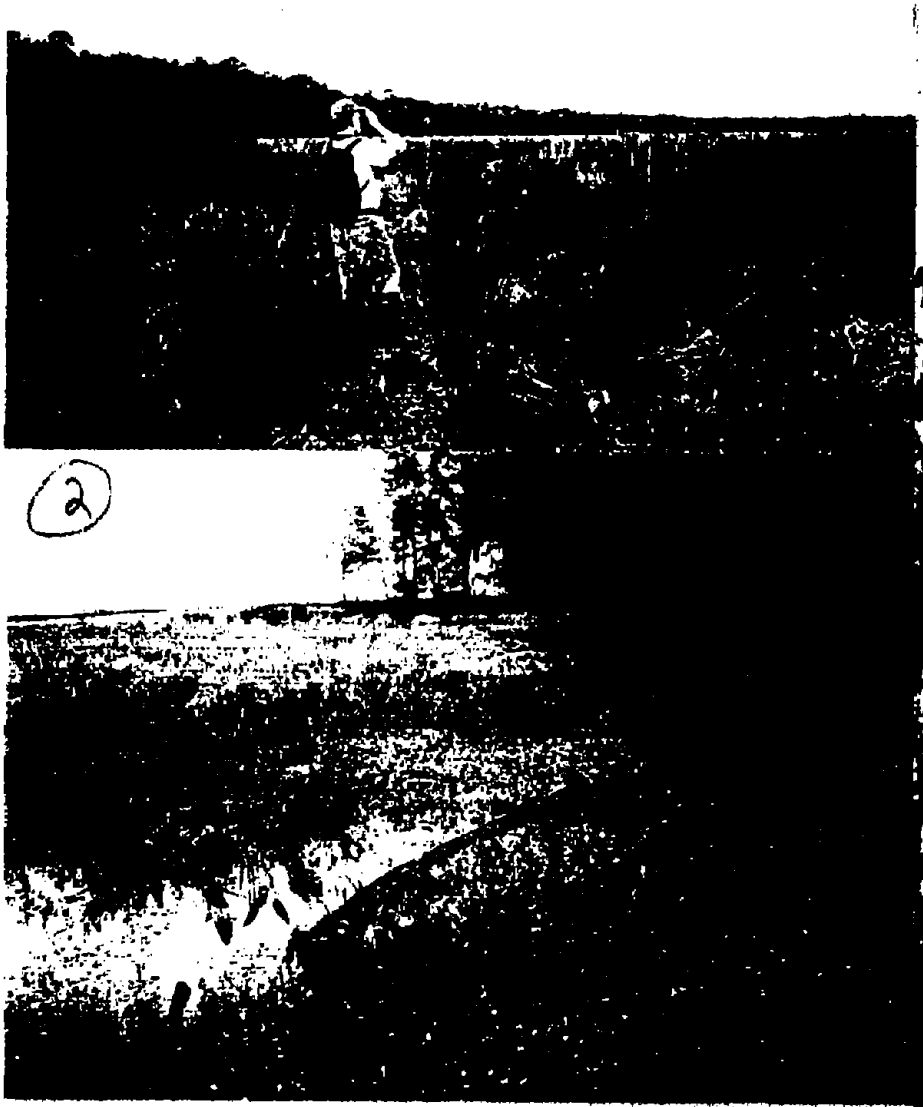
Oxford, MD 21654

tel 410-476-5163, 410-226-5193

FAX 410-226-5925

e-mail: spitzer_paul@hotmail.com

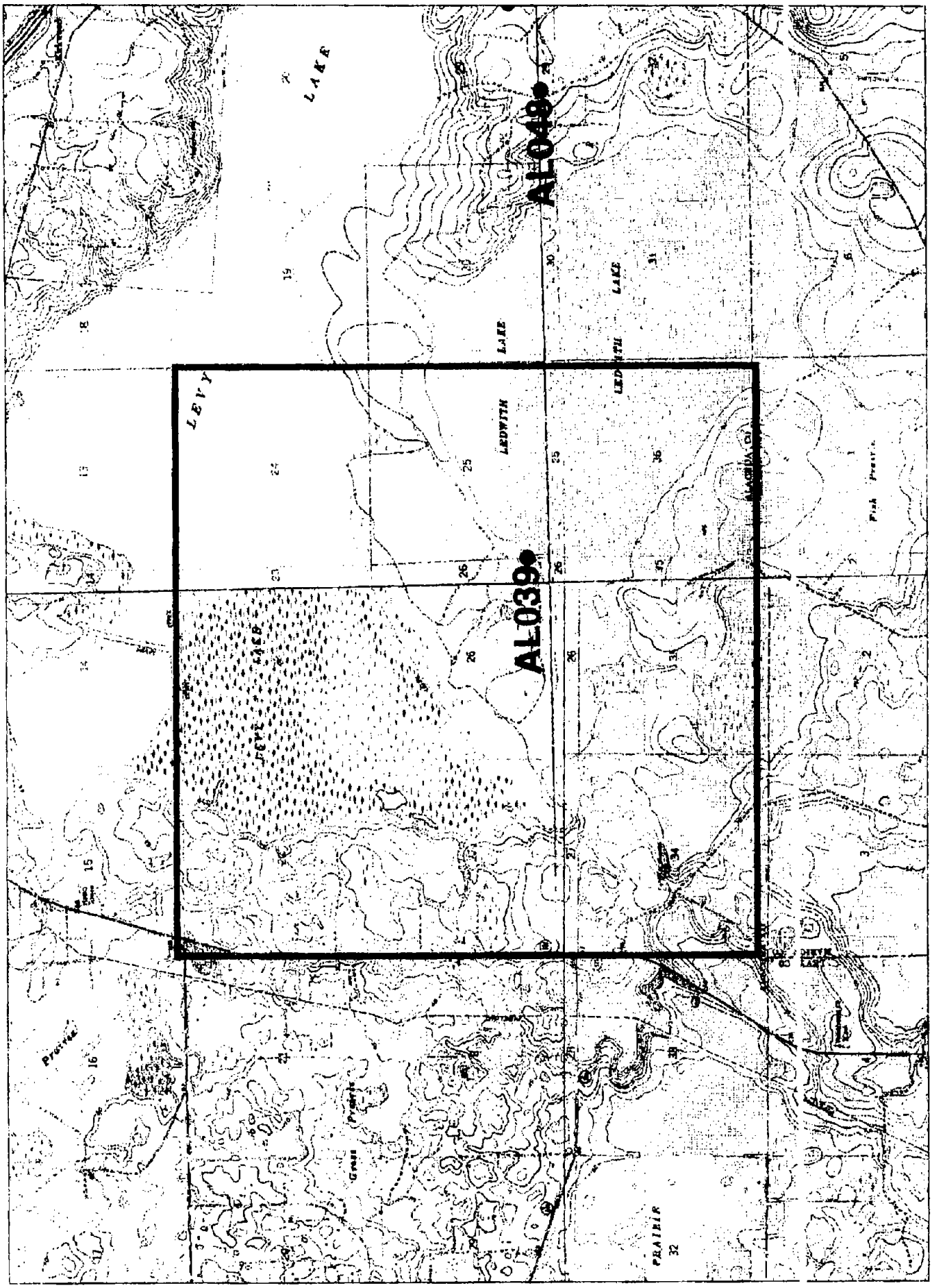
(1)



(2)

(4)

(3)



Bald eagle nests in the vicinity of "Levy Project" for Conservation Trust for Florida, Inc.

3 May 2001

To: Alachua County Forever

From: David W. Hall, Ph.D.

Subject: ZETROUER TRACT HABITATS AND VEGETATION LISTS

Plants viewed in the field by David W. Hall while walking meandering transects through various habitats on 5 April 2001.

The canopy of the hammocks on this property is an excellent example of maturity and diversity and well worth efforts of purchase and preservation.

UPLAND HAMMOCK
Good hammock with many very large Pignut Hickory, Live Oak and Basket Oak trees. The ground cover is disturbed and weedy due to grazing pressure.
Ambrosia artemisiifolia, Rag Weed
Arisaema dracontium, Green-dragon
Callicarpa americana, French Mulberry
Campsis radicans, Trumpet Creeper
Carpinus caroliniana, Blue-beech
Carya glabra, Pignut Hickory
Celtis laevigata, Sugar-berry or Hack-berry
Diospyros virginiana, Persimmon
Elephantopus elatus, Florida Elephant's-foot
Eremochloa ophiuroides, Centipede Grass
Gelsemium sempervirens, Yellow Jessamine
Ilex cassine, Dahoon Holly
Ilex opaca, American Holly
Lantana camara, Lantana
Liquidambar styraciflua, Sweetgum
Macfadyena unguis-cati, Cat-claw Vine
Magnolia grandiflora, Southern Magnolia
Medicago lupulina, Black Medick
Oplismenus hirtellus, Woods Grass
Parthenocissus quinquefolia, Virginia Creeper
Pinus taeda, Loblolly Pine
Quercus michauxii, Basket Oak or Swamp Chestnut Oak
Quercus nigra, Water Oak
Quercus virginiana, Live Oak
Sabal palmetto, Cabbage Palm
Smilax bona-nox, Catbrier
Stellaria media, Common Chick Weed
Tillandsia bartramii, Northern Needle-leaf
Vernonia gigantea, Giant Ironweed
Ulmus americana, American Elm
Viola sororia, Florida Violet
Vitis rotundifolia, Wild Grape

DEPRESSION
Grazing pressure and lack of water has altered the vegetation within this depression. Mature trees occur around the rim.
Ampelopsis arborea, Pepper-vine
Carex longii, Long's Sedge
Cephalanthus occidentalis, Button Bush
Cicuta maculata, Water Hemlock
Commelina diffusa, Spreading Day-flower
Diospyros virginiana, Persimmon
Eupatorium capillifolium, Dog Fennel
Hydrocotyle umbellata, Water Penny-wort
Juncus effusus, Soft Rush
Liquidambar styraciflua, Sweetgum
Nyssa biflora, Blackgum
Panicum gymnocarpon, Savannah Panic Grass
Rosa palustris, Swamp Rose
Rubus argutus, Highbush Blackberry
Saururus cernuus, Lizard's-tail
Ulmus americana, American Elm

LEDWITH PRAIRIE
Very large natural prairie with evident grazing pressure along the margins. Low water has affected growth of most species.
Axonopus furcatus, Big Carpet Grass
Bidens mitis, Marsh Beggar-tick
Carex longii, Long's Sedge
Commelina diffusa, Spreading Day-flower
Decodon verticillatus, Swamp Loosestrife
Digitaria serotina, Blanket Crab Grass
Eleocharis vivipara, Sprouting Spikerush
Eupatorium capillifolium, Dog Fennel
Hydrocotyle umbellata, Water Penny-wort
Juncus effusus, Soft Rush
Limnobium spongia, Frog's-bit
Ludwigia palustris, Marsh Seedbox
Nelumbo lutea, American Lotus
Nuphar lutea, Spatter-dock
Nymphaea odorata, American White Water-lily
Panicum hemitomon, Maidencane
Polygonum opelousana, Opelousas Smartweed
Pontederia cordata, Pickerel-weed
Teucrium canadensis, Wood Sage

DEPRESSION RIM AROUND A SMALL WET PRAIRIE, WET DEPRESSION, SMALL AREA OF OPEN WATER AND SHRUB MARSH
A natural depression marsh containing a wet depression, a deeper hole and a shrub marsh is dry. It shows little evidence of grazing and should easily return to a natural condition upon return of water.

Rim
Acer rubrum, Red Maple
Liquidambar styraciflua, Sweetgum
Lyonia lucida, Shiny Lyonia
Nyssa biflora, Blackgum
Persea palustris, Swampbay
Quercus laurifolia, Laurel Oak
Sabal minor, Bluestem Palm
Serenoa repens, Saw Palmetto

Shrub Swamp
Cephalanthus occidentalis, Button Bush
Salix caroliniana, Coastal Plain Willow

Wet Prairie
Galium tinctorium, Dye Bedstraw
Hibiscus grandiflorus, Swamp Hibiscus
Juncus effusus, Soft Rush
Nuphar lutea, Spatter-dock
Polygonum punctatum, Dotted Smartweed
Pontederia cordata, Pickerel-weed

Wet Depression
Andropogon glomeratus, Bushy Broom Grass
Panicum hemitomon, Maidencane
Woodwardia virginica, Virginia Chain Fern

Open Water
Nuphar lutea, Spatter-dock
Pontederia cordata, Pickerel Weed
Sesbania exaltata, Hemp Sesbania

LOGGED HAMMOCK
While quite weedy and lacking larger pines the diversity of woody species remains. Grazing and the opening of the canopy have increased sunlight and disturbed the soil allowing the rapid expansion of many weedy species.
Axonopus fissifolius, Common Carpet Grass
Carya glabra, Pignut Hickory
Cirsium horridulum, Horrible Thistle
Elephantopus elatus, Florida Elephant's-foot
Eremochloa ophiuroides, Centipede Grass
Erigeron quercifolius, Southern Fleabane
Eupatorium capillifolium, Dog Fennel
Gelsemium sempervirens, Yellow Jessamine
Juniperus virginiana, Red Cedar
Liquidambar styraciflua, Sweetgum
Medicago lupulina, Black Medick
Mitchella repens, Partridge-berry
Nyssa sylvatica, Sourgum
Parthenocissus quinquefolia, Virginia Creeper

Pinus taeda, Loblolly Pine
Plantago virginica, Paleseed Plantain
Polymnia uvedalia, Bear's-foot
Pteridium aquilinum, Bracken Fern
Quercus virginiana, Live Oak
Rubus argutus, Highbush Blackberry
Rubus cuneifolius, Sand Blackberry
Salvia lyrata, Lyre-leaf Sage
Serenoa repens, Saw Palmetto
Sporobolus indicus, Smut Grass
Trifolium repens, White Clover
Vitis rotundifolia, Wild Grape

UPLAND PASTURE
Area has been cleared and planted with forage grasses for pasture. Much of it is poorly maintained and quite weedy.
Cirsium horridulum, Horrible Thistle
Diospyros virginiana, Persimmon
Elephantopus elatus, Florida Elephant's-foot
Linaria canadensis, Old Field Toadflax
Liquidambar styraciflua, Sweetgum
Medicago lupulina, Black Medick
Paspalum notatum, Bahia Grass
Pinus palustris, Longleaf Pine
Pinus taeda, Loblolly Pine
Quercus virginiana, Live Oak
Rubus cuneifolius, Sand Blackberry
Sabal palmetto, Cabbage Palm
Smilax bona-nox, Saw Greenbrier
Zephyranthes atamasco, Atamasco-lily

LOWLAND PASTURE - DITCHED
A marshy lowland has been drained using ditches. The exposed land has been improved with pasture grass for grazing.
Aster subulatus, Annual Marsh Aster
Axonopus fissifolius, Common Carpet Grass
Centella asiatica, Coinwort
Eupatorium capillifolium, Dog Fennel
Juncus effusus, Soft Rush
Paspalum notatum, Bahia Grass
Polygonum punctatum, Dotted Smartweed
Zephyranthes atamasco, Atamasco-lily

LOGGED PINE WOODS
Most of the pine woods have been logged. The canopy is not mature and many small Water and Sand Live Oaks have filled in the openings. Much of the ground cover has been damaged by the logging and dense shade from the weedy shrubs and trees.
Gelsemium sempervirens, Yellow Jessamine

Ilex glabra, Gallberry
Liquidambar styraciflua, Sweetgum
Lyonia lucida, Shiny Lyonia
Myrica cerifera, Wax-myrtle
Pinus taeda, Loblolly Pine
Pteridium aquilinum, Bracken Fern
Quercus geminata, Sand Live Oak
Quercus nigra, Water Oak
Rubus argutus, Highbush Blackberry
Serenoa repens, Saw Palmetto
Vaccinium myrsinites, Shiny Blueberry
Vitis rotundifolia, Wild Grape

Sincerely,

David W. Hall

David W. Hall
3666 N.W. 13th Place
Gainesville, FL 32605
375-1370

Conservation Trust for Florida, Inc.
P.O. Box 134
Micanopy FL 32667-0134

May 9, 2001

Ramesh Buch
Manager, Land Conservation Program
Alachua County Environmental Protection Department
200 Southeast 2nd Avenue, Suite 201
Gainesville, Florida 32601

Subject: Zetrouer Parcel ACF Application Addendum.

Dear Mr. Buch:

The Conservation Trust for Florida forwards the attached addendum on the subject parcel for your consideration in the Alachua County Forever acquisition process. CTF has contacted several experts in their respective fields to provide their professional review of the Zetrouer tract. I understand that County staff has visited the tract and I'm sure that they are as impressed with the natural beauty of the site as we are. The attached is a quantification of that beauty by three scientists in hydrology, botany, and avian studies. Please feel free to use these data for your purposes. Also, feel free to contact me or the authors should you have any questions regarding their reports or the subject parcel.

I have also enclosed a letter from an official at the Southwest Florida Water Management District expressing his agency's interest in the subject parcel. In our discussions with him, it seems that there is the opportunity for some cost-share on this parcel. In addition, there is the opportunity to extend the impact of ACF beyond the Alachua County line into Marion and Levy Counties. CTF is working to attract the attention of several agencies to acquire a connecting corridor from the Payne's Prairie/Orange Creek/Oklawaha River through Levy and Ledwith Lakes (thus including the Zetrouer parcel) to Watermelon Pond and then on to the Goethe State Forest and Waccassassa Bay State Preserve. We view SWFWMD's interest in the Zetrouer parcel as a step in that direction.

Sincerely,

David Carr
Executive Director

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
SUNCOM 628-4150 TDD only 1-800-231-6103 (FL only)
World Wide Web: http://www.swfwmd.state.fl.us

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Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)
SUNCOM 578-2070

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)
SUNCOM 572-6200

Venice Service Office
115 Corporation Way
Venice, Florida 34292-3524
(941) 486-1212 or
1-800-320-3503 (FL only)
SUNCOM 526-6900

Leesburg Service Office
3600 West Sovereign Path
Suite 226
Leesburg, Florida 34461-8070
(352) 365-8131
SUNCOM 667-3271

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Steve A. Heath, Assistant Executive Director
William S. Blenky, General Counsel

April 25, 2001

Mr. David Carr, Executive Director
Conservation Trust for Florida
P.O. Box 134
Micanopy, FL 32667

RE: FDOT Mitigation within the Ocklawaha River Basin

Dear Mr. Carr:

The SWFWMD appreciates your organization's efforts and interest in evaluating opportunities to acquire native habitat parcels within Alachua, Marion, and Levy Counties. The WMD has been evaluating options to provide FDOT wetland mitigation within this basin for the last couple years. Due in part to the lack of wetland resources in this basin, opportunities have been very difficult to locate. We have coordinated with several landowners, as well as the SRWMD, SJRWMD, FDEP, USACOE, and NRCS. We were negotiating the possible less-than-fee acquisition and wetland restoration of Fish Prairie on the Zetrouer Tract. Mr. John Rudnianyn has been very helpful but unfortunately due to the contradictory plans proposed by other owners of the same property, the WMD needed to proceed with evaluating other mitigation alternatives.

As you know, the WMD is proposing to reimburse or cost-share the acquisition of the Carr Farm as part of the DEP-CARL acquisition program. According to Ms. Rolleston, the Carr Farm achieved a high ranking for possible acquisition with a final decision anticipated by July. We have notified DOT-District 5 that if this proposed acquisition is not approved and accepted by the other federal and state environmental agencies as appropriate for DOT mitigation, the WMD may have to defer fulfilling the mitigation responsibilities back to DOT. However, in light of your organization's interest and potential acquisition, we can probably still coordinate another mitigation option if funding for the Carr Farm is not approved this year. I will let you know when Ms. Rolleston contacts me with the final decision.

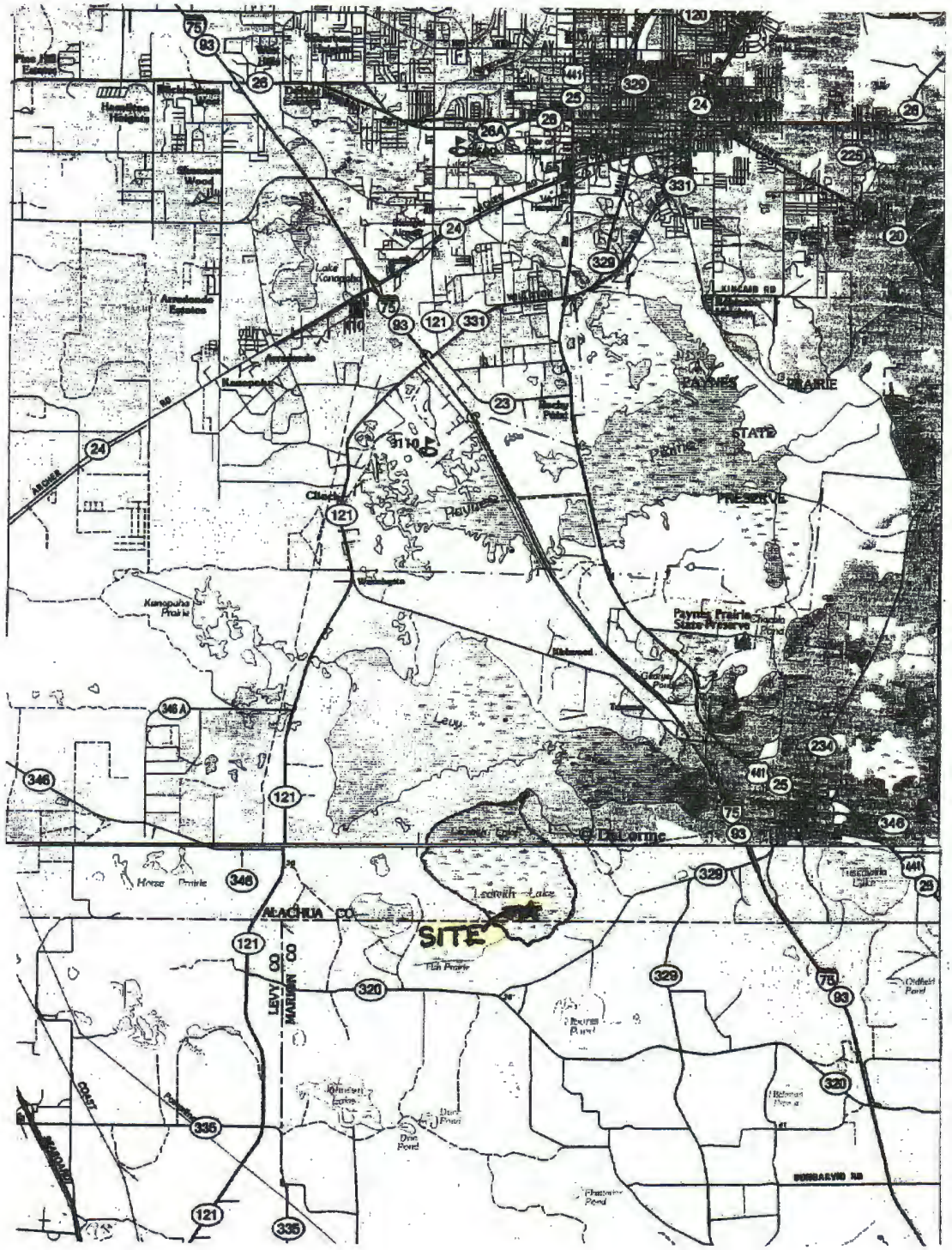
However, even if the DOT Mitigation funds are not available for parcels your organization has interest, you're encouraged to provide nominations to the various agencies for possible funding through the CARL program, Save Our Rivers, and Florida Forever. For the 5-year plan, the SWFWMD does not have a priority acquisition area within the northern portion of the District. That situation could change over time and with the potential of cost-share and management responsibilities provided by other agencies, there is an increase potential for obtaining multi-agency funds. For potential site nominations within this WMD, please feel free to contact Mr. Ron Daniel, Land Acquisition Manager, at 1-800-423-1476, ext. 4453. Thanks again for contacting us concerning this issue, please feel free to call me if you have any additional questions or comments.

Sincerely,

Mark Brown

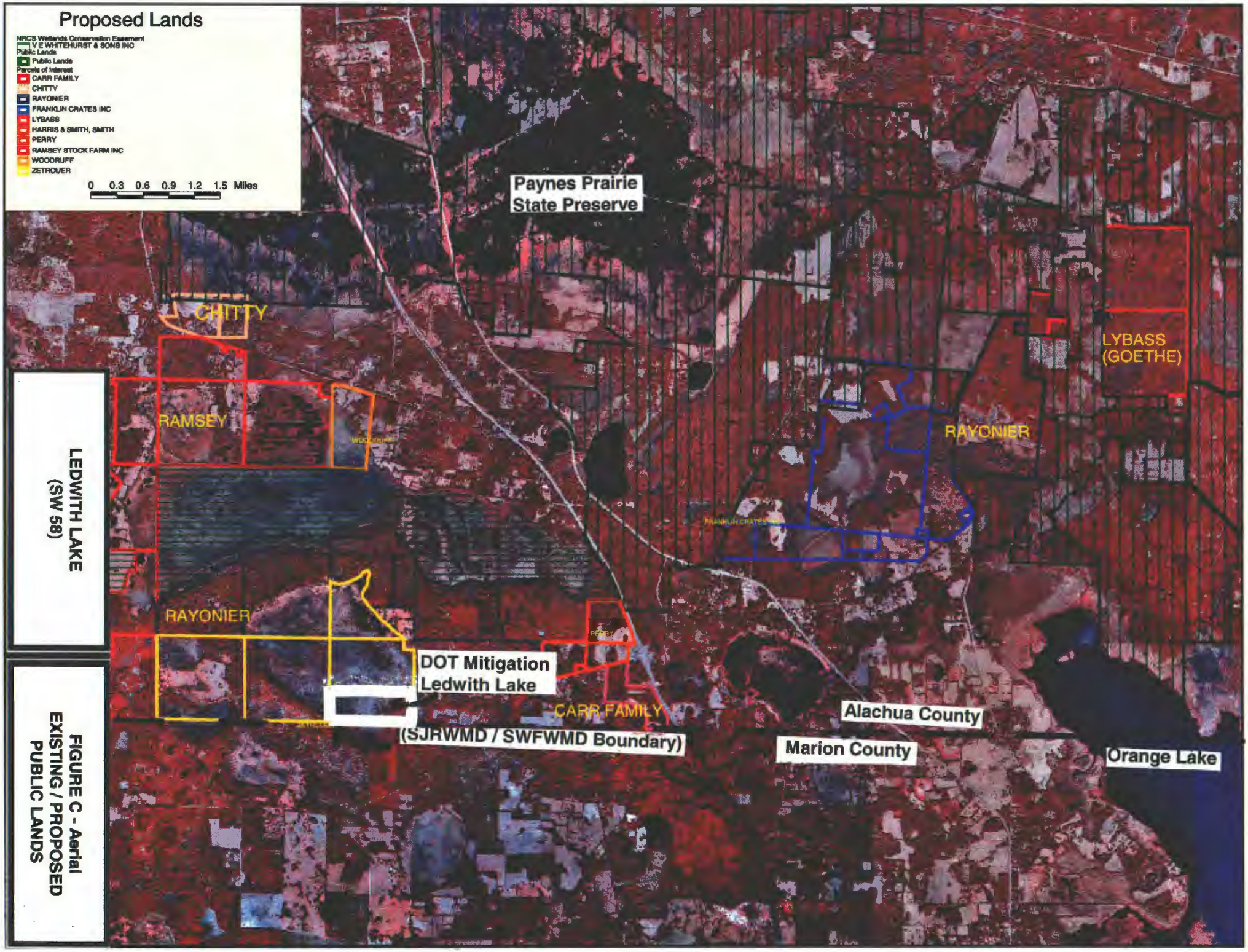
Mark M. Brown, PWS, CPSS
Environmental Scientist

cc: Penny Rolleston, FDEP
Ron Daniel, SWFWMD
Clark Hull, SWFWMD



FDOT - District 5 **MITIGATION SITE** **(Ocklawaha River Basin)**	**LEDWITH LAKE** **(SW 58)**	**FIGURE A** **LOCATION MAP** **Scale 1 in. = 2.3 miles**

Levy Project (Alachua County Section)
Ocala National Forest to
Waccassasa Preserve Corridor
First Phase Properties
Second Phase Properties
NRCS Wetlands Conservation Easement
Carr Family
CARL Project
Public Lands
Public Lands
SJRWMD
N
0 0.5 1 1.5 Miles
LEDWITH LAKE
(SW 58)
FIGURE B
EXISTING / PROPOSED
PUBLIC LANDS
PAYNES PRAIRIE
STATE PRESERVE
Lykes
Rayonier
Rayonier
DOT
MIT
Zetrouer
CARL Project
Carr Farm


Proposed Lands
NRCS Wetlands Conservation Easement
V E WHITEHURST & SONS INC
Public Lands
Public Lands
Parcels of Interest
CARR FAMILY
CHITTY
RAYONIER
FRANKLIN CRATES INC
LYBASS
HARRIS & SMITH, SMITH
PERRY
RAMSEY STOCK FARM INC
WOODRUFF
ZETROUER
0 0.3 0.6 0.9 1.2 1.5 Miles
Paynes Prairie
State Preserve
CHITTY
RAMSEY
RAYONIER
LYBASS
(GOETHE)
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

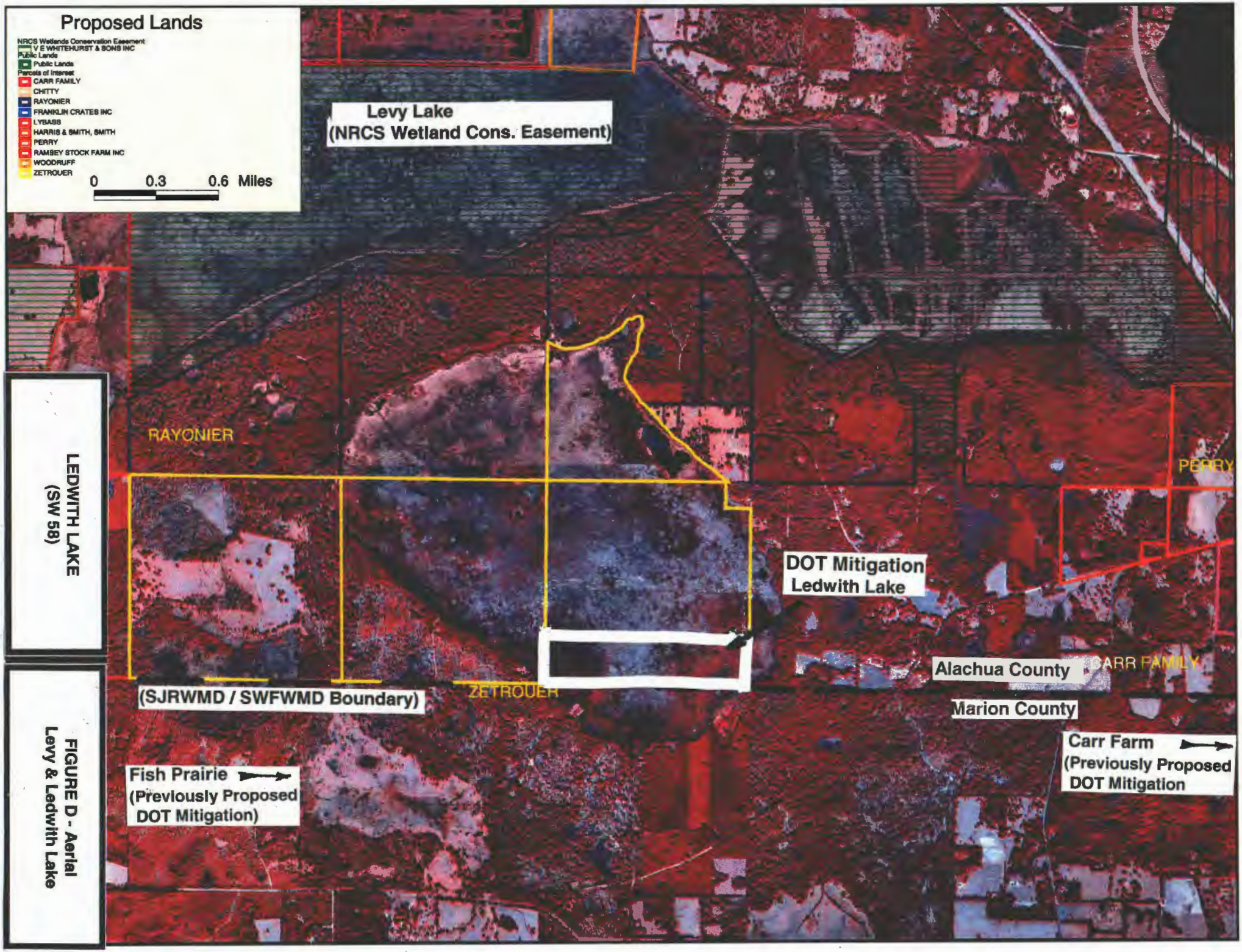

Proposed Lands
NRCS Wetlands Conservation Easement
V E WHITEHURST & SONS INC
Public Lands
Public Lands
Parcels of Interest
CARR FAMILY
CHITTY
RAYONIER
FRANKLIN CRATES INC
LYBASS
HARRIS & SMITH, SMITH
PERRY
RAMSEY STOCK FARM INC
WOODRUFF
ZETROUER
0 0.3 0.6 Miles
Levy Lake
(NRCS Wetland Cons. Easement)
RAYONIER
PERRY
LEDWITH LAKE
(SW 58)
DOT Mitigation
Ledwith Lake
Alachua County
CARR FAMILY
Marion County
(SJRWMD / SWFWMD Boundary)
ZETROUER
Carr Farm
(Previously Proposed
DOT Mitigation
Fish Prairie
(Previously Proposed
DOT Mitigation)
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
County(ies): Polk Location : Sections 22, 23, 25, 26, 27, 34, 35, 36 T25S, R23E ; Sections 30, 31 T25S R24E

IMPACT INFORMATION

(1) WPI: 1147952 FM 2012092, I-4, US 98 to SR 33 (Sec. 3) ERP #:_____ COE #:_____
(2) WPI: 1147952 FM 2012142, I-4, SR 33 to CR 559 (Sec. 4) ERP #:_____ COE #:_____
(3) WPI: 1147953 FM 2012152, I-4, CR 559 to CR 557 (Sec. 5) ERP #:_____ COE #:_____
(4) WPI: 1147954 FM 2012162, I-4, CR 557 to US 27 (Sec. 6) ERP #:_____ COE #:_____

Drainage Basin(s) : Withlacoochee River Water Body(s) : Lake Mattie, Lake Agnes SWIM water body? (Y/N) N

Impact Acres/ Types:

(1) FM 2012092 0.10 ac. 617 (Fluccs code)
0.25 ac. 643 (Fluccs code)
TOTAL (Seg. 3) 0.35 ac.*

(2) FM 2012142 0.07 ac. 617 (Fluccs code)
0.63 ac. 641 (Fluccs code)
7.24 ac. 643 (Fluccs code)
TOTAL (Seg. 4) 7.94 ac.

(3) FM 2012152 0.07 ac. 617 (Fluccs code)
1.22 ac. 621 (Fluccs code)
7.71 ac. 630 (Fluccs code)
1.33 ac. 641 (Fluccs code)
TOTAL (Seg. 5) 10.29 ac.

(4) FM 2012162 6.18 ac. 630 (Fluccs code)
TOTAL (Seg. 6) 6.18 ac.

TOTAL 24.76 acres

* Note – The western portion of Segment 3 is located within the Peace River Basin and associated wetland impacts will be mitigated at Tenoroc / Saddle Creek (SW 47).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _X_ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **1100 ac.**

Enhancement - Mixed Forested (Fluccs, 630)	683 acres
Enhancement - Cypress (Fluccs, 621)	368 acres
Enhancement - Hydric Pine Flatwoods (Fluccs, 625)	19 acres
Restoration - Marsh (Fluccs, 641)	14 acres
Enhancement - Wet Prairie (Fluccs, 643)	12 acres
Enhancement - Marsh (Fluccs, 641)	4 acres
TOTAL	**1100 acres**

SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) 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 covering over 20 miles that have excessively drained various wetland habitats throughout the property. With the use of at least 84 ditch blocks and filling approximately 4 miles of ditches, the wetlands will be hydrologically enhanced, allowing other historic wetland functions to return.

B. Brief description of current condition: The site has various wetland habitats covering over 2400 acres, dominated by cypress domes & strands, mixed forested, forested floodplain, hydric pine flatwoods, and marshes. Wetlands adjacent and connected with three major drainage ditches (Colt Creek Drain, Sapling Drain, Bee Tree Drain) are hydrologically impacted by the ditches. These ditches ultimate connect to Gator Creek along the western project boundary, a wetland system that has caused upstream flooding in spite of also being ditched. Upland habitats (approx. 4200 acres) are dominated by pine flatwoods of various habitat value, the lower quality areas are primarily due to lack of prescribed burning activity by the previous landowner. Some upland hardwood hammocks are 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 and west by extensive property owned and managed by the SWFWMD (Figure D), to the east and south by low-density residential areas.

C. Brief description of proposed work: The Hampton Tract has been added to a Gator Creek Watershed Study (conducted by Polk Co. and the SWFWMD) to evaluate and determine design features to restore the hydrology of the property without impacting upstream landowners. The majority of wetland hydrologic restoration will be conducted by constructing ditch blocks (at least 84, approximate locations on Figure F), that will redirect and detain surface and ground water in the wetlands. There are two miles of a large ditch located along the northeast property boundary that is accessible through the pasture, existing spoil material will be back filled into the ditch (Figure F). There is also a 2.5-mile ditch (Sapling Drain) that diverts historic water sheet flow from a cypress strand and historic marsh slough. That ditch will also be filled with soil excavated from the adjacent north pasture, and the excavated areas will be restored to marsh habitat. Monitor locations (23) have been designated with the installation of shallow monitor wells. Those wells will be monitored on a quarterly 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): From the 2000 mitigation plan, the proposed wetland impacts associated with the Interstate-4 corridor decreased from 44 to 25 acres. As of the fall, 2001, the design of I-4 is on hold pending further evaluation of design parameters relative to a potential construction of a high speed rail. It's apparent that this will probably not only result in an increase of impacts, but may surpass the previously proposed 44 acres. The majority of the anticipated wetland impacts along I-4 (15 of the current 25 acres) are forested wetlands. The Hampton Tract will have at least 1050 acres of forested wetland hydrologic enhancement, plus the restoration and enhancement of at least 31 acres of marsh habitat and enhancement of 19 acres of hydric pine flatwoods. The cumulative mitigation area (1,100 acres) and impact acreage (25 acres) result in an overall mitigation ratio of 44:1. However, with the I-4 wetland impact acreage anticipated to increase in 2002, this will result in a ratio decrease. The mitigation acreage and types associated with each section at Hampton is described in Attachment D. Wetlands that are preserved or have minimal enhancement are designated in green on the infrared aerial (Fig. G) and are not accounted for in the 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 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, 2003 (Construction)

Install Monitor Wells – Spring, 2001
Watershed Study -- Complete mid - 2002
Design -- Complete late 2002
Contractor Selection & Construction -- Spring, 2003
Minimum 3 Years Maintenance & Monitoring

Project cost: $1,210,700 (total);

Watershed Study	$50,000
Design	$80,000
Construction	$1,040,700
Maintenance & Monitor	$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. **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. The infrared aerial (Fig. F) depict the major ditches (yellow) and natural wetland water flow patterns (blue). Figure G is also the infrared aerial, and depict wetlands proposed for enhancement (blue) and non- or minimal enhancement (green). The wetlands designated in green are not accounted for as mitigation credit. Additional design drawings will be prepared as a supplement to 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 (almost all mixed forested and cypress systems), 4200 acres of pine flatwood & oak 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 is connected 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 flooplain associated with the Withlacoochee River. These 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 facultative species. The major ditches are designated with yellow lines on the attached infrared aerial and the natural surface water drainage patterns are marked with curved blue lines (Figure F).

A combination of predominantly ditch block construction and some total ditch backfilling 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 groundwater hydrology for the entire tract. The following information describes the restoration 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. 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 connection of these wetlands with predominantly perimeter ditches around the wetlands has altered those drainage patterns. Due to flat terrain and the slow drainage features, these pastures still periodically flood but the duration, extent, and elevation of water levels in these wetlands have been substantially altered by the ditch connections. West of the pastures, the wetlands are more contiguous, particularly for the unnamed tributary located south of the southeast-northwest access road (Figure F).

In order to restore the drainage patterns within each of these wetlands, the highest percentage of ditch blocks 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 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 but allow some degree of extended hydroperiods in the wetlands and within the ditch segments 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 foraging and water sources for all types of wildlife, 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 often associated with positive flow ditches will allow an important water resource to be available for wildlife use.

As noted on Figure G, there is a 2-mile long ditch along the northeastern property boundary proposed for backfill. As noted in the photos, this ditch is large and because doesn't have positive outfall to the Colt Creek Drain, and has more wetland water table drawdown impact during the dry season conditions. Unlike the smaller ditches associated with Colt Creek, wildlife accessibility of the wetlands and crossing adjacent property is difficult, particularly during the rainy season conditions when the ditch water is so deep. With easy equipment access to this ditch and associated spoil material, backfilling this ditch will note only enhance the hydrology of the adjacent wetlands but allow more wildlife movement through and around the wetlands and adjacent property, which includes other WMD property north of Hampton Tract. The back filled ditch will have native seed source material transferred to re-establish an appropriate wetland buffer habitat of facultative sedges, rushes, etc.

The WMD will be transferring the land use of the northeast upland pastures to silviculture. However, planted pines will be at least 50 feet from the wetlands and this buffer will be allowed to naturally generate foraging sedges and rushes. The decrease of cattle allowed in this area during the last year has already resulted in less grazing pressure and regeneration of native species to compete with the bahia. With the introduction of pines, more vegetative cover will allow more wildlife use to cross from the native habitat areas west and north of these sections. In addition, the alignment of these wetlands allows native corridor connections to other native habitat. The constructed ditch blocks will be capped with soil placed on an impermeable liner. Even though some rubble will be installed along the downstream sideslope of the block to ensure stability, the top will be a 40-50 feet long and seed/mulched with bahia. This will allow wildlife access into the wetlands during wet and dry season conditions.

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 extensive 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) to adequately circumvent the meandering flow into a relative straight 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 a meandering system. Along with the ditch blocks, if there are not adequate breach points in the spoil ridges adjacent to the ditch segments located through the wetlands, breaches will be created 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

As noted in the 2000 DOT Mitigation Plan, Sapling Drain and the intricate network of small pasture ditches within Sections 34, 35, and 2 adequately removed approximately 400 acres of marsh slough habitat. To restore that slough without impacting the contributing watershed may not only be unfeasible without extensive earthwork, but would result in substantially more cost and ecological lift than required to adequately compensate for the wetland impacts proposed by the DOT projects. Since the anticipated impact acreage decreased by almost half during 2001, it became evident that completely restoring the slough would not only result in excessive mitigation, but the funding of such construction would exceed the available funds.

However, a portion of a remnant cypress strand (Wetland 194) and three adjacent marsh restoration areas (Figure G, areas delineated in red) are still proposed for enhancement and restoration. This was the heart of the historic slough system and will restore an east-west wetland corridor toward Gator Creek. This will attenuate and sheet flow surface water to replace the straight ditch. However, it's noted the majority of pasture north of Wetland 194 has average grade elevations less than 6 inches above that of the remnant slough. It has been decided to not plant pines in these pastures north or south of Sapling Drain, nor detain surface water flow when it does extend beyond the cypress slough. These pastures have been periodically mowed which keeps decreasing regeneration of dog fennel cover. 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 that are present within the small ditches. Documentation of these conditions will be noted throughout the restoration effort and even though not accounted for in the mitigation credits, this natural regeneration without extending the earthwork beyond that needed to fill Sapling Drain may become an additional ecological benefit of the restoration effort. If at some time in the future this or any other slough restoration in these adjacent pastures are deemed acceptable for future DOT wetland impacts, the WMD will re-evaluate adding these restoration efforts to the plan.

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. Spoil material along the ditch segments within the wetlands will also be backfilled where necessary. One of the most drastic diversions is within Wetland #224 near monitor location #22, where the natural water flow to the north is diverted 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 creekbed areas, more dependent on water sheet flow. 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, minimizing and attenuating flow conditions within the floodplain currently appear to be unfeasible. 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, it's unlikely much can be conducted to divert water flow from the large ditch into the Gator Creek floodplain to restore the wetland sheet flow conditions. Attenuation of contributing flow within the Hampton Tract will potentially minimize some upstream flooding, but probably not enough to consider diverting more water out of the ditch into the floodplain.

But as noted on Figure G, the construction of ditch blocks within the Sapling Drain and Bee Tree Drain portions in the Gator Creek floodplain will provide some enhancement opportunities. There are spoil ridges along these ditch top-of-banks that by backfilling to construct ditch blocks, will accomplish a couple functions. The ditch blocks will allow availability of a water source for wildlife. For over half of each year, the Gator Creek ditch on the Hampton Tract is mostly dry. Under those conditions, there are few areas of standing water within the entire floodplain. By using the existing spoil material, this will result in breaches in the spoil ridges so when the

groundwater does exceed the block heights, surface water will be diverted north and south to the floodplain's lower grade elevations as opposed to discharging more water to the Gator Creek ditch. Since laurel oaks presently cover the spoil ridges, the construction of these ditch blocks will require removal of some trees. Care will be given to minimize impacts to the larger trees but with the contributing seed source, oaks will recruit and quickly generate in the displaced areas. As noted, the potential enhancement of the Gator Creek floodplain will be evaluated as to whether an additional 270 acres of mitigation enhancement credit will be proposed after completion of the watershed and Hampton Tract surface water studies.

ATTACHMENT B - Maintenance & Monitoring Plan, Success Criteria.

Maintenance & monitoring activities are anticipated for a minimum of three years and until success criteria is met. Maintenance activities will be predominantly associated with herbicide control (licensed applicator) of any exotic/nuisance species that may generate in the restored marshes adjacent to the existing Sapling Drain. Inspections and maintenance control will be conducted on a monthly schedule for the first year after construction activity, as needed and at least quarterly thereafter for an additional two years. Additional maintenance will be conducted thereafter as part of a long-term management plan for the Hampton Tract.

The 23 monitoring stations will be monitored for water levels, flow patterns, vegetative components, and wildlife activities on a quarterly 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 and other restoration opportunities. Additional documentation will be conducted of conditions within the Gator Creek floodplain, conversion of any northeast pastures to silviculture, and the pastures north and south of the Sapling Drain.

Success criteria for the marsh restoration will be based on a minimum 80% cover of desirable species and less than 5% exotics. A standard quantity of hydrophytic herbs (e.g. soft rush, pickerelweed, arrowhead, bulrush) will be specified as part of the final design, additional plantings will be determined based on the restored hydrology pattern, natural recruitment, and generation of desirable species. Success criteria for the hydrological enhancement of wetlands will be based on the documentation of restored surface water flow patterns. 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.

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 blocks, 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. Many of these same principles will be applied for the long-term management of the Hampton Tract.

ATTACHMENT C - DOT Mitigation

As previously noted, even though the Interstate-4 design is still under evaluation, the majority of anticipated wetland impacts associated with any future expansion are cypress and mixed forest wetlands. The majority of wetlands proposed for hydrologic enhancement at the Hampton Tract are the same habitat types. Additional evaluation may justify the opportunity to mitigate other DOT wetland impacts at the site.

