



South Florida Water Management District

GOVERNING BOARD MONTHLY MEETING AGENDA

This meeting is open to the public

January 9, 2014

9:00 AM

District Headquarters - B-1 Auditorium
3301 Gun Club Road
West Palm Beach, FL 33406

FINAL REVISED 01/08/2014 3:18 PM

Pursuant to Section 373.079(7), Florida Statutes, all or part of this meeting may be conducted by means of communications media technology in order to permit maximum participation of Governing Board members.

The Governing Board may take official action at this meeting on any item appearing on this agenda and on any item that is added to this agenda as a result of a change to the agenda approved by the presiding officer of the meeting pursuant to Section 120.525, Florida Statutes. The order of items appearing on the agenda is subject to change during the meeting and is at the discretion of the presiding officer. Public Comment will be taken after each presentation and before any Governing Board action(s) except for Governing Board hearings that involve the issuance of final orders based on recommended Orders received from the Florida Division of Administrative Hearings.

1. Call to Order - Dan O'Keefe, Chairman, Governing Board
2. Pledge of Allegiance - Dan O'Keefe, Chairman, Governing Board
3. Employee Recognitions - Presented by Blake Guillory, Executive Director
 - January Employee of the Month - Brian Garrett, Scientist 3, Field Operations & Land Management Division
 - January Team of the Month - Statewide Environmental Resource Permitting Team
 - Employee of the Year - Walter Wilcox, Section Leader, Water Resources Division
 - Team of the Year - Land Assessment Team

- 30-Year Service Recognition - Jenni Hiscock, Project Development Section Leader, Operations, Maintenance & Construction
- 4. Agenda Revisions - Reagan Walker, Director, Office of Governing Board & Executive Services
- 5. Abstentions by Board Members from items on the Agenda
- 6. Water Resources Advisory Commission (WRAC) Report - Tim Sargent, Chair

Consent Agenda

Members of the public wishing to address the Governing Board are to complete a Public Comment Card and submit the card to the front desk attendant. You will be called by the Board Chair or designee to speak. If you want to request that an item be removed from the Consent Agenda and be discussed by the Governing Board, please advise the Governing Board when you are called upon to speak. Governing Board directives limit comments from the public to 3 minutes unless otherwise determined by the Governing Board Chair. Your comments will be considered by the Governing Board prior to adoption of the Consent Agenda.

*Unless otherwise determined by the Chair, Board action on pulled Consent Agenda items will occur at or after 9:00 a.m. on Thursday. Regulatory items pulled from the Consent Agenda for discussion will be heard during the Discussion Agenda. **Unless otherwise noted, all Consent Agenda items are recommended for approval.***

7. Public Comment on Consent Agenda
8. Pull Items for Discussion from Consent Agenda
9. Board Comment on Consent Agenda
10. Approval of the Minutes of the Minutes for the December 12, 2013 Regular Business meeting held in West Palm Beach, Florida
11. Waivers for Water Resources Advisory Commission (WRAC) members pursuant to Section 112.313, Florida Statutes
12. Regulatory Consent Items
 - Consent Orders
 - **Town of Windermere; 618 W Second Avenue Drainage Improvements/903 Second Avenue Drainage Improvements (Orange County)** - Settlement of an enforcement action regarding unpermitted dewatering and non-compliance with permit conditions due to unauthorized offsite dewatering into outstanding Florida waters.
 - **Birchwood Acres Limited Partnership, LLLP; Harmony Community Development (Osceola County)** - Settlement of an enforcement action regarding unpermitted dewatering with offsite discharge.
 - Conservation Easements, Amendments and Releases
 - **Okeechobee County Board of County Commissioners, Agri-Civic Center (Okeechobee County)** - Staff recommends the approval of a request for the release of a 0.083 acre (3,632 square feet) portion of the conservation easement over a wetland mitigation area and upland buffer associated with the Okeechobee County Agri-Civic Center project in Okeechobee County (Environmental Resource Permit 47-00582-P, Application No. 020909-5). The Florida Department of Transportation District 1 has recently acquired a small parcel of land immediately adjacent to the south side of SR 70 which was previously part of the northeast quadrant of the Okeechobee Agri-Civic Center property. This small acquisition area is needed for improvements to the SR 70 roadway facility which permitted on November 18, 2013 (Permit No. 47-01151-P, Application 131212-9). The partial release of easement is being processed concurrently with an Individual Major Environmental Resource Permit modification of the State Road 70 Improvements permit.