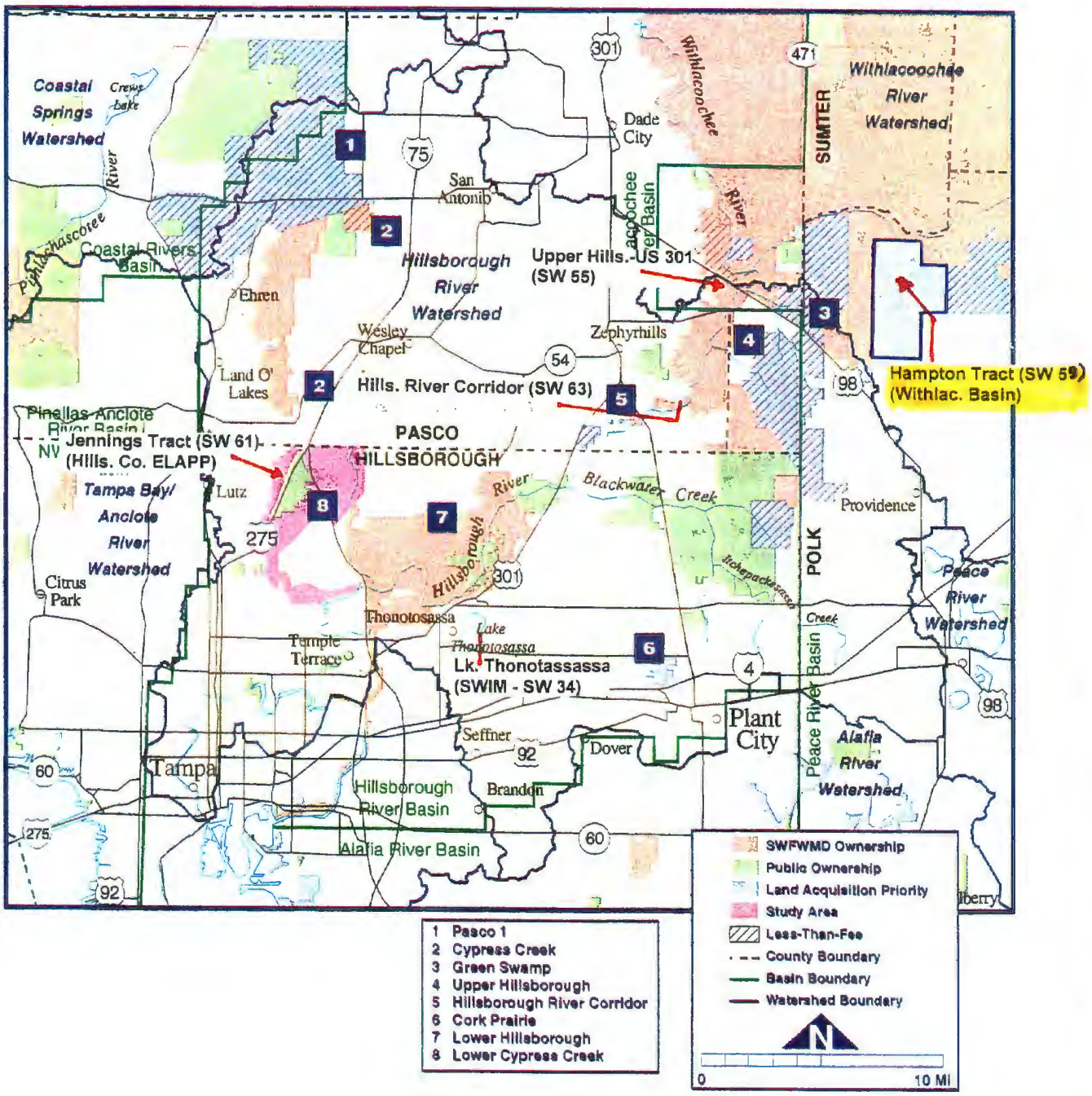
Mitigation Project - Hampton Tract

The wetland impacts associated with the four I-4 projects will be designated different areas of restoration at the Hampton Tract. Since the roadway design is anticipated to change during 2002, the comparison and matching of the mitigation with the proposed impacts will be conducted based on the final proposed impact acreage and habitats. In order to evaluate which wetlands would and would not be determined for enhancement, all the site's wetlands were determined and depicted on Figure G. 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 and restoration acreage associated with the proposed activities at the Hampton Tract.

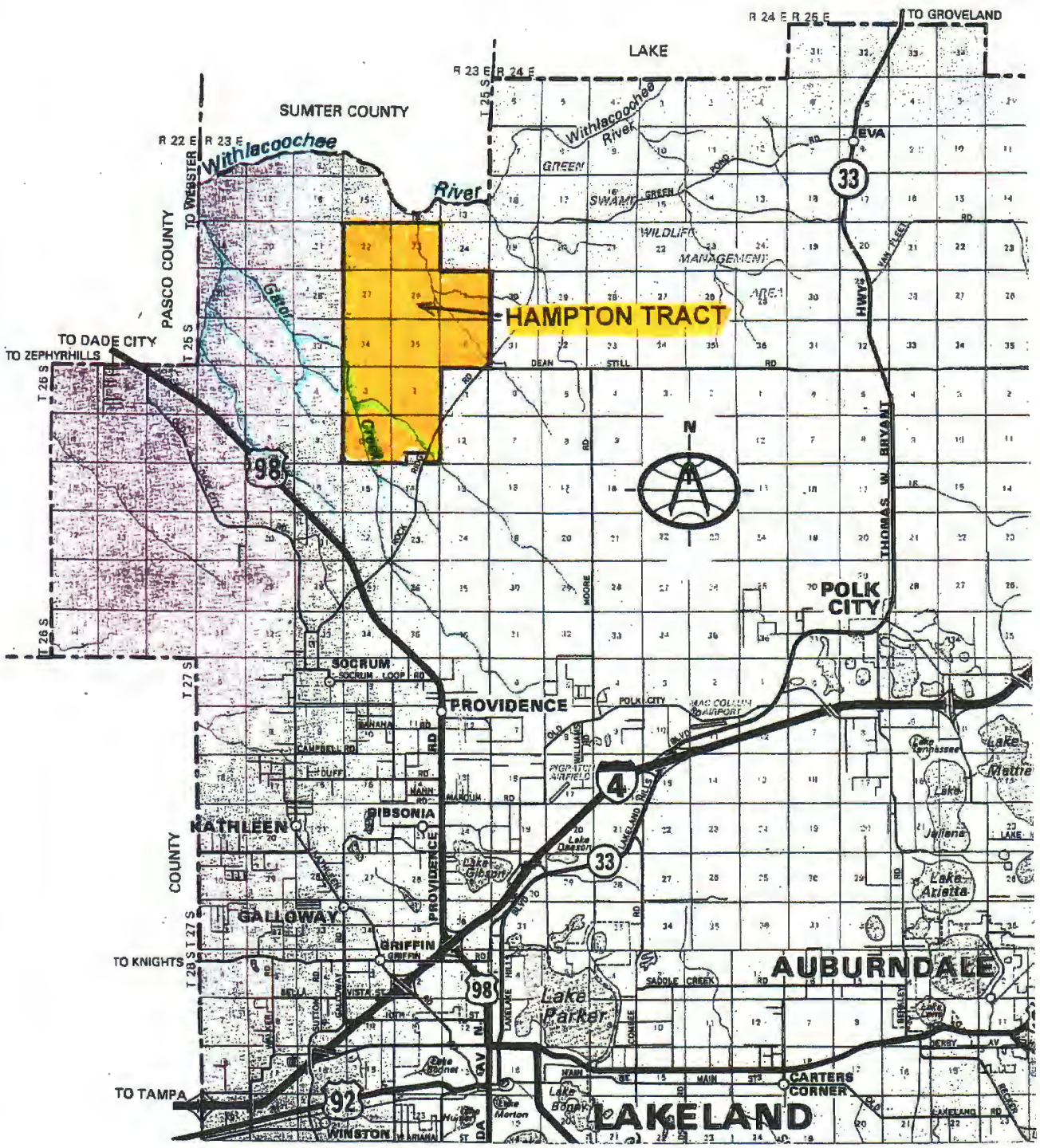
Sect. / Total Acres	**#630 Enhance**	**#621 Enhance**	**#641 Enhance**	**#641 Restore**	**#643 Enhance**	**#625 Enhance**
22 - 235.9	73.8	162.1				
23 - 88.6	74.7	13.2	0.7			
26 - 57.7	52.7	5.0				
25 - 24.5		24.5				
36 - 103.8	78.8	25.0				
27 - 43.1	10.6	32.5				
34 - 163.8	76.8	71.6	1.4	14.0		
35 - 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				
1100 Acres	**683.4 Ac.**	**367.8 Ac.**	**3.8 Ac.**	**14.0 Ac.**	**11.8 Ac.**	**19.2 Ac.**

The combination of the wetland enhancement and restoration, 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 commonly observed within the adjacent preserved Green Swamp property to encroach, and enhance the habitat conditions for the existing wildlife on the tract.

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

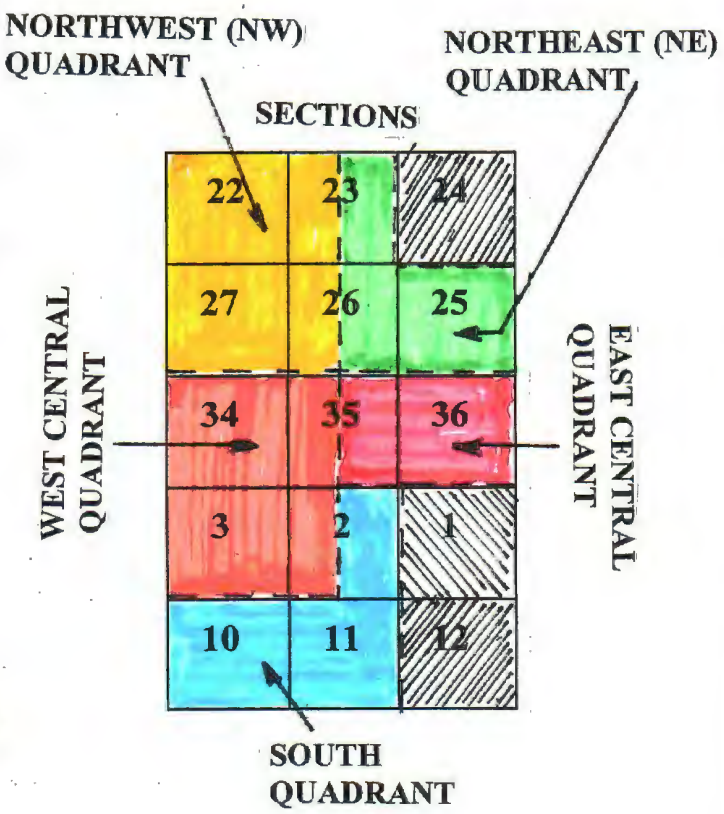
FDOT - District 1 **MITIGATION SITE** **(WITHLACOOCHEE BASIN)**	**HAMPTON TRACT (SW 59)**	**FIGURE B** **LOCATION MAP**

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

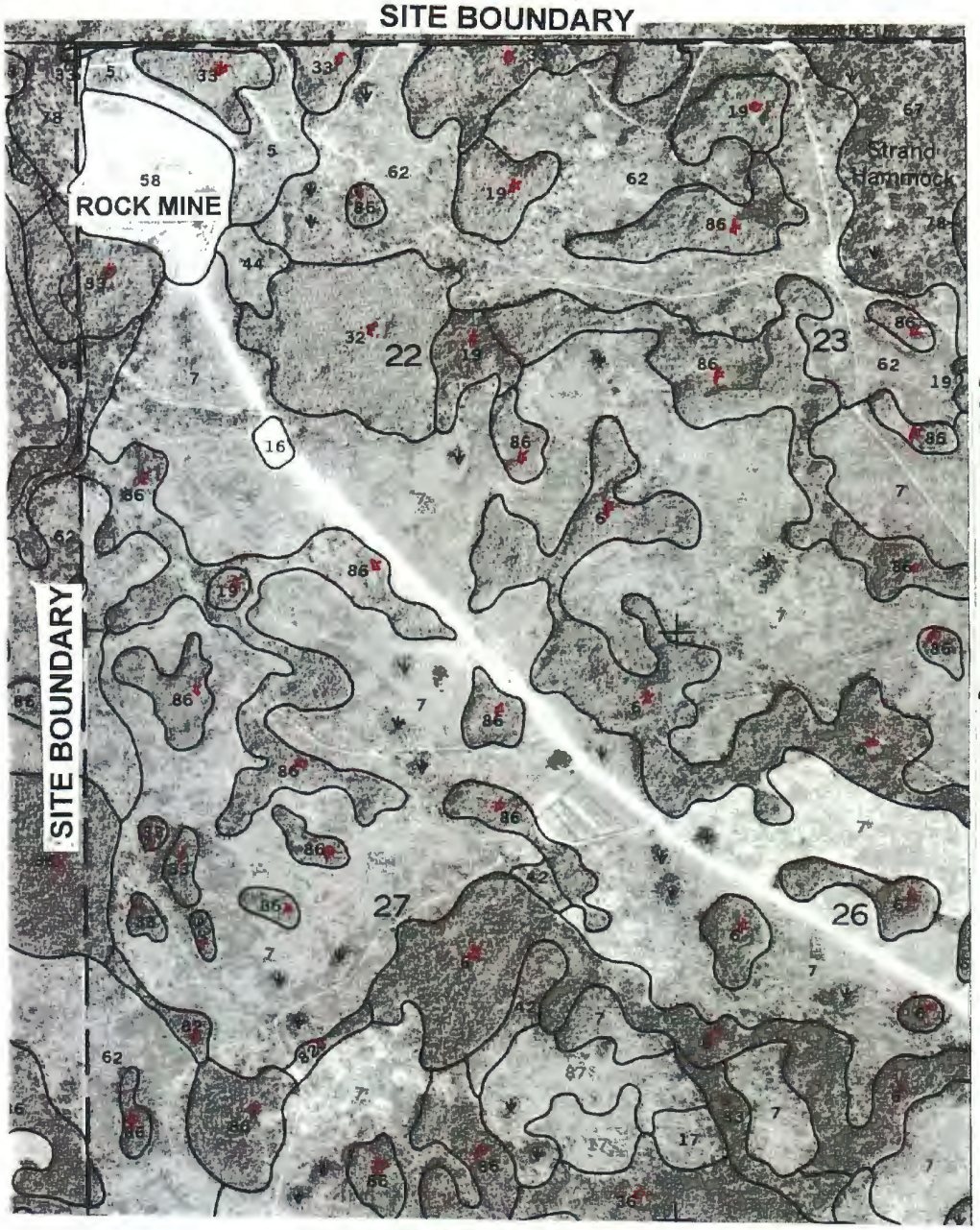
NORTH ^
Scale - 3.75 inches = 1 mile



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)

SITE BOUNDARY



JOINS NORTHEAST QUADRANT

JOINS WEST 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 (NW QUADRANT)

JOINS NORTHEAST QUADRANT

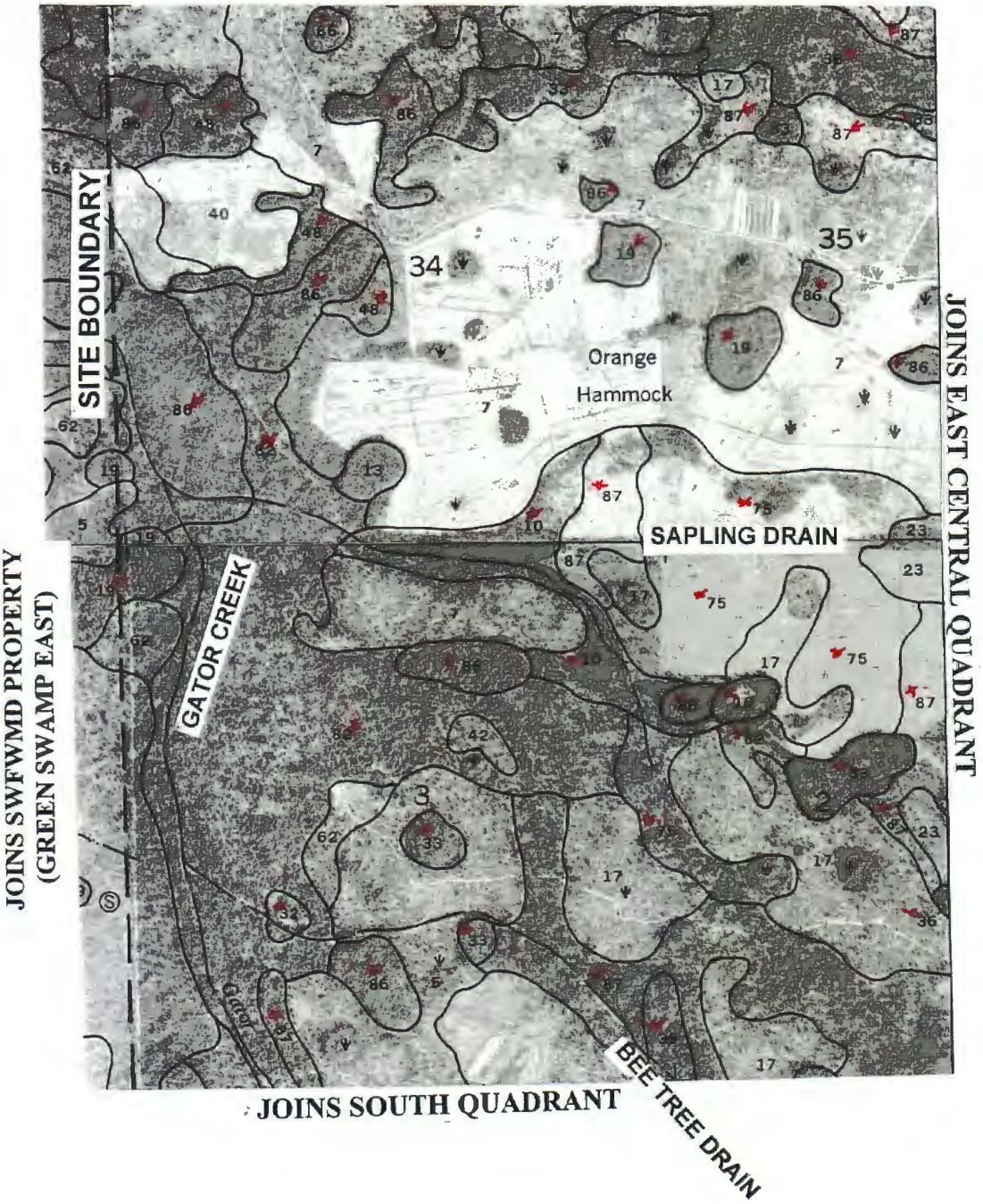
JOINS SOUTH QUADRANT

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)

JOINS NORTHWEST 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)

JOINS NORTHWEST QUADRANT

JOINS EAST CENTRAL QUADRANT

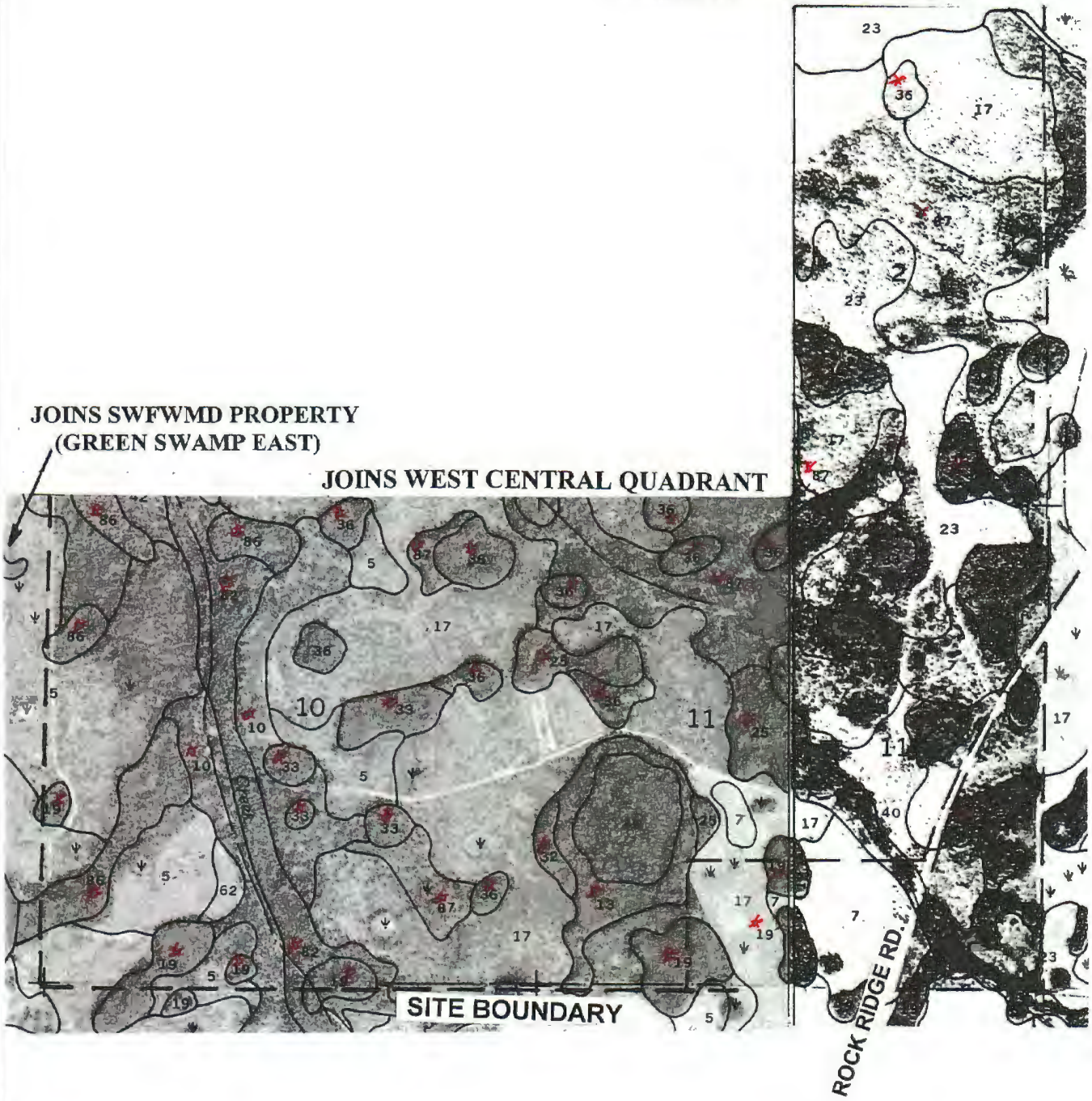
NORTH ^ SCALE 3.25 in. = 1 mile

FDOT - District 1 MITIGATION SITE (WITHLACOOCHEE BASIN)	HAMPTON TRACT (SW 59)	FIGURE C POLK CO. SOIL SURVEY (NE QUADRANT)

JOINS EAST CENTRAL QUADRANT

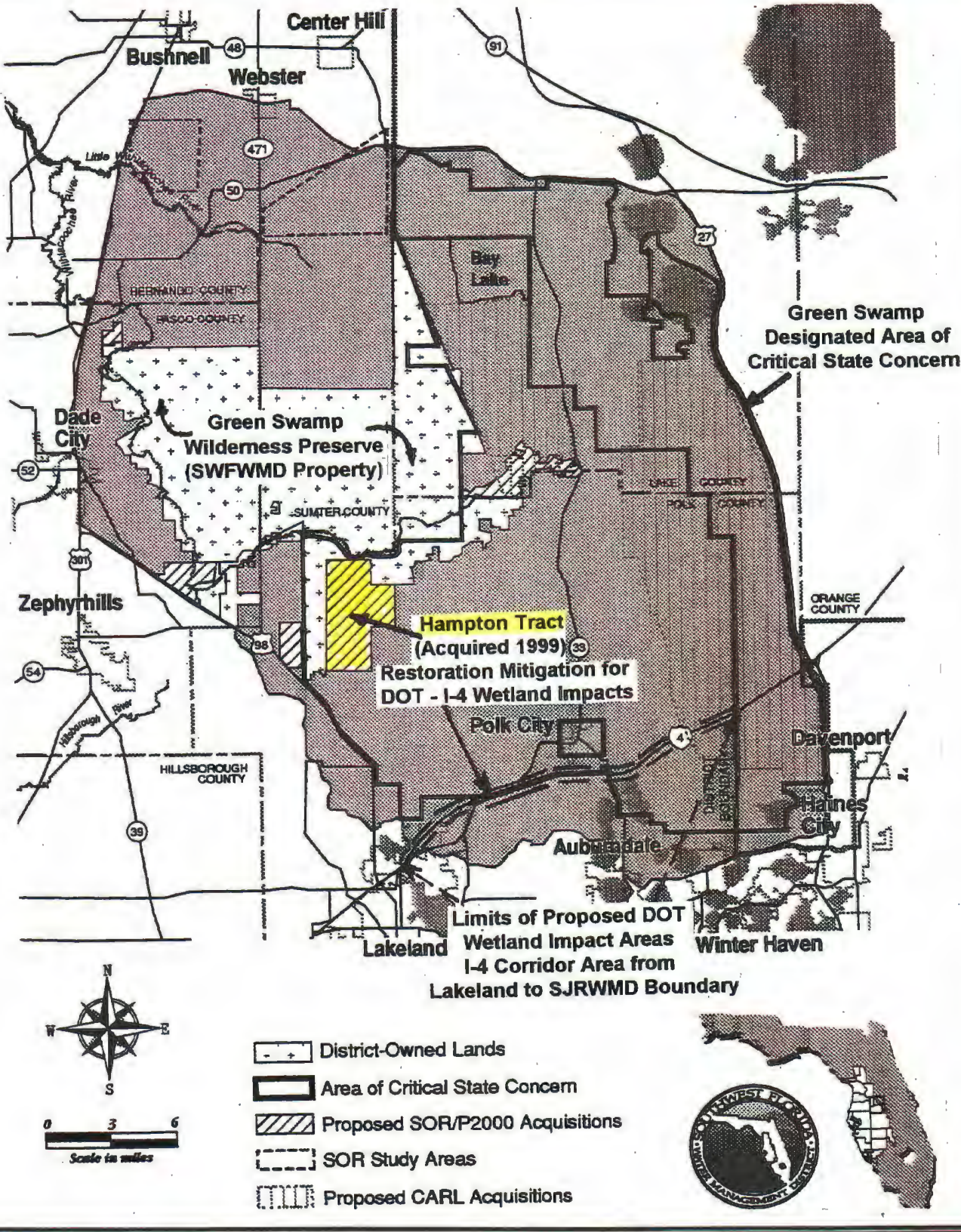
JOINS SWFWMD PROPERTY
(GREEN SWAMP EAST)

JOINS WEST 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 (SOUTH QUADRANT)



FDOT - District 1 **MITIGATION SITE** **(Withlacoochee Basin)**	**HAMPTON TRACT** **(SW 59)**	**FIGURE D** **GREEN SWAMP MAP**

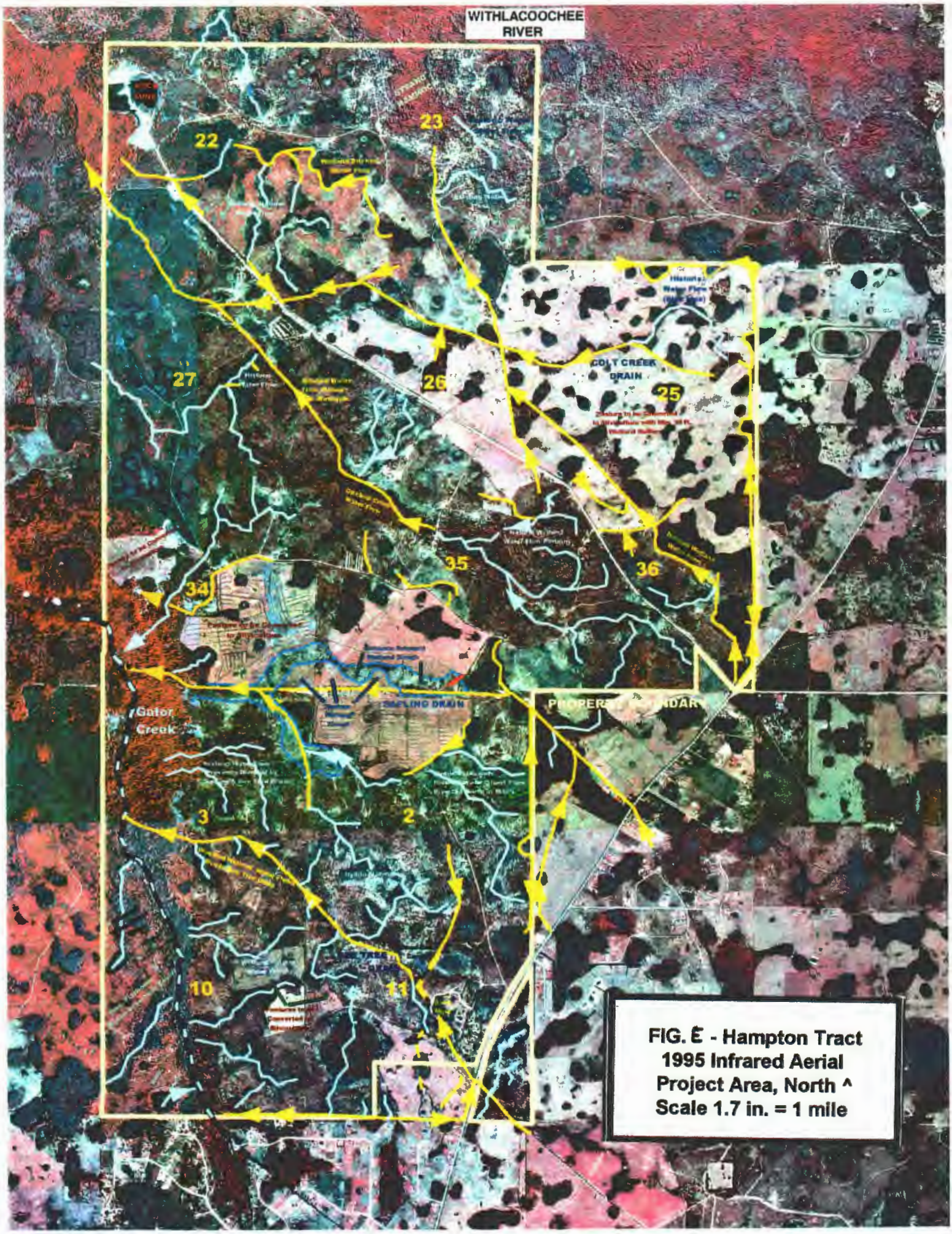


FIG. E - Hampton Tract
1995 Infrared Aerial
Project Area, North ^
Scale 1.7 in. = 1 mile

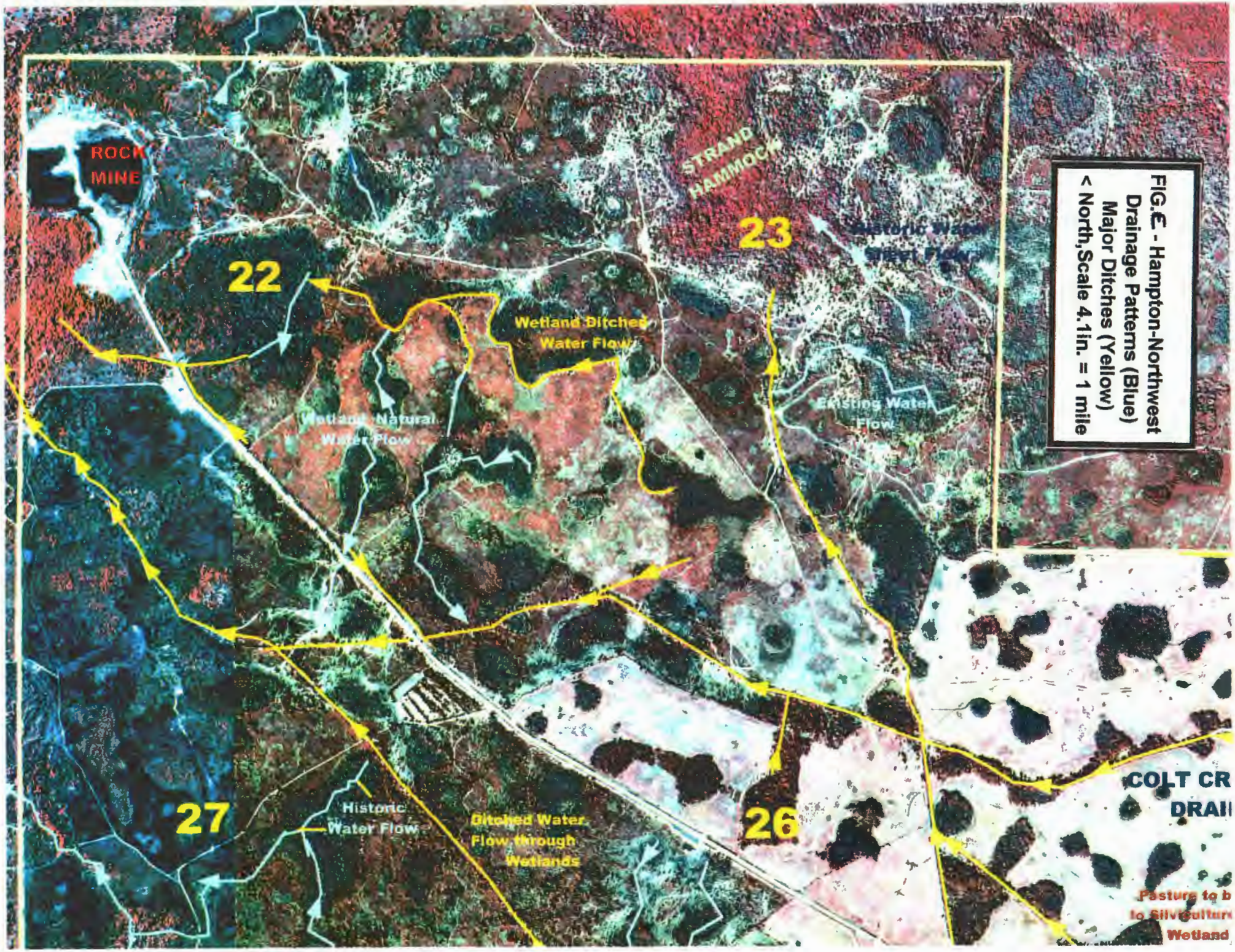


FIG.E - Hampton-Northwest
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North,Scale 4.1in. = 1 mile

FIG. € - Hampton-Central
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North,Scale 4.1in. = 1 mile

FIG. E - Hampton-Central
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North, Scale 4.1in. = 1 mile
SAPLING DRAIN
BEE TREE
DRAIN
Enhance Remnant
Wetland Slough
Restore
Wetland
Slough
Flatwoods
Pasture to be Converted
to Silvicolture
Historic Water Flow
Presently Diverted by
Sapling & Bee Tree Drains)
Hydric Flatwoods
Historic Water Sheet Flow
Diverted Overland in Ditch
Diverted Wetland Water Flows
Due to Bee Tree Ditch
Wetland Natural
Water Flows
Pasture to be
Gator
Creek
2
3
10
11

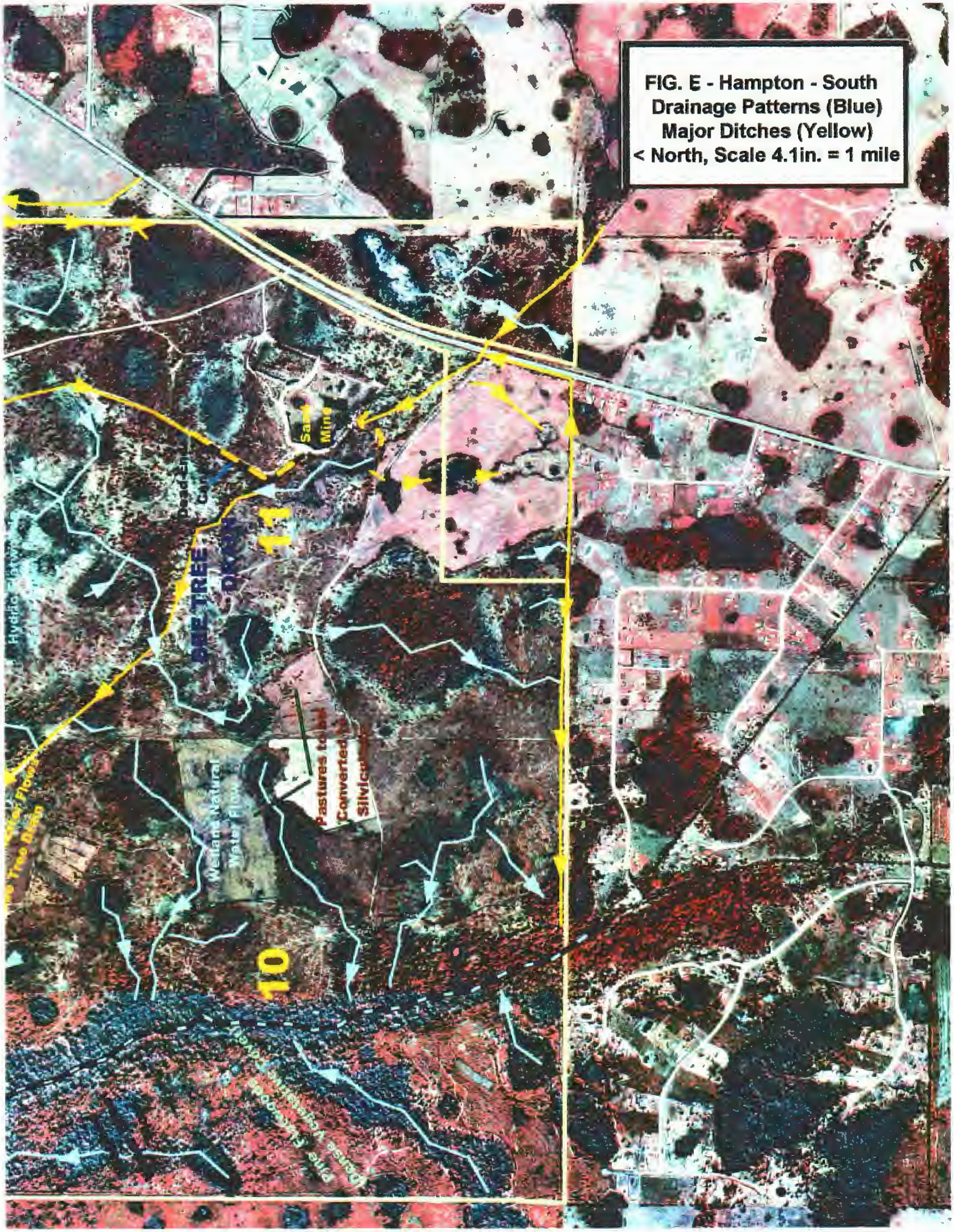
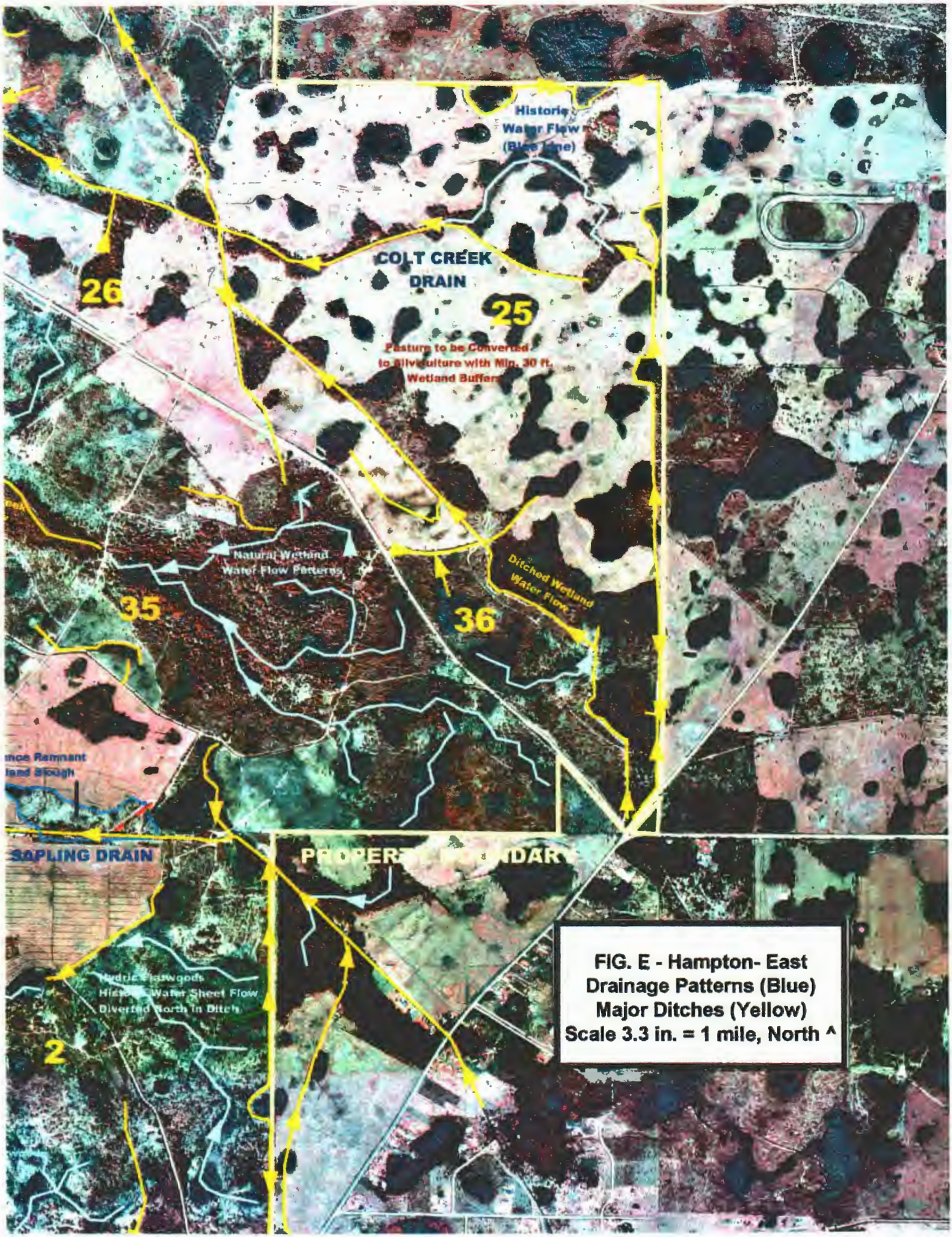


FIG. E - Hampton - South
Drainage Patterns (Blue)
Major Ditches (Yellow)
< North, Scale 4.1in. = 1 mile


Historic
Water Flow
(Blue Line)
COLT CREEK
DRAIN
26
25
Pasture to be Converted
to Silviculture with Min. 30 ft.
Wetland Buffers
Natural Wetland
Water Flow Patterns
Ditched Wetland
Water Flow
35
36
SAPLING DRAIN
Hydric Hardwoods
Historic Water Sheet Flow
Diverted North in Ditch
2
FIG. E - Hampton- East
Drainage Patterns (Blue)
Major Ditches (Yellow)
Scale 3.3 in. = 1 mile, North ^

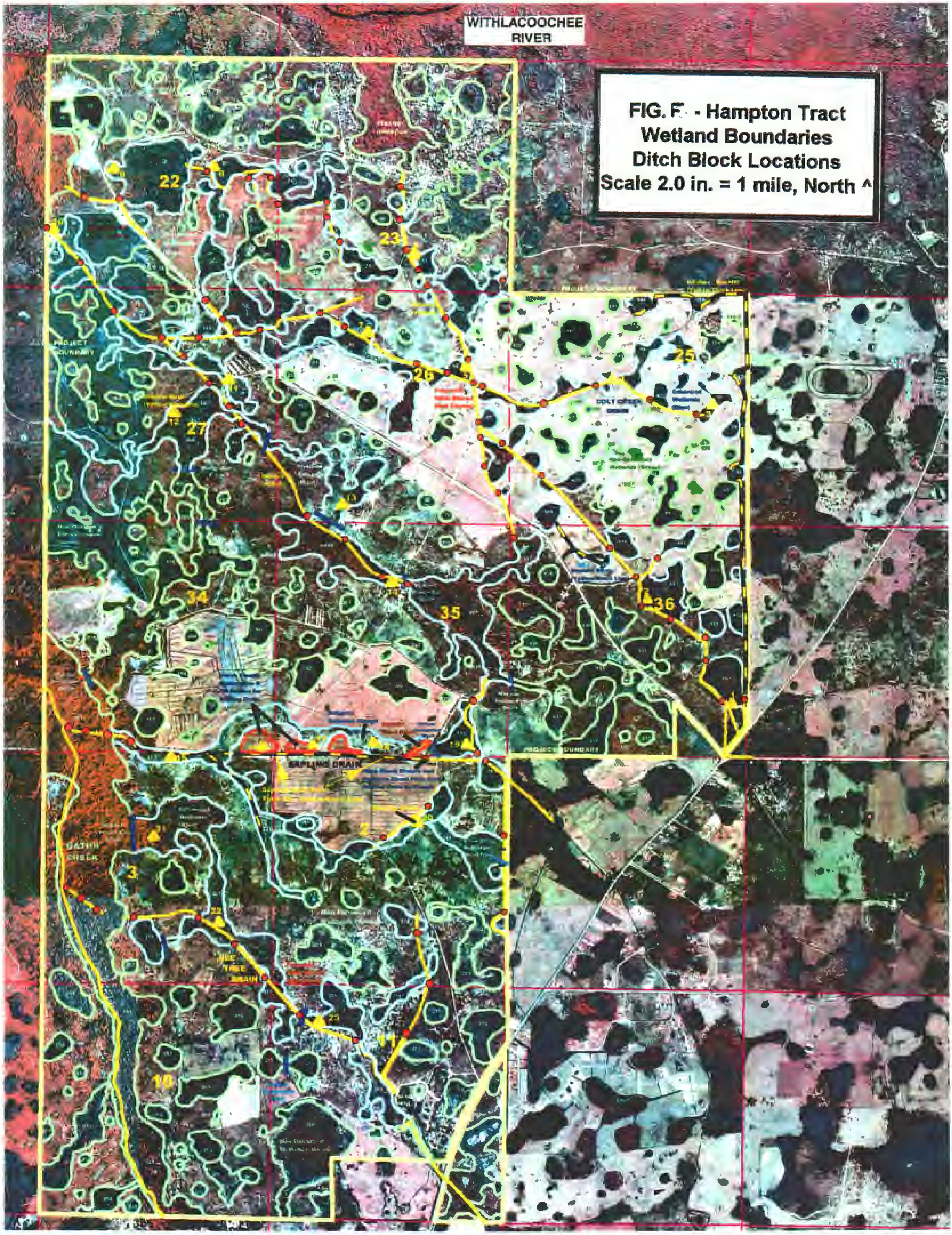

WITHLACOOCHEE
RIVER
FIG. F - Hampton Tract
Wetland Boundaries
Ditch Block Locations
Scale 2.0 in. = 1 mile, North ^
22
23
25
26
27
34
35
36
2
3
10
11
SAPLING DRAIN
PROJECT BOUNDARY

FIG. F - Hampton- Northwest
Wetland Boundaries
Ditch Block Locations
< North, Scale 5.0 in. = 1 mile
STRAND HAMMOCK
23
22
26
Proposed Ditch Blocks (Red Circles)
PROJECT BOUNDARY

FIG. F - Hampton-Central Wetland Boundaries Ditch Block Locations < North, Scale 5.0 in. = 1 mile

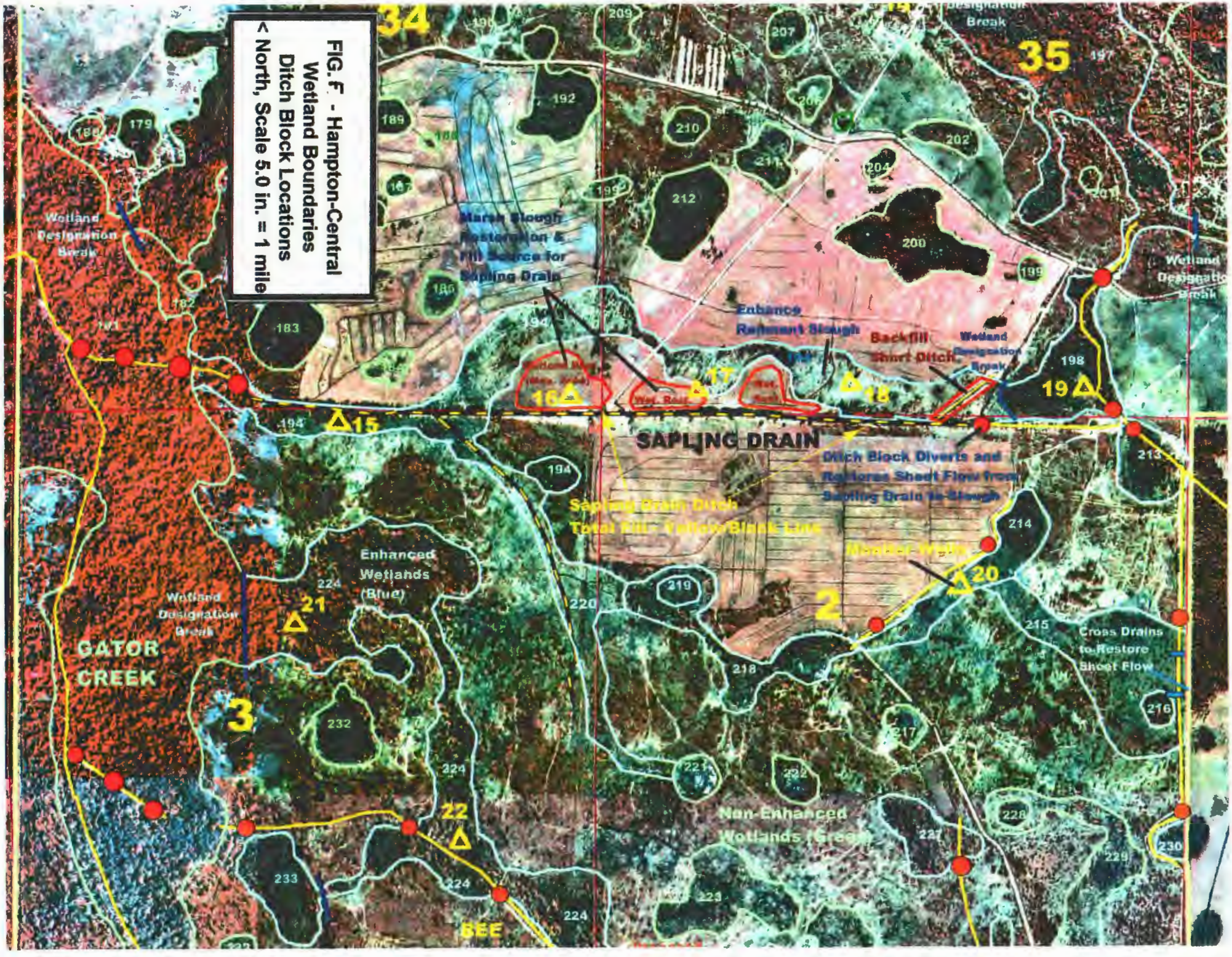
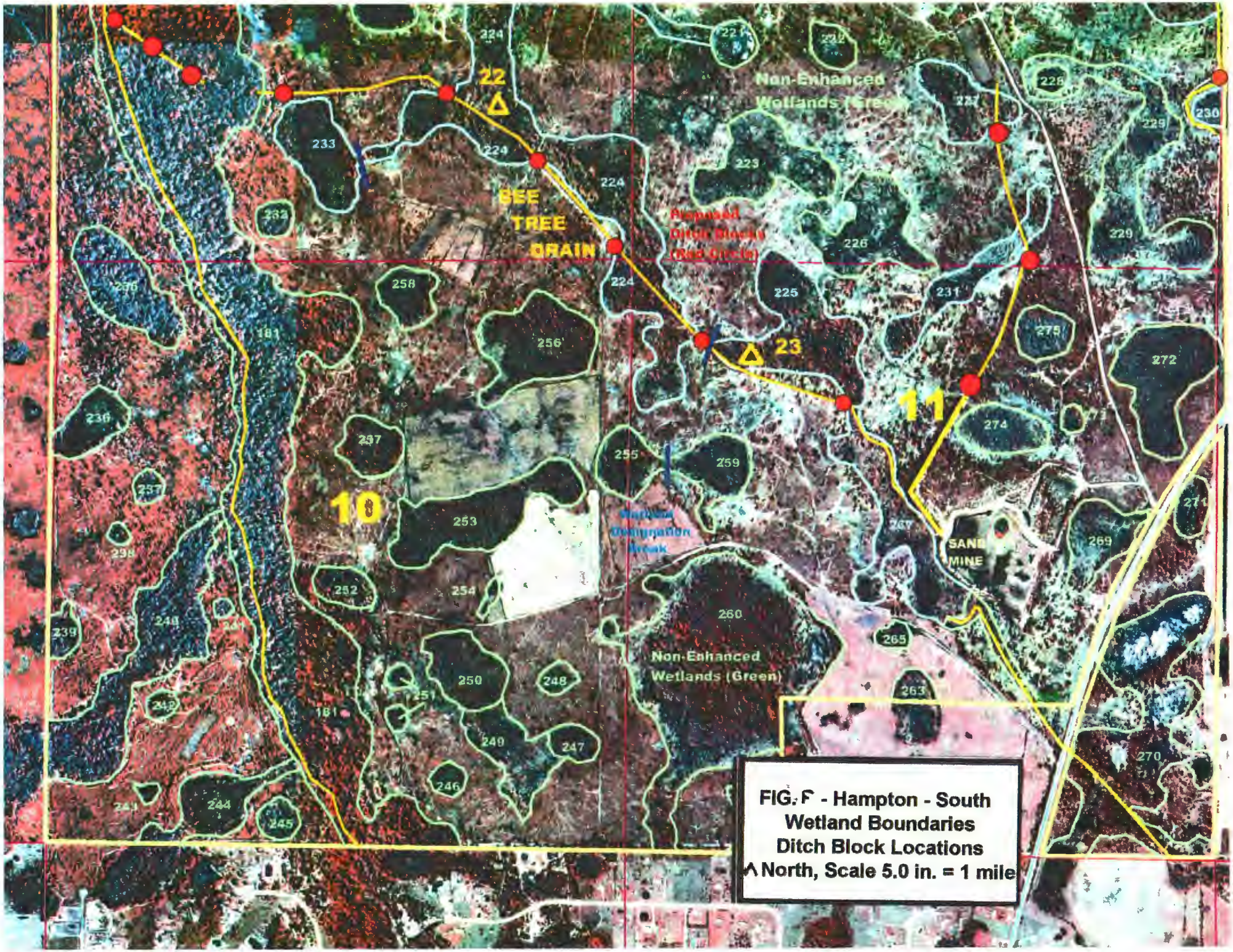


FIG. F - Hampton-Central
Wetland Boundaries
Ditch Block Locations
< North, Scale 5.0 in. = 1 mile
34
35
Wetland Designation Break
Marsh Slough Restoration & Fill Source for Sapling Drain
Enhance Remnant Slough
Backfill Short Ditch
16
17
18
19
15
SAPLING DRAIN
Sapling Drain Ditch Total Fill - Yellow/Black Line
Ditch Block Diverts and Restores Sheet Flow from Sapling Drain to Slough
Headcut Weir
20
2
Enhanced Wetlands (Blue)
21
GATOR CREEK
3
22
Non-Enhanced Wetlands (Green)
Cross Drains to Restore Sheet Flow
BEE


22
Non-Enhanced
Wetlands (Green)
BEE
TREE
DRAIN
Proposed
Ditch Blocks
(Red Circle)
23
11
10
Wetland
Designation
Break
SAND
MINE
Non-Enhanced
Wetlands (Green)
FIG. F - Hampton - South
Wetland Boundaries
Ditch Block Locations
North, Scale 5.0 in. = 1 mile

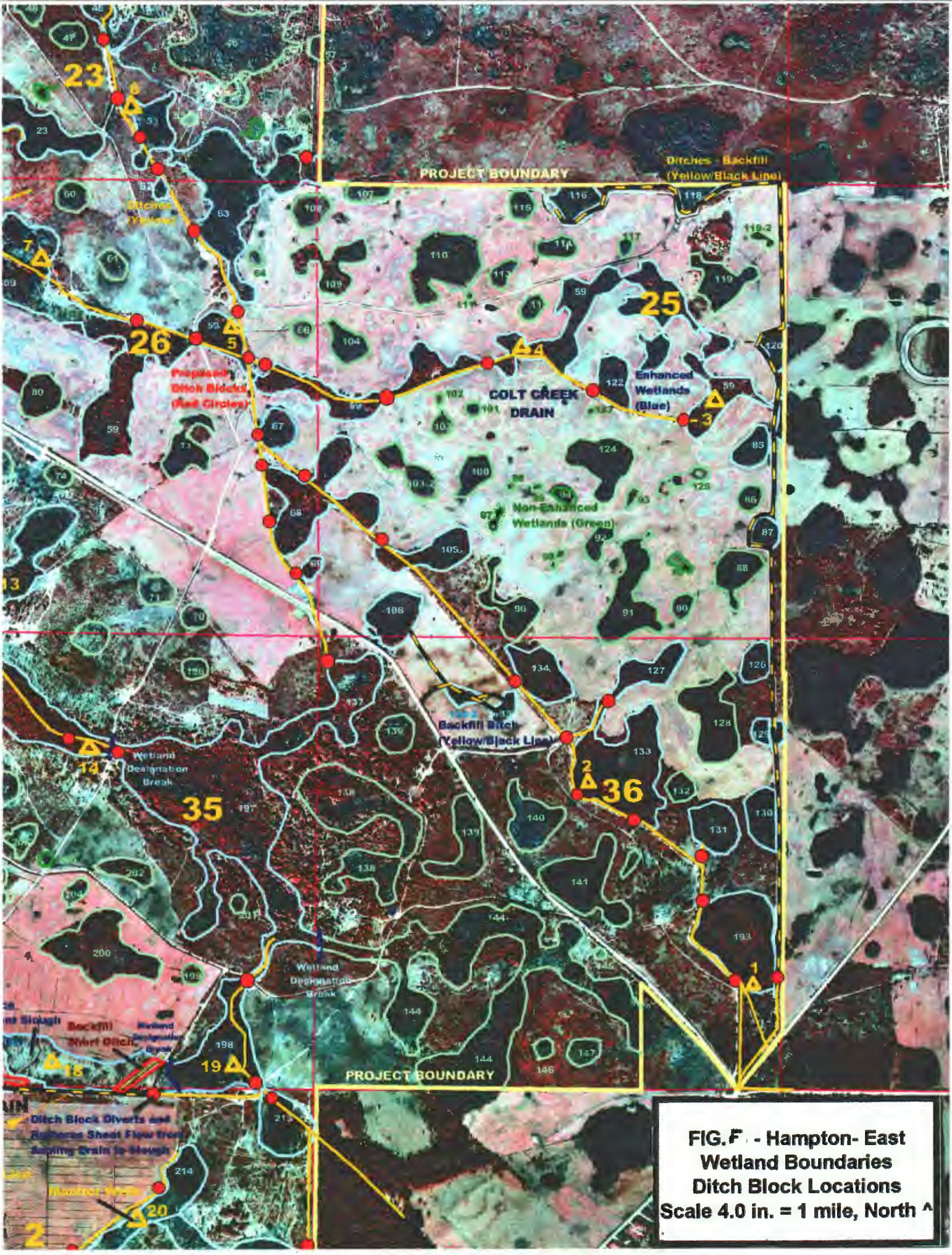


FIG. F - Hampton- East Wetland Boundaries Ditch Block Locations Scale 4.0 in. = 1 mile, North ^

View of a rim ditch (and associated spoil pile ridge) around the perimeter of a cypress dome within a northeast quadrant pasture, Spoil material will be backfilled into the ditches to enhance wetland hydrology.

Another rim ditch impacting a wetland hydroperiod. Once backfilled, a 30 -50 ft. buffer will be seeded with temporary cover (browntop millet, winter rye), allowing the buffer to generate transitional wetland vegetation from adjacent wetland seed source. The pastures will be converted to pine plantations while maintaining the wetland buffers.

FDOT - District 1 Mitigation Site
(Withlacoochee River Basin)

HAMPTON TRACT (SW 59)

View from a spoil ridge, looking west at Sapling Drain ditch (left) as it ties into Gator Creek (background). Spoil material will be backfilled into Sapling Drain so that upstream wetlands will not be dewatered, to allow restoration of the converted marsh sloughs within the pastures, and enhancing the seepage hydrology within the Gator Creek floodplain wetlands.

View from Gator Creek, looking upstream (east) at the connecting Bee Tree Drain. This ditch is more shallow but wider than Sapling Drain. Spoil along the top-of-bank will be backfilled into the ditch, allowing upstream wetland hydrology and hydroperiods to attenuate more water volume, which will enhance and increase the proper wetland vegetative cover species.

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. Inter. ERP #: _____ COE #: _____
Drainage Basin(s) (names): Upper Coastal Basin Water Body(s) (names):None SWIM water body? (Y/N) N
Impact Acres/Types: FM 2589581-0.15 ac. - 530 (Fluccs code)
8.19 ac. - 621 (Fluccs code)
3.48 ac. - 641 (Fluccs code)
TOTAL 11.82 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration X Enhancement X Preservation Mitigation Area: **200 ac.**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) N Drainage Basin(s): Upper Coastal Basin Water Body(s):None SWIM water body? (Y/N) N

Project Description

A. Overall project goal: Acquire, preserve, maintenance, and manage 200 acres of high quality upland and wetland habitat located adjacent to an existing protected habitat area (Serenova & Starkey Wilderness Area – 15,000 acres, Figure A).

B. Brief description of current condition: The 200-acre site has live oak hammocks (46 acres) and pine flatwoods (85 acres) within the uplands. The wetlands are made up of cypress domes (19 acres), marsh (3 acres, primarily adjacent to a few cypress systems), upland-cut borrow pits (4 acres), and mixed forested systems (43 acres) (Figures B & C).

C. Brief description of proposed work: The SWFWMD Land Management Division has been implementing best management practices for maintaining and enhancement of the existing Serenova Tract. These same management & maintenance activities (particularly prescribed burning) will be implemented at Serenova.

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 62 acres of high quality forested wetlands at the proposed mitigation site. The remaining wetland impacts include borrow pits and marsh (3.63 acres), which can be compensated with the 7 acres of marsh and borrow pits on the Serenova Extension. The addition of 46 acres of oak hammock and 85 acres of pine flatwoods in the mitigation plan adequately compensates for the proposed wetland impacts.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discusslon 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 discusslon 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: No Construction Activities Proposed

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 associated with the adjacent Serenova Tract.

Proposed timeframe for implementation: Commence: Early, 2002 - Acquisition Complete: Continuous maintenance & management by the SWFWMD Land Management Division as an extension of the existing Serenova Tract.

Project cost: $942,810 (Total will be determined by the appraised value, maintenance & 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, project doesn't propose any construction therefore no design drawings necessary.**

X 4. Detailed schedule for work implementation, including any and all phases. **Acquisition proposed by early, 2001, maintenance and management will be continuously conducted by the WMD.**

X 5. Proposed success criteria and associated monitoring plan. **The site has excellent habitat conditions that don't require success criteria or a monitoring plan.**

X 6. Long term maintenance plan. **Refer to Attachment B - Maintenance Plan.**

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 habitat conditions. There are nine live oak hammocks located throughout the property, with an average size of 0.5 to 1.5 acres. A 16-acre oak hammock is located in the northwest quadrant, and a 17-acre oak hammock in the southeast quadrant (Figure C - Infra-red aerial, site photos). Canopy cover is generally 50-70%, dominated by sand live oak with additional cover provided by live oak and turkey oak. Ground cover is dominated by scattered saw palmetto, wiregrass, runner oak, live oak saplings, fetterbush, and reindeer moss. Several gopher tortoise burrows are present within the oak hammocks and adjacent pine flatwoods. The pine flatwoods have scattered longleaf pine over dense cover of saw palmetto, scattered gallberry and fetterbush, with a ground cover provided by wiregrass.

One of the mixed forested wetlands is located adjacent and parallel to SR 52 along the northeast quadrant of the site. Historically a bay/maple system, slight changes in hydroperiod have allowed more pine to encroach this system. Dominant canopy cover (avg. 70%) includes slash pine, sweet bay, loblolly bay, red maple, and laurel oak. Dense subcanopy is dominated by wax myrtle, gallberry, saw palmetto along the perimeters, and saplings of the same tree species. Understory vegetation is dominated by sawgrass within the core, with the saw palmetto along the perimeters. 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 & chain fern) provide the dominate cover. The water level indicators for the cypress systems depict a healthy range of appropriate hydroperiods.

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, sweet bay, loblolly bay, red bay, dahoon holly; with tupelo 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 and lizard's-tail 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 very high value wetlands. Two of the three marshes are perimeters of cypress systems, dominated by blue maidencane, spikerush, and St. John's-wort.

The borrow pits have upland shrub islands and during the dry season, these deep-cut ponds are the only water source for wildlife. Several wading birds and ducks were observed using the ponds, observed mammals 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 habitats in the area. The site has been well-managed which has maintained proper wetland hydrology and periodic prescribed burns have kept palmetto heights and densities at appropriate levels.

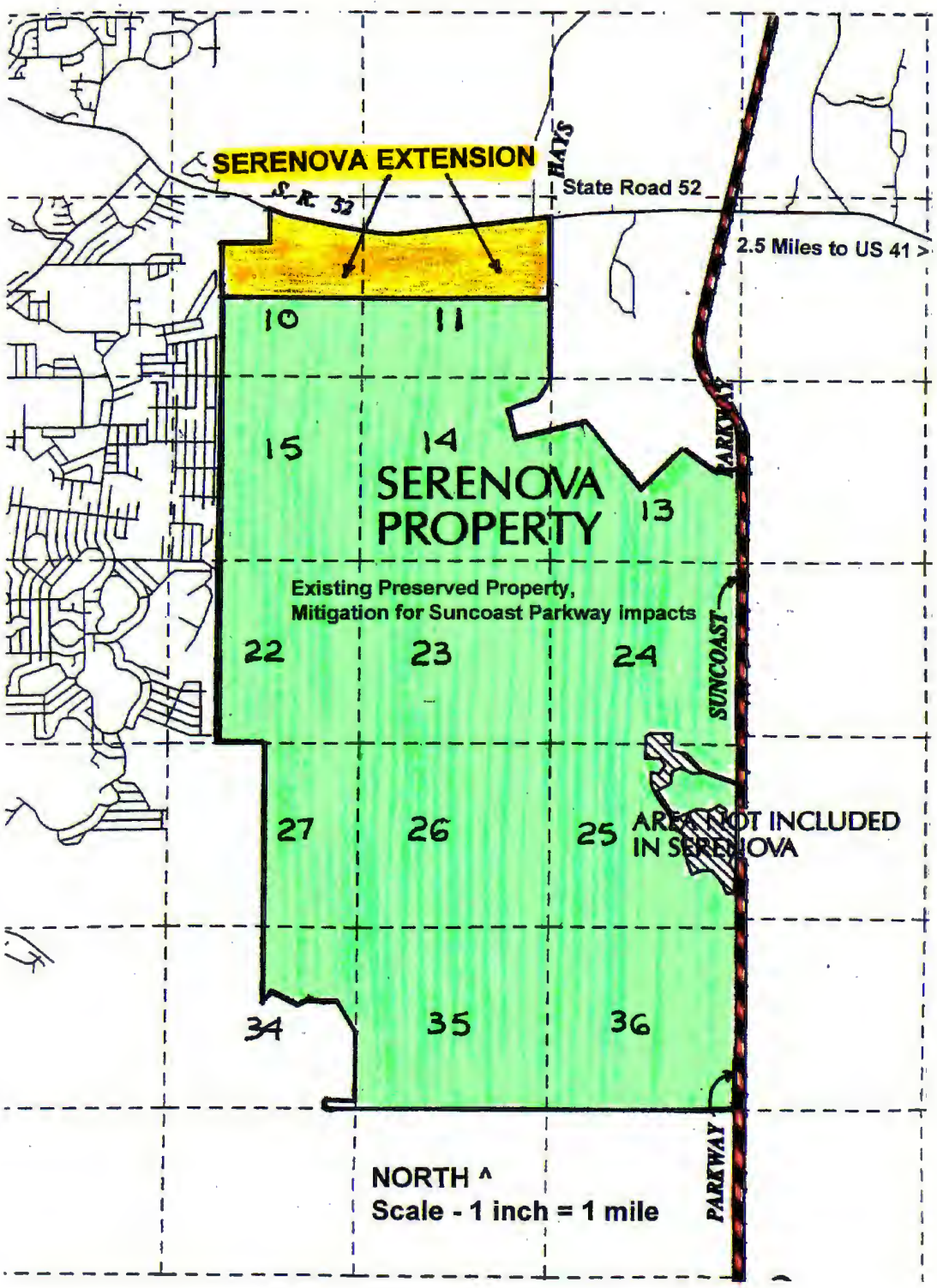
ATTACHMENT B - Maintenance Plan

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. The Serenova Extension site is presently owned by the Turnpike and will be added to the management plan, which will maintain and enhance upland habitat with an appropriate prescribed burn plan, and provide security of the property.

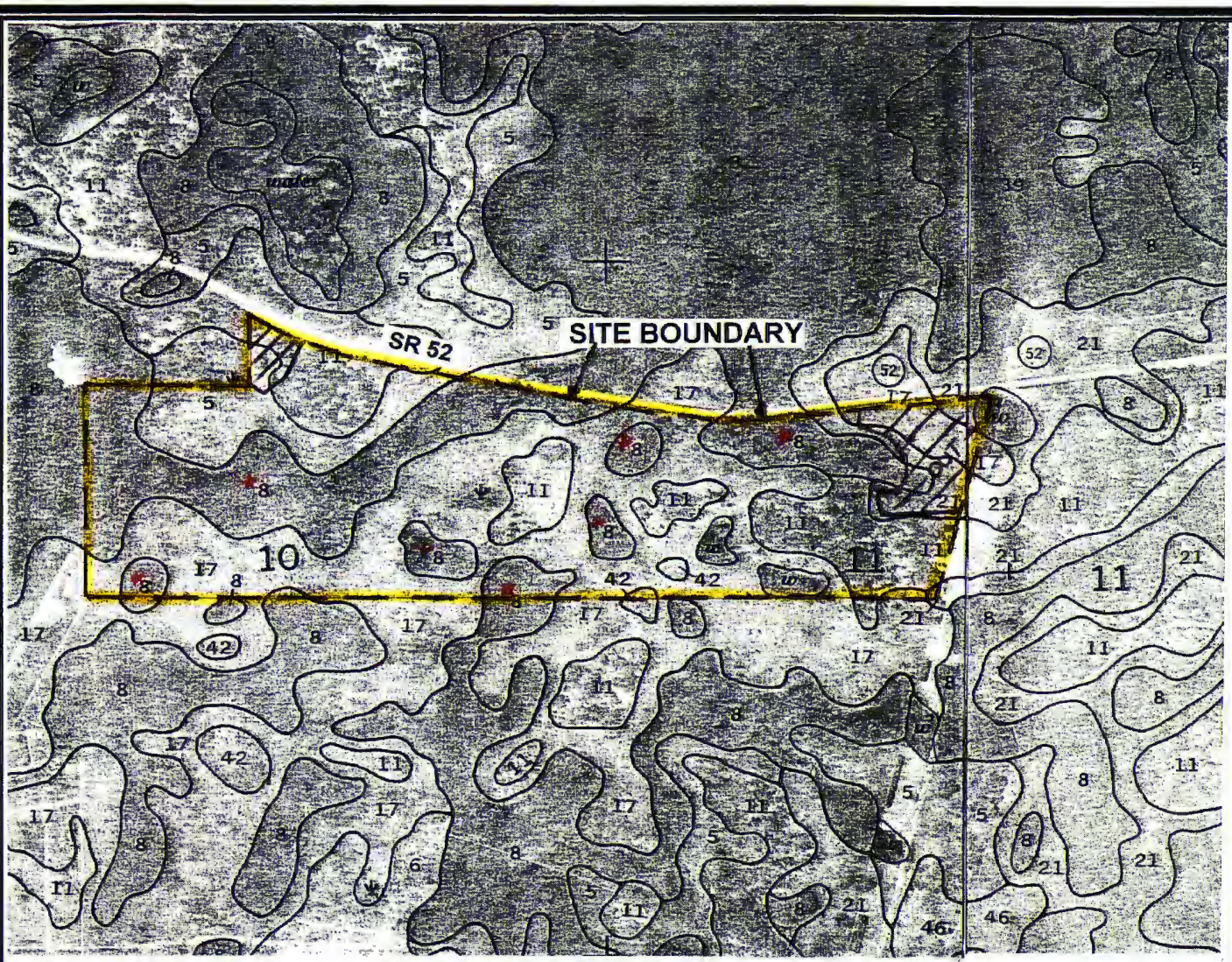
Maintenance will include prescribed burning (conducted by the SWFWMD Land Management Dept.) of the upland habitat on a 3-5 year cycle, as an extension of the same management & maintenance conducted on the Serenova Tract south of the site. Maintenance of fencing and security patrols will also be conducted to control access and disallowed activities.

ATTACHMENT C - DOT Mitigation

The 2000 FDOT Mitigation Plan proposed the Serenova Extension Tract would cover 235 acres and mitigate for 13.32 impact acres. Since then, the anticipated design plans for widening the adjacent segment of SR 52 includes the proposed removal of a portion of the northwest and northeast corners of the parcel to construct storm water treatment facilities. The difference between the previous and proposed mitigation boundaries are depicted on Figure B. As a result, those approxiate areas that DOT need to retain for their facilities were removed from consideration as mitigation (Figure C). The proposed area will be approximately 200 acres, resulting in a slight decrease in oak hammock and approximately 30-acre loss of pine flatwood habitat within the northeast quadrant. The final acreage is dependent on what DOT requires for the ponds and the widening of SR 52 from a 2-lane to a 6-lane facility. As a result, this mitigation project has been revised to only propose mitigation for the 11.82 impact acres that could potentially occur in association with the proposed Suncoast interchange at Ridge Road. The proposed mitigation area will preserve 19 acres of high quality cypress systems from any silviculture activities. As previously mentioned, the remaining wetland habitats proposed for impact represent a dominance of marsh and borrow pit habitats that are also represented on the mitigation site. The mosaic of various upland (129 acres) and wetland (71 acres) habitats proposed for preservation will adequately mitigate the proposed wetland impacts at a ratio of 17:1 (mitigation:impacts), the same ratio that was proposed when the site was proposed to be 235 acres.



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: Kurt Gremley, ELAPP Acquisition Manager
Hillsborough County Real Estate Dept.
P.O. Box 1110
Tampa, FL 33601 (813) 272-5810

Rob Heath, Resource Manager
Hillsborough County Parks & Recreation
813-672-7876

County(ies): Hillsborough

Location: Sections 4, 5, T27S, R19E

IMPACT INFORMATION

1-DOT WPI: 7123606 FM: 2578071 B.B. Downs Bikepath (Hunter's)	ERP #: 4418710	COE #: 199803683
2-DOT WPI: 7113773 FM: 2555361 SR 39, Blackwater Ck. Bridge	ERP #: 4320526	COE #: 200000574
3-DOT WPI: 7147617 FM: 2587341 SR 56, SR 54 to BB Downs	ERP #: 4312944	COE #: 199500079
4-DOT WPI: 1147955 FM: 2012171 I-4, Memorial to US 98 (Seg.2)	ERP #: 4311896	COE #: Pending
5-DOT FM: 2578072 B.B. Downs Bikepath (Amberly)	ERP #: 4421434	COE #: 200101187
6-DOT FM: 2558591 SR 678 (Bearss Ave.) Florida Ave.	ERP #: 4419802	COE #: 200101181
7-DOT FM: 2578391 Alexander St., US 92 to Inter.-4	ERP #: _____	COE #: _____
8-DOT FM: 2584491 Alexander St., On-Ramp to Westbound I-4	ERP #: _____	COE #: _____
9-DOT FM: 2584131 SR 93 (Inter. 275), US 41 to Pasco Co.	ERP #: _____	COE #: _____
10-DOT FM: 4084602 I-75 at CR 581 (Off-Ramp to B.B. Downs)	ERP #: 4421639	COE #: Pending

Drainage Basin(s) : Hillsborough River Water Body(s) (names): Blackwater Creek , Cypress Creek SWIM water body? (Y/N) N
Impact Acres/ Wetland Types:

1-WPI 7123606 0.40 ac. 618 (Fluccs code)
0.10 ac. 641 (Fluccs code)
TOTAL 0.50 ac.

2-WPI 7113773 1.40 ac. 615 (Fluccs code)
0.70 ac. 641 (Fluccs code)
TOTAL 2.10 ac.

3-WPI 7147617 5.20 ac. 630 (Fluccs code)
0.10 ac. 641 (Fluccs code)
TOTAL 5.30 ac.

4-WPI 1147955 0.45 ac. 630 (Fluccs code)
1.63 ac. 641x (Fluccs code
TOTAL 2.08 ac.

5-FM 2578072 0.20 ac. 610 (Fluccs code)

6-FM 2558591 0.10 ac. 618 (Fluccs code)

7-FM 2578391 3.10 ac. 617 (Fluccs code)

8-FM 2584491 1.70 ac. 617 (Fluccs code)

9-FM 2584131 4.10 ac. 610 (Fluccs code)
3.00 ac. 630 (Fluccs code)
0.20 ac. 641 (Fluccs code)
TOTAL 7.30 ac.*

*Note - These impacts could total 7-9 acres, will be determined in late fall, 2001 when permit applications are anticipated.

10-FM 4084602 0.50 ac. 621 (Fluccs code)

TOTAL: 22.98 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation _X_ Restoration _X_ Enhancement _X_ Preservation Mitigation Area: **298 acres**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N Drainage Basin(s): Hillsborough River Water Body(s):Blackwater Creek, Cypress Creek
SWIM water body? (Y/N) 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 the "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 very high quality functions relative to wildlife habitat, species richness & diversity, and especially habitat connectivity to both on-site 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 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. (Attachment C).

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 (19.65 of the total 22.88 acres) will be 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 compensates for the impacts to the forested wetland habitat. The remaining proposed wetland impacts include encroachments (total 3.23 acres) 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 13 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.

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: Kurt Gremley, ELAPP Acquisition Manager Phone Number: (813) 272-5810
Rob Heath, 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

Project cost: $1,000,000 (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 & Attachment C - Conceptual Management Plan.**

__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 Map, Figure E – existing 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. **The site has high quality habitat conditions. Success criteria are not warranted but a monitoring plan is proposed to document the additional plantings conducted by Hills. Co. Parks & Rec. meet survivorship requirements.**

__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 conceptual management plan for this property is located in Attachment C.**

__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 B (text and table), & Figure F designates the various mitigation for each wetland impact.**

ATTACHMENT A - Existing Site Conditions

In addition to preservation of mixed forested wetland (146 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 upland habitat. 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 habitat.

The upland hardwood hammock includes 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 transitional areas, minimal in areas 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 anticipated to increase in cover when the existing cattle are removed. As with the bahia pastures, longleaf pine and wire grass plantings are proposed to enhance and restore upland habitat. Wildlife diversity is known to be high within the forested areas, and several gopher tortoise inhabit the pasture.

The existing landowner has maintained and managed the native habitat on the property, allowing for a high quality mosaic and inter-relationship of upland and wetland habitat. The acquisition of this tract for preservation and management is important. 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. During the last few years, the landowner had opportunities to sell the property for constructing residential development on the upland hammocks. Acquiring this property as a mitigation alternative will provide the habitat protection needed for this area of Hillsborough County.

ATTACHMENT B - Mitigation Opportunities

The following table designates the various wetland impacts for each DOT project and the associated mitigation acreage. The base mitigation acreage-to-impact acreage ratios are 13 to 20:1 for forested wetland impacts (FLUCCS 615, 617, 630), 10:1 for Willow & Elderberry wetland impacts (FLUCCS 618),10 to15:1 for marsh wetland impacts (FLUCCS 641), and 5 to 10:1 to compensate for the ditch impacts (FLUCCS 641x). The proposed ditch impacts are located within Segment 2 of I-4 in Polk County. Those impacts were not required mitigation per State-ERP criteria and may or may not be required compensation per Federal - Section 404 criteria.

The mitigation includes 13 to 20:1 ratios for the wetland preservation (146 acres, FLUCCS 630), and upland hardwood hammock preservation (98 acres, FLUCCS 420). Based on state regulatory criteria (Environmental Resource Permit, ERP, Basis of Review, Chapter 3.3.2.2), wetland preservation ratio guidelines are 10:1 to 60:1 (preserved wetland acreage to wetland impact acreage), and upland preservation ratios are 3:1 to 20:1 (preserved upland acreage to wetland impact acreage). The proposed impacts and mitigation to be conducted at the Jennings Tract are within those ranges.

Due to enhancement and restoration activities required to improve the habitat conditions of the palmetto prairie enhancement (15 acres, FLUCCS 321), pine flatwood enhancement (19 acres, FLUCCS 411), and bahia pasture converted to pine flatwoods (20 acres, FLUCCS 211), these ratios range from 10 to15:1 due to the available opportunities and proposed improvements to increase habitat conditions. If these improvements were not proposed, the enhancement and restoration areas would only qualify as preservation and would reflect substantially less mitigation credits. Instead, these criteria are within the 4:1 to 20:1 range (enhanced acres : impacted acres) stated within the ERP guidelines.

The delineation of the DOT projects relative to the various habitat types are depicted on Figure F. 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. As noted on the attached table, the design of one of the DOT projects (Project 9, I-275-US 41 to Pasco Co.) has not been completed as of September, 2001. An estimate of 7.3 acres of the total permitted wetland impacts for this project are proposed to be mitigated at the Cypress Creek Preserve, 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 Hillsborough County Real Estate Dept. is preparing acquisition of an additional 110 acres (referred to as the Greer Tract) located along the northern boundary of the Jennings Tract. This acquisition site also has a high percentage of high quality wetlands and upland hammocks similar to the habitat conditions of the Jennings Tract. The SWFWMD and Hillsborough Co. Parks & Rec. are currently evaluating the opportunity that this additional tract may be able to provide the mitigation for additional DOT wetland impacts within the Hillsborough River Basin. Even though it appears the majority if not all of the Greer Tract could be limited to habitat preservation, the proposed habitat enhancement & restoration components adjacent to the Jennings Tract could provide some important mitigation opportunities.

Attachment B - DOT Project / Mitigation Table **Cypress Creek Preserve, West (Jennings Tract) Hills. Co. ELAPP Updated 9/10/01**

SITE	DOT Project	WPI	FM	USACOE Permit #	SWFWMD Permit #	Hab. Imp. Acres	Habitat (FLUCFCS)	Mitig. Ratio	Mitig Ac.	Mitigation Type
1	BB Downs Bikepath (Hunter's)	7123606	2578071 2578641	199803683	4418710 **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. Pres. Upl. Hardwood Pres. Flatwoods Restoration
2	SR 39-Blackwater Ck. Bridge	7113773	2555361	200000574	4320526 **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. Pres. Upl. Hardwood Pres. Flatwoods Enhance.
3	SR 56-SR 54 to BB Downs	7147617	2587341	199500079	4312944 **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 Restor. Flatwoods Enhance. Upl. Hardwood Pres. Mix Forest Wet. Pres.
4	I-4, Memorial to US 98 (Seg. 2)	1147944	2012171	43011896 (No mitig. required)	Pending **TOTALS**	0.45 1.63 **2.08**	630x- Forest Ditch 641x - Ditch (ACOE only)	**6 to 1**	2.0 10.5 **12.5**	Mix Forest Wet. Pres. Flatwoods Restoration
5	BB Downs Bikepath (Amberly)	NA	2578072	200101187	4421434 **TOTALS**	0.20 **0.20**	610- Hardwood Forest	**18 to 1**	0.5 3.0 **3.5**	Mix Forest Wet. Pres. Flatwoods Restoration
6	SR 676 (Bearss Ave.)	NA	2558591	200101181	4419802 **TOTALS**	0.10 **0.10**	615 - Willow & Elderberry	**16 to 1**	0.2 1.0 0.3 **1.5**	Upl. Hardwood Pres. Palmetto Prairie Enh. Mix Forest Wet. Pres.
7	Alexander St., US 92 to Interstate 4	NA	2578391	No Applic.	No Applic. **TOTALS**	3.10 **3.10**	617-Mix Hardwood Forest	**10 to 1**	7.0 12.0 13.0 **32.0**	Palmetto Prairie Enh. Upl. Hardwood Pres. Mix Forest Wet. Pres.
8	Alexander St., On-Ramp to Interstate 4	NA	2584491	No Applic.	No Applic. **TOTALS**	1.70 **1.70**	617-Mix Hardwood Forest	**9 to 1**	7.0 1.0 7.5 **15.5**	Flatwoods Enhancement Upl. Hardwood Pres. Mix Forest Wet. Pres.
9	I-275, US 41 to Pasco County	NA	2584131	No Applic.	No Applic.	4.10 3.00 0.20 **7.30**	610 - Hardwood Forest 630 - Mixed Forest 641 - Marsh	**14 to 1**	4.0 51.0 48.0 3.0 **106.0**	Palmetto Prairie Enhance. Upl. Hardwood Pres. Mix Forest Wet. Pres. Flatwoods Enhance.
10	I-75 at BB Downs Off - Ramp	NA	4084602	43021639	Pending **TOTALS**	0.50 **0.50**	621-Cypress	**17 to 1**	2.0 3.0 3.3 **8.3**	Mix Forest Wet. Pres. Upl. Hardwood Pres. Palmetto Prairie Enh.
					GRAND TOTALS	**22.98 Ac.**		**13 to 1**	**297.8 Ac.**	

Attachment B - DOT Project / Mitigation Table **Cypress Creek Preserve, West (Jennings Tract) Hills. Co. ELAPP Updated 9/10/01**

FDOT Wetland Impacts by Habitat Type

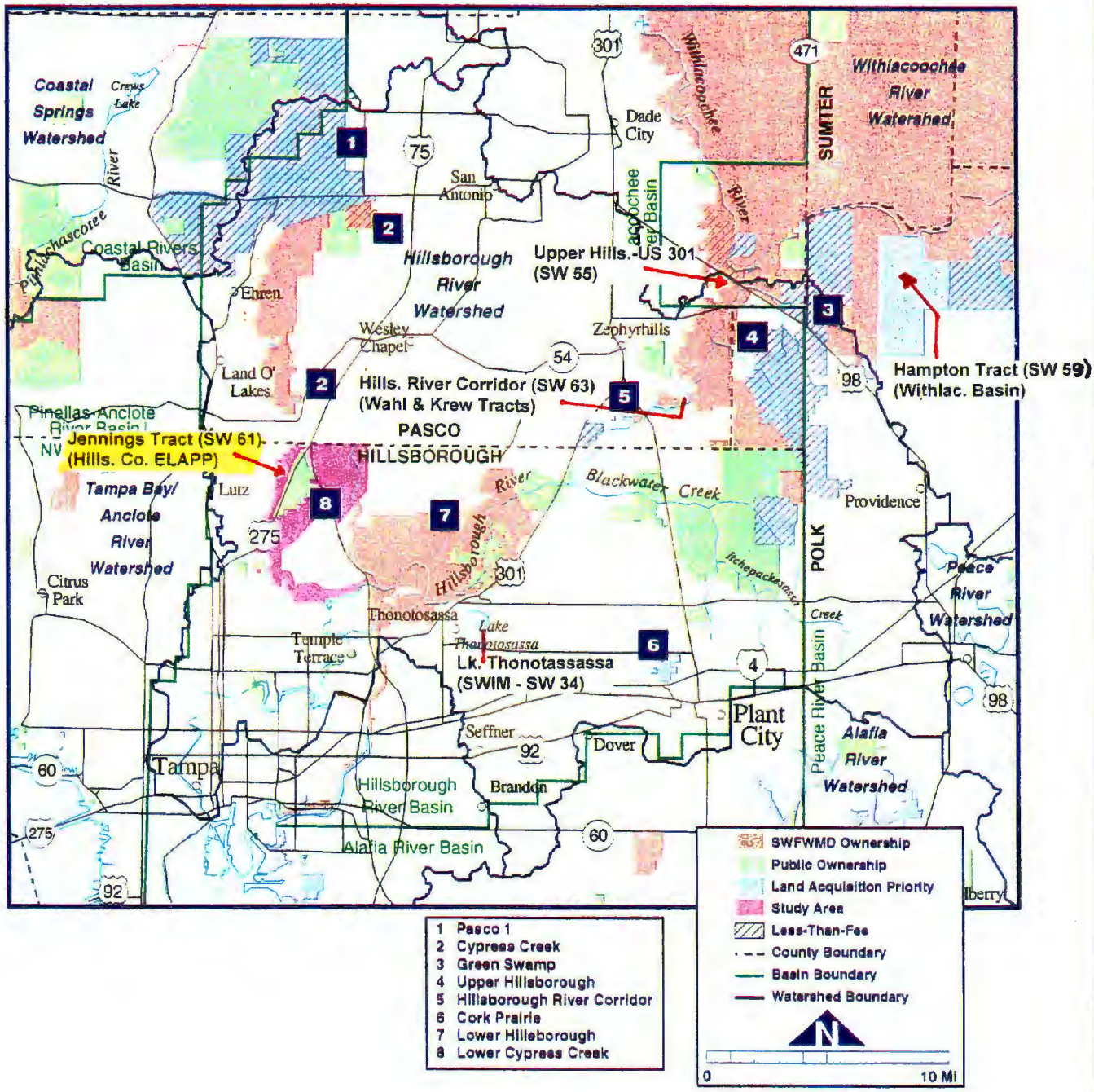
610	Hardwood Forest	4.30 acres
615	Stream Swamp	1.40 acres
617	Mixed Hardwood For.	3.20 acres
618	Willow & Elderberry	0.50 acres
621	Cypress	0.50 acres
630	Mixed Forest	8.20 acres
641	Freshwater Marsh	1.10 acres
641x	Marsh (Ditch)	2.08 acres
IMPACT TOTALS		**22.98 acres**

Mitigation Acreage by Habitat Type

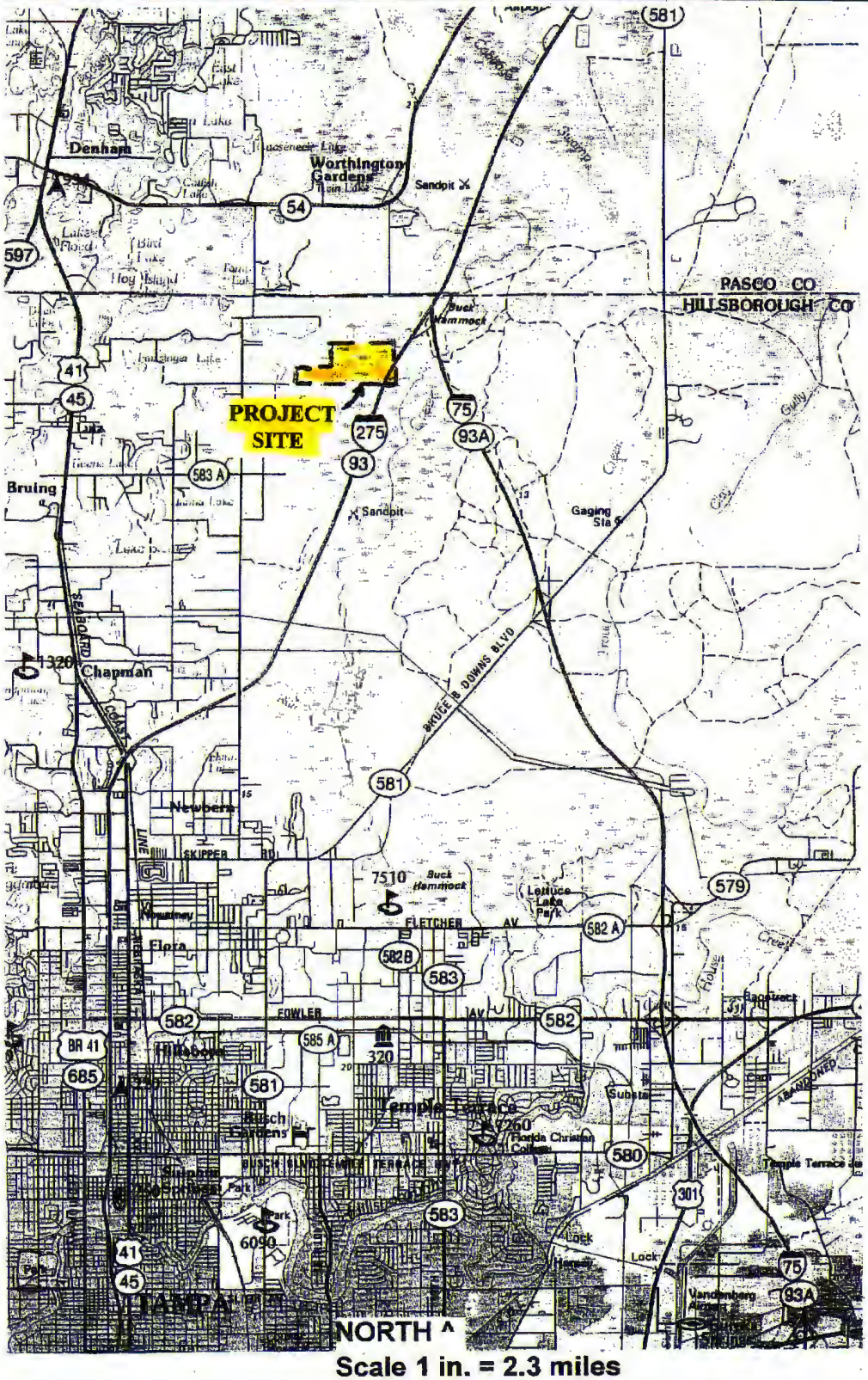
Mixed Forested Wetland Preservation	145.3 acres
Upland Hardwood Forest Preservation	98.2 acres
Pine Flatwoods Enhancement	19.0 acres
Pine Flatwoods Restoration	20.0 acres
Palmetto Prairie Enhancement	15.3 acres
MITIGATION TOTALS	**298 Acres**