- Seminole Tribe Work Plan
 - Staff recommends concurrence with the Fifth Amendment to the **Twenty Seventh Annual Work Plan for the Seminole Tribe of Florida**. Works in the Brighton Reservation include the construction of a recreation and maintenance facility including a gravel parking area.
13. Right of Way Regulatory Consent Items - *ITEM REVISED*
- Right of Way Occupancy Permit Request with Waiver of District Criteria
 - Staff recommends approval of a request by **Craig Ehrnst on behalf of Peninsula Corporate Center** (Application Number 13-1030-1) for issuance of a Modification to Right of Way Occupancy Permit No. 10934M and waiver of criteria to allow an existing culvert connection to remain within the south right of way of C-15. Location: Palm Beach County, Section 31, Township 46 South, Range 43 East.
14. **Resolution No. 2014 - 0101** Approving release of canal, road and mineral reservations. (OMC, Kathy Massey, ext. 6835)
- Summary**
- The District has jurisdiction over certain reserved rights to construct canal and road right of ways, and mineral rights, together with the right of ingress, egress and exploration. Applications requesting releases of these reservations are routinely received from landowners, attorneys, title companies and lending institutions, who consider the reservations to be title defects. Applications are reviewed by appropriate District staff and applicable local governmental agencies to determine that there is no present or future need for the reservations.
- Release of District canal and road reservations for Lutheran Church of the Holy Cross West Palm Beach, Inc., (File No. 18564) for 6.12 acres in Palm Beach County.
 - Release of Trustees canal reservations for Bridgewater Lake Osborne, LLC (File No. 10-13-3) for 9.86 acres in Palm Beach County.
 - Release of Board of Education canal reservations for Avenir Holdings, LLC (File No. 10-13-2) for 480 acres in Palm Beach County
 - Release of District mineral reservations for Charles Kenneth Deese (File No. 18569) for 1 acre in Palm Beach County.
15. **Resolution No. 2014 - 0102** Authorize entering into an Interagency Agreement between the South Florida Water Management District (SFWMD) and the St. Johns River Water Management District (SJRWMD) for designation of regulatory responsibility for permitting under Part II of Chapter 373, Florida Statutes, for the project known as Eagle Island Farm that crosses the jurisdictional boundaries of both Water Management Districts. (REG, Maria Clemente, ext. 2308)
- Summary**
- The SFWMD is reviewing a water use permit application for an agricultural project in Okeechobee County, Florida known as Eagle Island Farm. However, the project crosses water management district boundaries. In order to issue a single permit for the entire project, an interagency agreement is necessary to delegate SJRWMD's Part II, Chapter 373, Fla. Stat., jurisdiction and responsibility to SFWMD.
- Staff Recommendation**
- Approve an Interagency Agreement between the SJRWMD and the SFWMD authorizing the SFWMD to issue any Water Use Permits under Part II of Chapter 373, Fla. Stat., for the portion of Eagle Island Farm that lies within the jurisdictional

boundaries of SJRWMD.

16. **Resolution No. 2014 - 0103** Approve the ten year update of the Dupuis and Kissimmee River General Management Plans (2014-2024). (OMC, Steve Coughlin, ext. 2603)

Summary

Section 373.591, Florida Statutes, and Section 140.25(6)(b), South Florida Water Management District Policies Code, direct the District to develop a General Management Plan that follows a designated format and provides recommended management actions for Land Stewardship Management Areas. The District updates these plans every ten (10) years concurrent with conducting a multi-party land management review of the subject property which is consistent with the timeframe and process followed by State agencies. The management plan describes the historical, physical, and ecological aspects of the property, existing public recreational opportunities, and the various land management functions necessary to properly manage the area. The purpose of the management plan is to provide guidance to District land managers for the implementation of appropriate and consistent land management practices, to identify goals and objectives for the management of the property, and to present the findings of the land management review team.

Staff Recommendation

Staff recommends approval of the updated Dupuis and Kissimmee River General Management Plans (2014-2024) in accordance with Section 373.591, Florida Statutes.