Cumulative Mitigation Ration - 13 mitigation acres per 1 impact acre

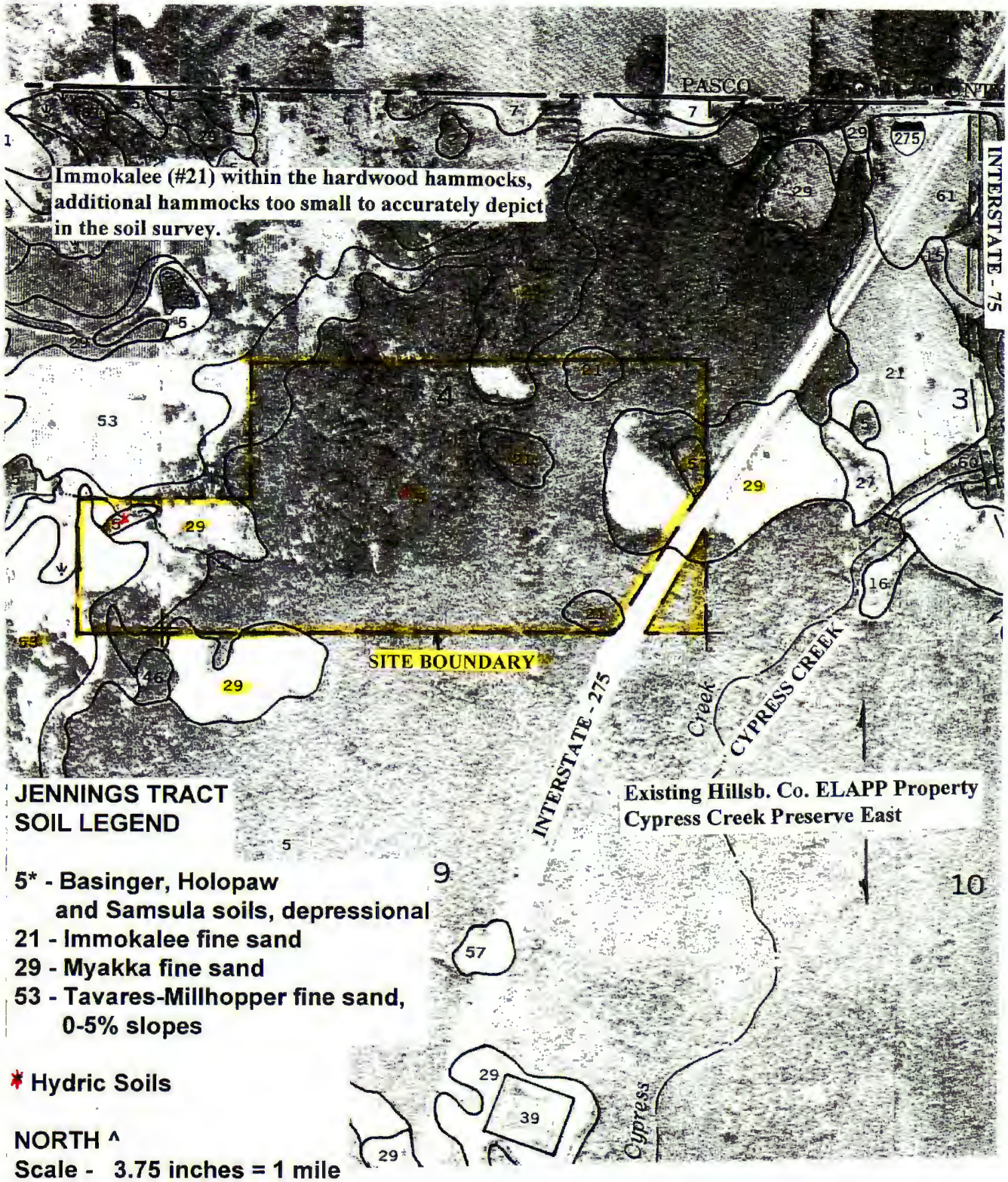
Save Our Rivers
Preservation 2000
2000 Five-Year Plan



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** **Hills. Co. ELAPP (SW 61)**	**FIGURE D** **INFRARED AERIAL - 1995**

FDOT - District 7
MITIGATION SITE
(HILLSBOROUGH BASIN)

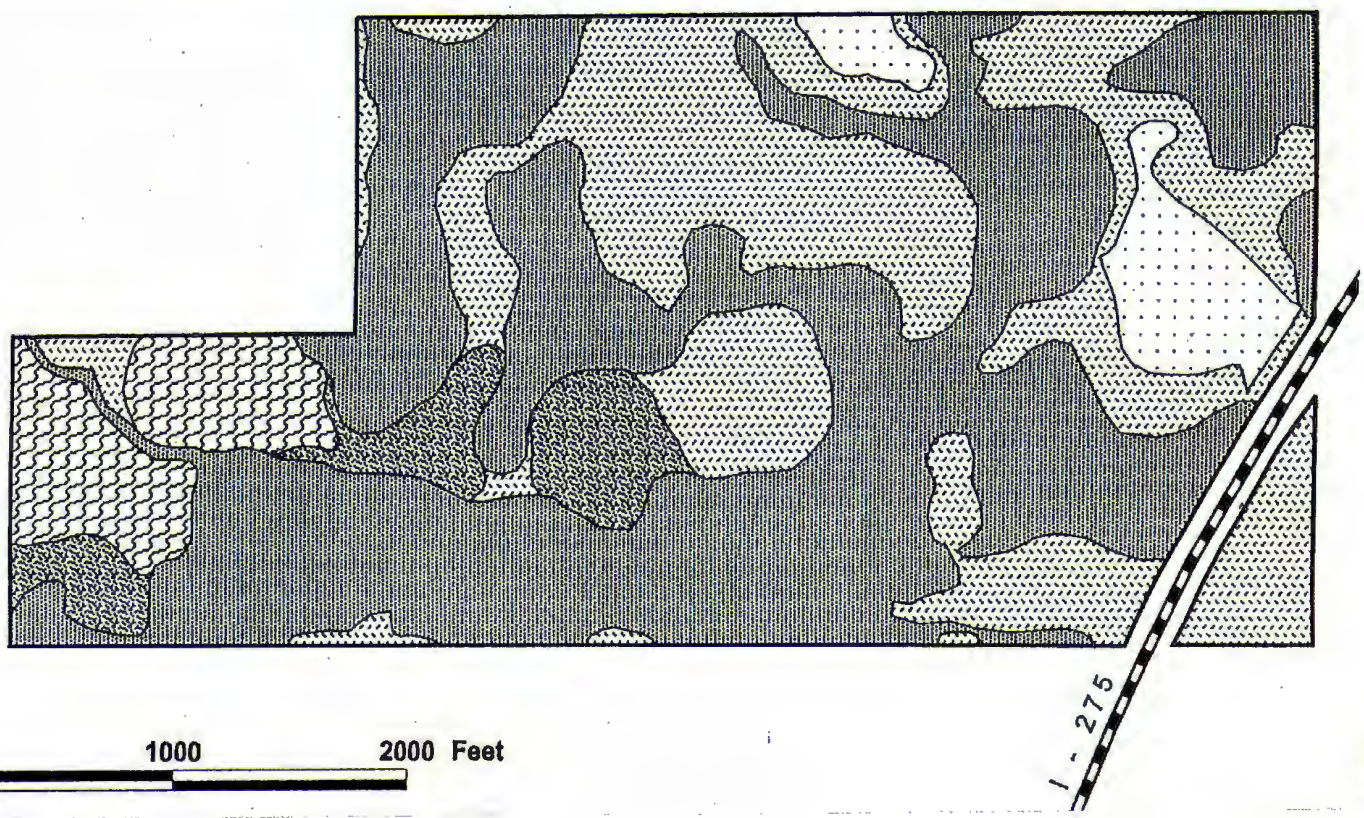
JENNINGS TRACT
CYPRESS CREEK
PRESERVE WEST
Hills. Co. ELAPP (SW 61)

FIGURE E
VEGETATIVE COMMUNITIES

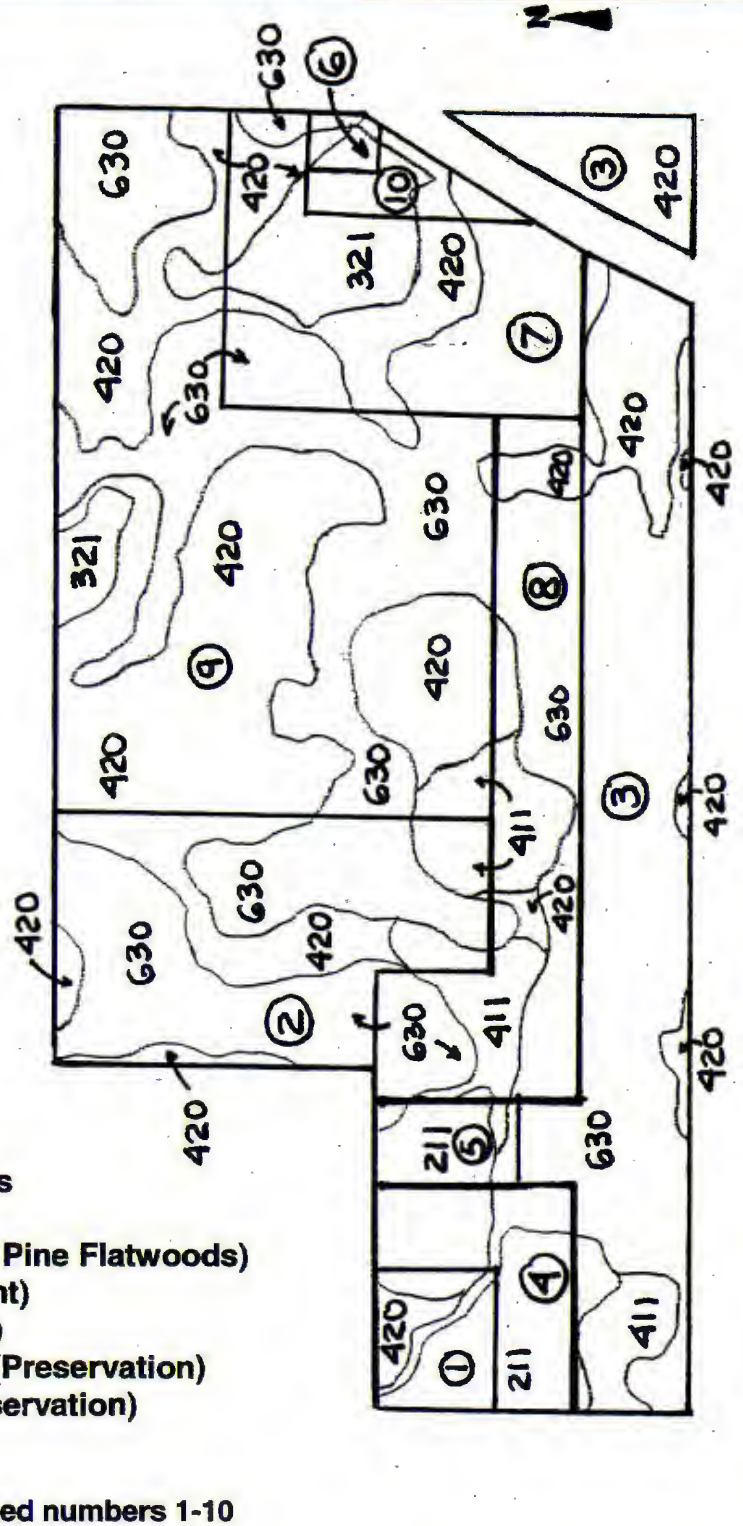
Cypress Creek - Jennings Parcel

- Plant Communities

Hardwood/Cypress Swamp (146ac)
Hardwood Hammock (98ac)
Palmetto Prairie (15ac)
Overgrown Pine Flatwoods (19 ac)
Bahia Pasture (20 ac)



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 Communities - 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 .

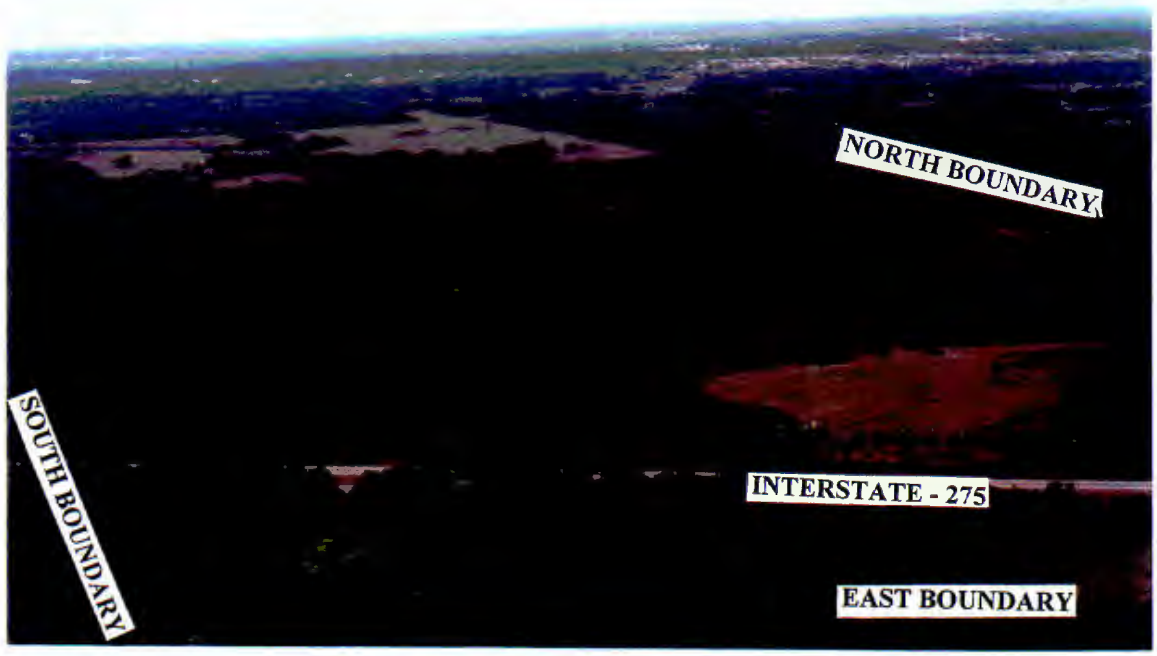
FDOT - District 7 Mitigation Site (Hillsborough River Basin)	**CYPRESS CREEK PRESERVE WEST (SW 61) (Jennings Tract, Hills. Co. ELAPP)**

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: Denise Bristol, Environmental Scientist (WMD-SWIM) Phone No: 813-985-7481 ext. 2208
County(ies): Hillsborough Location : Sec. 17, T30S, R18E

IMPACT INFORMATION

DOT (FM): 2557031, SR 60 - Cypress St. to Fish Creek* ERP #: _____ COE #: _____
Drainage Basin(s) (names): Tampa Bay Coastal Water Body(s) (names): Tampa Bay SWIM water body? (Y/N) Y

Acres/Impact Types: FM 2557031 - 0.3 ac. 612 (Fluccs code)
1.9 ac. 641x (Fluccs code)
4.0 ac. 642x (Fluccs code)
TOTAL: 6.2 acres

* Only the mangrove and ditch impacts associated with this project are being mitigated at Tappan Tract. The remaining wetland impacts for this DOT project will be mitigated at the Wolf Branch Extension project (SW 67).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Wetland Creation X Upland Enhancement X Wetland Enhancement Mitig. Area: **8.43 ac.**
SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) 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 (0.72 ac.), mangrove habitat (0.77 ac.) and salt marsh (3.06 ac.) (total 5.08 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 covers approximately 33-acres, which includes 9 upland acres and 24 wetland acres (Figures D&E). Only the eastern portion of the property have 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, exotics 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 Brazilian 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 proposed 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 and coastal upland habitat.

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 Wolf Branch Extension project (SW 67). 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 4.0 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.), tidal pool enhancement (0.72 ac.), for a total mitigation ratio of 1.5:1. For the 1.9 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 0.9:1. Considering 95% of the impacts are associated with ditches, and there are over 20 acres of quality habitat surrounding the proposed restoration area, the mitigation is considered appropriate and adequate to mitigate these impacts.

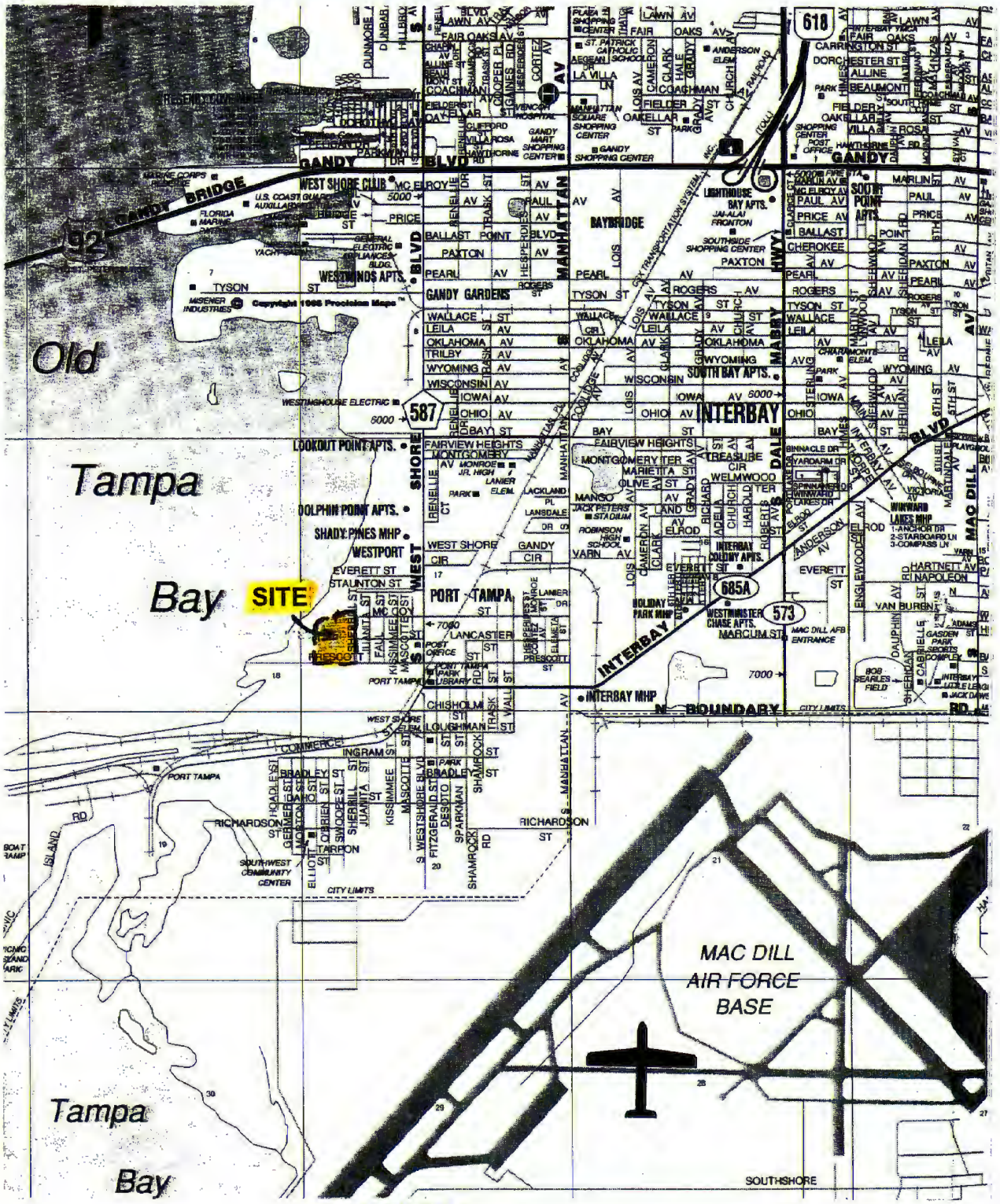
E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: To date, the only proposed mitigation bank in the Tampa Bay Drainage Basin is the Tampa Bay Mitigation Bank (TBMB). The TBMB has not received the USACOE permit therefore cannot be considered to provide the mitigation.

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: Southwest Florida Water Management District, Operations Dept. or selected contractor
Contact Name: Denise L. Bristol, WMD-SWIM Environmental Scientist Phone Number: 813-985-7481 ext. 2208
Entity responsible for monitoring and maintenance: City Of Tampa, Parks Department
Proposed timeframe for implementation: Commence: October 2000 (design) Complete: December 2003 (construction complete)

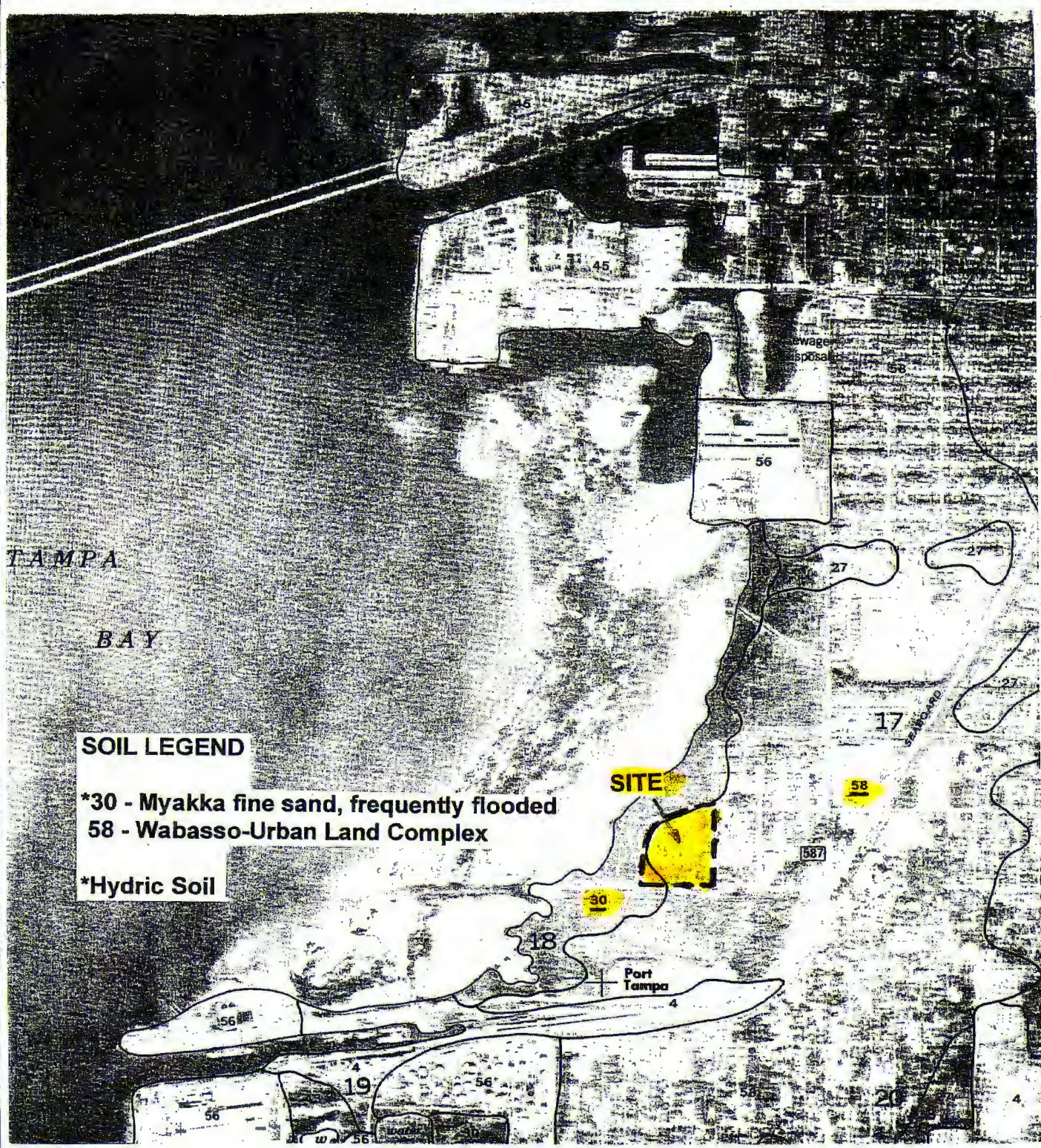
Project cost: $ 460,000 (total)
Design: $80,000
Construction and planting: $340,000
Monitoring & Maintenance: $40,000



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

DOT WPI: 7115951, FM 2563431, US 41, Bell Lake to Tower Road ERP #:4318030.001 COE #: 199241273
Drainage Basin(s) (names): Hillsborough River Water Body(s):Trout Creek, Cabbage Swamp SWIM water body? (Y/N) N

Impact Acres/Types: WPI: 7115951 0.5 ac. 621 (Fluccs code) **TOTAL: 0.50 ac.**
Note - 0.6 impact acre of this project will be mitigated off the DOT Mit. Program by DOT, D-7.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation___ Restoration __ Enhancement X Preservation Mitigation Area: **10 ac.**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) N Drainage Basin(s) : Hillsborough River Water Body(s):Hillsborough River SWIM water body? N

Project Description

A. **Overall project goal:** Acquisition and preservation of a portion of the Hillsborough River floodplain, a mixed forested wetland (10 acres) 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).

B. **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).

C. **Brief description of proposed work:** After acquisition, the site will be periodically reviewed for security. Efforts will continue to be made to hopefully acquiring the adjacent 20 acre outparcel of floodplain forest to finalize the corridor connection of public lands along Hillsborough River (refer to Figure 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 20:1.

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: $20,000 (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 complete by spring of 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 Attachment B.**

ATTACHMENT A - Existing Site & Proposed Work

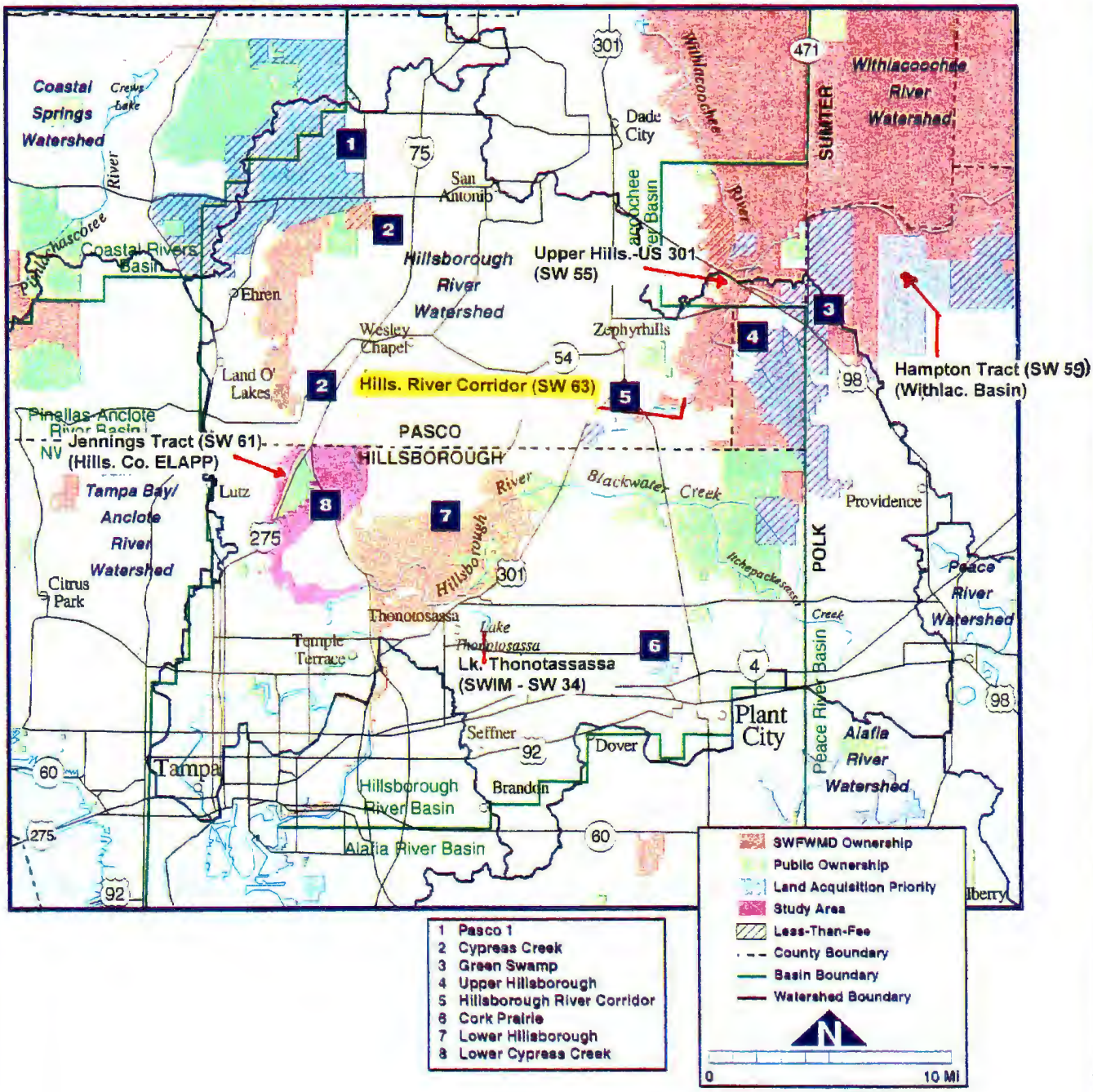
The entire 10 acres is mixed forested floodplain with the Hillsborough River meandering through the southern portion of the site (refer to photos). The overstory (canopy >70%) is dominated by red maple, American elm, and laurel oak. Sub-dominants include sweet gum, hackberry, ironwood, bald cypress, 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.

It is noted that this project previously proposed the acquisition of the adjacent 20-acres (Wahl Tract) and 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 to be mitigated at Cypress Creek Preserve, West (SW 61). Hopefully the opportunity for public acquisition of the additional 20 acres will occur in the future.

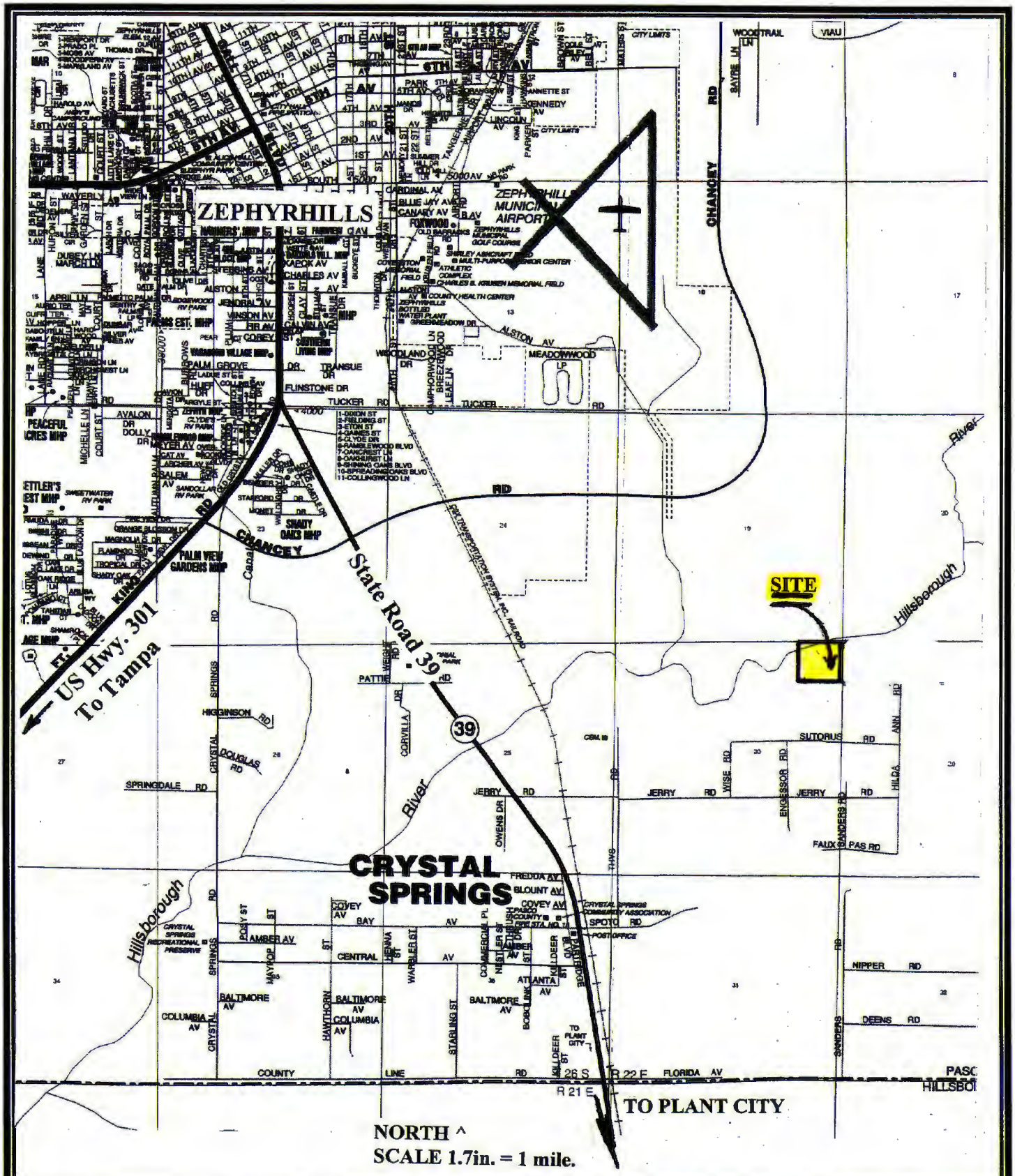
ATTACHMENT B - DOT Mitigation

The 10-acre site is proposed to mitigate for wetland impacts associated with a portion of wetland impacts associated with one DOT project, a wetland impact associated with the perimeter of a cypress –dominated wetland. The perimeter of the impact area also has cover of red maple and a roadside swale with primrose willow and Carolina willow, covered with skunkvine and Virginia creeper. The hydrology of the proposed impact area has been dewatered, allowing air potato to establish within the canopy area. The acquisition site has a cypress component as part of the mixed forested wetland floodplain system. The acquisition, preservation, and long-term management of this Hillsborough River Corridor tract will mitigate the proposed wetland impact at a ratio of 10 acres of mitigation compared to 0.5 impact acre (20:1).

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**

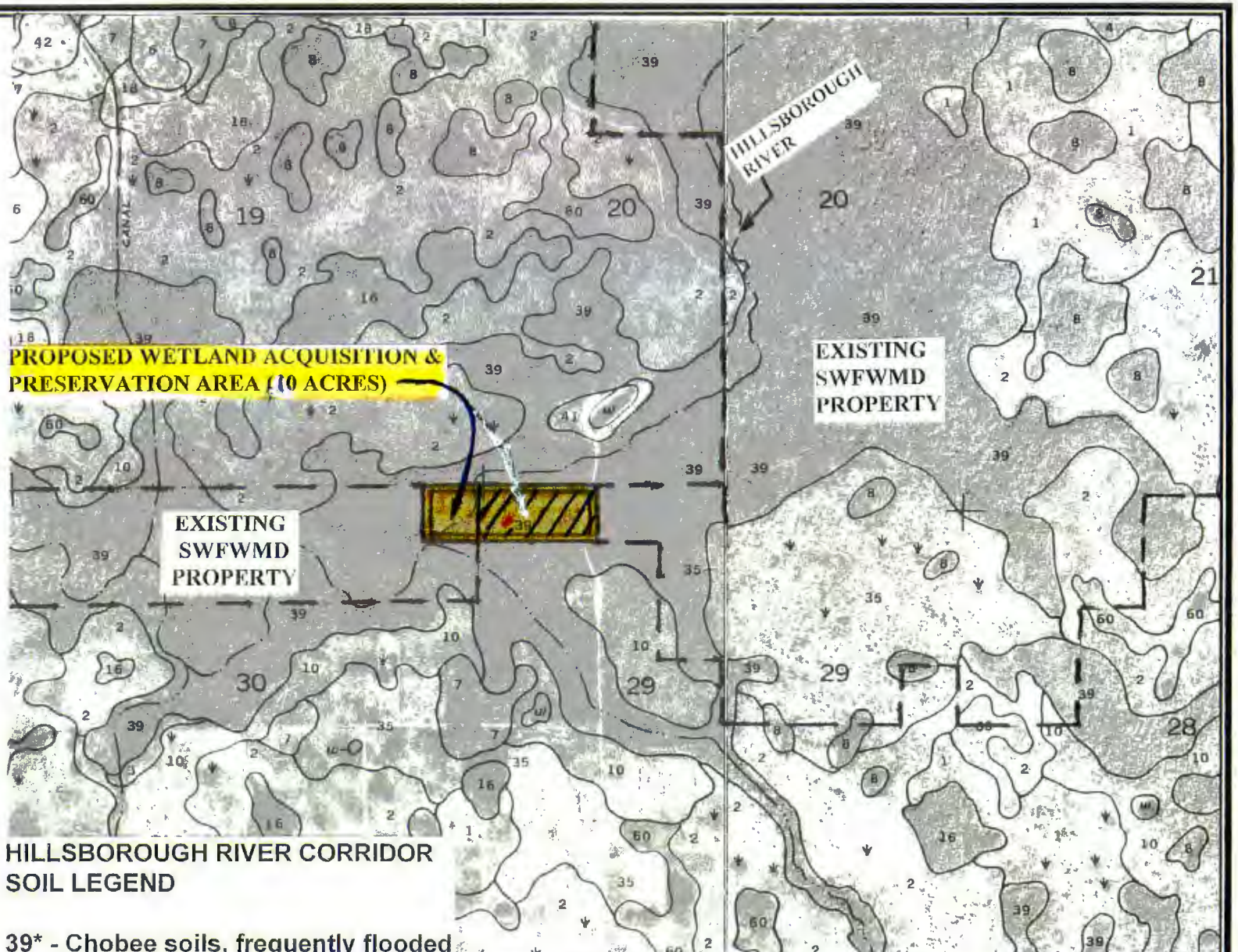


FDOT - District 7 MITIGATION SITE (HILLSBOROUGH BASIN)	HILLSBOROUGH RIVER CORRIDOR (SW 63)	FIGURE B LOCATION MAP

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)

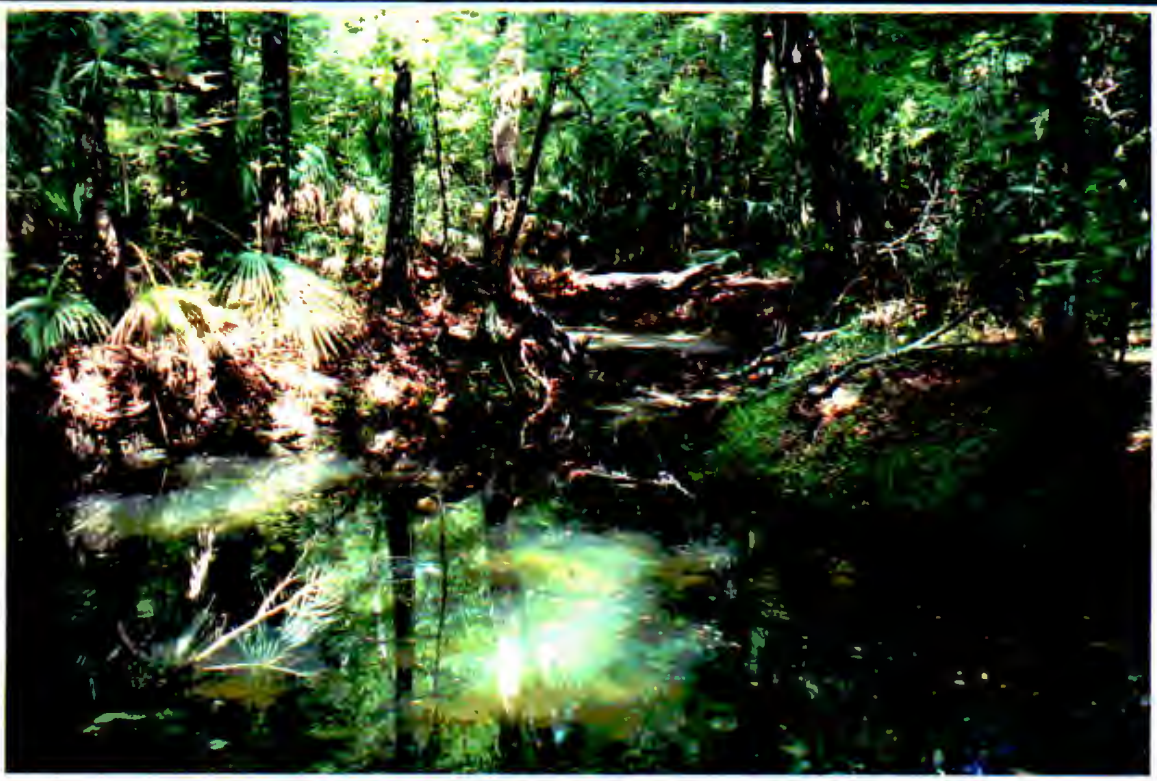
FIGURE D
LOCATION MAP
Scale 1in. = 366 ft.

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 Management Area) Project Number: **SW 64**

Project Manager: Allen Burdett (FDEP-Tampa) Phone No: (813) 744-6100 ext. 333, Suncom 542-1042

Judy Ashton (FDEP- Tampa)

County(ies): Sumter Location (central lat/long): 28 33' 0", 82 00', 00"

IMPACT INFORMATION

DOT WPI: 7119003, FM: 2571641, SR 44-CR 470 to County Line ERP #:_____ COE #: _____

WPI: 7119002, FM: 2571631, SR 44-US 41 to CR 470 ERP #: _____ COE #:_____

FM: 2571841, SR 45 (US 41) – Watson St. to SR 44 East ERP #:_____ COE #: _____

Drainage Basin(s): Withlacoochee River Water Body(s): Lake Henderson, Lake Tsala Apopka SWIM water body? N

Impact Acres / Types:

WPI 7119003	WPI 7119002	WPI 2571841
10.70 ac. 617 (Fluccs code)	3.10 ac. 615 (Fluccs code)	0.10 ac. 641x (Fluccs code)
0.20 ac. 630 (Fluccs code)	3.10 ac. 618 (Fluccs code)	**0.10 ac.**
1.40 ac. 641 (Fluccs code)	1.60 ac. 641 (Fluccs code)	
12.30 ac.	**7.80 ac.**	

TOTAL: 20.2 ac.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation ___ Restoration _X_ Enhancement ___ Preservation Mitigation Area: **1518 acres**
(Non-forested Wetland - 970 acres, Forested Wetland – 548 Acres)

SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) N Drainage Basin(s): Withlacoochee River Water Body(s): Giddon Lake, Merritt Pond, Goose Pond, Little Withlacoochee River SWIM water body? (Y/N) 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 foraging opportunities for wildlife.

B. Brief description of current condition: Refer to Attachment A and 1995 infrared aerials.

C. Brief description of proposed work: Refer to Attachment B.

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 to 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 existing SR 44 construction. 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 20 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 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 Department of Environmental Protection

Contact Name: Allen Burdett, Judy Ashton (DEP-Tampa) Phone Number: 813-744-6100, ext. 436

Entity responsible for monitoring and maintenance: Division of Forestry

Proposed timeframe for implementation: Commence: January, 2001 Complete: Spring, 2003 (Construction) 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

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 late 2001.**

__x__ 4. Detailed schedule for work implementation, including any and all phases. **Schedule includes design & permitting in 2001, proposed construction commences during January-June dry season conditions in 2002, construction is followed by three years of monitoring. Proposed SR 44 wetland impacts won't commence until October, 2002.**

__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. A monitoring plan will be conducted in coordination with the Div. of Forestry to evaluate strategically placed staff gauges, piezometers, and vegetative monitoring. Qualitative vegetative evaluation of the proposed wetland enhancement areas will be conducted as part of the hydrologic monitoring. Success criteria and associated monitoring plan will be specified as part of the permit conditions.**

__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/stabilization problems. The maintenance plan will be specified as part of the permit conditions.**

__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 dye 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

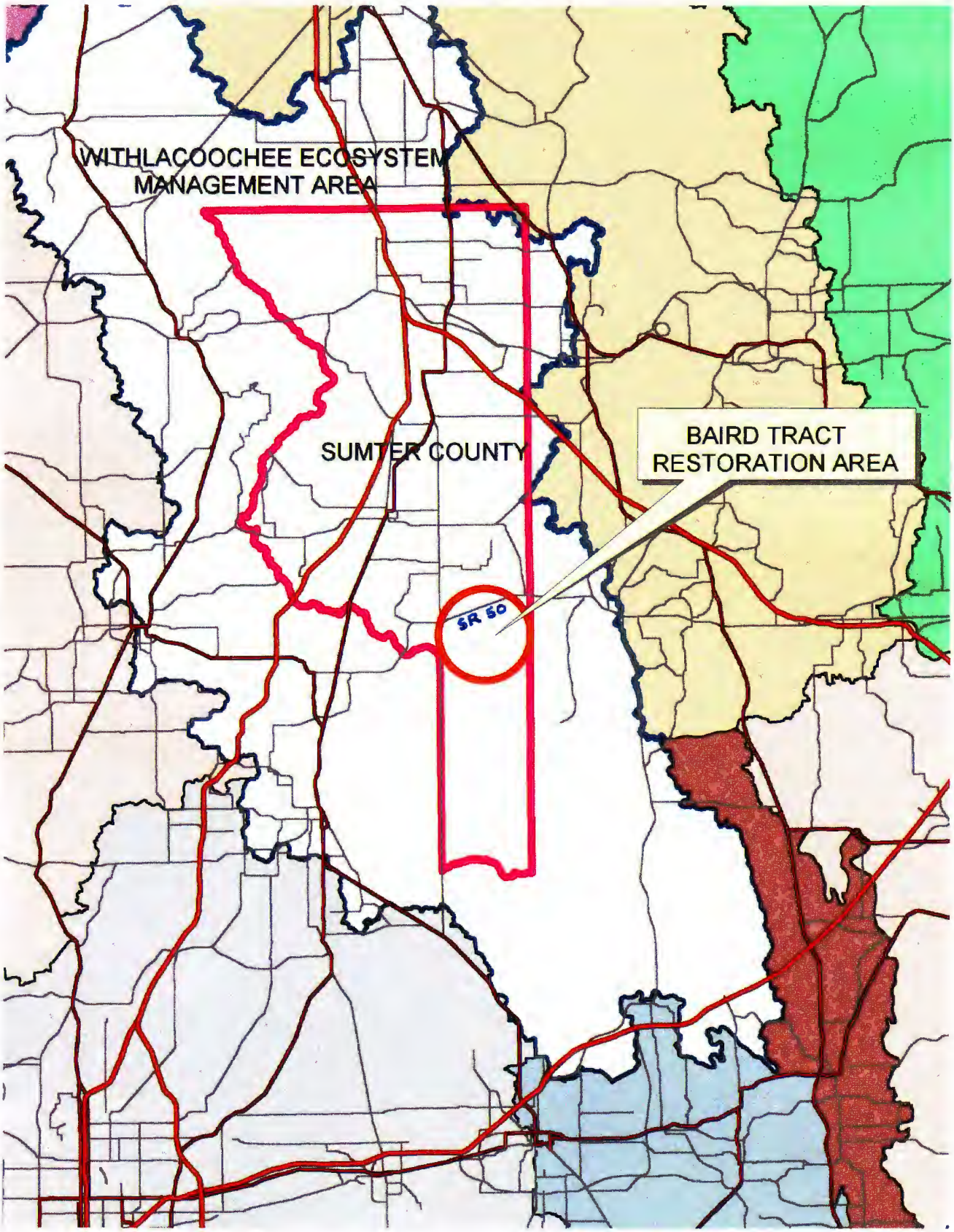
Merrit Pond
Approximately 185 acres of marsh will be enhanced, including openwater areas. Enhancement will include the blocking of the ditch draining from Merrit Pond into Gidden lake. Land use codes included in ehnancement areas: 6430, 6440, 6410, 6150

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

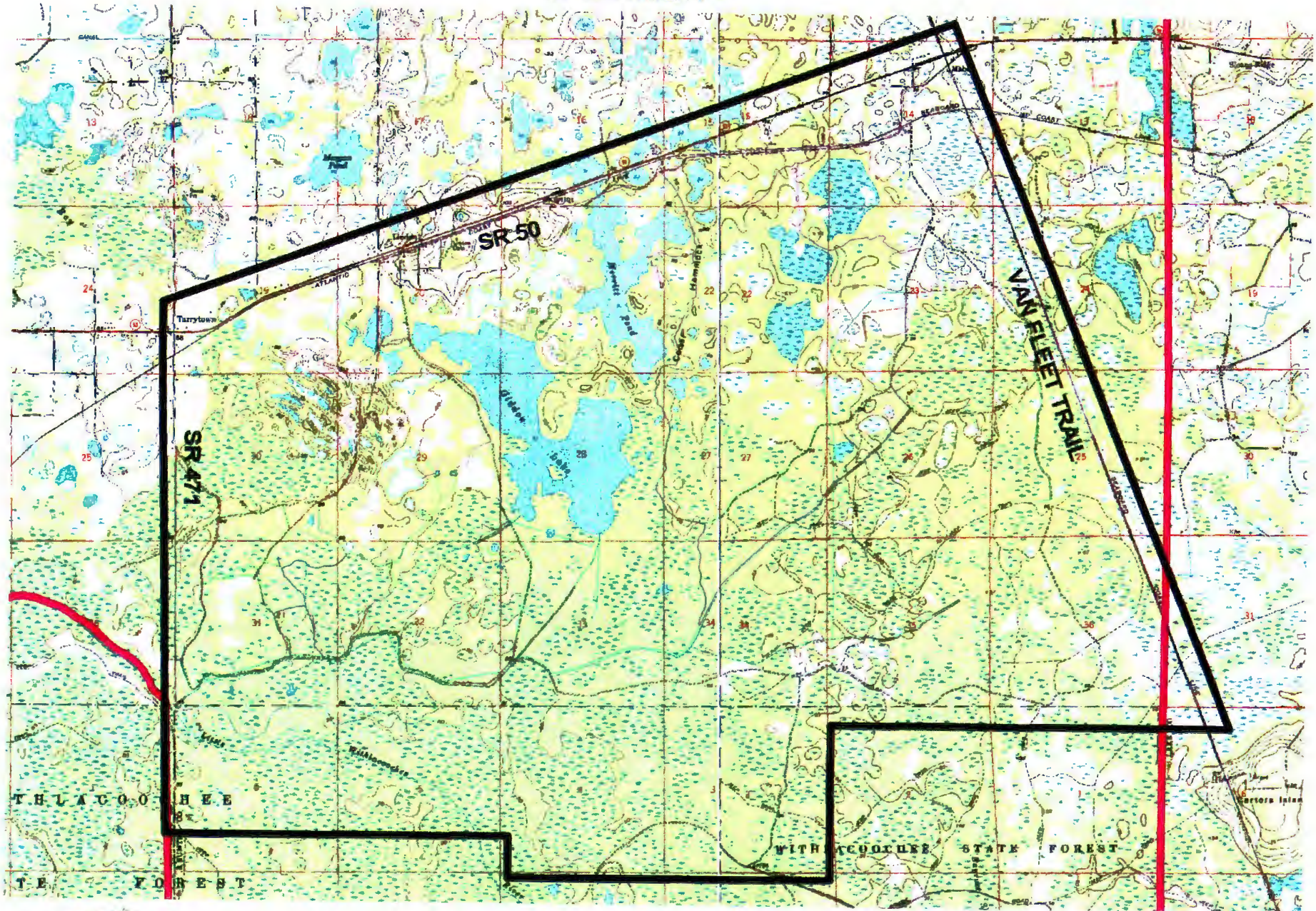
***Canal Grade**
Approximately 422 acres of wetlands will be directly enhanced via the installation of ditch blocks, geoweb and culverts. Land use codes included in enhancement areas: 6210, 6430, 6300, 6410
*(A Federal Grant has been applied for and received by the Department for this area. This area 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

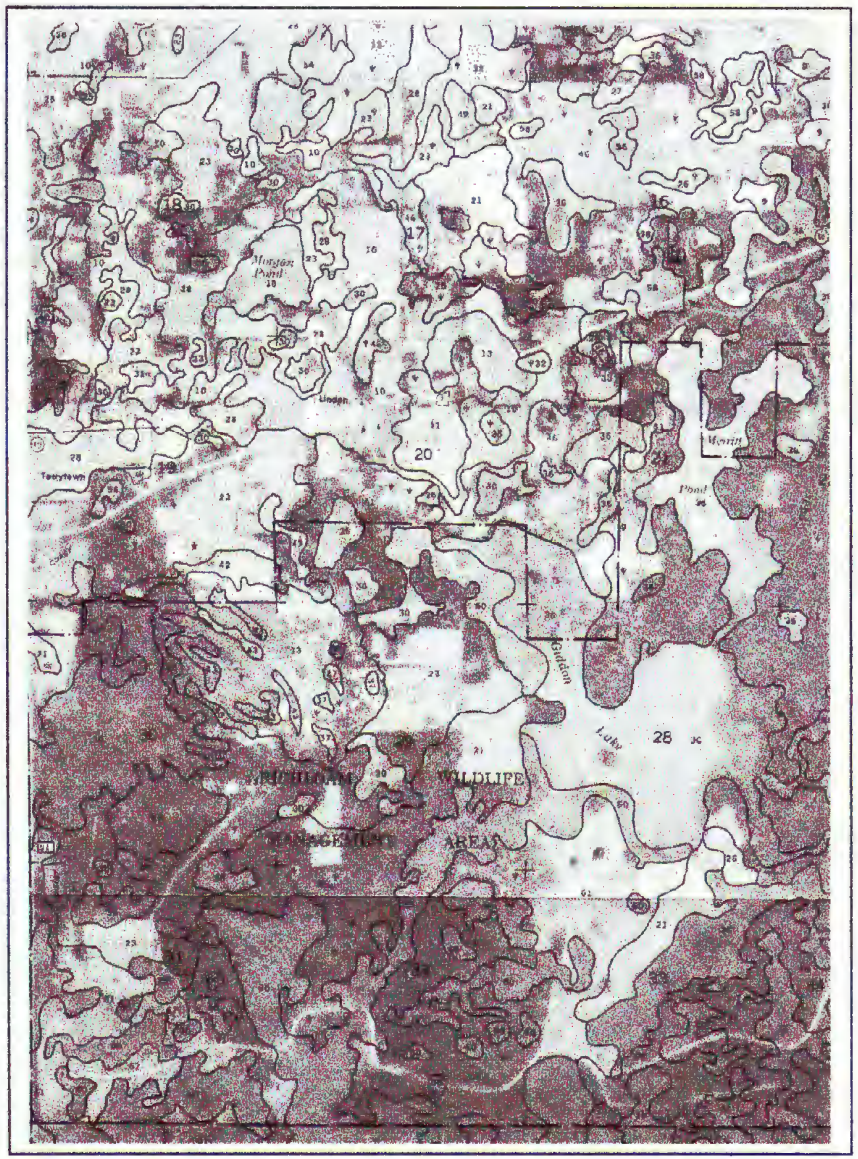
ATTACHMENT 1



ATTACHMENT 4



BAIRD TRACT
Natural Resource Conservation Survey November 1988

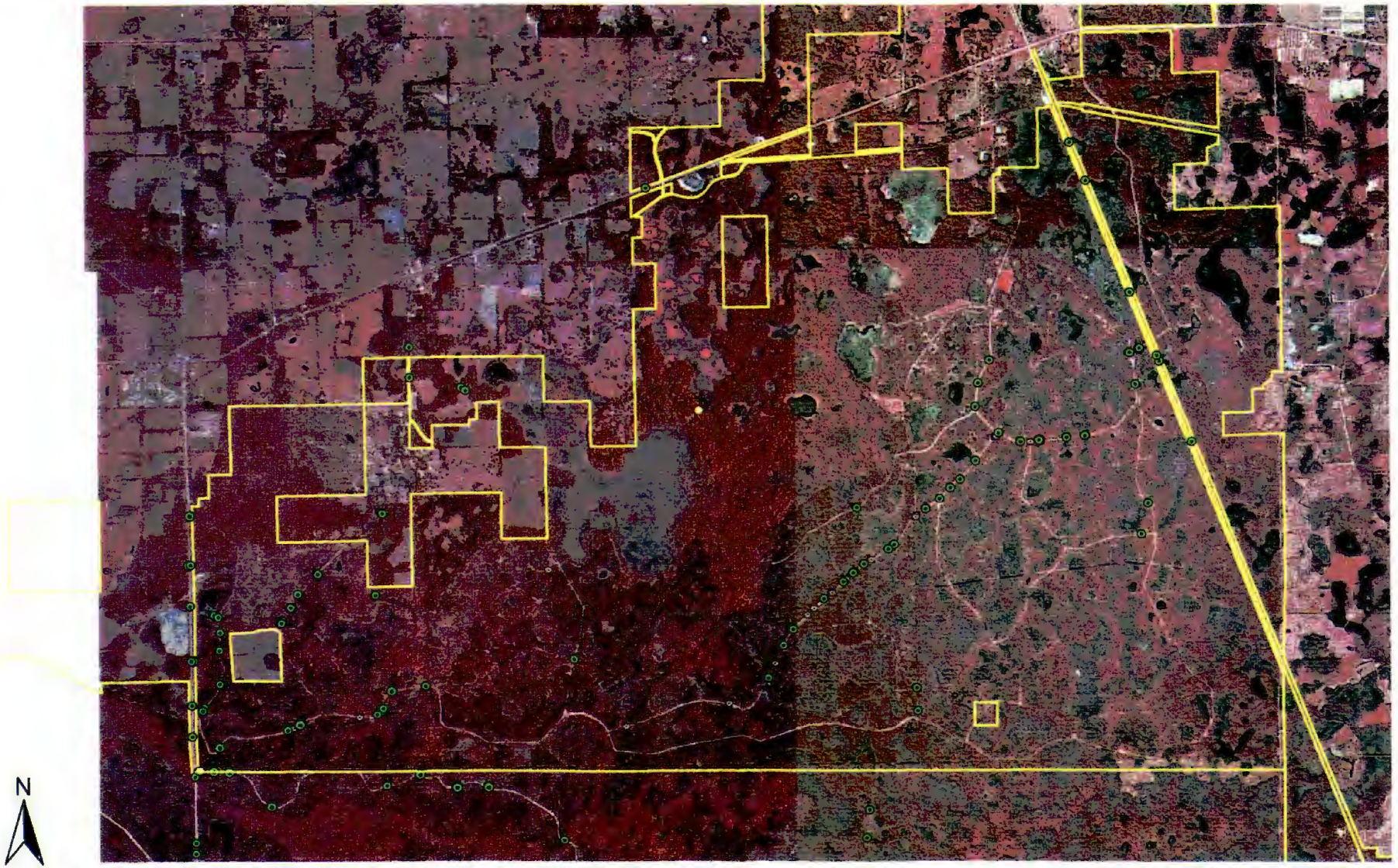


BAIRD TRACT
1995 INFRARED AERIAL
Entire Project Area

BAIRD TRACT
NORTHEAST SECTIONS
Scale 1 in. = 2017 ft.

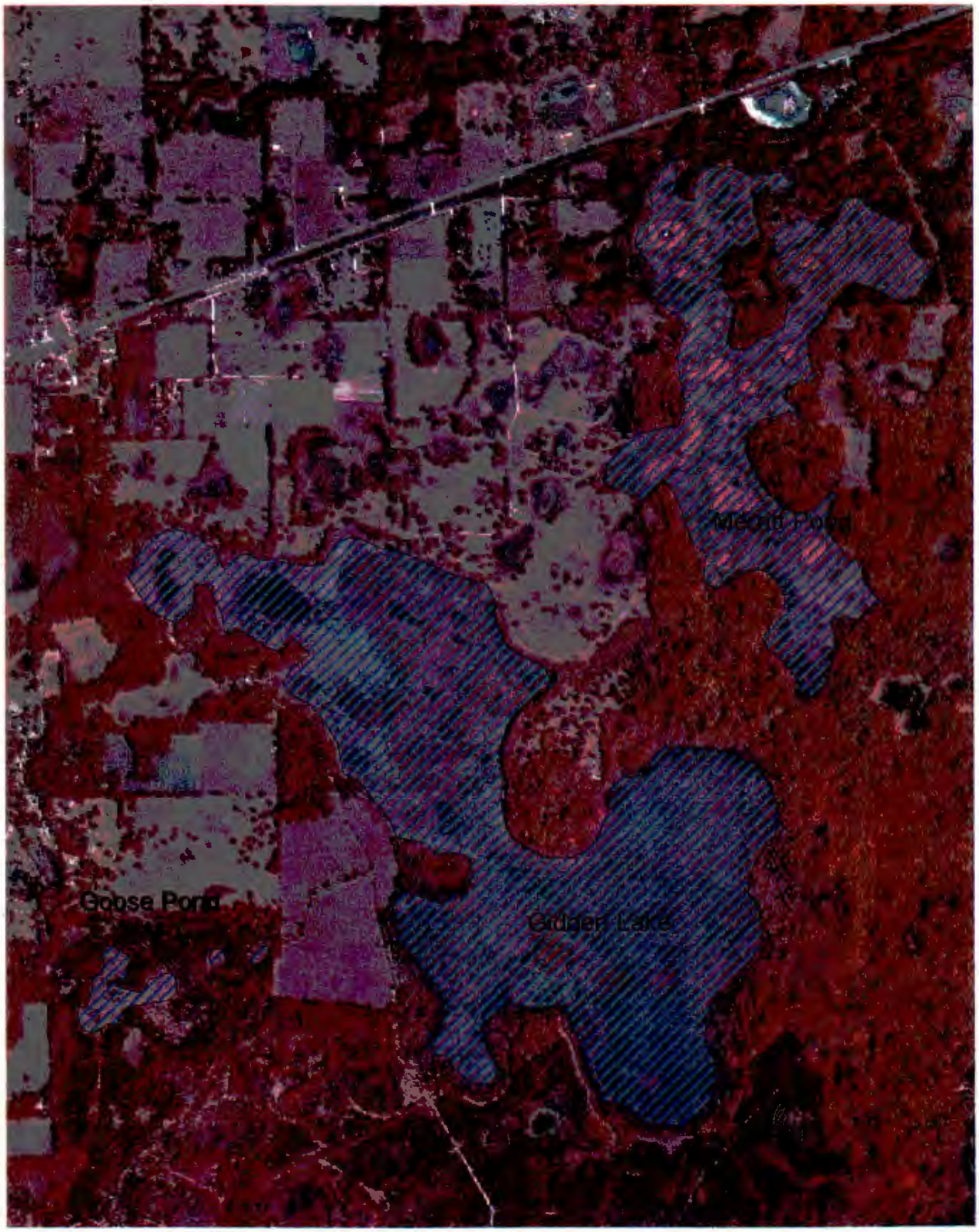
BAIRD TRACT
WESTERN SECTIONS
Scale 1 in. = 2017 ft.

BAIRD TRACT
SOUTHEAST SECTIONS
Scale 1 in. = 2017 ft.



Overall Project Area W/Structures

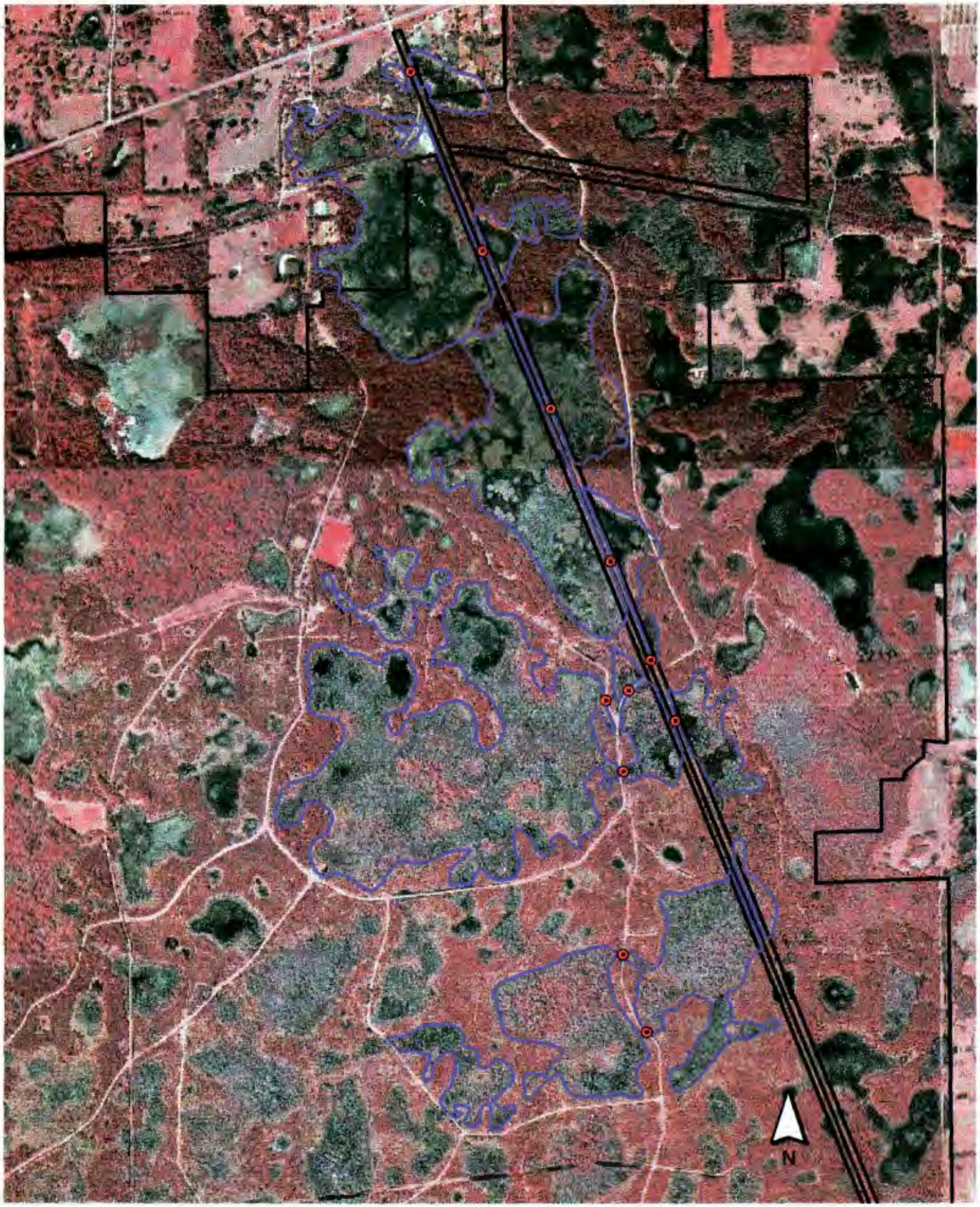
Gidden Lake, Goose Pond, Merritt Pond
Restoration Area



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

DOT (WPI): 1115353 (FM) 196022 – SR 64 – I-75 Interchange to Lorraine Rd. ERP #:_____ COE #:_____
FM: 199668 – Upper Manatee River Road, SR 64 to US 301 ERP #:_____ COE #:_____
Drainage Basin: Manatee River Water Body: Gates Creek, Manatee River SWIM water body? N

Wetland Impact Acres / Types: FM 196022 – SR 64

Seg. 1 (Interchange to Lena Rd.)	Seg. 2 (Lena Rd. to Lakewood Ranch Rd.)	Seg. 3 (Lakewood Ranch to Lorraine Rd.)
0.75 ac. 617 (Fluccs code)	0.89 ac. 641x (Fluccs code)	0.84 ac. 510 (Fluccs) – Mill Ck.
1.67 ac. 641 (Fluccs code)	0.22 ac. 641 (Fluccs code)	1.09 ac. 617 (Fluccs code)
2.42 ac. TOTAL	**1.11** ac. TOTAL	1.12 ac. 618 (Fluccs code)
		0.39 ac. 641 (Fluccs code)
		3.44 ac. TOTAL

Note: As of September, 2001, only Segment 1 has been programmed by DOT for construction. Segments 2 &3 are currently not proposed for construction until after 2005, but could be moved up in the work program pending available funds. The wetland impacts for these two segments are based on the highest potential acreage, but will be revised and minimized per final design.

FM 199668 – Upper Manatee River Road
0.76 ac. 500x (Fluccs code)
1.72 ac. 617 (Fluccs code)
0.27 ac. 618 (Fluccs code)
0.95 ac. 641 (Fluccs code)
0.49 ac. 641x (Fluccs code)
4.19 ac. TOTAL

Note: As of September, 2001, the Upper Manatee River Road project is under PD&E evaluation which includes a feasibility analysis. The project cannot be officially accepted onto the impact inventory until the project receives federal, state, and local approval for future funding and construction. The wetland impacts listed above are associated with the highest quantity that could be anticipated from the design. It is anticipated that some of the upland-cut ditch (641x) and pond (500x) impacts may be exempt from mitigation requirements. However, the potential saltwater impacts (4.2 acres from shading) associated with constructing a new bridge over the Manatee River would be proposed for mitigation at a saltwater wetland restoration project in the basin, SW 50 – Terra Ceia. Since that acreage has not been qualified or quantified as per mitigation requirements, those impacts have not been included in the narrative for Terra Ceia.

TOTAL – 11.16 Acres

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: 12 ac. Upland Enhance. 17 ac. Upland Restor. 86 ac. Wetland Enhancement Mitigation Area: **115 ac.**
SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N
Mitigation Bank? (Y/N) N Drainage Basin(s): Manatee River Water Body(s): None SWIM water body? (Y/N) 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. These majority of these marshes have been heavily drained by interconnecting ditches that substantially alter the wetland hydrology and vegetative composition. The proposed restoration includes completely filling some of those ditches and using ditch blocks in other areas to restore the various wetland hydrology, which will enhance the wetland habitat, as well as plant wetland buffers and a vegetated upland corridor connection between the marshes within the pasture.

DOT Mitigation – Rutland Ranch

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. During the last few years, the row crops were replaced with improved pasture (bermuda grass) that didn't successfully establish due to drought conditions. The minimal grass cover allowed dog fennel and broomsedge to establish in the uplands, as well as the drained wetlands. The western one-third portion of the tract is still covered with a palmetto prairie that has been used as native range for cattle. A mixed forested wetland tributary to Gilley Creek is located along the northern boundary. Due to the extensive and excessive drainage features, the marshes are dominated by broomsedge, along with minimal coverage of desirable wetland species, predominantly maidencane. (Refer to Attachment A).

C. Brief description of proposed work: To evaluate wetland water levels pre- and post-construction, six shallow monitor wells were installed in the six most disturbed wetlands in the spring, 2001. Prior to any earthwork activities, exotic species (predominantly primrose willow and cattails) within the ditches will be eradicated with herbicide treatment. Existing spoil material without coverage of trees & shrubs will be back filled into the ditches located within Wetlands 2, 4, 5, 6, 11, 12, and 13. (wetland enhancement – 86 acres). Additional ditch fill material will be obtained by dredging cattle ponds within the pastures. Wetland herb planting will occur within the graded areas where the wetland cut ditches are filled and the spoil areas are graded to match the adjacent wetland elevations. Around the perimeter of Wetland 4 and along the western boundary of Wetland 12, a minimum 50 ft. buffer along with a 100 ft. upland corridor connection between Wetlands 3, 4, and 12 will be planted with native grass seed and pine saplings (upland restoration – 17 acres). A seed harvester will be used to collect from native seed sources of wiregrass, broomsedge, and palmetto located within the on-site palmetto prairies. By filling all the ditches within and adjacent to Wetlands 1-3, and incorporating additional pine planting and prescribed burn plan, the existing upland habitat around those three marshes will be enhanced (upland enhancement – 12 acres). Refer to Attachment A for additional information and Figure C for monitor & wetland locations, proposed construction areas.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The anticipated FDOT wetland impacts include an approximately 50/50 split of non-forested and forested wetlands. The listed wetland impacts for the two eastern segments of SR 64 and the potential Upper Manatee River Road are based on the roadway alignment with the most potential wetland impacts. With minimization of impacts and the possibility that mitigation won't be required for the upland-cut ditches and ponds, the actual impact acreage that will require mitigation will decrease. However, the proposed restoration activities and acreage at Rutland Ranch will stay the same. Even when any of these additional impacts occur, they won't be until after 2004, a minimum of two years after mitigation construction. This will allow the mitigation earthwork to be conducted and the potential of achieving desirable wetland habitat conditions prior to the impacts occurring to over 70% of the proposed wetland acreage. The proposed mitigation plan will result in wetland enhancement (86 acres), upland habitat restoration (total 17 acres for Wetland 4 and 12 buffers and 10 acres of Wetland 3,4,12 corridor), upland habitat enhancement (12 acres, between and adjacent to Wetlands 1,2,3). 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 other DOT projects, including the potential saltwater wetland impacts associated with the Upper Manatee River Road. However, the proposed freshwater wetland impacts associated with the DOT projects can be mitigated with more appropriate freshwater wetland improvements associated with the proposed restoration activities at Rutland Ranch.

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 (M. Brown & Operations Dept.)

Proposed timeframe for implementation: Commence: Hydrologic Monitoring, Spring – 2001 Complete: Const., Spring, 2002, followed by minimum 3 years of monitoring

Project cost: $ 190,000 (total);

$5,000	Herbicide Ditches
$165,000	Construction (Backfill Ditches, Pond Dredging)
$10,000	Planting (Wetland Herbs, Upland Seed Collection & Dispersal, Pine Tree Planting)
$10,000	Maintenance (Herbicide) & Monitoring (3 Years – Annual Reports)

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 proposed ditch backfill & pond locations. Ditch cross-sections will be prepared prior to construction.**

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

X 5. Proposed success criteria and associated monitoring plan. **Refer to Attachment C – Maintenance & Monitoring Plan**

X 6. Long term maintenance plan. **Refer to Figure C -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 and Sarasota Counties. 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, revising their land use where appropriate, and evaluating restoration opportunities in the Lake Manatee watershed.

The SWFWMD is currently committed to long-term cattle grazing on the Rutland Ranch-South Tract. However, the proposed construction activities associated with this mitigation plan will substantially lessen any associated impacts from cattle, restore wetland habitat, improve water quality, retain surface water for groundwater recharge, and increase the habitat for wildlife opportunities. The following information pertains to major site characteristics and proposed 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 (near Wetlands 13, 14). The vegetation of these areas include a dominance by saw palmetto, broomsedge, and wiregrass. Ditches excessively drain surface and ground water conditions for the uplands and the majority of wetland marshes (Wetlands 5, 6, 9, 11, 13, 14) located within the native range areas. Drainage ditch patterns lead northwest, west, south, and southeast to tributaries of Gilley Creek and the Manatee River.

Spoil associated with the historic dredging of these ditches will provide a majority of the proposed ditch backfill material. However in order to preserve many native tree and shrub species located on the spoil (Photos 4, 7, 8) and provide fill material, a few additional cattle ponds will be dredged within the adjacent pasture (refer to Figure C). Due to the decrease of grazing opportunities within the native range compared to improved pasture, cattle will instinctively occupy native range at lower rates per acre. To further minimize impacts to habitat from cattle grazing, no additional ponds are proposed within the native range. The combination of less foraging grasses/sedges and limited sources of surface water will result in fewer cattle grazing within the native range.

Improved Pasture – The transition from row crop activities to improved pasture (bermuda grass) hasn't been completely successful, potentially due to the drought conditions the last few years. No matter what the various reasons, the bermuda grass doesn't provide sufficient pasture coverage to minimize the recruitment and generation of dog fennel and broomsedge (Photo 1). These vegetative conditions in the pasture could change to include supplemental planting of bahiagrass and removal of fennel and broomsedge.

A minimum wetland buffer of 50 ft. will be planted and maintained around the perimeter of Wetland 4 and along the western boundary of Wetland 12 (total 8 acres). There are at least 50 ft. perimeters of upland habitat associated with the remaining pasture marshes so additional upland plantings for those areas will not be necessary. For Wetlands 1, 2, and 3, pine flatwood buffers already exist (Figure C, Photos 2, 3, 4) but will be enhanced by the total fillings of the adjacent ditches, planting additional pines, and incorporating into a prescribed burn management program. Native species seed source material will be harvested with a seed collector mounted on the front of a tractor. Seed sources are available at both the North and South Tracts of the Rutland Ranch property.

DOT Mitigation – Rutland Ranch

A minimum 100 ft. wide corridor of native habitat will be established between Wetlands 3 to 4, and Wetlands 4 to 12. Existing palmetto, pines, and myrtles located on spoil material within this corridor will be preserved to provide a seed source and wildlife cover through the corridors (Photos 7, 8). Pine tree saplings will be planted at low densities within the buffers and proposed upland corridor. Pines at high densities not only have difficulty establishing within cattle grazing conditions, but dense tree canopy tend to entice cattle to locate under shade. This increases the potential of nutrient influence, minimizing ground cover due to shade and trampling damage within the buffer.

The proposed corridors and well-dispersed and low cattle stocking rates won't preclude wildlife from roaming and foraging throughout the tract. A perimeter fence will be maintained but no cross-fencing is proposed for the South Tract. With various native range areas and limited pasture acreage bisected by a couple long, linear marshes, attempting a cattle rotation program for this tract would be difficult to manage and would result in less environmental benefits than without cross-fencing. With fencing, cattle would concentration at higher densities within pastures and near the marshes since the native range cannot support the same cattle stocking rates as the pastures. Without interior fences, the cattle will still occupy the pastures but not at the same density since alternative foraging areas are readily available in the native range. As a result, there won't be a problem with overgrazing any one particular area, and nutrients (i.e. manure) are dispersed over the entire site. In addition, stocking rates will be approved and managed at levels acceptable to the WMD so nutrients won't present a water quality problem.

Marshes – The majority of the marshes are bisected by drainage ditches. The smaller wetland cross ditches in Wetlands 2,14, and perimeter of Wetland 12 average 10-15 ft. wide, 2-3 ft. deep (Photos 3, 5), connecting to moderate size drainage ditches that are 20-25 ft. wide, 5-8 ft. deep from natural grade elevations (Photos 4, 7). The large drainage ditches such as through the center of Wetland 12 and east-west connecting ditch to Wetland 4 (Photo 8) are 25-30 ft. wide, 6-8 ft. deep. With the gradual size increase as the ditches proceed downstream, they have the opportunity to convey a large amount of water to off-site wetland and water sources. These ditches not only drain surface water after rain events, but actually dewater the surficial groundwater table. Except for the interior of Wetland 4 (Photos 5, 6), the marshes with direct ditch connections have minimal duration and depth of surface water (hydroperiods). This has resulted in substantial alterations in the vegetative components of these wetlands. The marshes have 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 is Wetland 12, which has few relic indicators of wetland functions and characteristics. Remnant pockets of maidencane within the cross-ditches are present due to intermittent periods of surface water drainage to the large interior collector ditch (Photo 10). Evaluation of these maidencane pockets during the summer, 2001 indicated that pockets encircled by the ditch spoil material have less than 6 inches of surface water compared to below grade water levels for areas that have direct connection to the interior ditch. Along with the broomsedge, other species that have recruited into the marsh include gallberry, wax myrtle, and scattered pine (Photo 9).

The following wetland types and acreage are located on the South Tract. The wetlands proposed for mitigation credit include hydrologic restoration (HR) with hydrologic enhancement (HE) for the less disturbed systems, minimally improved wetlands (MI) are not accounted for with mitigation credits.

Wet. 1 - marsh – 1.0 acres (HR)	Wet. 9 – marsh – 2.2 acres (HE)
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 (HR)
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 – 110 wetland acres, **83 acres (HR), 3 acres (HE)**

DOT Mitigation – Rutland Ranch

Hydrologic restoration and enhancement of the marshes will result in the enhancement of other wetland functions and attributes. Vegetative shifts to more desirable and appropriate species, particularly maidencane, will provide foraging opportunities for wildlife. Currently, most of the marshes have so limited hydroperiods that they have transitioned to vegetative characteristics more indicative of abandoned fallow fields, with minimal wildlife food resources. The few marshes that support foraging vegetation have been heavily impacted by hog rooting activity. During 2001, the WMD has a contract with a trapper who is removing hogs off the Rutland Ranch property. Opportunities for foraging wading birds are primarily limited to the few, small isolated marshes within the western palmetto prairie. Water and aquatic food resources for wildlife are primarily limited to high nutrient, often stagnant ditch water. Restoring the wetlands into isolated systems will increase 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 regeneration of maidencane and other desirable hydrophytic vegetation will improve the ecological balance of upland habitat with appropriate wetland habitat value. With the segregated habitat between Wetlands 3, 4, and 12, there isn't a contiguous corridor of native habitat through the improved pasture. The proposed corridor can be re-established for wildlife use and won't be in conflict with 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. To widen the quantity of upland habitat around the marshes in the pasture, a minimum 100 ft. wide upland buffer will be planted around the perimeter of Wetland 4 and the western boundary of Wetland 12.

Attachment B – Work Schedule

Herbicide treatment of exotic and nuisance species will be conducted within the ditches, followed by a sufficient period for vegetative mortality before earthwork activities will commence. Cattails provide minimal cover but primrose willow is dense within the central ditch of Wetland 12. By eradicating these species prior to filling the ditches, it will minimize future exotic species recruitment and regeneration.

Construction will commence with ditch block installation within the five outfall ditches at their associated crossings along the property boundary. This will allow the ditch filling operation to take place while eliminating the opportunity for downstream, off-site turbidity. By conducting this activity within the dry spring season of 2002, the ditch water will be at the lowest elevations. This will allow a more rapid earthwork operation without the need for dewatering while minimizing on-site turbidity. Where adequate quantities of spoil are not available due to preserving existing trees and shrubs, cattle ponds have been strategically proposed based on the following criteria:

- Locations that minimize distance of hauling fill to the ditches.
- Locations predominantly within the improved pasture to remove direct dredging impacts to the native range.
- Locate ponds within the pasture to attract cattle toward more grazing in the pasture instead of native range.
- With the combination of more ponds located in pastures and ditch filling, this will minimize cattle encroachment into the wetlands. Under current conditions, dominant water sources for the majority of the year are the ditches. Cattle use of those ditches would result in high nutrient concentrations that are easily carried downstream and off-site.
- Ponds are designated at areas that are of sufficient distance and locations that won't impact wetland ground water hydrology or hydroperiods.
- Ponds will be within a range of 0.20 to 0.50 acre in size, maximum 3:1 slopes to minimize turbidity from cattle, maximum depth of 8 ft. below existing grade. Size and quantity of ponds (less ponds than depicted on Figure C) will be contingent on the material needed to fill the ditches, no excess fill will be dredged or stockpiled.

- Even with the proposed hydrologic restoration, the marshes will still be shallow water systems with periods of below grade water levels during the dry season. With the replacement of the ditch water source with cattle ponds, there will be a sufficient water source for wildlife throughout the property, including along the proposed upland corridor between Wetlands 3, 4, and 12.

Some settling of ditch fill is anticipated but at ditch block locations, sufficient sandy fill material and removal of any accumulated organic sediments within the ditch bottom grades will be required to ensure stable conditions. These ditch blocks will be a minimal length of 50 feet at the top-of-block, sideslopes extended at least 20 feet each direction to the ditch bottom grade. The top-of-block elevations will be filled to match adjacent natural grade elevations, encased with an impermeable liner, capped with sand, and seed/mulched. At a minimum, rip-rap rubble is required at the downstream sideslope of each ditch block. Other than the ditch blocks, ditch fill grades will raised to within 0.5ft. tolerance of pre-existing surface grades. After constructing the ditch blocks, for Wetlands 2 and 12, the cross-ditches will be filled to match adjacent wetland grade. Since these marshes are excessively drained, the filled cross ditches can be used to provide equipment access routes to haul fill material from the proposed cattle ponds and back fill spoil into the central ditches.

After earthwork, native grass seed will be spread and tilled into the proposed buffers of Wetlands 4, 12, and within the proposed upland corridor. Pine saplings will be added to supplement vegetative cover from the seed dispersal. After grading, obligate hydrophytic species (pickerelweed, arrowhead) will be planted in the filled ditches and graded spoil areas. Maidencane is also anticipated to spread from the adjacent seed source. After filling the ditches, a period of ground and surface water recharge is anticipated through the summer rainy season in 2002. During that period, evaluation of marsh vegetation recruitment will be conducted as part of the monitoring to determine the generation and spreading of the planted material and the need for supplemental planting.

Attachment C – Maintenance & Monitoring Plan, Success Criteria

A pre-construction monitoring report will be prepared to document and photograph 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. Maintenance & monitoring activities are anticipated for a minimum of three years after construction and until success criteria are met. Qualitative monitoring and photographic documentation of vegetative and hydrologic conditions for the various proposed marsh restoration areas will be semi-annually conducted for the minimum period of three years. Figure E depicts photograph and qualitative evaluation points, along with proposed hydrologic monitoring stations. The monitor wells were installed in the spring, 2001.

Success criteria will be based on demonstrating restoration of marsh hydroperiods. The anticipated maintenance activity will include controlling exotic and nuisance vegetation which will require less than 10% coverage, with a minimum 85% coverage of desirable species (including existing, regenerated, recruited, and any planted material) within the 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 relative to each other, they were slightly combined based on the site location and proposed activities relative to the anticipated impacts. These include the area in the vicinity of Wetlands 1-3 (mitigation for SR 64-Seg. 1), Wetland 13 (SR 64-Seg. 2), Wetland 4 and adjacent buffer, Wetland 12 buffer and upland corridor (SR 64 – Seg. 3), Wetlands 5, 6, 9, 11,12 (mitigation for Upper Manatee River Rd.) The following details the correlation of mitigation with the impacts:

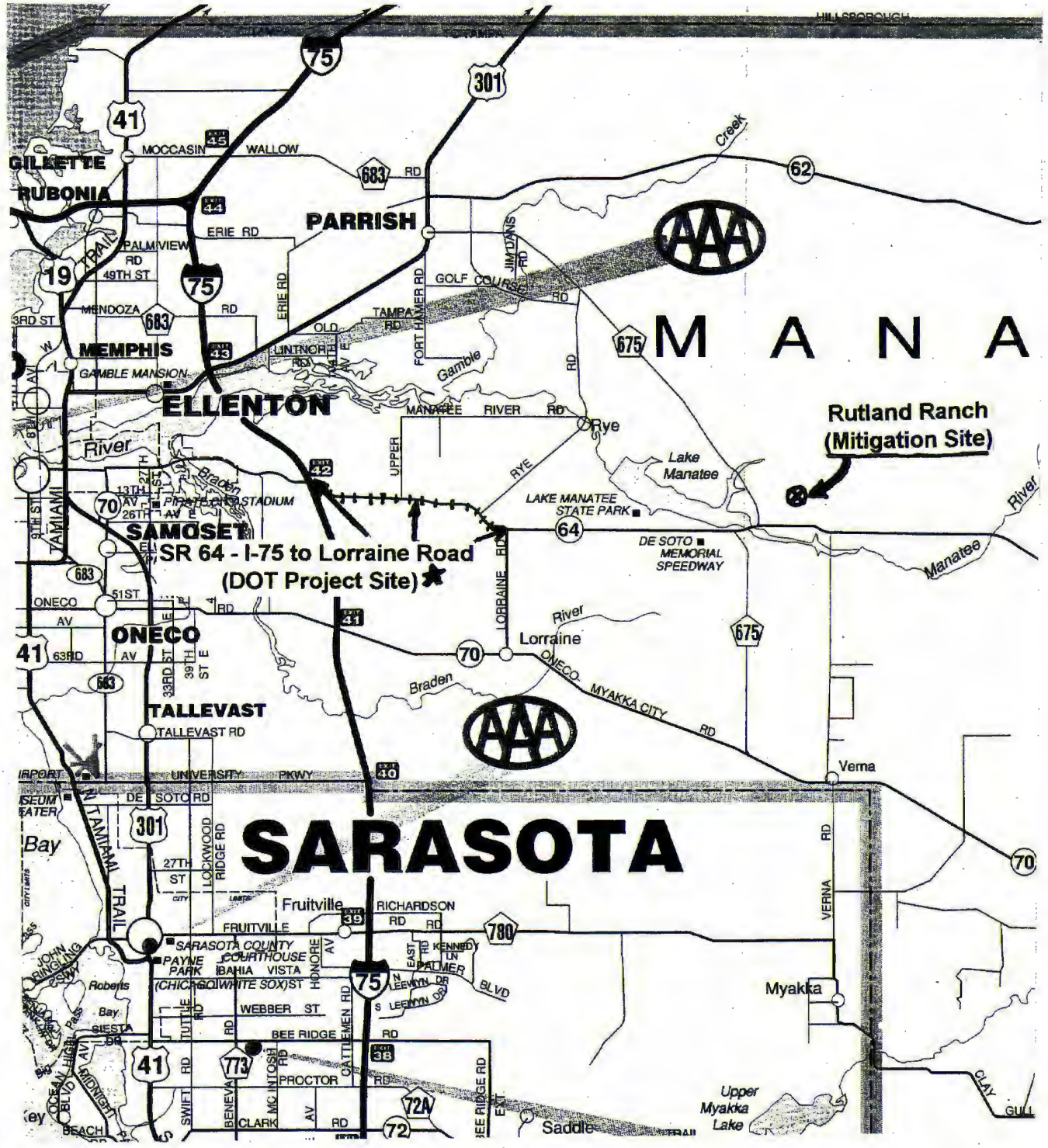
DOT Mitigation – Rutland Ranch

SR 64 – Seg. 1 - The proposed impacts include 0.75 acre of mixed forested wetland (617) and 1.67 acres of marsh (641). The proposed mitigation includes enhancement of Wetlands 1-3 (11.1 acres) and enhancement of the adjacent pine flatwoods (12 acres). This results in a total **impact of 2.42 acres** and **compensation of 23 acres** (ratio 9.5:1).

SR 64 – Seg. 2 – The proposed impacts include 0.89 acre of ditch (641x) and 0.22 acre of marsh (641). It is possible a portion of the ditch impacts will not require mitigation. The proposed mitigation includes enhancement of Wetland 13 (11.4 acres). This results in a total **impact of 1.11 acres** and compensation of **11.4 acres** (ratio 10:1).

SR 64 – Seg. 3. – The proposed impacts include 0.84 acre of Mill Creek (510), 1.09 acres of mixed forested, 1.12 of elderberry, and 0.39 acre of marsh. The proposed mitigation includes enhancement of Wetland 4 (11.4 acres), buffer planting around Wetland 4 (4.5 acres), buffer planting along the west perimeter of Wetland 12 (2.5 acres) and the upland restoration corridor between Wetlands 3, 4, and 12 (10 acres). This results in a total **impact of 3.44 acres** and **compensation of 28.4 acres** (ratio 8.3:1)

Upper Manatee River Road – The proposed impacts include 0.57 of upland-cut pond (500x), 1.72 acres of mixed hardwood forest (617), 0.27 acres of elderberry, 0.95 acre of marsh, and 0.49 acre of ditch. It is possible a portion of the upland-cut pond and ditch impacts will not require mitigation. The proposed mitigation includes enhancement of Wetlands 5, 6, 7, 9, 11, and 12 (52.2 acres). This results in a **total impact of 4.19 acres** and **compensation of 52.2 acres** (ratio 12.5:1).