17. **Resolution No. 2014 - 0104** Authorize entering into a three-year contract with two (2) one-year renewal options with G4S Secure Solutions USA, Inc., for Security Guard Services in an amount not to exceed \$559,478.52 for which \$199,000 in ad valorem funds are budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15–FY18 budgets; providing an effective date. (Contract Number 4600002990) (AS, Bill Hancsak, ext. 6167)

Summary

This request is to enter into a three-year contract with two (2) optional one-year renewals with G4S Secure Solutions USA, Inc. (G4S) for Security Guard Services in an amount not to exceed \$559,478.52. The present security guard contract expires February 4, 2014. G4S will provide professional security guard services to maintain a safe and effective working environment for employees located at HQ. Services include 24-hour monitoring of security systems, daily visitor control, ID badge and access control assistance, crowd control, and site security. Security guard services have been traditionally outsourced by the District. Since it is not a core function staff recommends continuing to outsource the service.

Staff Recommendation

Staff recommends approval of the contract renewal with GRS for security services.

18. **Resolution No. 2014 - 0105** Authorizing the Executive Director or designee to submit reimbursement requests to the Florida Department of Environmental Protection for implementation of Comprehensive Everglades Restoration Plan Water Quality Studies using Save our Everglades Trust Funds. (AS, Doug Bergstrom, ext. 6214)

Summary

Section 373.472, F.S. created the Save Our Everglades Trust Fund within the Florida Department of Environmental Protection. Funds in the Trust Fund shall be expended to implement the comprehensive plan as defined in s. 373.470(2)(b) F.S. The Governing Board of the South Florida Water Management District approved Resolution Number 2012-302 authorizing the execution of an agreement with the Department for Implementation of CERP Water Quality Studies. The agreement contains Exhibit "A" which prescribes the Disbursement Procedure for CERP Water Quality Studies and requires a formal resolution adopted by the Governing Board of the District. The Governing Board approved Resolution Number 2012-1204 on December 13, 2012 authorizing the District to seek reimbursement for expenditures supporting the CERP Water Quality Studies Annual Work Plan for Fiscal Years 2012 and 2013. This resolution authorizes the District to seek reimbursement for expenditures supporting the CERP Water Quality Studies Annual Work Plan for Fiscal Year 2014 as presented and adopted by the Governing Board on January 9, 2014.

Staff Recommendation

Staff recommends approving the authorization of the Executive Director or designee to seek reimbursement for CERP water quality studies from Save Our Everglades Trust Funds.

19. **Resolution No. 2014 - 0106** Authorize entering into a three-year agreement with Florida International University for Ecological Monitoring of Water and Habitat Quality associated with the C-111 Spreader Canal Project in an amount of \$356,323 for which \$86,323 in Florida Bay Special Revenue Funds are budgeted and the remainder is subject to Governing Board approval of the FY15-FY16 budgets. (Contract No. 4600002987) (WR, Christopher J. Madden, ext. 4647)

Summary

This contract is designed to monitor the redistribution of freshwater flow by the C-111 Spreader Canal Western Features (C-111 SC WF) Project and assess the resulting salinity and nutrient changes on habitat condition. It will track improvements in hydrology, salinity encroachment and vegetation as well as detect potential changes in water quality in affected coastal wetlands and in waters of Florida Bay. The project location is in the C-111 Basin in the Everglades Panhandle near US Hwy 1, and lower Taylor Slough. This contract documents the ecological benefits of the C-111 SC WF Project and provides data for permit compliance. The three-year project cost is \$356,323 of which \$86,323 in Florida Bay special revenue funds are budgeted in FY14.

Staff Recommendation

Staff recommends approval of this agreement, which will allow the District to collect data and analyze information about the performance of the C-111 Spreader Canal, Western Features Project, monitor water quality changes, provide guidance for the next phase of the C-111 project, and determine its effects on critical habitat areas in southern Taylor Slough, the C-111 Basin, the Model Lands and Florida Bay.

20. **Resolution No. 2014 - 0107** Accept the FY2014 Five-Year Water Resource Development Work Program pursuant to Section 373.536(6)(A)4, Florida Statutes. (WR, Mark Elsner, ext. 6156)

Summary

The water management districts are required to submit a Five-Year Water Resource Development Work Program to the Florida Department of Environmental Protection (FDEP) following final budget adoption. The work program describes the District's implementation strategy and funding plan for the water resource, water supply and alternative water supply (AWS) development components of each approved regional water supply plan. The work program identifies which projects in the water resource components will provide water, explains how each water resource, water supply and AWS development project will produce additional water available for consumptive uses; estimates the quantity of water to be produced by each project; and provides an assessment of the contribution of the district's regional water supply plans in providing sufficient water needed to timely meet the water supply requirements of existing and future reasonable-beneficial uses for a 1-in-10 year drought event. The Five-Year Water Resource Development Work Program will be published in the FY2014 South Florida Environmental Report, Volume II as Chapter 5A.