^ 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

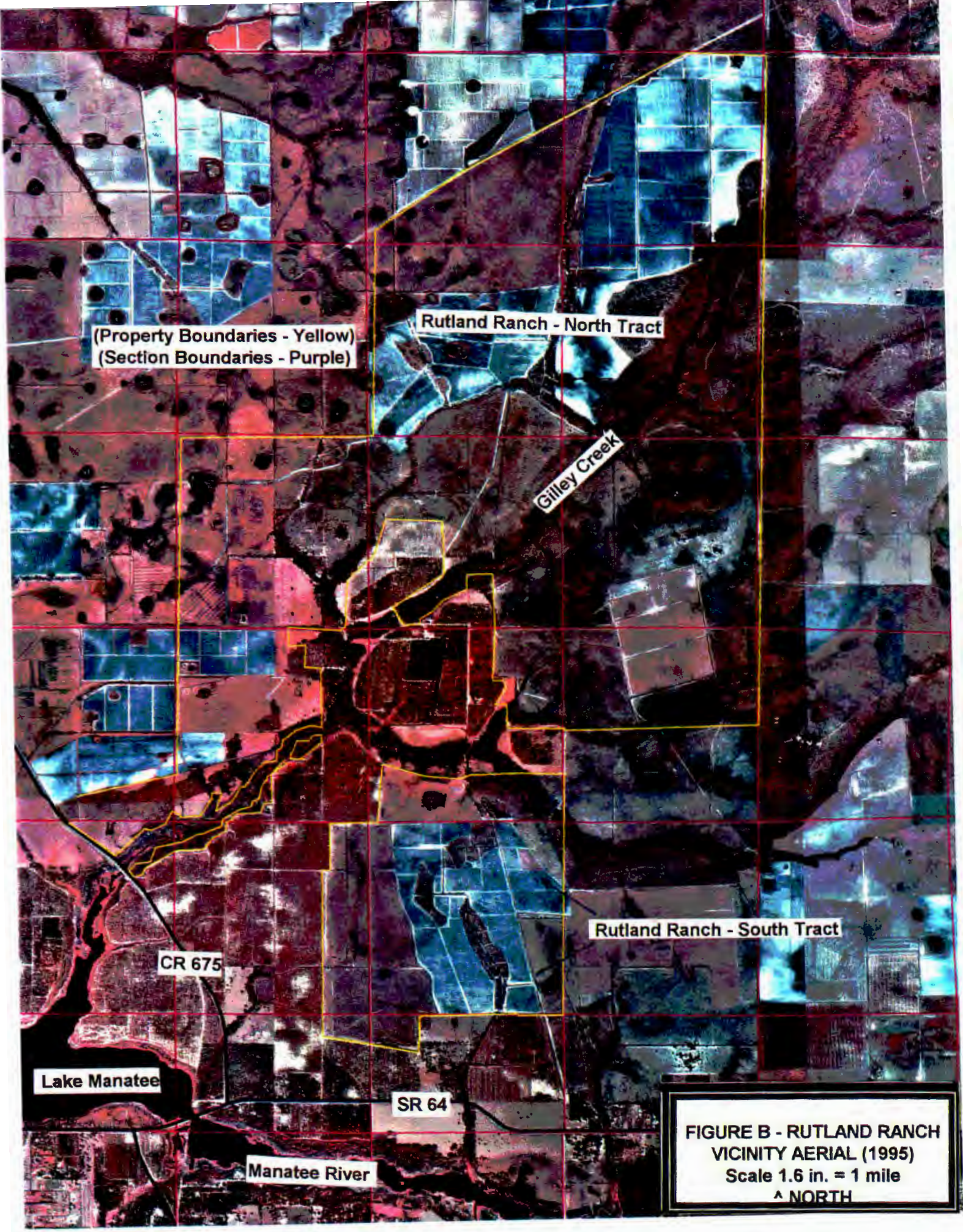
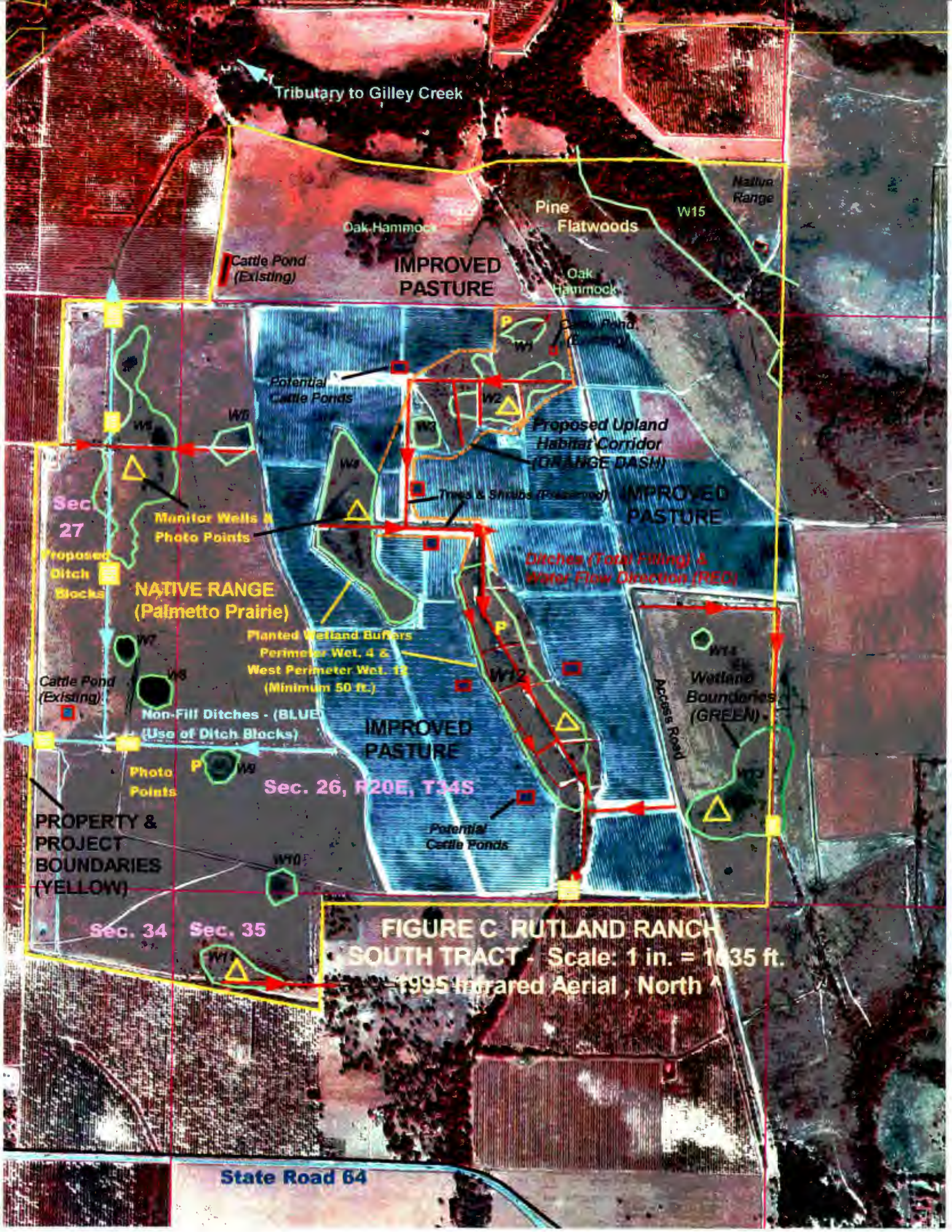


FIGURE B - RUTLAND RANCH
VICINITY AERIAL (1995)
Scale 1.6 in. = 1 mile
^ NORTH

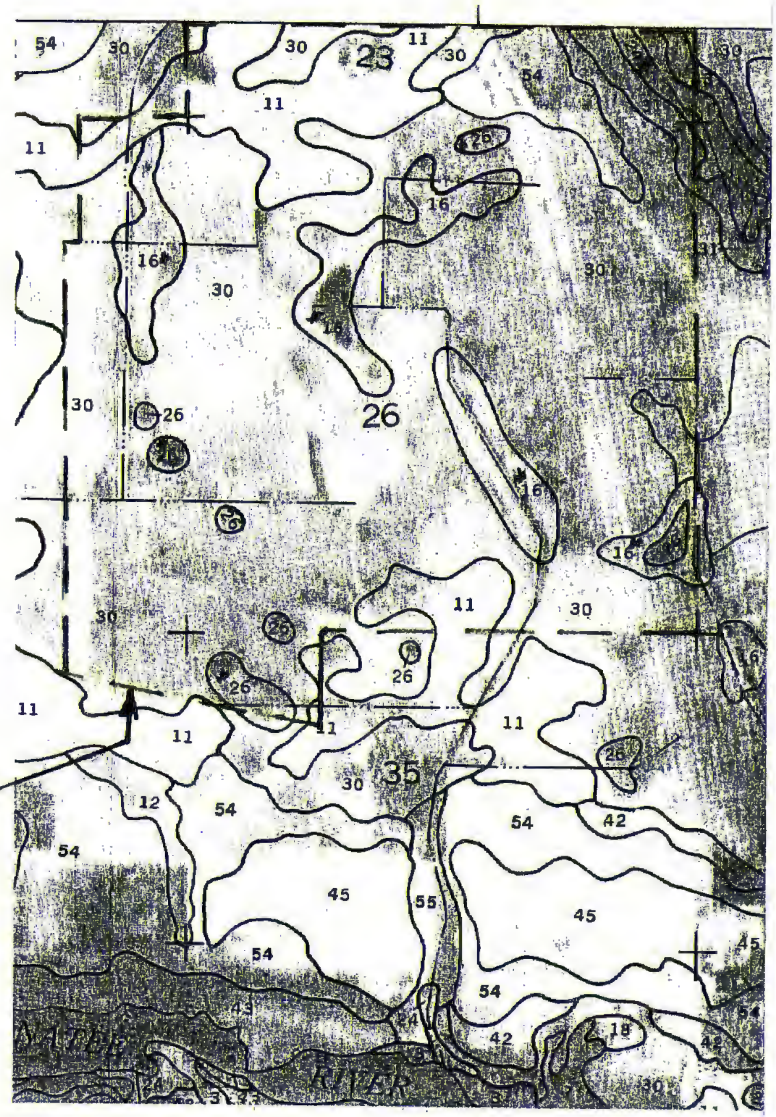

Tributary to Gilley Creek
Native Range
Pine Flatwoods
W15
Oak Hammock
Cattle Pond (Existing)
IMPROVED PASTURE
Oak Hammock
Potential Cattle Ponds
W1
W2
W3
W4
W5
W6
Proposed Upland Habitat Corridor (ORANGE DASH)
Trees & Shrubs (Preserved)
IMPROVED PASTURE
Sec. 27
Monitor Wells & Photo Points
Proposed Ditch Blocks
NATIVE RANGE (Palmetto Prairie)
Ditches (Total Filling) & Water Flow Direction (RED)
Planted Wetland Buffers Perimeter Wet. 4 & West Perimeter Wet. 12 (Minimum 50 ft.)
W7
W8
W12
W14
Wetland Boundaries (GREEN)
Access Road
Cattle Pond (Existing)
Non-Fill Ditches - (BLUE) (Use of Ditch Blocks)
IMPROVED PASTURE
Photo Points
W9
Sec. 26, R20E, T34S
PROPERTY & PROJECT BOUNDARIES (YELLOW)
Potential Cattle Ponds
W10
Sec. 34
Sec. 35
W11
FIGURE C RUTLAND RANCH
SOUTH TRACT - Scale: 1 in. = 1635 ft.
1995 Infrared 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

Photo 1 -View of typical improved pasture condition, row crops were replaced with bermuda grass that hasn't been maintained, allowing broomsedge and dog fennel to encroach. Future cattle operations could include the use of bahiagrass to replace the bermuda but the remaining native range habitat will not be replaced with grass.

Photo 2 -View of the upland native habitat conditions within proximity of Wetlands 1-3. This habitat will be extended to provide a corridor connection to Wetlands 4 and 12. This corridor will be a minimum width of 100 ft, preserving the existing native trees and shrubs along the upland-cut ditches within the proposed corridor.

FDOT - District 1 Mitigation Site (Manatee River Basin)	**Rutland Ranch - South Tract (SW 65)**

Photo 3 -View of Wetland 2 with existing pine flatwoods buffer in the background (north). One of the three north-south cross-ditches (foreground, 10-15 ft. wide, 2-3 ft. deep) through this wetland that will be filled to eliminate water table drawdown.

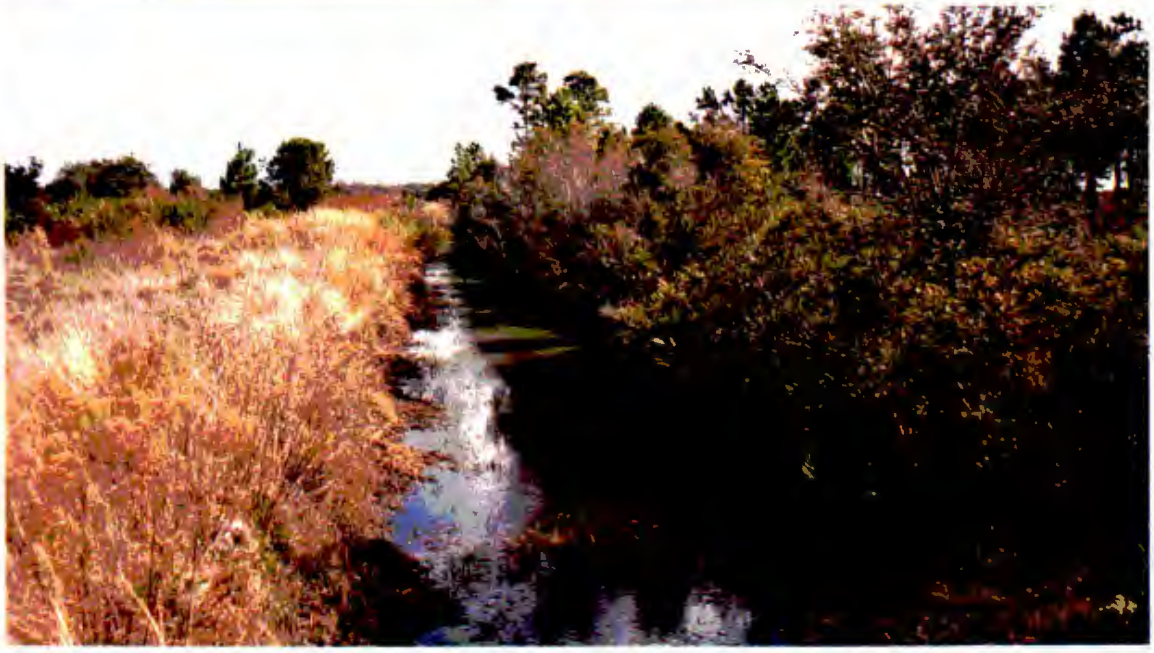


Photo 4 -View of the east-west ditch (15-20 ft. wide, 5-6 ft. deep) located through Wetland 2. Material to fill ditch will include existing spoil ridge (left, covered with broomsedge) and dredged material from the proposed cattle pond where the east-west ditch turns south. Existing vegetation (right) along top-of-bank will remain.

FDOT - District 1 Mitigation Site (Manatee River Basin)	**Rutland Ranch - South Tract (SW 65)**

Photo 5 -View atop a spoil ridge along the eastern boundary of Wetland 4. The ditch (15-20 ft. wide, 3-4 ft. deep) doesn't have enough gradient decrease to drain Wetland 4 to the same degree of long-term hydrologic and vegetative degradation as Wetlands 2 and 11.

Photo 6 -View near the core of Wetland 4, wax myrtle and broomsedge encroach into the marsh, with sufficient hydroperiods during wet years that decreases their survivorship (many myrtle snags) which allows maidencane to regenerate.

FDOT - District 1 Mitigation Site (Manatee River Basin)	**Rutland Ranch - South Tract (SW 65)**

Photo 7 -View of the north-south ditch located along the western boundary of Wetland 3. The ditch (20-25 ft. wide, 6-8 ft. deep) is located along the eastern boundary of the proposed upland corridor. To preserve the vegetation along the eastern spoil banks, spoil from the western bank (left) along with material from a proposed cattle pond to the east will be used to fill the ditch.

Photo 8 -View of the east-west ditch that connects Wetlands 4 and 11. This ditch (25-30 ft. wide, 6-8 ft. deep) is also proposed within the corridor, and has palmetto and pines growing along the northern spoil ridge (right). To preserve the vegetation, spoil along the southern banks along with dredged material from a proposed cattle pond (south) will be used to fill the ditch.

FDOT - District 1 Mitigation Site (Manatee River Basin)	**Rutland Ranch - South Tract (SW 65)**

Photo 9 -Typical condition of Wetland 12. With a deep central ditch (25-30 ft. wide, 8-10 ft. deep), and several cross ditches (10 ft. wide, 3 ft. deep), the wetland groundwater is excessively drawn down and any surface water is rapidly drained to the central ditch. Broomsedge, dog fennel, gallberry, wax myrtle, and scattered slash pine have encroached and provide the dominant vegetative cover.

Photo 10 -View of the broomsedge dominance in Wetland 12, remnant pocket of maidencane in foreground. There are spoil ridges on both sides of the central ditch, majority of the spoil along the eastern banks have oaks (left) and other native species that won't be impacted by the ditch filling operation. With the hydrologic restoration of the wetland, some of the trees at lower spoil elevations won't survive and become snags.

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 (West)** 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 - DOT (FM): 1975331, US 27 – Towerview Rd. to SR 540 ERP #: _____ COE #: _____

2 - DOT (WPI): 1118571, FM 1976791, US 27 – SR 544 to Blue Heron Bay ERP #: _____ COE #: _____

3 - DOT (WPI): 1111277, FM 1940931, US 17 (SR 35) – Peace River to Tropicana ERP #: _____ COE #: _____

4 - DOT (WPI): 1110467, FM 1938891, US 17 – Livingston to Hardee County ERP #: _____ COE #: _____

5 – DOT (WPI): 1118059, FM 1971681, SR 60A (Van Fleet Dr.)-CR 555 to Broadway ERP #: _____ COE #: _____

Drainage Basin : Peace Water Body(s): (2) Tower Lake, (3) Thompson Branch, (4) McBride Br., Mare Branch, Sand Gully Br.
SWIM water body? (Y/N) N

Impact Acres / Types:

1- FM 1975331 3.00 ac. 630 (Fluccs code)
4.00 ac. 640 (Fluccs code)
TOTAL 7.00 ac.

2- FM 1976791* 1.45 ac. 641 (Fluccs code)

3- FM 1940931 3.00 ac. 630 (Fluccs code)
0.49 ac. 640 (Fluccs code)
0.93 ac. 641 (Fluccs code)
TOTAL 4.42 ac.

4- FM 1938891 0.48 ac. 618 (Fluccs code)
6.18 ac. 630 (Fluccs code)
0.74 ac. 631 (Fluccs code)
0.59 ac. 640 (Fluccs code)
0.20 ac. 641 (Fluccs code)
3.40 ac. 641x (Fluccs code)
TOTAL 11.59 ac.

5- FM 1971681 0.46 ac. 630 (Fluccs code)

TOTAL – 24.92 acres

* Portions of this project are within the Palatkaha basin and will be mitigated through the SJRWMD - DOT Mit. Program.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: ___ Creation X Restoration X Enhancement ___ Preservation Mitigation Area: **204 acres**

SWIM project? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) 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 outfalled east through forested and marsh wetland habitat into Lake Hancock (Figure C, 1927 Soil Survey). During the 1940's, the construction of the Banana Lake Canal between the two lakes, along with connector ditches, adequately drained the wetlands. Portions of the forested wetland and the marshes were converted to pasture. 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, with financial assistance from the SWFWMD, the Polk County Natural Resources & Drainage Division purchased approximately 1000 acres (Circle B Bar Ranch, Owner – Al Belloto) to convert into a passive recreational park with a long-term objective to restore and enhance the wetland habitat on the property.

The proposed enhancement and restoration will be primarily achieved by filling the Banana Creek Canal and other ditches to restore wetland hydrology, and replanting former forested and marsh wetlands (Figure I). This will allow the restored and enhanced 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 existing and historic wetlands are located within a wetland floodplain adjacent to the Banana Lake Canal. The portions proposed for enhancement and restoration (total 501 acres) to compensate for DOT wetland impacts are delineated into the East (Figure H) and West (Figure I) projects. Except for the majority of the northeast pasture (Figure H), the pastures still have adequate cover of hydrophytic species, presence of hydric soils, and sufficient hydrology to be designated as wetlands per state and federal criteria. Bahiagrass and carpetgrass provide dominant cover but soft rush is common within the majority of the pastures (Photos 3, 4, 8, 10). The northeast pasture (Figure H, Photo 1) has a diverter ditch along the northern boundary (Photo 2), and a three ditch/canal complex through the middle of the proposed East Project (Photos 5-8). Only a few remnant marshes are still present in the northeast pasture (Fig. H). Two seepage maple/ bayheads are present, one along the East project's southeast border (Figure H), the remnant portion of another forested wetland is located along the West project's western border (Figure I). Two smaller remnant cypress wetlands are within the eastern area. The extensive drainage system has 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 shorter hydroperiods to adequately support appropriate vegetative species and generate food sources for wildlife.

B. Brief description of proposed work: The enhancement and restoration aspects are divided into two separate projects, the first project is referred to as Lake Hancock (West). The other project, Lake Hancock (East), is summarized in this narrative to provide the entire restoration concept. The designated break between the East and West Projects is the western access road / berm located in a north-south perpendicular alignment to historic surface water sheet flow (Figure H). Both access roads will be raised 2 feet and widened 20-30 feet (toe-of-slope) to construct structurally sound water control facilities, and reinforced access roads for recreational and maintenance use from the north to the south side of the property. Culvert cross-drains will be installed under the roads, at structure elevations (normal pool water elevation) that will restore historic wetland hydroperiods and east-west water sheet flow patterns. The access road berm will have some wide, reinforced overflow swales (for vehicle access) at slightly higher elevations than the culverts to allow seasonal high water flow cross the berm without impacting the road. The western access road will be reinforced and cross-drains installed in associated with the construction of the West project. But those structures will be blocked to direct sheet flow back into the Banana Creek Canal through the East project area until such time the eastern area is constructed for mitigation. The Lake Hancock, East project will be designed and constructed when additional DOT wetland impacts within the Peace River Basin are determined to be adequately mitigated in that area. The construction for both projects could be conducted at the same time. For the West project, the Banana Creek Canal and connecting ditches will be backfilled with the adjacent spoil material (Figure I). Due to the presence of existing desirable vegetation, additional herb planting is expected to be minimal, but trees and shrubs will be planted to restore the former forested wetland area.

D. Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): The enhancement & restoration plan includes the following proposed activities and associated acreage per habitat type:

	West (Figure I)	East (Figure H) (Conceptual)	TOTAL
Marsh Enhancement	95 acres	96 acres	**191 acres**
Marsh Restoration	0 acres	161 acres	**161 acres**
Forested Wetland Enhancement	32 acres	19 acres	**51 acres**
Forested Wetland Restoration	55 acres	0 acres	**55 acres**
Upland Habitat Restoration	22 acres	0 acres	**22 acres**
Upland Habitat Enhancement*	0 acres	21 acres	**21 acres**
TOTAL	**204 acres**	**297 acres**	**501 ACRES**

* The upland habitat enhancement is associated with the filling of the Banana Creek Canal and adjacent two ditches associated with the eastern area.

The five DOT projects (total 24.92 impact acres) to be mitigated at the West project area will have a total 13.38 acres of forested wetland impacts, which will be mitigated by the restoration (55 acres) and hydrologic enhancement (32 acres) of forested wetland habitat (total 87 acres). This will be a cumulative forested wetland mitigation ratio of 6.5-to-1. The remaining wetland impacts include 11.06 acres of marsh and ditch impacts that will be mitigated through enhancing marsh habitat (95 acres) and upland habitat restoration (22 acres) that will be conducted along the wetland buffer. This will be a cumulative non-forested wetland mitigation ratio of 11-to-1. The cumulative mitigation ratio of compensation to impacts is 8.2-to-1 which is within the normal ranges recommended of enhancement (4:1 to 20:1) and restoration (1.5:1 to 5:1) criteria per ERP, Chapter 40D-4.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The only permitted mitigation bank in the Peace River basin is a less cost-effective option than this proposed mitigation project, and contains habitats which are different from those to be impacted by the DOT projects. Since substantial public funds were required to purchase the Lk. Hancock Reserve property (total $7 million, SWFWMD reimbursed for $4 million), restoration funds are not available and it will require many years before Polk County can even hope to allocate adequate funds toward restoring the wetland. 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 public restoration projects in the basin (e.g. Tenoroc, 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 a major and important wetland restoration and enhancement project, 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 study 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. or Earthwork Contractor working for the WMD.
Contact Name: Mark Brown, SWFWMD Env. Scientist Phone Number: (352) 796-7211, ext. 4488

Entity responsible for monitoring and maintenance: SWFWMD Tech. Services Dept. & Aquatics Dept. or Environmental Consultant working for the WMD. Long-term management conducted by Polk County Natural Resources Dept.

Proposed timeframe for implementation: Commence: January, 2001 Complete: Summer, 2003 (Construction)

Project cost: $770,000 (total);
Surveying & Design - $130,000
Construction - $400,000
Planting – Trees & Shrubs - $180,000, Herbs - $20,000
Maintenance & Monitoring - $40,000

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-I.**

__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-I. Design contract for an engineering consultant, with a final plan by October, 2002, will be depicted in the FDOT Mit. Plan (2002).**

__X__ 4. Detailed schedule for work implementation, including any and all phases.

January - March, 2001- Request for bids from engineering consulting firms to conduct surface water modeling.
January – October, 2002 – Field work (environmental, surveying, monitor well installation) and surface water modeling conducted to ensure no off-site impacts, as well as hydrologic restoration for the project area.

October, 2002 – February, 2003 – Finalize reports, pre-construction field work, Private Contractor selection if necessary
February, 2003 – August, 2003 – Earthwork construction during dry season, followed by planting during the rainy season.
June, 2003 – August, 2008 – 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 D – DOT Mitigation.**

Attachment A – Existing Site Conditions & Proposed Work

West Project (Figure I) - The surface water models will determine the quantity, sizes, elevations, and locations of the culverts and swales. Based on the SWFWMD aerial topography, the forested wetland along the project's western border has an average grade elevation of 100.5ft. Organic soil oxidation due to the dewatering effects of the ditch network has slightly lowered the grade elevation compared to historic conditions. But the forested system has adapted to this decrease in grade and water elevations so the objective will be to increase the duration of groundwater hydrology in the forested wetland area to allow continuous soil seepage yet retain minimal duration of surface water (hydroperiods). This condition is typical of seepage bayhead systems. Maintaining groundwater seepage in the existing and proposed reforested wetland will be primarily achieved by backfilling the ditches and Banana Lake Canal with adjacent spoil material. As opposed to the eastern portion of the canal (Figure H), the adjacent spoil material doesn't have any tree cover (photos 9,10) and therefore will be used to backfill the ditches.

The wet pasture west of the western access road berm has variable grade elevations of 97.5-100.0 ft., with minimal areas of 100.0-100.5 ft. Figure I depicts the proposed conditions of the western access road berm. By placing the culvert cross-drains under the southwestern part of the access road at elevation 100.5 ft. (seasonal high water elevation), the northwestern part of the access road at elevation 100.0 ft. (normal pool elevation), these elevations will restore hydroperiod elevations for both project areas (explained further in next segment). The restored hydrology will allow the lower grade elevations to regenerate obligate species such as pickerelweed and arrowhead from the existing seed source. The higher pasture grade elevations will regenerate more facultative species (particularly soft rush and maidencane) and surface water will result in mortality of the bahia and other pasture grasses. Major rainfall events during the rainy season will result in water overflowing the access road through reinforced swales at control elevation 101.0 ft. 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 Project (Figure H – Conceptual Plan) – Like the West project, the proposed construction will include the filling of the Banana Creek Canal and other ditches, but not with the adjacent spoil material. The canal's eastern portion is bordered by two large collector ditches, separated by two adjacent spoil ridges with average grade elevations 3 ft. higher than the adjacent pastures, and covered with very large oaks and other tree species (Photos 5-7, Fig. K). Due to the ecological value of these trees, the associated spoil ridges will not be disturbed. The ditches and canal are large enough to allow access of construction equipment without impacting the trees. Instead of backfilling the spoil ridges, the fill source will include the construction of 5-6 deeper water cells within the northeast pasture (Figure H). These cells will include a gradual slope (10:1 maximum) down to a maximum grade elevation approximately 3-4 feet below existing grade. The cells will be dredged at varying depths above the underlying clay horizon, allowing different hydroperiods of surface water, foraging access for wading birds, and a water source for wildlife.

The proposed restored wetlands in the West project area will operate as one system controlled by the proposed structures in the western access road. However, due to the various conditions for the southeastern pasture in comparison to the northeastern pasture, and the preservation of the existing trees & associated spoil areas along the Banana Lake Canal, separate hydrologic conditions will be adopted for each pasture in the East project area.

The southeastern pasture has grade elevations ranging from 97.5 to 98.5 ft. This pasture is bordered to the south by a maple/bayhead system that has grade elevations of 98.5 to 101.0 ft. There is a high elevation, deep sandy soil ridge south of the bayhead. This ridge provides adequate groundwater seepage to maintain wetland hydrology for the bayhead and the southeastern wet pasture. The collector ditch along the south side of the Banana Creek Canal has extended periods of surface water compared to the collector ditch north of the canal, and even more water than the canal during drought conditions (compare photos 5-8).

With the use of pumps, the collector ditches have been used for irrigation of the pastures during dry conditions, and to pump over into the canal to flow into Lake Hancock during wet conditions. As a result, the ground and surface water has been controlled over many years to adequately maintain pasture grasses while limiting regeneration of hydrophytic species.

The northeastern pasture is almost exclusively dense bahia, in direct contrast to the wet pasture grasses and soft rush in the southeastern pasture. The northeast pasture grade elevation ranges from 98.5 ft. to 99.5 ft., a foot higher grade elevation than the southeastern pasture. However, the grade elevation is just one reason for the drastic vegetative difference. 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. But the rapid permeability rate of muck and the use of pumps along the southern collector ditch can also maintain the water table below grade elevations. In contrast to the muck, the northeastern pasture has a dominance of mineral soils (24-Nittaw sandy clay loam, 44-Paisley fine sand). The Nittaw soils generally have loam in the surface soils and denser clays increase with depth. The Paisley soils have 2-4 ft. of sand over clay. With slower permeability rates than muck, the hydrology of these hydric soils depend more on surface water runoff from contributing watersheds and direct rainfall as opposed to groundwater seepage. Along the northeastern boundary of the proposed project area, there is a diverter ditch that collects the contributing basin surface and ground water and diverts the flow to Lake Hancock, by-passing the northeastern pasture (Photo 2). Since the Banana Lake Canal has been maintained to not overflow into the adjacent pastures and there is an adjacent northern collector ditch, the hydrology of the northeastern pasture substantially depends on direct rainfall and static groundwater conditions. With the introduction of the bahia and use of pumps, this adequately removed the conditions needed to support hydrophytic vegetation except for the scattered remnant marsh pockets within slightly lower elevations. The presence and depths of these clays within the northeastern pasture will be a determining factor as to the location, depth, and the extent of the constructed obligate zones (Figure H). Within the dredged areas, a minimum 6 inches of sand material will be maintained above the clay horizon to allow for a proper herb planting medium. This may include backfilled topsoil scraped from the pasture areas in order to excavate for material needed to fill the canal and ditches.

The filling of the canal and ditches bordering the northeast pasture will aid in restoring the hydrology of this system. But compared to the contributing watershed for the southeastern pasture, there will still be a smaller contributing watershed from the northeast portion of the Lk. Hancock Reserve. In addition, contributing surface water from the west would naturally tend to flow toward the lower grade elevations associated with the southeastern pasture. With the spoil ridge that will be associated with the filling of the eastern portion of the Banana Creek Canal (Figure K), the northeastern pasture might still not receive the appropriate percentage of contributing hydrology compared to the southeastern pasture or historic conditions. As noted in the previous section, that is why the culvert crossdrain connections along the northwestern part of the access road will be conceptually proposed for installation at an elevation approximately 0.5 ft. lower than the crossdrains within the southwestern access road (100.0 ft. versus 100.5 ft.). This will allow a small percentage of contributing flow to enter and hydrate the northeastern restored marsh before additional flow enters to enhance the southeastern marsh.

As depicted on Figure J, to restore the normal pool water elevation within the northeastern pasture, the culvert crossdrains will be established to closely match the existing highest grade elevation (99.5 ft.). The seasonal high water table will be restored with an overflow swale at elevation of 100.0 ft. This will allow the water level of the northeast pasture to be a 3-6 inches above surface grade during the majority of the year (normal pool). During the dry season, the water level will drop to concentrate into the restored wetlands within the dredged obligate areas, allowing concentrated foraging opportunities for wildlife. The culvert cross-drains under the southeastern access road will probably be established at slightly lower elevations, 99.0 ft. for normal pool and 99.5 ft. for restoring the seasonal high water table.

Between the eastern access road and Lake Hancock, the southeastern pasture rises to an elevation of 99.4 then drops to an impounded marsh (elevation 97.3 ft.), separated from the lake by a spoil ridge. In this same area, the northeastern pasture has an average elevation of 98.6 ft. 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. The minimum flood elevation of Lake Hancock (established 1980) is 99.0 ft., maximum desirable water elevation is 98.5 ft., and minimum low elevation is 96.0 ft. The outfall structure (P-11) for Lake Hancock can control the lake level from 98.6 ft. to a low of 95.0 ft., the lowest elevation in preparation of hurricane and flood events. The P-11 structure is designed to pass the 10-year flood of 1100 cfs at elevation 98.6 ft. The gates and weir overflow elevation is at elevation 98.7 ft. By establishing two overflow swales at the restoration area at 98.7 ft., this will allow positive west-east flow from the eastern access road culverts (elev. 99.5 and 99.0 ft.), restore an appropriate hydrology for the existing impounded southeastern corner marsh, and restore the hydrology and vegetation of the northeast marsh. The berm that contains the southeastern corner marsh is located along the property boundary, and the adjacent canal coincides with the boundary approximately 800 ft. west of the lake. As a result, it may be necessary to not fill this last segment of the canal to have positive outfall from the southeastern marsh. Since there are adjacent berms that have to be partially opened to construct overflow weirs (Figure K), this last segment has minimal effects to the wetland or lake hydrology. Adjacent property and construction issues will be evaluated prior to making a decision for the weir locations.

Access Roads – As previously discussed and depicted on Figures J and K, the access roads will be raised 2-3 ft. and the berm toe-of-slope extended 20-30 feet, depending on the necessary structure stability. Since the southern portions of each road were constructed primarily from adjacent muck soils, geotechnical evaluation will be conducted to determine the stability of these berms. Additional fill material will be clean sands obtained from the dredged areas within the northeastern pasture. Only the volumes needed for filling the ditches, canals, and encasing the access roads will be dredged from the northeast pasture. There will be no additional dredging conducted to haul off-site. The western access road and adjacent north-south ditch are depicted in Photo 11. Since these ditches adjacent to the access berm road will no longer be allowed to connect with the filled interior ditches, the existing water table drawdown of these ditches will be removed. As a result, the proposed plan may include keeping these shallow ditches to act as spreader swales for dispersing water entering from the western side of the access road. If the entire ditch isn't preserved as spreader swales, it may be modified to include ditch blocks and will be definitely be decreased in size to widen the berm toe-of-slope.

As previously noted, 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 6:1 gradient, seeded and mulched for stabilization. Various tree species will also be planted along the sideslopes. A minimum 10 ft. wide limerock road will be constructed along the top of the two access berms and the top of berm constructed in place of the existing eastern portion of the Banana Lake Canal (Figures J & K). The swale connections are anticipated to be 20-30 feet across, and stabilized with a synthetic material such as geoweb. The 4 inches of limerock base material will be encased below top-of-berm grade to limit loss of rock, as well as within the cells of the geoweb. The road grade will be a minimum 12 inches above the concrete pipe to eliminate the possibility of crushing the pipe from vehicular traffic.

Planting – Herb planting within the western enhanced wetlands are anticipated to be minimal, but will include species such as sand cordgrass, soft rush, pickerelweed, arrowhead, maidencane, and bulrush. Tree and shrub planting will be conducted within the 55 acres of restored wetland. The restored hydrology of the western forested wetland is anticipated to have a normal pool water elevation 6 inches below grade and minimal periods of surface water. In addition, there is an existing seed source for tree regeneration. Therefore, anticipated plantings will include one gallon size trees and shrubs planted on 10 ft. centers. Dominant species will include red maple, sweet bay, cypress, laurel oak, dahoon holly, and swamp bay. These are commonly found within the proposed DOT forested wetland impact areas and available nursery

stock. The herb planting of restored marsh within the northeast pasture will include similar species within the West project but substantially more due to the apparent lack of existing seed source material. Since herbicide control of the bahiagrass prior to rehydration will also eradicate any desirable plant seed sources and expose the soil to erosion, it is anticipated to allow the restored hydrology result in bahia mortality over time, allowing desirable species to be planted as well as naturally generate. The cells graded for fill material will also require herb planting.

Attachment B – Maintenance & Monitoring, Success Criteria

Maintenance will be conducted primarily to control exotic and nuisance species. Maintenance will include herbicide treatment, with particular concentration for cattails and primrose willow. Herbicide events are anticipated to be monthly for the first year after construction. The maintenance for the four remaining years will be dependent on the quantity of maintenance events needed the first year, but a minimum of every other month.

Monitoring will be conducted biannually the first two years, annually in years 3- 5, and annually thereafter if deemed necessary. Pre-construction qualitative vegetative and water level monitoring will commence in the January-March, 2002 period, and conducted semi-annually to evaluate existing conditions. A minimum of 8 shallow monitor wells will be installed to evaluate the surface and groundwater conditions from the western forested wetland to the eastern pastures. These monitor wells will be located in areas to not interfere with future construction activities and will be adapted as part of the long-term monitoring. Selected areas will be photographed from pre-construction through the minimum 5 years of monitoring post-construction. Qualitative evaluation of vegetative cover and wildlife evaluation will be conducted for the entire 502 acres.

Success criteria is anticipated to include a minimum 30% canopy of the restored forested wetland for trees and over 10 ft. tall and shrubs over 5 ft. tall. Vegetative cover for the marsh will include 70% 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 prepared in 2002 and will be included as part of the project design plans and submitted for the 2002 FDOT Mitigation Plan.

Attachment C – Potential Polk County Off-Site Regional Mitigation Area (ROMA)

As noted on Figure G, there are at least 230 acres of the Lake Hancock Reserve that have been designated as a potential regional off-site mitigation area (ROMA) that could serve to mitigate for wetland impacts only associated with County improvements such as roads, utilities, buildings, etc. The ROMA could be expanded to include other areas within the property boundaries such as the oak habitat & forested wetlands within the northeast, as well as upland and marsh restoration within the southern portions of the Reserve. The mitigation plan would be designed and modified at the discretion of Polk County as mitigation needs change over the years, such as utilizing wetland creation opportunities within the northwest upland pasture as an alternative to upland restoration. Any creation, restoration and enhancement activities and associated mitigation plans would require WMD-ERP and federal-Section 404 individual permits.

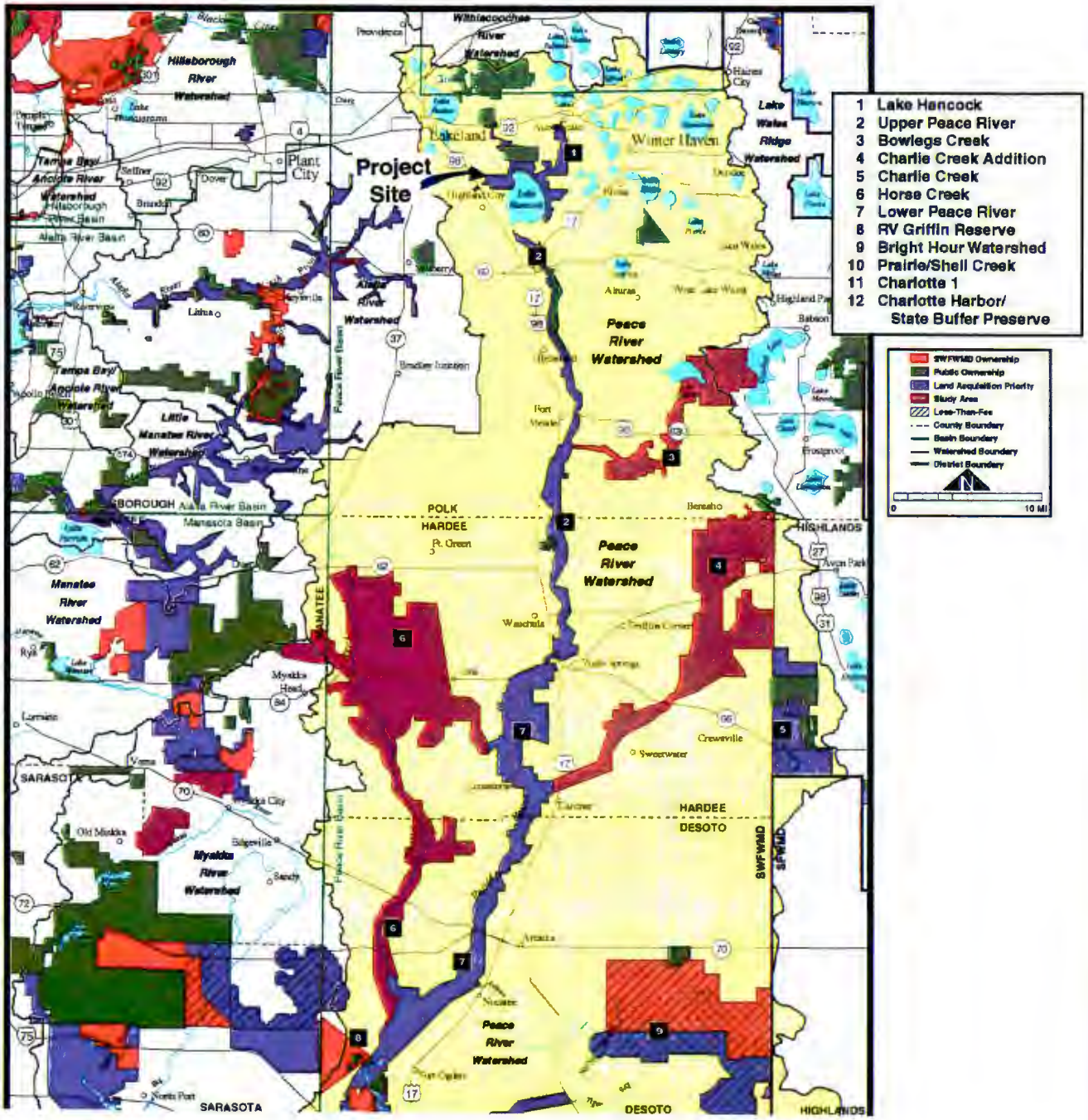
As part of the restoration and enhancement associated with the DOT mitigation area, surface water modeling will include the contributing basins from Banana Lake, south, and north of the Reserve property boundary. The northern areas not only include the drainage improvements associated with a potential ROMA, but address flooding problems associated with the area north of SR 540. Historic southern drainage patterns into the project's floodplain have been diverted east along the north side SR 540, resulting in regional flooding. Restoring drainage patterns south into the floodplain will aid in the wetland enhancement & restoration efforts of the DOT mitigation, the potential ROMA, and alleviate flooding impacts.

Attachment D – DOT Mitigation

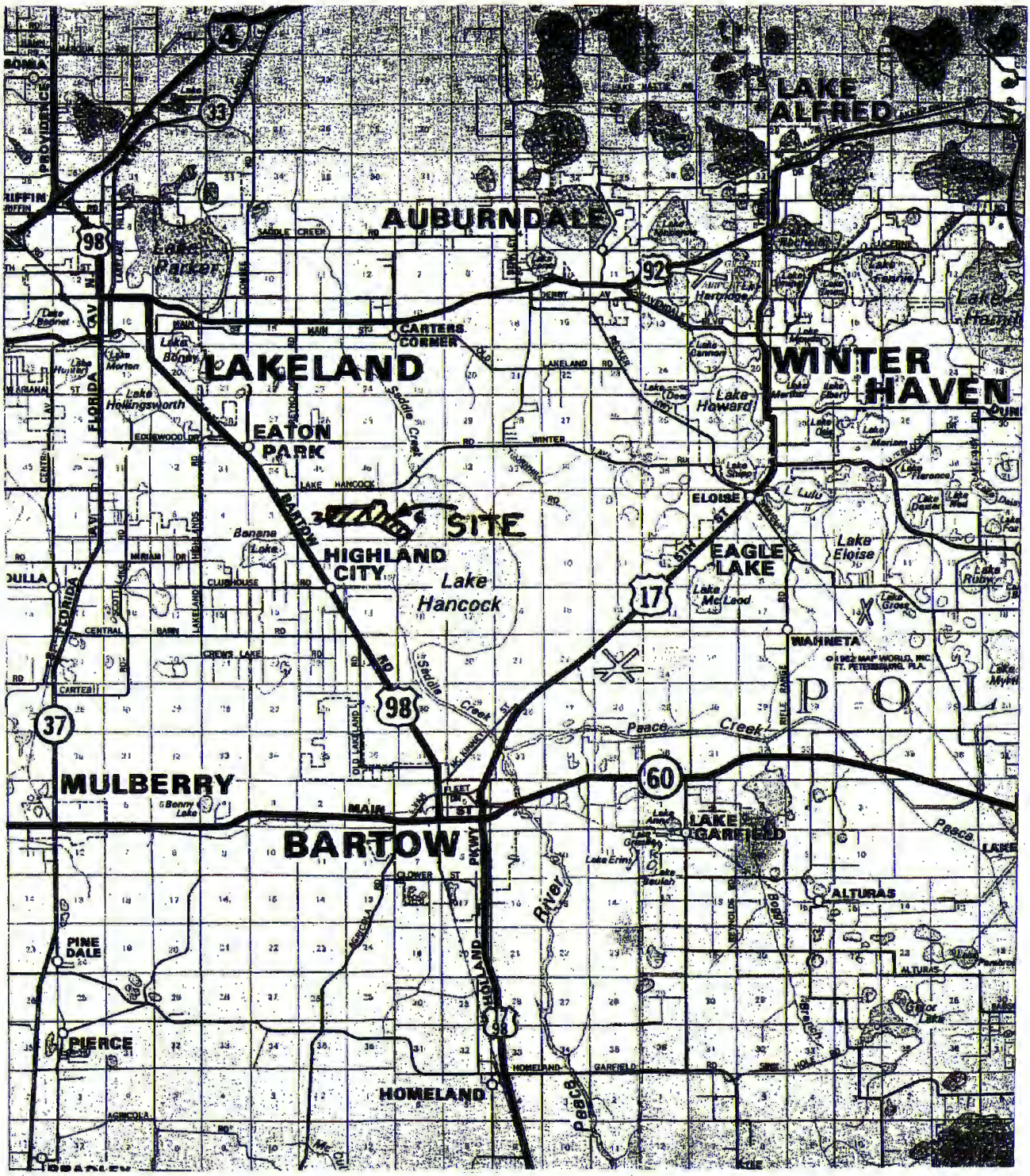
The following information summarizes the proposed wetland impacts for those projects proposed to be mitigated through construction activities at Lake Hancock Reserve, West. The DOT impacts are anticipated to change as these projects go through the design and permitting stages. In order to ensure there is

sufficient mitigation to compensate for the impacts, the mitigation acreage for the various habitats are based on conceptual conservative estimates. As the mitigation design proceeds, the various habitat acreage is anticipated to slightly increase.

DOT Wetland Impacts	Proposed Mitigation
1- US 27 – Towerview Rd. to SR 54 Mixed Forested Wetland – 3.00 Acres Freshwater Marsh – 4.00 Acres **TOTAL – 7 Acres**	Mixed Forested Wetland Restoration – 11 Acres Mixed Forested Wetland Enhancement – 6 Acres Marsh Enhancement – 34 Acres Upland Habitat Restoration – 6 Acres **TOTAL – 57 Acres**
2 – US 27 – SR 544 to Blue Heron Bay Freshwater Marsh – 1.45 Acres **TOTAL – 1.45 Acres**	Marsh Enhancement – 13 Acres Upland Habitat Restoration – 5 Acres **TOTAL – 18 Acres**
3 – US 17 – Peace River to Tropicana Mixed Forested Wetland – 3.00 Acres Freshwater Marsh – 1.42 Acres **TOTAL – 4.42 Acres**	Mixed Forested Wetland Restoration – 11 Acres Mixed Forest Wetland Enhancement – 6 Acres Marsh Enhancement – 13 Acres Upland Habitat Restoration – 5 Acres **TOTAL – 35 Acres**
4 – US 17 – Livingston to Hardee Co. Mixed Forested Wetland – 6.92 Acres Shrub – 0.48 Acres Freshwater Marsh – 4.19 Acres **TOTAL – 11.59 Acres**	Mixed Forested Wetland Restoration – 26 Acres Mixed Forest Wetland Enhancement – 15 Acres Marsh Enhancement – 35 Acres Upland Habitat Restoration – 6 Acres **TOTAL – 82 Acres**
5 – SR 60A – CR 555 to Broadway Mixed Forested Wetland – 0.46 Acres **TOTAL – 0.46 Acres**	Mixed Forested Wetland Restoration – 7 Acres Mixed Forested Wetland Enhancement – 5 Acres **TOTAL – 12 Acres**
GRAND TOTALS – 24.92 Imp. Acres Mixed Forested Wetlands – 13.38 Ac. Freshwater Marsh – 11.06 Acres Shrub – 0.48 Acres	**GRAND TOTALS – 204 Mitigation Acres** Mixed Forested Wetland Restoration – 55 Acres Mixed Forested Wetland Enhancement – 32 Acres Marsh Enhancement – 95 Acres Upland Habitat Restoration – 22 Acres

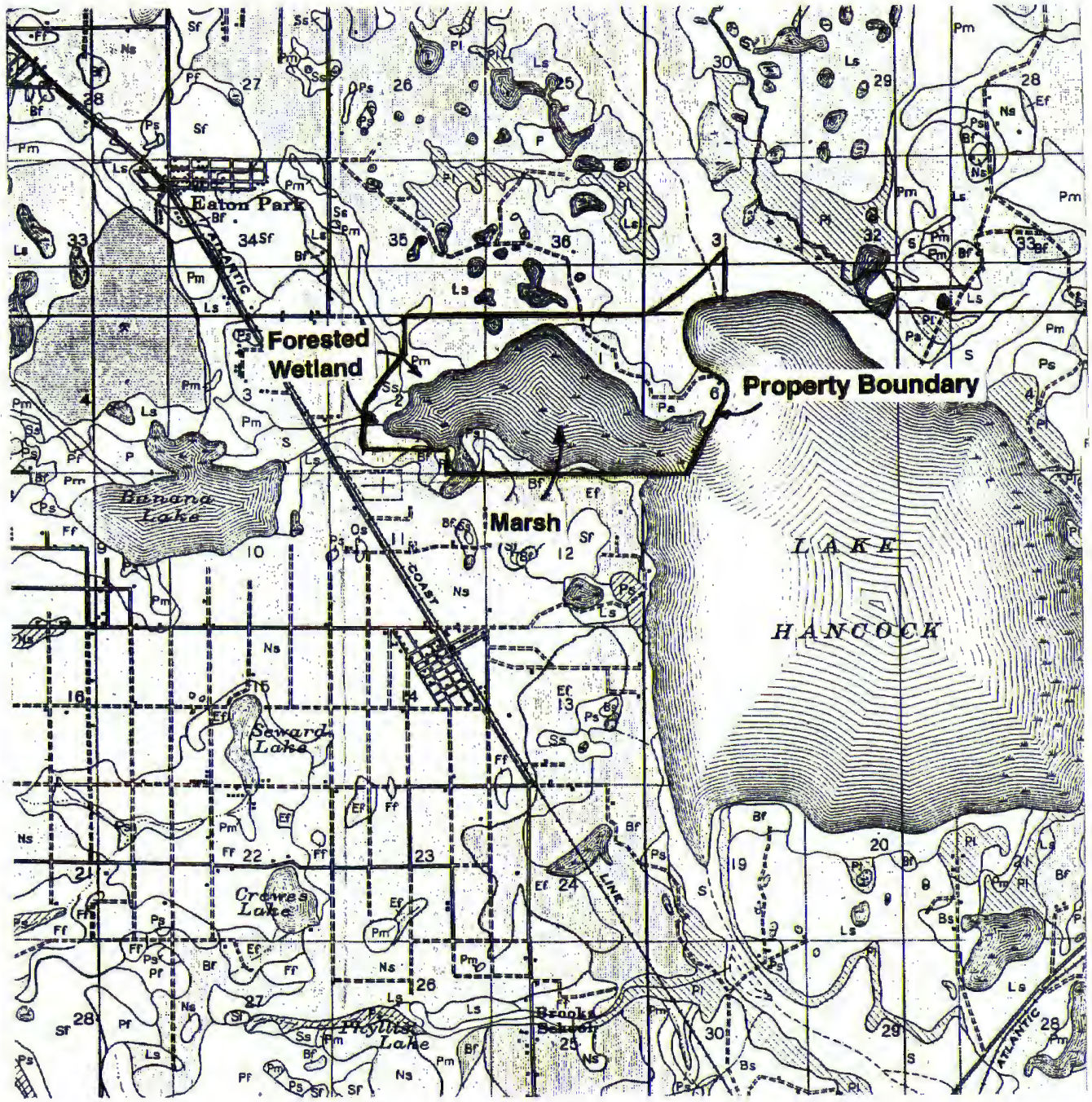


FDOT - District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**	**FIGURE A WATERSHED BASIN MAP**



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

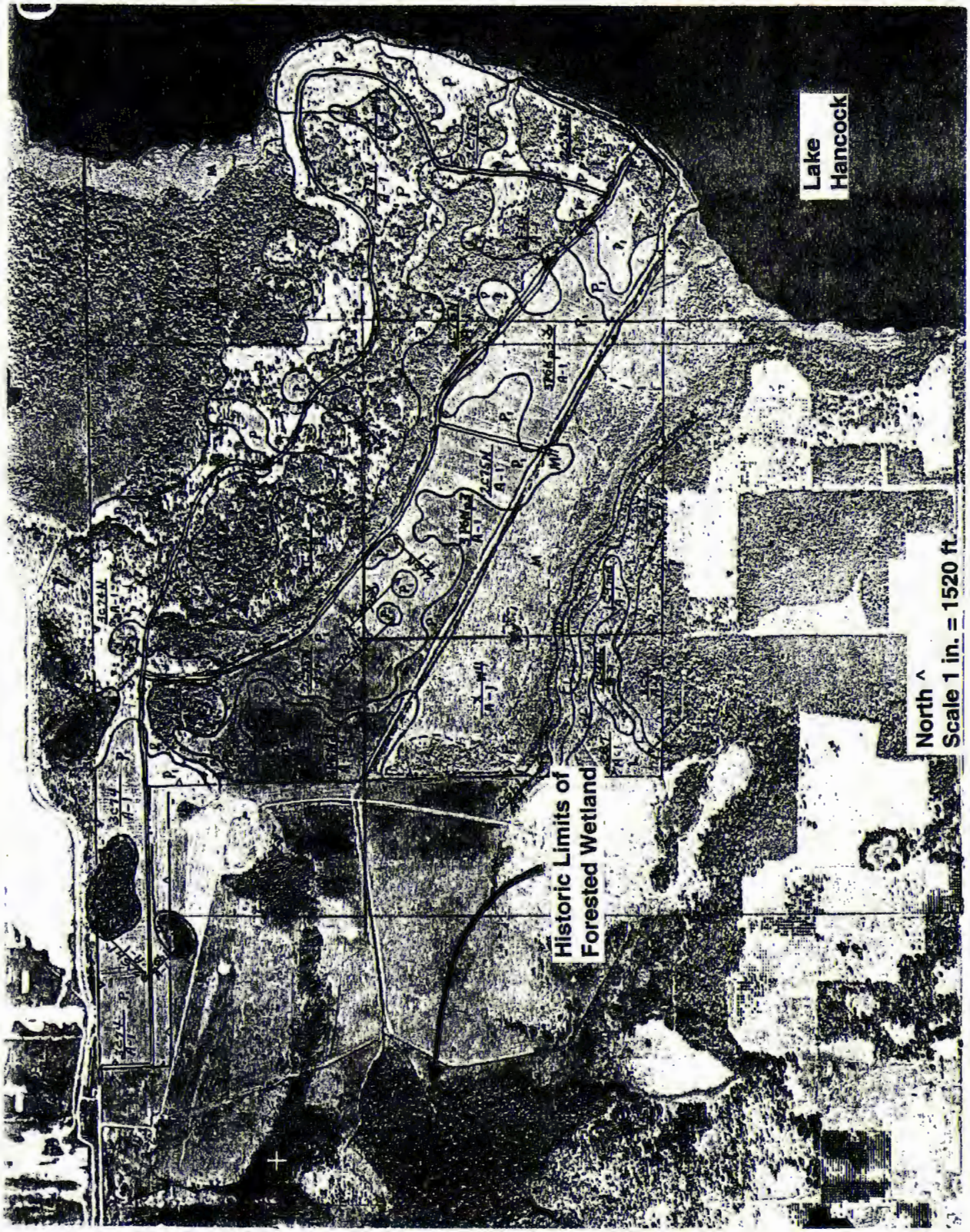


FDOT - District 1 **MITIGATION SITE** **(Peace River Basin)**	**LAKE HANCOCK /** **CIRCLE B BAR RESERVE** **(SW 66)**	**FIGURE C** **1927 SOIL SURVEY**

FDOT - District 1
MITIGATION SITE
(Peace River Basin)

LAKE HANCOCK /
CIRCLE B BAR RESERVE
(SW 66)

FIGURE D-1
1941 AERIAL



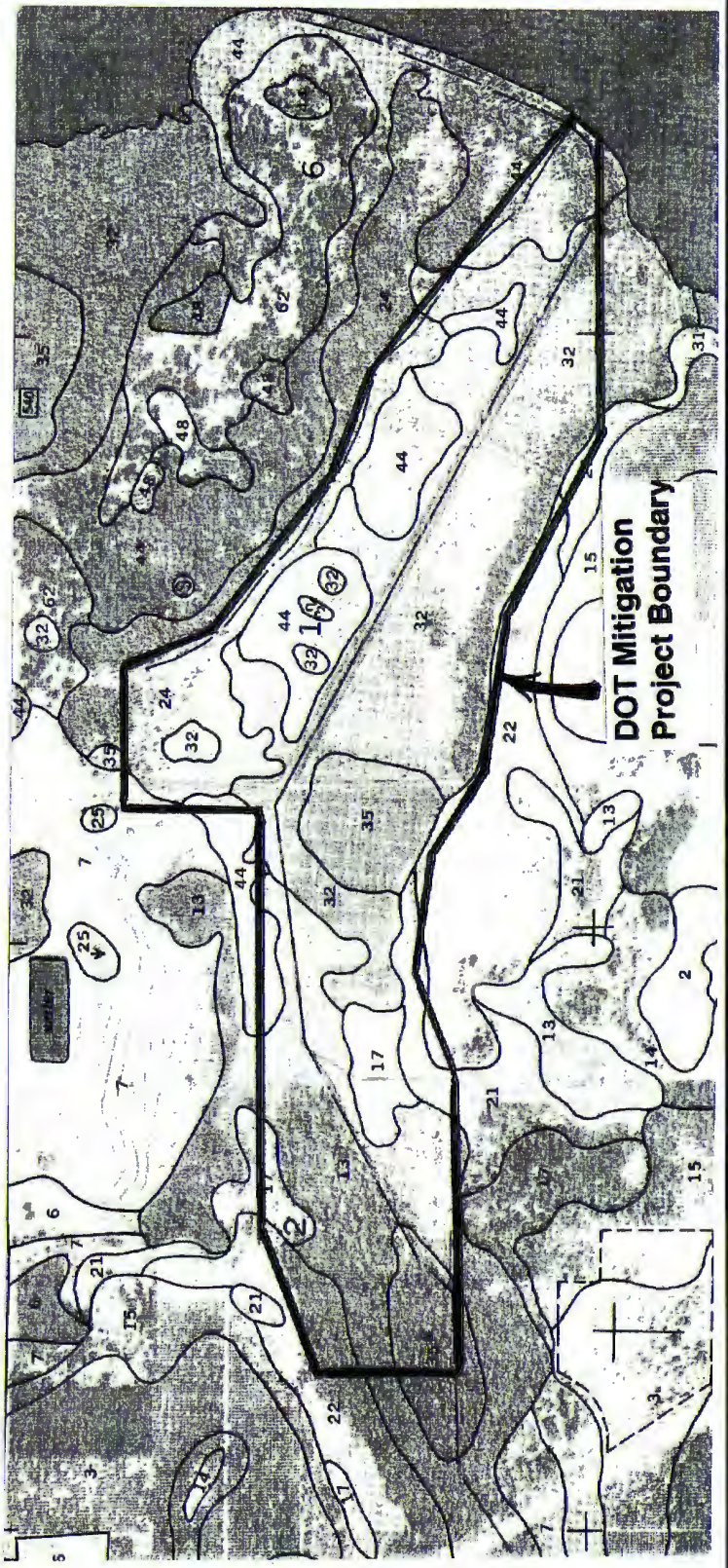
FDOT - District 1 MITIGATION SITE (Peace River Basin)	**LAKE HANCOCK / CIRCLE B BAR RESERVE (SW 66)**	**FIGURE D-2 1952 AERIAL**

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 / CIRCLE B BAR RESERVE (SW 66)

FIGURE F
PROPERTY BOUNDARY
(Landowner - Polk County)

Lk. Hancock /
Circle B Bar Reserve
North
Scale 1 in. = 1257 ft.
DOT Mitigation
Project Area
(East)
Upland
(Historic
Wetland)
Existing
Wetland
Boundaries
Project
Boundaries
(East)
(West)
Potential Polk County
Regional Mitigation Area
Upland Pasture
(Historic Flatwoods)
Wetland
Boundary
DOT Mitigation
Project Area (West)
LAKE HANCOCK /
CIRCLE B BAR RESERVE
(SW 66)
FIGURE G
PROJECT BOUNDARY
(1995 Infrared Aerial)

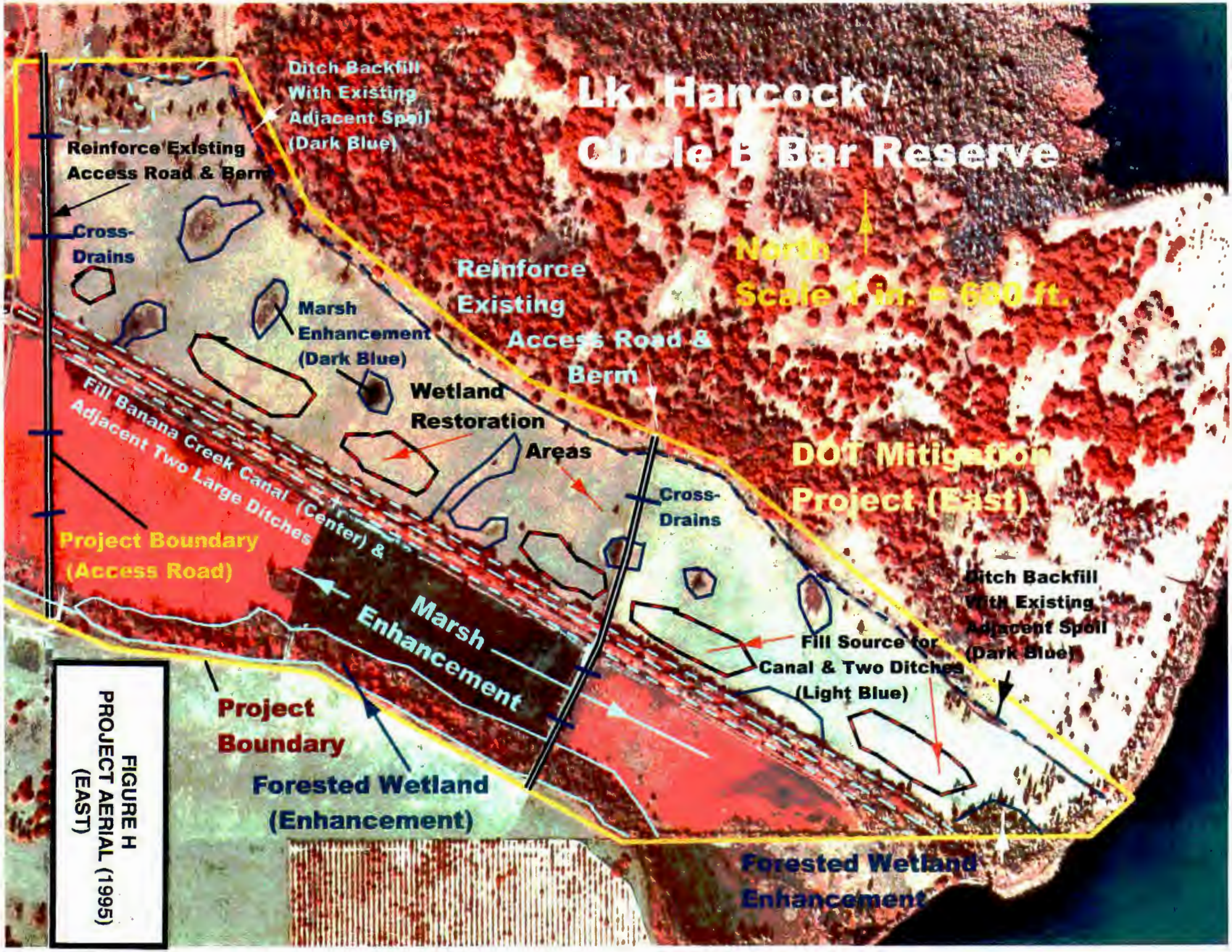


FIGURE H
PROJECT AERIAL (1995)
(EAST)

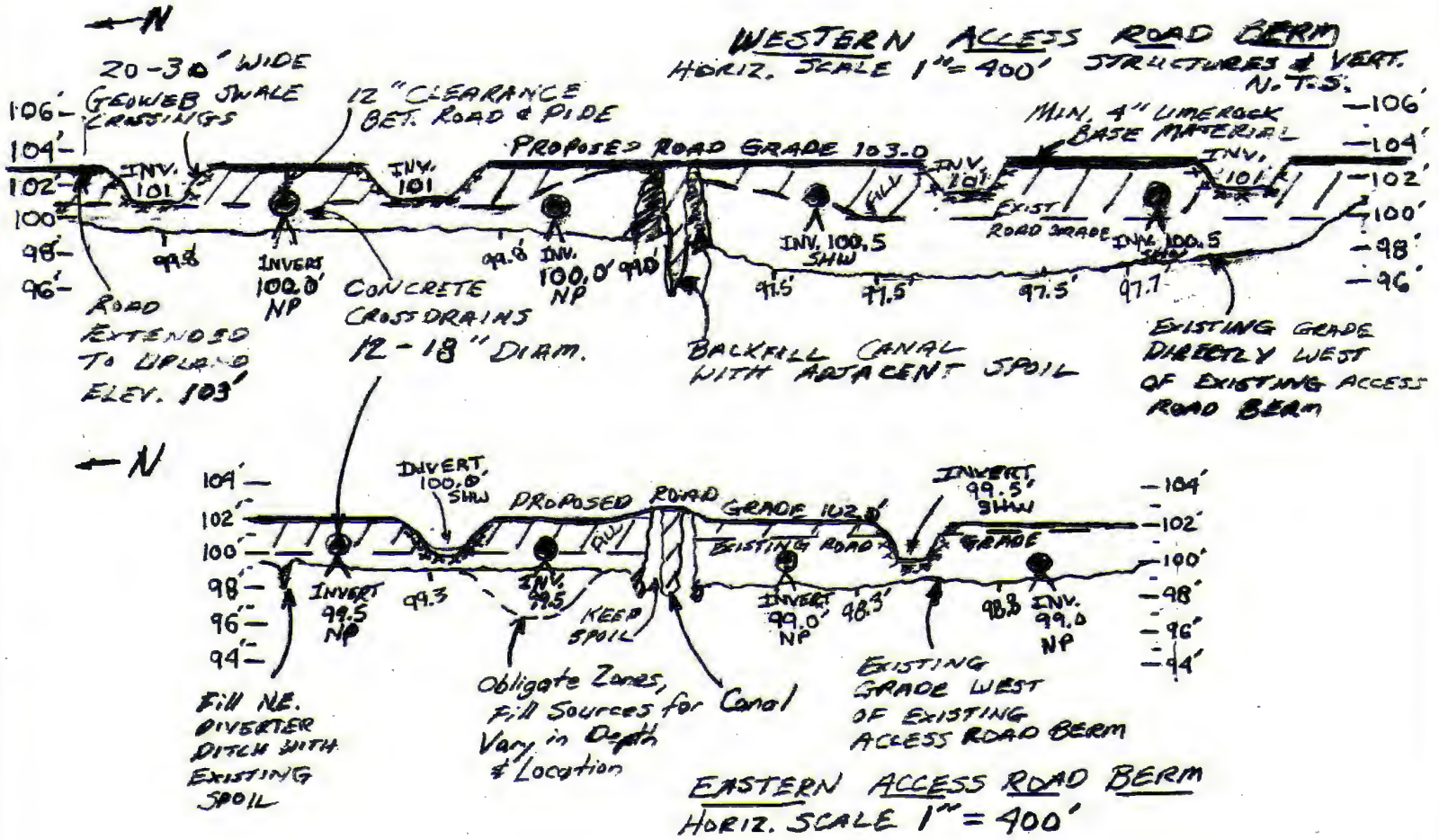
LAKE HANCOCK /
CIRCLE B BAR RESERVE
(SW 66)

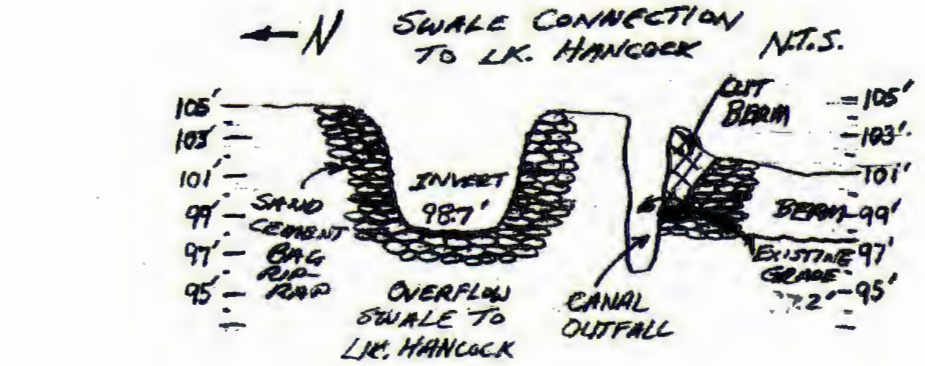
FIGURE I
PROJECT AERIAL (1995)
(WEST)

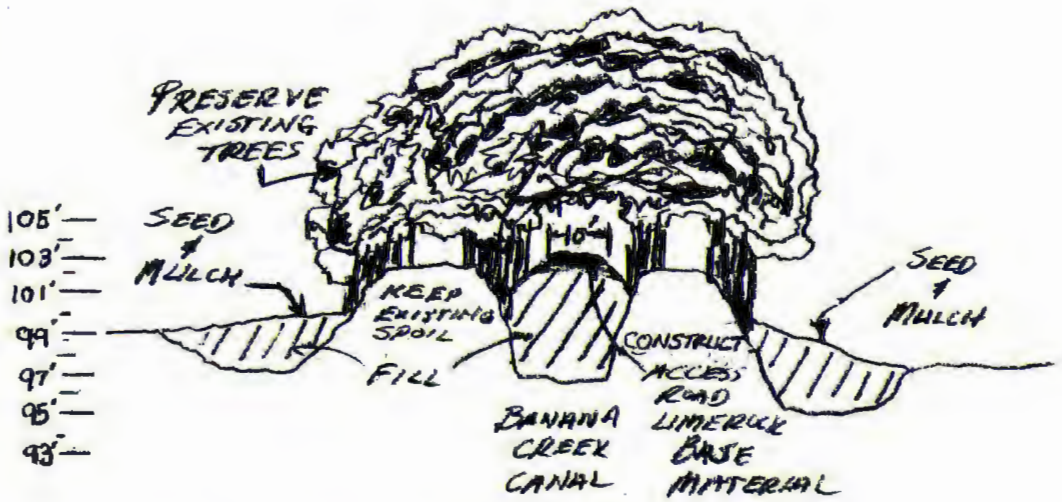
FDOT - District 1
MITIGATION SITE
(Peace River Basin)

LAKE HANCOCK /
CIRCLE B BAR RESERVE
(SW 66)

FIGURE J
ACCESS ROAD
BERM IMPROVEMENTS







N EASTERN PORTION
BANANA CREEK CANAL
& ADJACENT DITCHES

FDOT - District 1 **MITIGATION SITE** **(Peace River Basin)**	**LAKE HANCOCK /** **CIRCLE B BAR RESERVE** **(SW 66)**	**FIGURE K** **SWALE CONNECTION** **CANAL& DITCH BACKFILL**

1 - Northeast Pasture - The pastures north of the Banana Creek Canal (noted in background, oaks on spoil ridge) are heavily dominated by bahiagrass, substantially less hydrophytic species (particularly soft rush) than south of the Canal.

2 - Northeast Pasture - Perimeter ditch located along the pasture / upland oak boundary, diverts northern contributing surface and ground water eastward toward Lake Hancock.

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**POLK COUNTY - Lk. Hancock / Circle B Bar Reserve**

3- Southeast Wet Pasture / Marsh - North view from southern upland boundary toward Banana Creek Canal (noted in right background, closest oaks on spoil ridge). The wet pastures south of the Canal have variable soft rush coverage .

4 - Southwest Pasture - North view from the southern upland boundary toward Banana Creek Canal. Hydrophytic ground vegetation diminishes as the pasture proceeds westward.

FDOT - District 1
MITIGATION SITE
(Peace River Basin)

POLK COUNTY - Lk. Hancock / Circle B Bar Reserve

5 - Banana Creek Canal Crossing - View from the bridge crossing, looking south at the main channel, no water present, predominantly pigweed cover. Two adjacent spoil ridges separate two irrigation channels from main canal.

6-Banana Creek Canal Crossing - Adjacent view from above photograph, looking south at the southern irrigation ditch and the southeast wet pasture (right). Due to contributing ridge seepage and rapidly permeable muck soils south of the canal, the southern wetland pastures and this ditch probably have longer saturated/inundated periods than the canal or the northern irrigation ditch.

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**POLK COUNTY - Lk. Hancock / Circle B Bar Reserve**

7- Banana Creek Canal Crossing - View from the bridge crossing, looking north at the main channel, no water present, predominantly pigweed cover. Two adjacent spoil ridges separate two irrigation channels from main canal.

8- Banana Creek Canal Crossing - Adjacent view from above photograph, looking north at the southern irrigation ditch and the southeast wet pasture / marsh (left). Spoil ridge (right) separates the ditch from the canal.

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**POLK COUNTY - Lk. Hancock / Circle B Bar Reserve**

9 - *Southwest Property Boundary - This southern fork of the Banana Creek Canal intercepts surface and groundwater from southern off-site contributing areas.*

10 - *West-Central Pasture - The main channel of the Banana Creek Canal and the adjacent pasture. Mixed forested wetland in the background.*

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**POLK COUNTY - Lk. Hancock / Circle B Bar Reserve**

11 – North-Central Pasture - One of the North-South ditches draining surficial & groundwater to the Banana Creek Canal.

12 – North-Central Pasture - View of remnant cypress stand over bahiagrass.

FDOT - District 1 MITIGATION SITE (Peace River Basin)	**POLK COUNTY - Lk. Hancock / Circle B Bar Reserve**

REGIONAL MITIGATION PLAN

BACKGROUND INFORMATION

Water Management District : Southwest Florida Water Management District

Mitigation Project Name: **Wolf Branch Extension** Project Number: **SW 67**

Project Manager: Forest Turbiville, SWFWMD-SWIM Env. Scientist Phone No: (813) 985-7481, ext. 2213

County: Hillsborough Location : Section 32, T31S, R19E

IMPACT INFORMATION

DOT Projects

(1) FM: 4037701, US 19-CR 816 (Alderman) to SR 582 (Tarpon)	ERP #: 4422085.001	COE #: Post-Const. Notif.
(2) FM: 2568881, US 19 - Coachman Rd. to Sunset Point	ERP #: 4411760.011	COE #: No number yet
(3) FM: 4051681, US 19 – Pasco Co. Line to SR 580 (sidewalk)	ERP #: _____	COE #: _____
(4) FM: 2557031, SR 60 – Cypress St. to Fish Creek *	ERP #: _____	COE #: _____
(5) FM: 2558881, US 301-Sligh Avenue to Tampa Bypass Canal	ERP #: _____	COE #: _____
(6) FM: 2571391, Ulmerton Rd. – US 19 to 49th Street	ERP #: _____	COE #: _____
(7) FM: 4082011, Himes Ave. at Hillsborough Avenue	ERP #: _____	COE #: _____

Drainage Basin: Tampa Bay Drainage Water Body(s):Lake Tarpon, Anclote River, Curlew Creek, Spruce St. Drainage Canal, Fish Creek, Old Tampa Bay, Cross Bayou, Lemon St. Canal SWIM water body? (Y/N) Y

Impact Acres / Types:

(1) FM 4037701 - 0.10 ac. 618 (Flucco code)

(2) FM 2568881 – 0.30 ac. 617 (Flucco code)
0.10 ac. 618 (Flucco code)
TOTAL 0.40 ac.

(3) FM 4051681 – 0.40 ac. 618 (Flucco code)
0.10 ac. 642 (Flucco code)
TOTAL 0.50 ac.

(4) FM 2557031 * – 0.80 ac. 641 (Flucco code)
10.80 ac. 642 (Flucco code)
*TOTAL 11.60 ac.

(5) FM 2558881 – 3.70 ac. 617 (Flucco code)
1.50 ac. 618 (Flucco code)
2.00 ac. 641 (Flucco code)
TOTAL 7.20 ac.

(6) FM 2571391 – 1.00 ac. 641x (Flucco code)

(7) FM 4082011 – 0.10 ac. 618 (Flucco code) **TOTAL 20.9 Ac.**

* The total impact for this project is 17.80 acres, 5.90 ditch acres and 0.30 mangrove acres will be mitigated at Tappan Tract.

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: X Creation X Restoration X Enhancement X Preservation Mitigation Area: **70 acres**
SWIM project? (Y/N) Y Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) X
Mitigation Bank? N Drainage Basin(s): Tampa Bay Drainage Water Body(s): Wolf Branch SWIM water body? Y

Project Description

A. **Overall project goal:** The project will include upland and wetland habitat acquisition, creation, restoration, and enhancement. Freshwater wetland enhancement and restoration will be conducted within the southeast corner of the project site (Figure D). Saltwater marsh creation will occur adjacent to the dredged Wolf Branch located within the northern portion of the site. Upland oak hammocks and pine flatwood habitat will be created, restored and enhanced surrounding the wetland habitat. The DOT funds will provide for the acquisition of this 70-acres which is an extension of the existing 1200-acre Hills. Co. / SWIM project referred to as Wolf Branch Restoration. Nomination for this additional acquisition includes the Hillsborough County Parks & Recreation Dept. (ELAPP nomination), restoration by the SWIM Dept., and within the SWFWMD's Save Our Rivers proposed 5-Year Acquisition Plan. Along with the Wolf Branch Restoration, additional public lands (E.G. Simmons Park, Bahia Beach

Restoration) and private mitigation (Terra Brook) add to the overall habitat value of this restoration project (Figure C). Long-term maintenance and management will be conducted by Hillsborough Co. Parks & Recreation.

B. Brief description of current condition: A majority of the existing site is currently within improved pasture conditions. An historically freshwater marsh (7 acres within the project area) has been hydrologically connected to Wolf Branch with a ditch within the southeast portion of the site (Figure D). This ditch has not only altered the hydrology, but allowed minor saltwater connection, and Brazilian pepper has heavily invaded the southern portion of the marsh (Photos 5 and 6). A shrub wetland (1.5 acres is located within the northwest corner, surrounded by a disturbed upland oak hammock (Figure D, Hammock #1 - 5.5 acres, Photo 3). Three other upland hardwood hammocks, covering approximately 4.5 acres, are also on the site. Brazilian pepper has invaded each of the hammocks as well as along the entire perimeter of the property. A channelized portion of Wolf Branch (1.4 acres) is located across the northern portion of the property. The Branch is bordered by Brazilian pepper, live oaks, cabbage palms (Photos 2, 3, 4) and tidally connected to Tampa Bay.

C. Brief description of proposed work: A saltwater marsh (7.0 acres) will be created from the existing upland improved pastures adjacent to Wolf Branch (Figure D, Photos 1, 2, 4). The freshwater marsh (7.0 acres) will be enhanced by filling the interior ditches, blocking the saltwater connection, and eradication of the Brazilian pepper. Upon review of site conditions and the hydric soil limits (Figure B), a portion of the existing bahiagrass pasture surrounding the northern and eastern part of the marsh was historically part of the same wetland system (Photos 7 and 8). Restoration of this freshwater wetland (2.5 acres) will be conducted by scraping and stockpiling the pasture topsoil, excavating the underlying sands 1-2 ft. to match the adjacent marsh elevation, then backfill the topsoil and planting facultative species such as soft rush, sand cordgrass, and wax myrtle. The adjacent upland pasture not converted to wetland habitat will be restored to pine flatwoods (approximately 38 acres) and potentially additional hardwood hammocks. The Brazilian pepper, Australian pine, and other exotic/nuisance species will be eradicated from the site, which are predominantly located within the upland hardwood hammocks, project perimeter, northwest shrub wetland, and marsh.

D.Brief explanation of how this work serves to offset the impacts of the specified DOT project(s): For the freshwater ditch impacts (1.0 acre) and freshwater marsh impacts (2.0 acres, total 3.0 impact acres), the proposed plan includes enhancing 7.0 acres and restoring 2.5 acres (total 9.5 acres) of the southeastern freshwater marsh. Additional mitigation for these freshwater wetland impacts include enhancing the southern hardwood hammock #4 (2.0 acres), located adjacent to the restored freshwater wetland. The saltwater impacts include salt marsh (10.9 acres) with proposed mitigation including a minimum 7.0 acres of salt marsh creation, 1.4 acres of Wolf Branch enhancement, and 10.4 acres of upland oak hammock creation and enhancement (Hammocks #1-3) adjacent to the salt marsh creation. For the 2.2 acres of shrub wetland and 4.0 acres of mixed hardwood forest impacts (total 6.2 acres), the mitigation includes 1.5 acres enhancement of the northwest shrub wetland and 37 acres of pine flatwood and hardwood hammock restoration from the existing pasture conditions.

E. Brief explanation of why a mitigation bank was/was not chosen, in whole or in part, including a discussion of cost: The only proposed mitigation bank in the Tampa Bay Drainage Basin is the Tampa Bay Mitigation Bank, which has not received the necessary ACOE permit.

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 : Wolf Branch Extension will be a SWIM project, constructed adjacent to the existing SWIM / Hillsborough County ELAPP projects (Figure C).

MITIGATION PROJECT IMPLEMENTATION

Entity responsible for construction: SWFWMD Operations Dept. or a Contractor working for the WMD.

Contact Name: Forest Turbiville, SWFWMD-SWIM Env. Scientist Phone Number: (813) 985-7481, ext 2213

Entity responsible for monitoring and maintenance: SWFWMD SWIM Dept., Hillsborough County Parks & Recreation.

Proposed timeframe for implementation: Commence: October, 2001 Complete: August, 2007 (schedule below)

Project cost: $1,764,730 (total); attach itemized cost estimate

Land Acquisition (70 Acres)	$ 1,050,000 (October, 2001 – September, 2002)
Design	$ 100,000 (October, 2002 – December, 2003)
Construction	$ 494,730 (January, 2004 – June, 2004)
Planting	$ 100,000 (June, 2004 – August, 2004)
Maintenance & Monitoring	$ 20,000 (July, 2004 – August, 2007)

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 C & D, 1995 Infrared aerials.**
_X_ 3. Location map and design drawings of existing and proposed conditions. **Refer to Figure A (Location Map) and Figure C (Adjacent Restoration Projects). Figure D has the existing and conceptual proposed habitat conditions.**
_X_ 4. Detailed schedule for work implementation, including any and all phases. **Refer to schedule above.**
_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 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.**

Attachment A – Existing & Proposed Site Conditions

The existing northern pastures provide minimal habitat characteristics (Photos 1 and 2). Constructing saltwater marsh habitat will require excavating 3-5 ft. below existing pasture grade, with strategically placed tidal swale connections to the Branch (Photos 2 and 4) that won't impact the existing hardwood hammocks. These swale connections will have overflow structures (potentially sand-cement rip-rap) that will maintain tidal fluctuations. The salt marsh will have several lower grade elevation cells that will be hydraulically disconnected and isolated during low tidal elevations of Wolf Branch, thus providing wildlife foraging opportunities. Since this segment of Wolf Branch is tidally influenced but also has contributing freshwater flow from the east, the saltwater content will determine the appropriate selection of salt-tolerant species.

Unless the excavated material is removed from the site, an upland island adjacent to each side of the narrow hardwood hammock (#2) bordering the creek will be used as a disposal area for excavated material (Figure D). Additional disposal of excavated material will probably include the construction of an elevated hammock 2-3 ft. above existing pasture grade around the outer perimeter of the salt-marsh. If constructed, this hammock would be graded with small, rolling hammock grades, stabilized with grass seed/mulch and planted with hardwood hammock species such as various oak species. The determination of any disposal areas will be made during the design phase of the project. Due to the future demand for fill material anticipated in the area, it would be preferable to remove the excavated material from the site.

As noted, the freshwater marsh has received saltwater influence from the outfall ditch over the years, allowing salt grass to generate along with freshwater species. There is a roadside ditch located along the

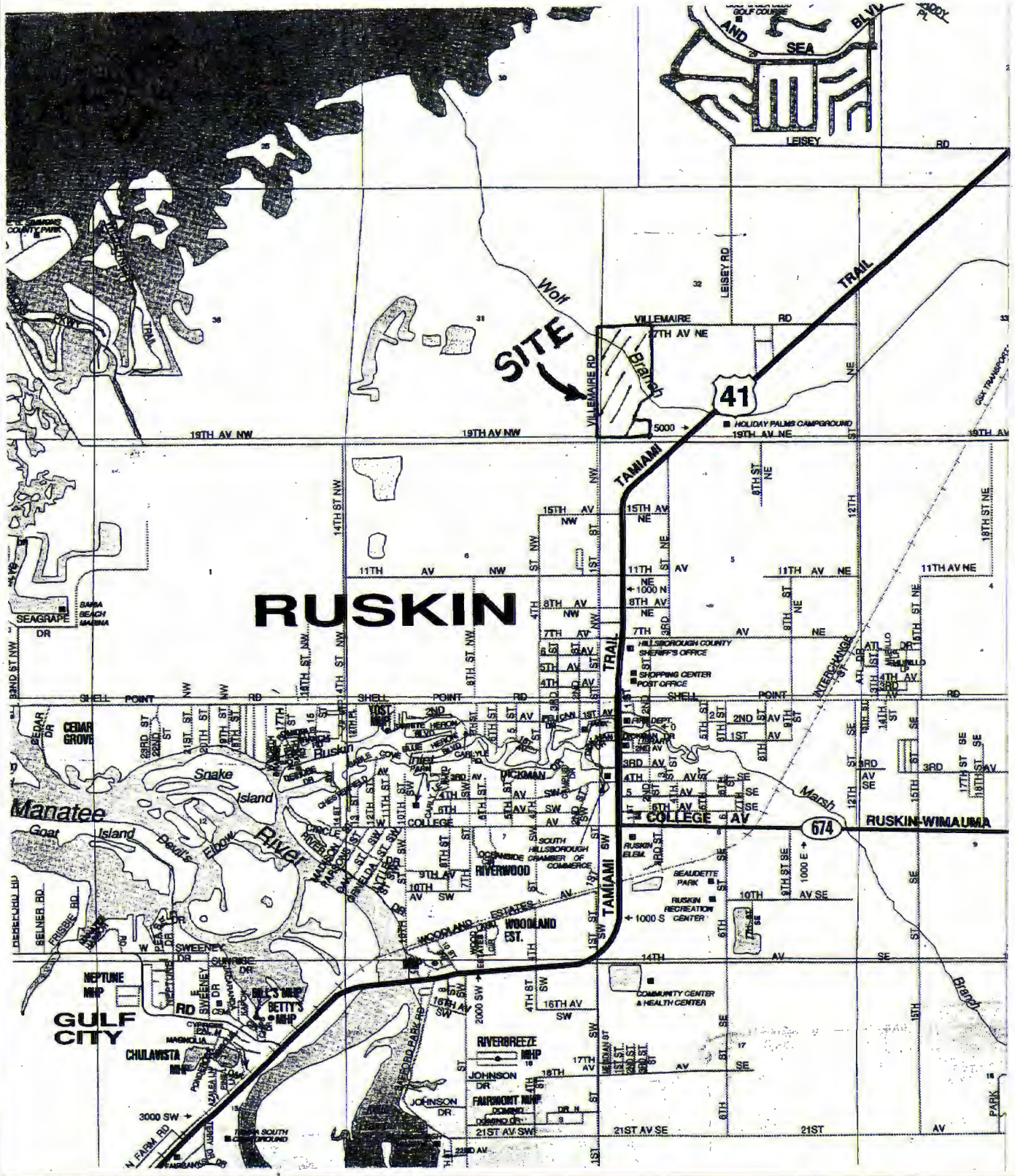
south and eastern project boundary that ultimately connects to Wolf Branch at the northwestern corner of the project boundary. Surface and storm water flow is blocked from entering the southern boundary by a perimeter berm covered by Brazilian pepper. This drainage system will not be interrupted by the proposed restoration effort. However, the Brazilian pepper and other exotics along the berm and perimeter of the project will be eradicated. Ground cover such as bahia or bermuda grass will stabilize the berm and desirable oak, pine, and myrtle species will provide additional cover.

Filling the swales excavated through the marsh will be required to remove the contributing saltwater. Since the marsh will need surface water outfall to avoid flooding the eastern adjacent property, a northern outfall swale is anticipated for construction through the proposed flatwood area and into the southern salt marsh creation area. This swale connection may need an outfall structure and flapgate to permit freshwater to outfall but not allow saltwater to enter the swale and flow into the freshwater marsh. Restoring the historic freshwater marsh water elevations cannot be conducted since it would result in elevating the hydroperiod for the southeastern portion of the marsh not within the project area (Figure D). Since the water elevation cannot be raised, to adequately restore the wetland perimeter within the project, the pasture grade will require excavating 1-2 ft. (Photos 7 and 8). The topsoil will be scraped and stockpiled, the underlying sandy subsoil graded down and used to backfill the swales, topsoil replaced and graded, and herb, shrub, and cypress planting will occur. If for some reason the saltwater influence cannot be separated, marsh enhancement will still occur and an isolated freshwater wetland creation within the upland pasture will be constructed, this will be evaluated during the project design. Along with the hydrologic enhancement of the marsh, additional plantings of obligate species will include such species as pickerelweed, arrowhead, and bulrush.

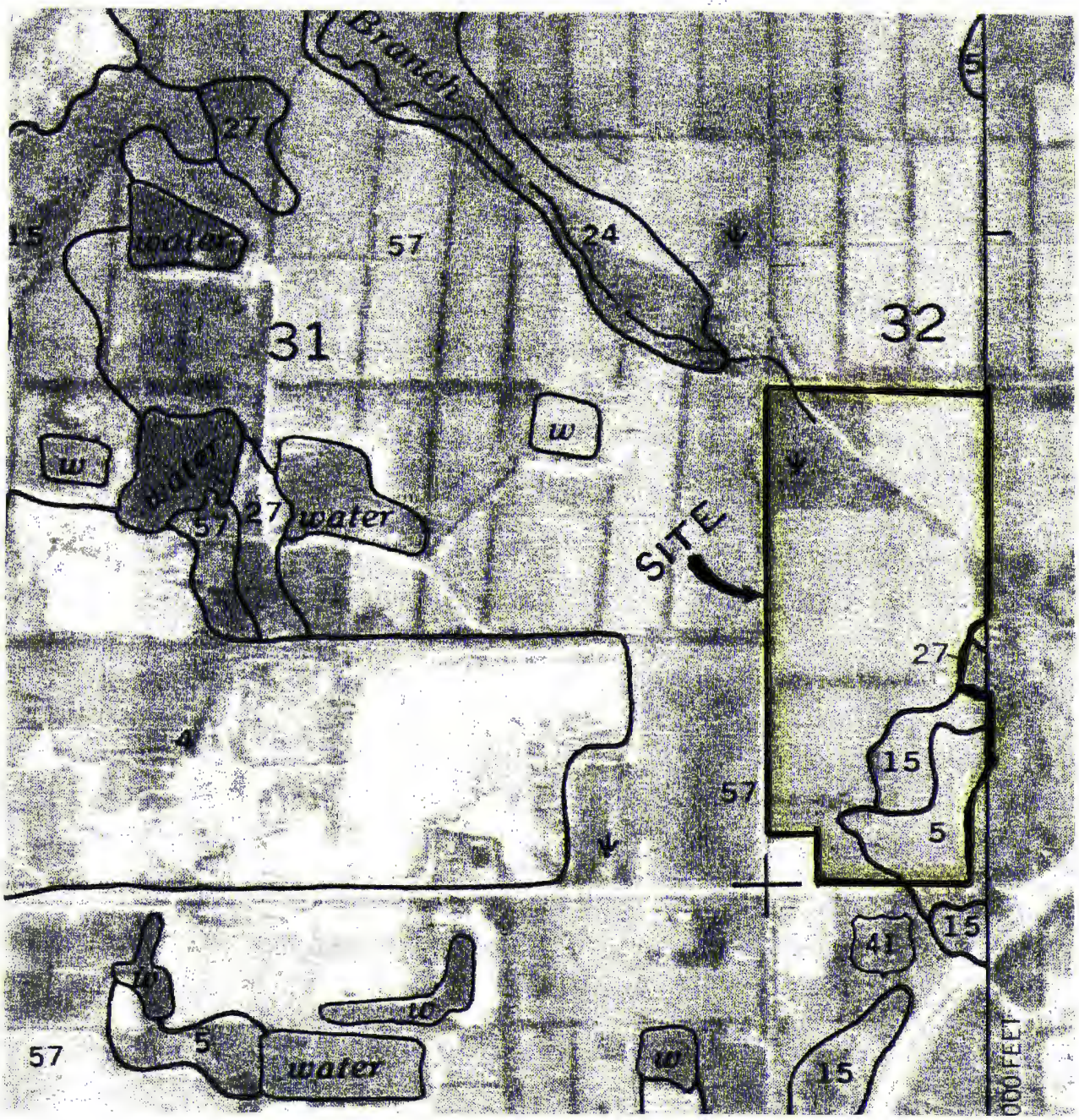
Historically, the uplands at the site probably included a combination of both coastal flatwoods and oak hammocks. The four existing oak hammocks will be enhanced through removing B. pepper and the flatwood planting of slash pine, wax myrtle, wiregrass, and other species will be conducted to replace that portion of the remaining pasture not converted to salt marsh creation. The SWFWMD will also investigate the opportunity to conduct native species seed collection and transfer either with or in place of herb plantings. The SWFWMD-SWIM, Hills. Co. Parks staff, and the design consultant will conduct an evaluation of site conditions and make the decisions on the most appropriate alternatives during the design phase.

Attachment B – Maintenance & Monitoring, Success Conditions

Maintenance activities will be conducted as needed to eradicate exotic and nuisance species that generate during post-construction. Maintenance events are anticipated to be monthly for the first year after construction, and bi-monthly for an additional two years, and quarterly thereafter for at least an additional three years. Monitoring is expected to be semi-annual for the first year, annual thereafter for a minimum total of 3 years. Monitoring will include an evaluation of species survival & cover, wetland hydrologic evaluation, percentage of exotic/nuisance species, and recommended actions needed to ensure and enhance success. Beyond the 3-year monitoring period, maintenance will be conducted by Hillsborough County Parks & Recreation, and be primarily related to control of debris from the site, any additional planting deemed necessary, and to ensure exotics (particularly Brazilian pepper and Melaleuca) do not regenerate. Saplings of these species are controlled with herbicide, which will be applied by a certified herbicide applicator. Success criteria will include a minimum 90% survival of planted material, 90% cover of desirable species within the wetland restoration and enhancement areas, less than 10% cover of exotic/nuisance species (maintained to 0% during the 3-year maintenance & monitoring period). The upland habitat conditions require a cumulative 30% cover of desirable species and less than 10% cover of exotic/nuisance species (also maintained to 0% during the 3-year maintenance & monitoring period). Bahiagrass will not be eradicated from the uplands but supplemented with herb plantings and/or native species seed transfer from appropriate donor sites on SWFWMD property. Over time, it is anticipated that a prescribed burn management plan will be adopted for pine flatwood restoration area.



FDOT - District 7 **MITIGATION SITE** **(Tampa Bay Drainage Basin)**	**WOLF BRANCH** **EXTENSION** **(SW 67)**	**FIGURE A** **LOCATION MAP**



SOILS LEGEND **North ^ Scale: 1 in. = 1650 ft.**

*5 - Basinger, Holopaw, & Samsula soils, dep.
*15 - Felda fine sand
*27 - Malabar fine sand
57 - Wabasso fine sand

* Hydric Soils

FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	WOLF BRANCH EXTENSION (SW 67)	FIGURE B NRCS - Hillsborough Co. Soil Survey (Aerial-1982)

FDOT - District 7 MITIGATION SITE (Tampa Bay Drainage Basin)	WOLF BRANCH EXTENSION (SW 67)	FIGURE C ADJACENT PUBLIC & PRIVATE RESTORATION

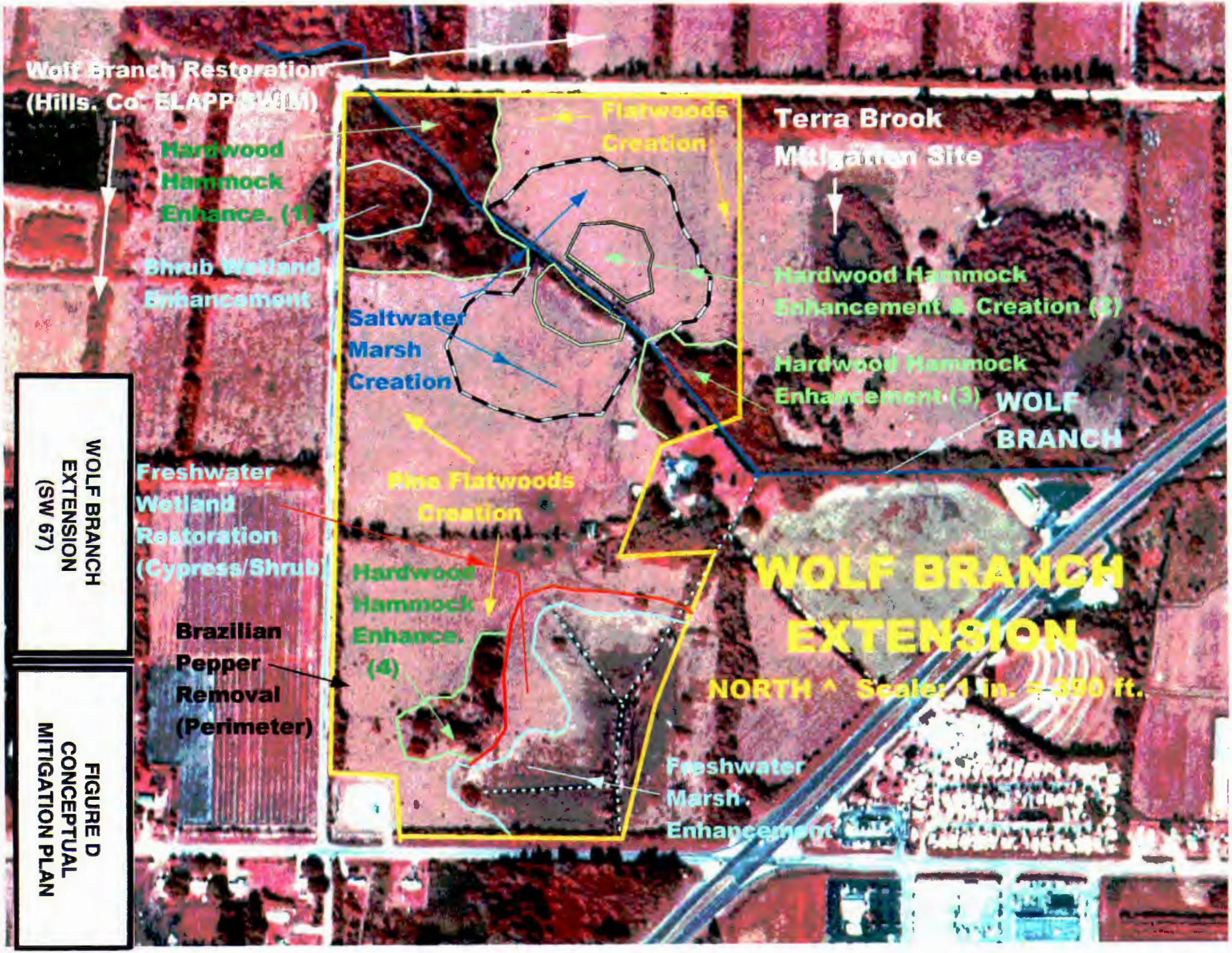

Wolf Branch Restoration
(Hills. Co. ELAPP)
Hardwood Hammock Enhance. (1)
Shrub Wetland Enhancement
Flatwoods Creation
Terra Brook Mitigation Site
Hardwood Hammock Enhancement & Creation (2)
Saltwater Marsh Creation
Hardwood Hammock Enhancement (3)
WOLF BRANCH
Pine Flatwoods Creation
Freshwater Wetland Restoration (Cypress/Shrub)
Hardwood Hammock Enhance. (4)
Brazilian Pepper Removal (Perimeter)
WOLF BRANCH EXTENSION
NORTH ^ Scale: 1 in. = 400 ft.
Freshwater Marsh Enhancement
WOLF BRANCH EXTENSION (SW 67)
FIGURE D
CONCEPTUAL MITIGATION PLAN

Photo 1 - View of the northeast pasture proposed to be excavated to create a saltwater marsh and buffered with pine flatwoods. The hardwood hammock bordering Wolf Branch is in the background.