Staff Recommendation

Staff recommends that the Governing Board enter into this resolution accepting the Five-Year Water Resource Development Work Program pursuant to Section 373.536(6)(a)4 F.S. The FDEP has evaluated the work program document and provided comments. FDEP is required to submit a copy of a final evaluation report to the Governor, the President of the Senate and the Speaker of the House of Representatives.

21. Board Vote on Consent Agenda
22. General Public Comment
23. Board Comment

Discussion Agenda

24. Technical Reports
- A) Water Conditions Report - Tommy Strowd, Assistant Executive Director, Operations, Maintenance & Construction (ext. 6998)
- B) Ecological Conditions Report - Terrie Bates, Division Director, Water Resources (ext. 6952)
25. Everglades Restoration Project Prioritization, Part 2: State Restoration Projects - Temperince Morgan, Division Director, Office of Everglades Policy & Coordination (ext. 6987)

Summary

The Governing Board has requested a review of the various restoration projects that are being implemented or considered for implementation to provide recommendations regarding obligations and priorities. Multiple presentations will be given over the course of the next several months to provide background information relevant to this discussion. This is Part 2 of the presentation and will focus on state funded restoration projects.

Staff Recommendation

This item is for information only. No action is required.

26. Modified Water Deliveries to Everglades National Park and C-111 South Dade Projects Update - Tom Teets, Federal Policy Chief, ext. 6993

Summary

The Modified Water Deliveries to Everglades National Park (Modified Water Deliveries) and C-111 South Dade projects are federal projects designed and constructed to restore more natural hydropatterns to Everglades National Park. Both projects are nearing completion of the construction phase; both efforts are pre-requisites to implementing several key components of the Comprehensive Everglades Restoration Plan (CERP), including current Central Everglades Planning Project (CEPP). An overview will be provided for each project, including Congressional authorization, the terms of the Project Cooperation Agreements with the United States Army Corps of Engineers, as well as a description of the project purposes, features and the status of construction and operations associated with these projects.

Staff Recommendation

This item is for information only. No action is required.

27. Capital Projects Plan Update - Jeff Kivett, Division Director, Operations, Engineering & Construction Division (ext. 2680)

Summary

The Governing Board has requested an update on the status of the Operations & Maintenance Capital Plan. A presentation will be provided on the history of the current capital plan, current inspection program for assessing assets, and the current and future projects and associated funding. The presentation will also provide for discussion suggested future steps to enhance the current program in developing risk

profiles and a long term refurbishment and rehabilitation program.

Staff Recommendation

This item is for information only. No action is required.

28. **Resolution No. 2014 - 0108** Authorize staff to negotiate and enter into an agreement with Florida Department of Environmental Protection to provide the District with 319(h) Grant funding in the amount of \$1,506,401 in support of the Water Farming Pilot Projects where the District is required to provide \$1,581,000 of matching funds. (EPC, Beth Lewis, ext 6343) - **ITEM REVISED**

Summary

On August 22, 2013, the South Florida Water Management District's Section 319(h) Grant Proposal entitled "Evaluation of Water Farming as a Means for Providing Water Storage/Retention and Improving Water Quality in the Indian River Lagoon/St. Lucie Watershed" was accepted for funding by the Florida Department of Environmental Protection. The award includes grant funding in the amount of \$1,506,401 with a requirement for \$1,581,000 in matching funds for the implementation of three Water Farming Pilot Projects to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain, store and treat surface water to reduce total regional run-off and nutrient loading to natural systems. The Grant Funding Agreement provides the framework for grant reimbursables and cost match deliverables during the implementation, operations, maintenance and reporting phases of all three Water Farming Pilot Projects in the St. Lucie River Watershed.

Staff Recommendation

Staff recommends that the Governing Board of the South Florida Water Management District authorize staff to enter into an agreement with the Florida Department of Environmental Protection for a Section 319(h) Grant entitled "Evaluation of Water Farming as a Means for Providing Water Storage/ Retention and Improving Water Quality in the Indian River Lagoon/ St. Lucie Watershed" in the amount of \$1,506,401 with \$1,581,000 required in matching funds for the implementation of a Water Farming Pilot Program.