Photo 2 - The northern bank of Wolf Branch. The hardwood hammock proposed for enhancement is located along the south bank of the branch (right). Note high coverage of Brazilian pepper and cattle in the water.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Wolf Branch Extension (SW 67)**

Photo 3 - View from northwest corner of project boundary, Wolf Branch is bordered by a hardwood hammock (#1) proposed for enhancement by removal of exotic vegetation, dense cover of Brazilian pepper.

Photo 4 - View from northern bank of Wolf Branch. One of the potential swale connection locations through the enhanced hardwood hammock into the southern saltwater marsh creation areas (pasture area located in the background).

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Wolf Branch Extension (SW 67)**

Photo 5 - View of the central swale dredged the the core of the freshwater marsh, the swale and outfall will be filled to block saltwater connection to Wolf Branch. Brazilian pepper (to be removed) along the southern perimeter berm (19th Avenue) is located in the background.

Photo 6 - Minimal periods of saltwater intrusion has not restricted extensive Brazilian pepper generation into the southern portion of the marsh, cabbage palms will be preserved.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Wolf Branch Extension (SW 67)**

Photo 7 - View of the bahia pasture proposed for wetland restoration, hardwood hammock (#4) proposed for enhancement in the background.

Photo 8 - View from hardwood hammock (#4) toward the north. The pasture proposed to restore to wetland habitat is to the right, pasture converted to pine flatwoods to the left.

FDOT - District 7 Mitigation Site (Tampa Bay Drainage Basin)	**Wolf Branch Extension (SW 67)**

REGIONAL MITIGATION PLAN

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., Hillsb. Co., Pasco Co., SWFWMD

County: Pasco Location: Sec. 21, 28, 33, T26S, R17E

IMPACT INFORMATION

DOT Projects

(1) FM: 4037711, US 19-Republic Drive to CR 816 (Alderman) ERP #: 407894.12 COE #: N/A

(3) FM: 2571741, US 98 – Hernando Co. Line to US 19 ERP #: COE #:

(4) FM: 2570501, SR 688 (Ulmerton Rd.) – Oakhurst Rd. to 119th St. ERP #: COE #:

(5) FM: 2563221, SR 52 – Moon Lake to Suncoast Parkway ERP #: COE #:

(6) FM: 2563321, SR 54 – Rowan Rd. to Mitchell Bypass ERP #: 4011641.03 COE #: 19930210 (IP-ML)

(7) FM: 2568151, SR 586 (Curlew Rd.) – CR 1 to Fisher Rd. ERP #: COE #:

Drainage Basin(s): Upper Coastal Water Body(s): Anclote River, Curlew Creek, Church Creek, McKay Creek, Buckhorn Creek

SWIM water body? (Y/N) N

Impact Acres / Types:

(1) FM 4037711 0.10 ac. 618 (Fluccs code)

(2) FM 2571741 0.30 ac. 610 (Fluccs code)
1.20 ac. 621 (Fluccs code)
TOTAL 1.50 ac.

(3) FM 2570501 0.20 ac. 630 (Fluccs code)
1.80 ac. 641 (Fluccs code)
TOTAL 2.00 ac.

TOTAL 14.5 Acres

(4) FM 2563221 3.40 ac. 617 (Fluccs code)
0.80 ac. 618 (Fluccs code)
2.90 ac. 621 (Fluccs code)
0.10 ac. 641 (Fluccs code)
TOTAL 7.20 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? (Y/N) N Aquatic Plant Control project? (Y/N) N Exotic Plant Control Project? (Y/N) N

Mitigation Bank? (Y/N) N Drainage Basin(s): Upper Coastal Water Body(s): None

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).

B. **Brief description of current condition**: As of the summer, 2001, the exact dimensions and acreage of the proposed corridor is under negotiation with the existing landowners. The corridor length will be slightly longer than 2 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, 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 $1 million) 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 at a minimum ratio of 1:1. 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 undercrossing 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:	Eric Summa, USACOE Biologist	Phone Number: (813) 840-2908, ext. 242
	David Sumpter, Pinellas Co. Land Management Coord.	Phone Number: (727) 943-4675
	Len Bartos, SWFWMD Environmental Manager	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, 2002

Project cost:	**$1,100,000 (total)**
Land Acquisition	$1,000,000 (January, 2002 – August, 2002)
Enhancement	$100,000 (Initial planting costs, long-term management costs encumbered by the Counties & WMD- Land Mgmt.)

FDOT Mitigation - Brooker-Starkey Corridor, Pg. 3 of 3

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 acquisition area, and will be included in the 2002 DOT Mitigation Plan.**

_X_ 2. Recent aerial photograph with date and scale. **Figure B is a 1995 infrared aerial of the proposed corridor area.**

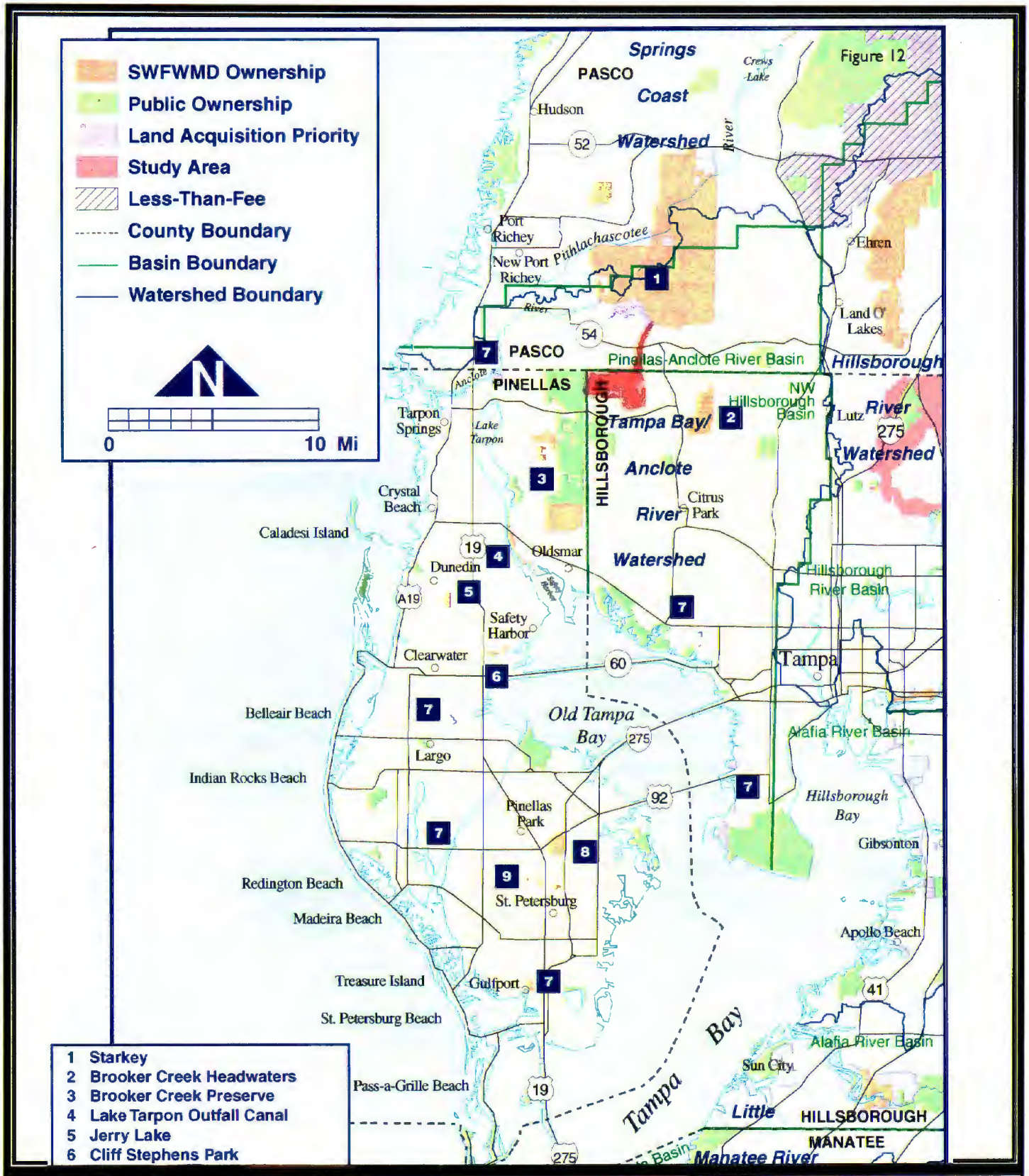
_X_ 3. Location map and design drawings of existing and proposed conditions. **Figure A is a location map and Figure B depicts the aerial of existing conditions. The final corridor location will determine the proposed vegetative conditions.**

_X_ 4. Detailed schedule for work implementation, including any and all phases. **Final schedule for acquisition, restoration, and enhancement conditions will be determined during 2002, and included in the 2002 DOT Mitigation Plan.**

_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 2002 DOT Mitigation Plan.**

_X_ 6. Long term maintenance plan. **Maintenance will be included in the 2002 DOT Mitigation 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 are anticipated to 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. The ability to successfully acquire this corridor will be determined during 2002. The associated DOT wetland impacts that are proposed to be mitigated at the corridor may be permitted prior to final approval of the corridor. Conditions to any WMD-ERP and ACOE-Section 404 permits proposed for issuance will stipulate that if the corridor is not achieved, permit modification applications will be required to transfer the mitigation activities to another approved mitigation option. The SWFWMD has evaluated and provided the responsible environmental agencies a few mitigation alternatives that may be considered in lieu of the proposed corridor. These alternatives are primarily associated with the possible acquisition and enhancement of native habitat property adjacent to the existing limits of the Starkey Wilderness Area.**



FDOT - District 7
MITIGATION SITE
(Upper Coastal Basin)

BROOKER CREEK PRESERVE
CORRIDOR TO STARKEY
WILDERNESS AREA (SW 68)

FIGURE A
LOCATION MAP

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 #: NW permit
Drainage Basin(s): Peace River Water Body(s) : Peace River SWIM water body? (Y/N) 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: An additional 2.75 acres of mangrove & estuarine permanent impacts from shading will be mitigated through the purchase of mangrove credits from the Little Pine Island Mitigation Bank (SW 52).

MITIGATION ENVIRONMENTAL INFORMATION

Mitigation Type: 2.51 ac. Restoration (temp. impacts) 2.06 ac. Enhancement (under removed bridge) Mitigation: **4.57 acres**
SWIM project? (Y/N) N Aquatic Plant Control project? Y Exotic Plant Control Project? N
Mitigation Bank? (Y/N) 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 constructed 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 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 northbound span. After a functional assessment is conducted for the impact area, a determination will be made concerning how many mitigation credits are required to be purchased to compensate for the addition 2.75 acres of permanent impact. Under the highest functional rating, the impacts would require purchasing 2.75 credits from the Little Pine Island Mitigation Bank. The 2.78 acres of temporary impact to mangrove and saltmarsh habitat will be restored in place.

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 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 an appropriate contractor selected by the SWFWMD.

Proposed timeframe for implementation: Commence: After completion of bridge construction, which is scheduled to commence late, 2001 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 photographs.

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.

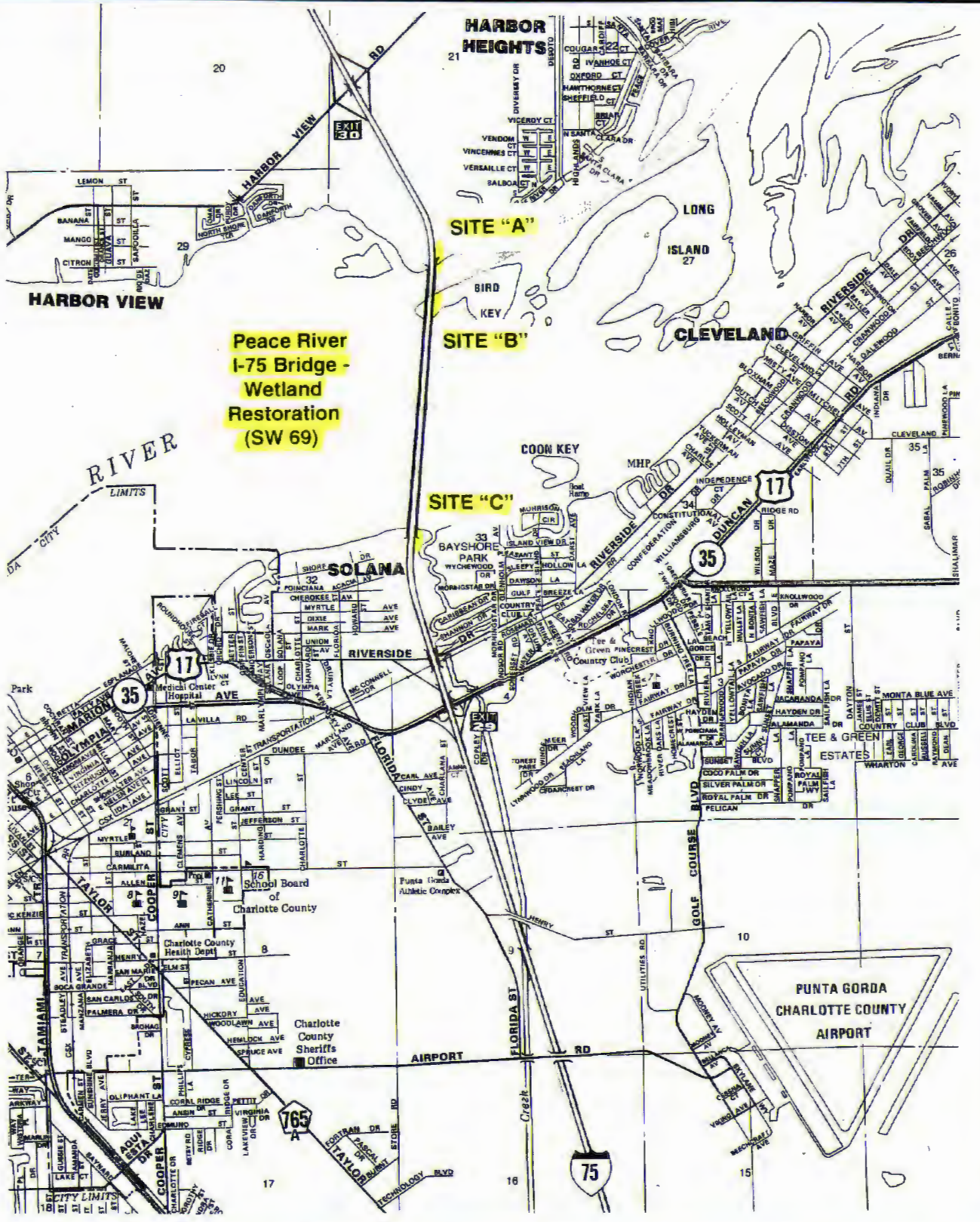
_X_ **4. Detailed schedule for work implementation, including any and all phases.** Refer to previous discussion on activities.

_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 assist with the 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 as needed during the minimum 3 -year monitoring period.

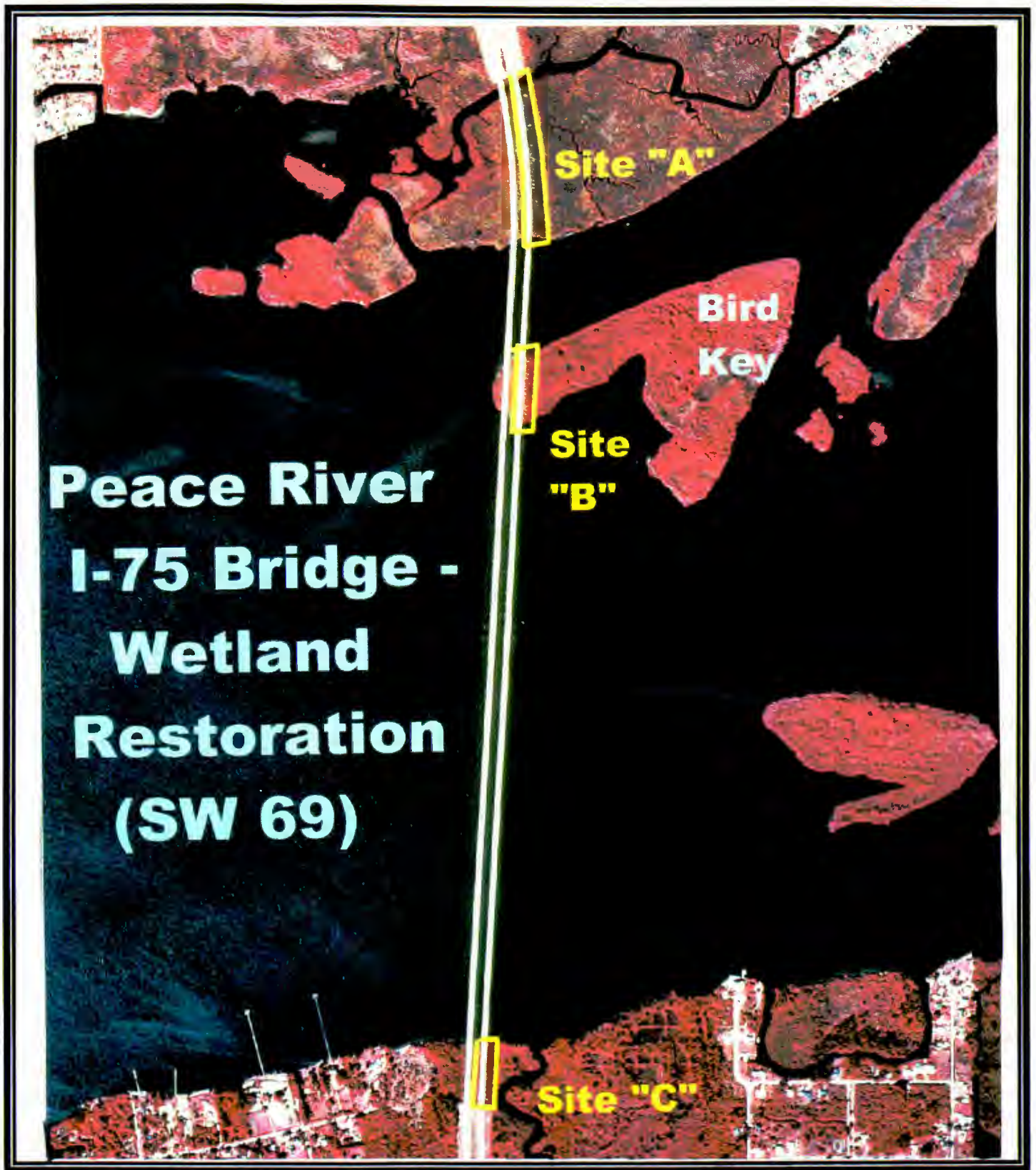
The monitoring will be conducted on an annual basis for a minimum 3-years post construction. The monitoring will be qualitative, noting species coverage, photo documentation, and vegetative trends and required maintenance activities. Monitoring reports will be prepared and submitted to the ACOE and SWFWMD.

_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 6 inspections the first year and quarterly thereafter to conduct a review of the site conditions, herbicide any exotic/nuisance species, trash removal, and photo documentation of conditions. These photo updates will be provided to the SWFWMD and included in the annual monitoring report.

_X_ **7. Detailed explanation of how this work serves to offset the impacts of the specified DOT project(s).** Refer to previous discussion.

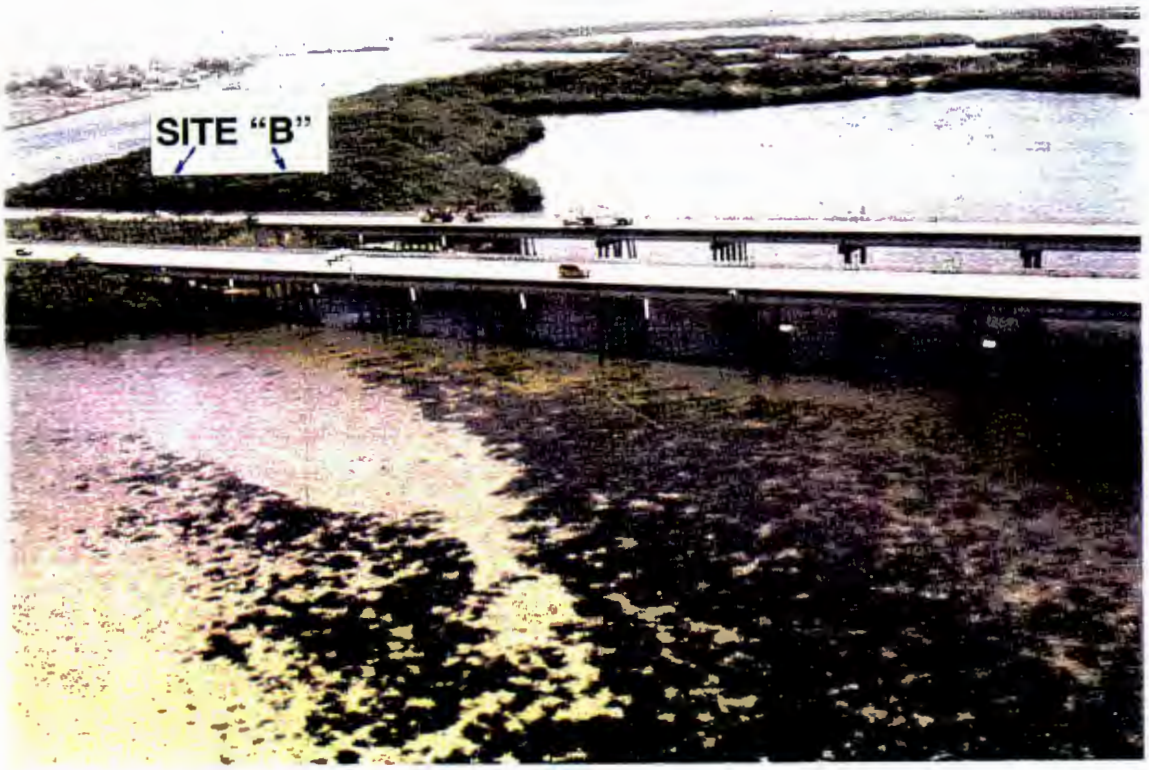


FDOT - District 1 MITIGATION SITE (Peace River Basin)	**PEACE RIVER / I-75 BRIDGE RESTORATION (SW 69)**	**FIGURE A LOCATION MAP ^North, Scale 1.7 in. = 1 mile**

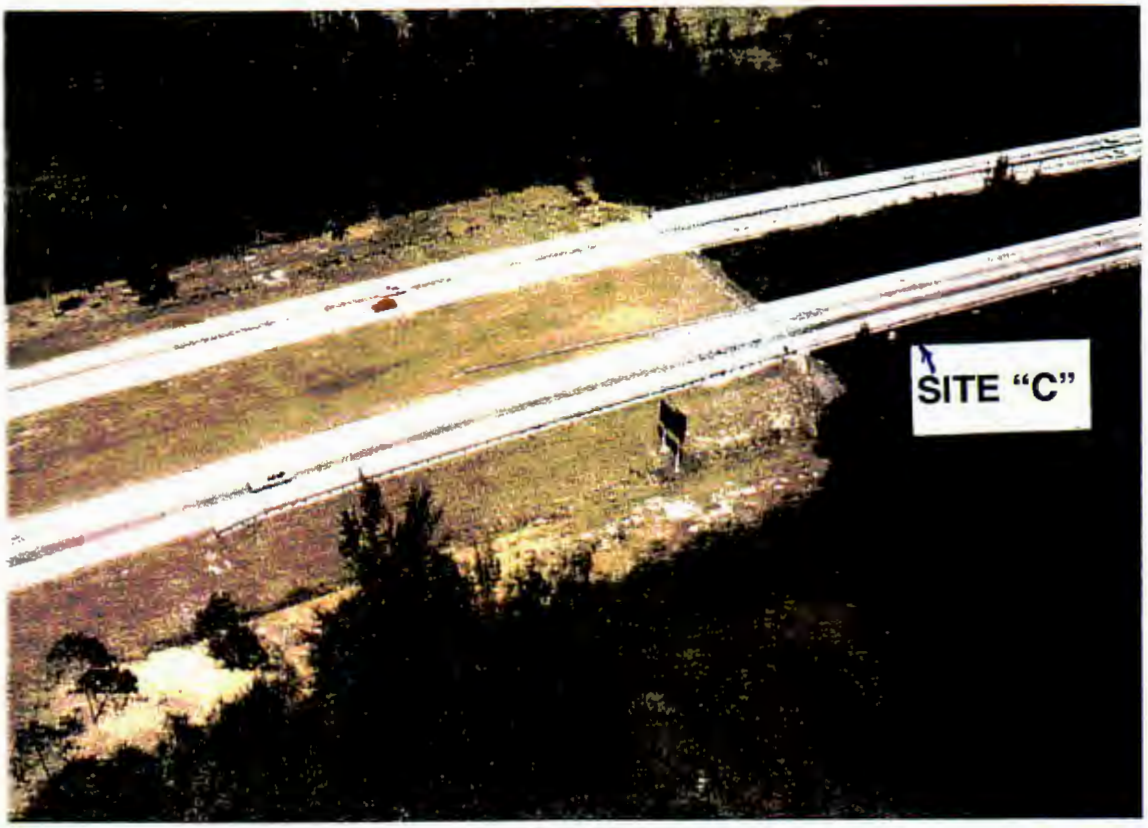


FDOT - District 1 MITIGATION SITE (Peace River Basin)	PEACE RIVER / I-75 BRIDGE RESTORATION (SW 69)	FIGURE B 1995 INFRARED AERIAL ^North, Scale 1In. = 1075 ft.

Wetland S1
Facing South

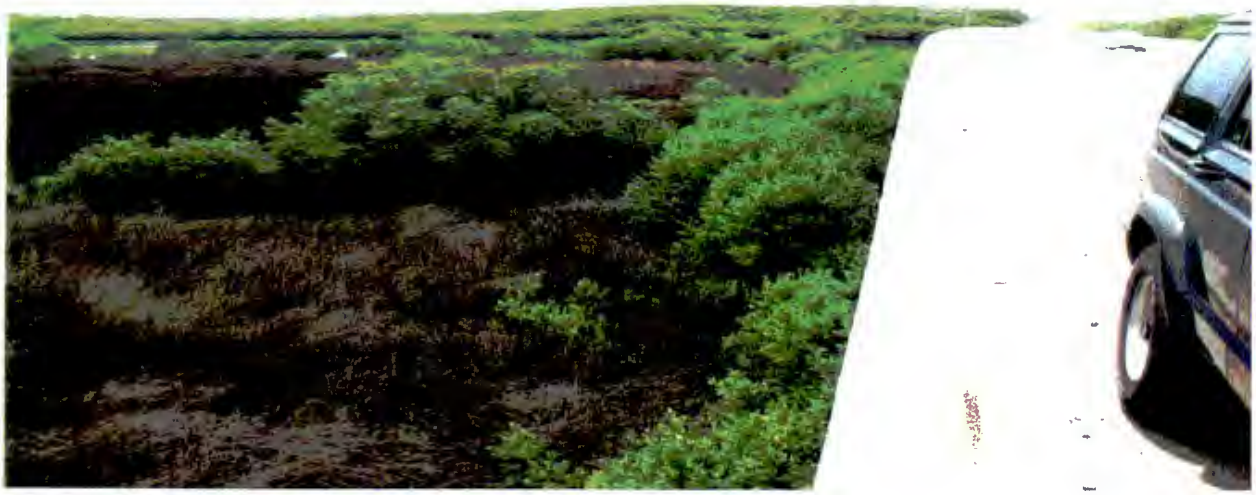


Seagrass bed
on west side
of bridge



Wetland I
Facing West

Wetland J
Facing North

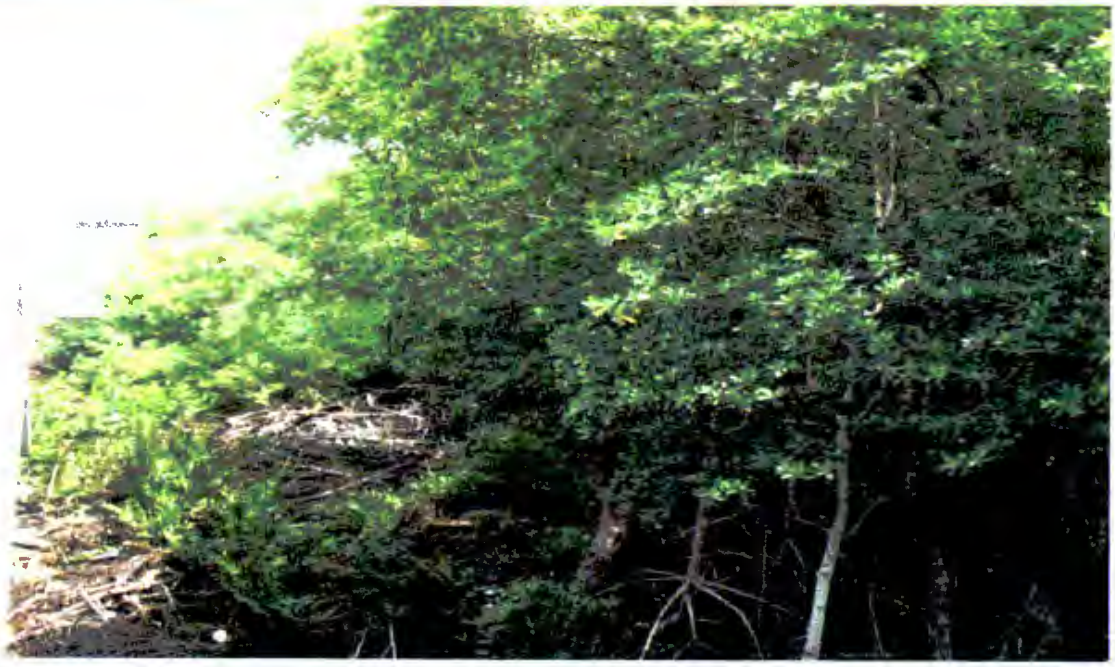


Site A - View from top of the northbound bridge, looking south at mangroves and black rush alongside the bridge within the proposed temporary impact area. These species will be planted to restore the temporary impact and to enhance a portion under the bridge span proposed for removal.

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.

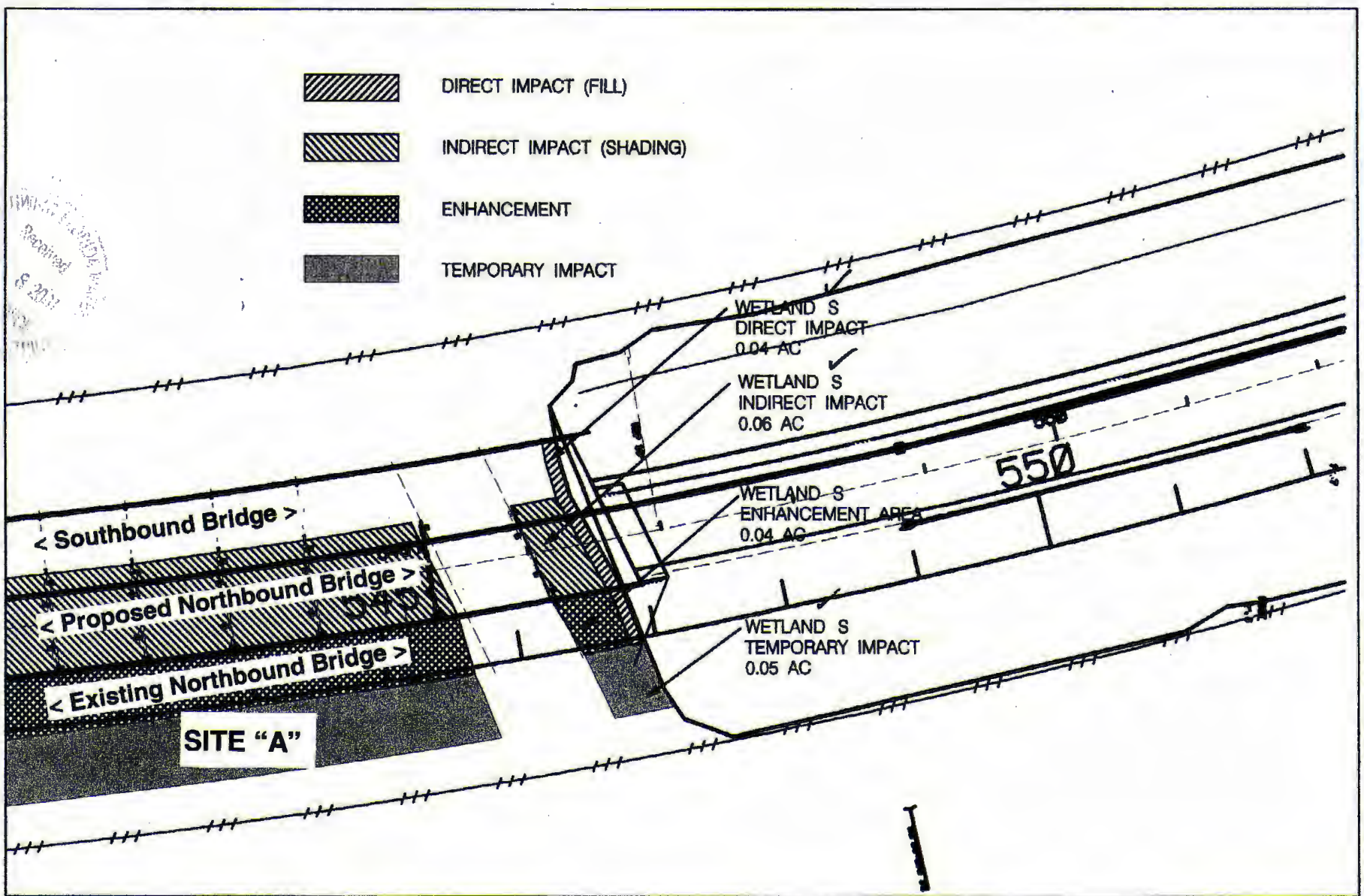
Site C - View of the temporary impact area (right) and proposed span removal (left). The temporary impact area is dominated by white mangrove, including shrub-size mangroves that have generated under the edge of the existing bridge span.

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.

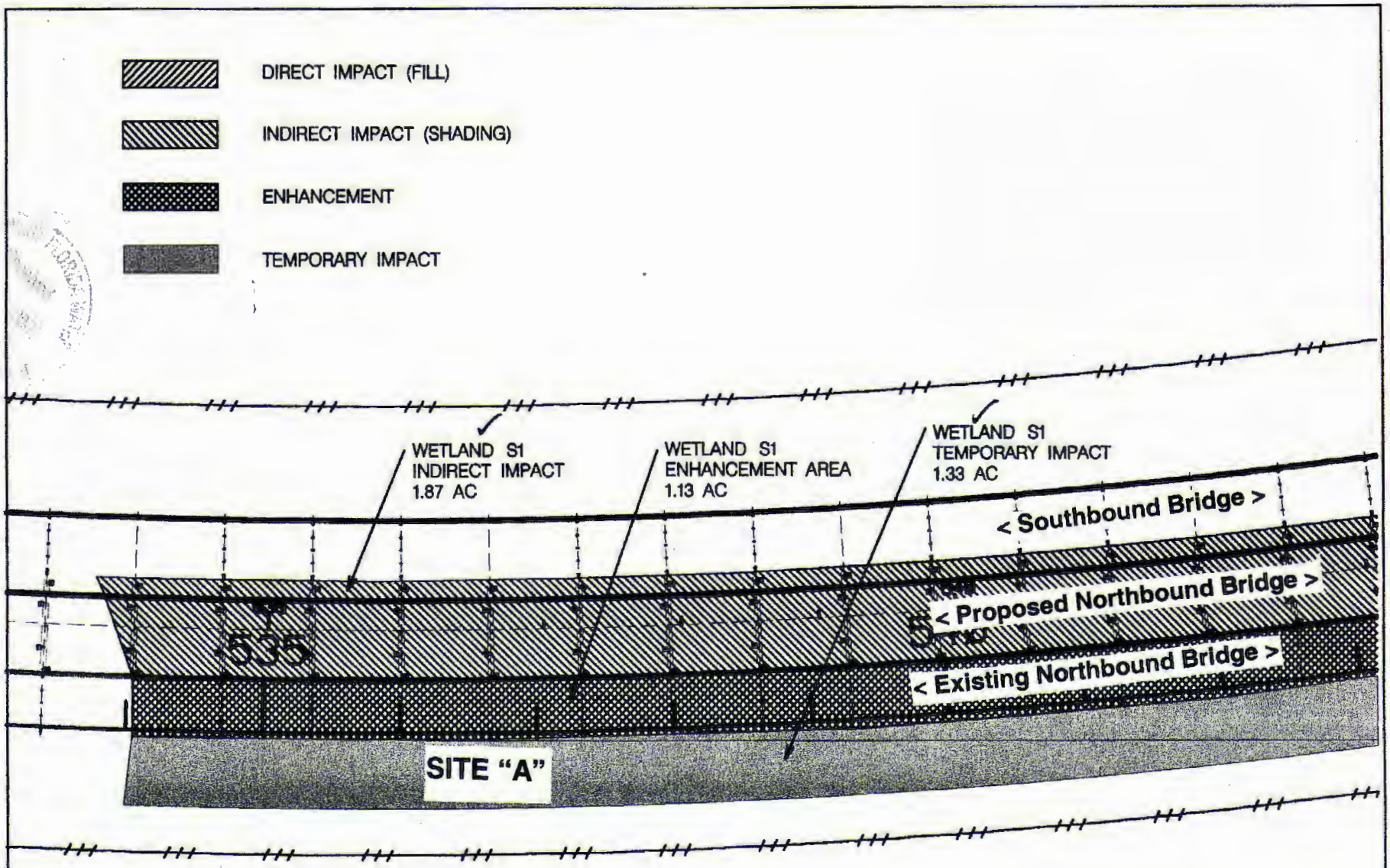
FDOT - District 1 Mitigation Site (Peace River Basin)	**Peace River / I-75 Bridge Restoration (SW 69)**



I-75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN-BUILD PROJECT

WETLAND IMPACT AREAS

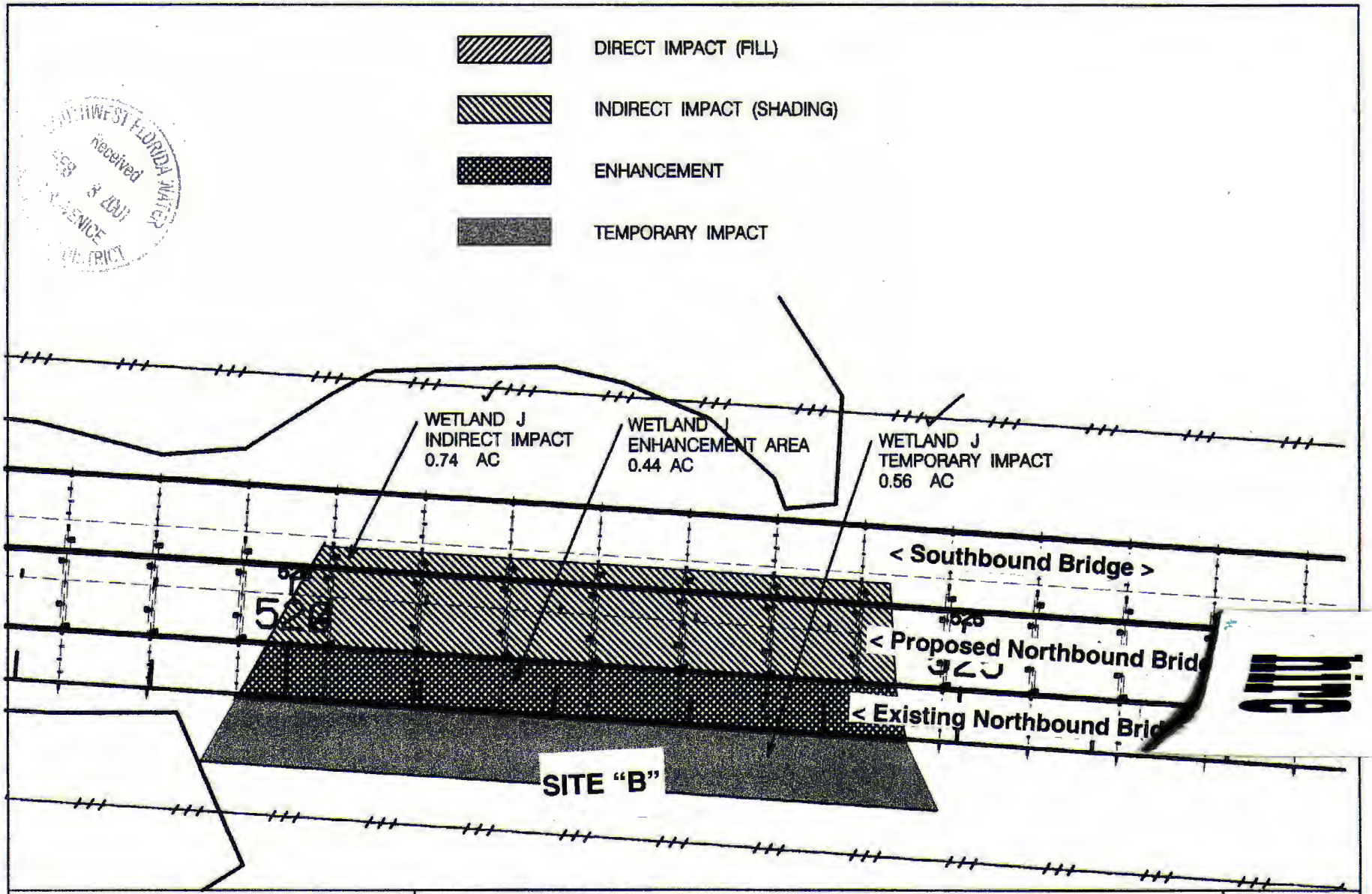
FIGURE 16



I-75 (S.R.93) OVER THE PEACE RIVER
REDECKING AND WIDENING
DESIGN-BUILD PROJECT

WETLAND IMPACT AREAS

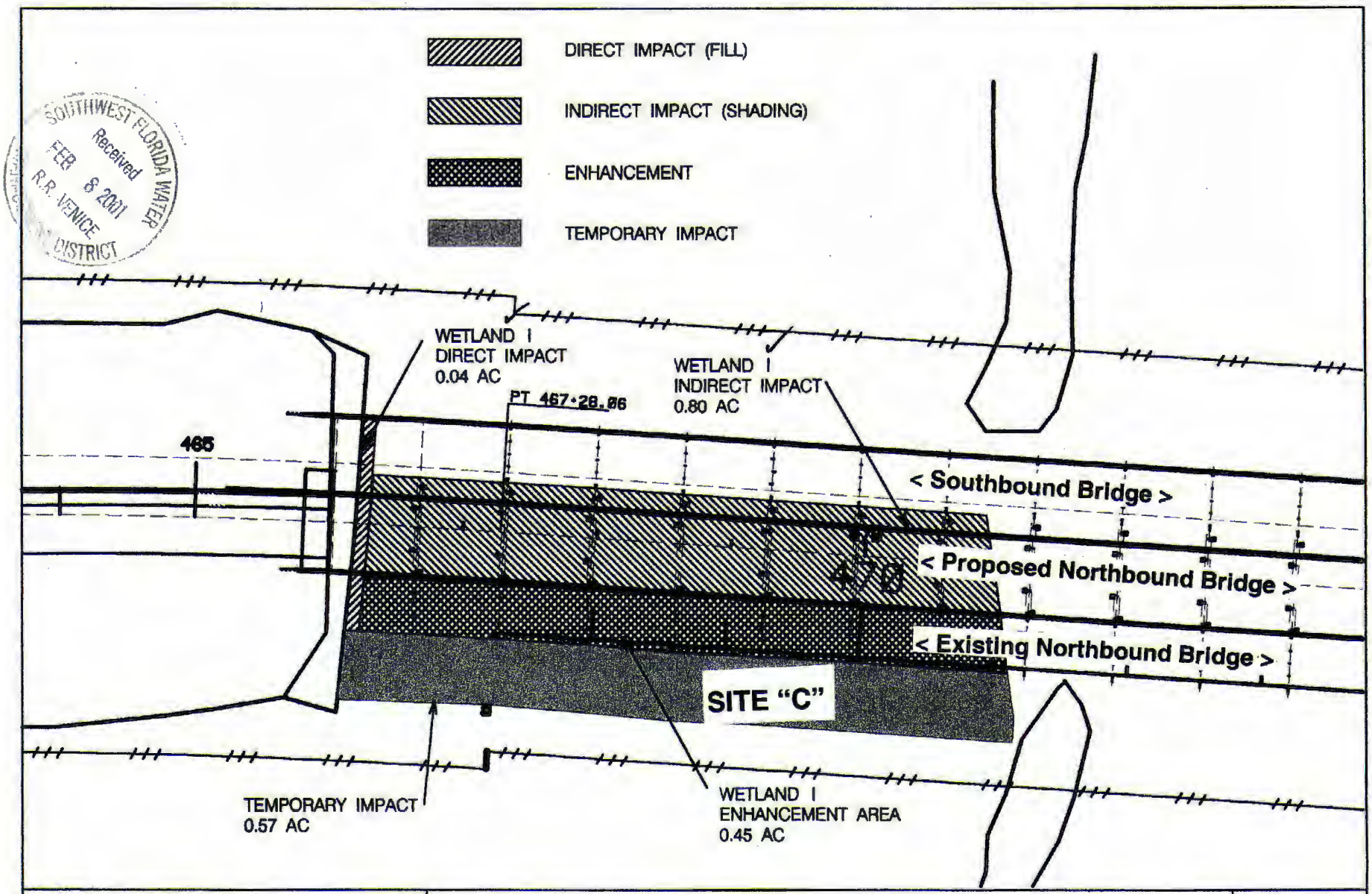
FIGURE 15



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