29. **Resolution No. 2014 - 0109** Authorize a three-year contract with the University of Florida Board of Trustees for Dispersed Water Management Program Water Farming Watershed Coordination Assistance for the purpose of providing outreach, options assessment and opportunities identification, and recommendations, contingent on the execution of the 319(h) Grant Agreement with the Florida Department of Environmental Protection. (EPC, Beth Lewis, ext 6343) (Contract No. 4600002986) - **ITEM REVISED**

Summary

This contract is the result of a 319(h) Grant application and resulting award to the SFWMD for implementing a pilot program, known as the Water Farming Pilot Projects, to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems within the St. Lucie Watershed. The University of Florida Board of Trustees Center for Landscape Conservation Planning (University) will provide watershed coordination assistance associated with the Water Farming Pilot Projects 319(h) Grant. The University will be reimbursed \$156,400 for outreach, options assessment and opportunities identification, and focused follow-up, results

and recommendations. The objective of the watershed coordination assistance is to identify opportunities for innovative funding and additional cost-effective strategies for nutrient load reduction. The term of the contract is three years and the total contract cost is \$156,400.

Staff Recommendation

Staff recommends approval for a contract with the University of Florida Board of Trustees in the total amount of \$156,400.

30. **Resolution No. 2014 - 0110** Authorizing staff to negotiate and enter into a three-year Water Farming Pilot Project agreement with Evans Properties, Inc. to implement, monitor and evaluate the costs and benefits of "Water Farming." The total District cost is \$1,392,117 for design, permitting, construction, operation & maintenance, and participation payments (970 acres in St. Lucie County). (EPC, Beth Lewis, ext. 6343) - **ITEM REVISED**

Summary

This contract is the result of a solicitation request from the SFWMD for implementing a pilot program to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems. Evans Properties, Inc. will provide for the design, permitting, construction, operation and maintenance of the Water Farming Pilot Project located in the St. Lucie River Watershed in St. Lucie County. The contract term is three years, allowing up to one year for design, permitting and construction, and two years of operation and maintenance. The estimated average annual retention is 3,635 acre-feet per year. Evans Properties, Inc. will be reimbursed up to \$317,780 for facility design, permitting and construction. The contract further provides for a fixed payment of \$537,168.50 on an annual basis for a two-year term for operations and maintenance costs. The total not to exceed contract cost is \$1,392,117.

Staff Recommendation

Staff recommends approval for a contract with Evans Properties, Inc. in a total not to exceed amount of \$1,392,117.

31. **Resolution No. 2014 - 0111** Authorizing staff to negotiate and enter into a three-year agreement with Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. to conduct a pilot project to implement, monitor and evaluate the costs and benefits of "Water Farming." The total District cost is \$245,440 for design, permitting, construction, operation & maintenance, and participation payments (210 acres in Martin County). (EPC, Beth Lewis, ext. 6343) - **ITEM REVISED**

Summary

This contract is the result of a solicitation request from the SFWMD for implementing a pilot program to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems. Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. will provide for the design, permitting, construction, operation and maintenance of the Water Farming Pilot Project located in the St. Lucie River Watershed in Martin County. The contract term is three years, allowing up to one year for design, permitting and construction, and two years of operation and maintenance. The estimated average annual retention is 870 acre-feet per year.

Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. will be reimbursed up to \$136,000 for design, permitting and construction. The contract further provides for an annual fixed payment of \$54,720 for operations and maintenance costs for a two-year term. The total not to exceed contract cost is \$245,440.

Staff Recommendation

Staff recommends approval for a contract with Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. in a total not to exceed amount of \$245,440.

32. **Resolution No. 2014 - 0112** Approving the acquisition of fee title land interests containing 4,604.22 acres, more or less, for the STA-1W Expansion Project, in Palm Beach County, along with the receipt of \$450,000, in exchange for the conveyance of fee title land interests in Palm Beach County containing 8,700 acres, more or less, and the option to require the District to convey fee title land interests containing 55 acres, more or less, for no additional consideration, and the payment of cash consideration in the amount of \$5,978,474 and associated costs for which ad valorem funds are budgeted; approve declaring surplus for exchange and conveyance of fee title land interests in Palm Beach County containing 8,755 acres, more or less, all without reservation of interests under Section 270.11, Florida Statutes; approve entering into a lease agreement with respect to the lands containing 4,604.22 acres, more or less, in Palm Beach County; approve lease extensions. (OMC, Richard Bassell, ext. 2510)

Summary

STA-1W is located in Western Palm Beach County. The acquisition of approximately 4,604.22 acres of lands adjacent to STA-1W is critical to the expansion of STA-1W to meet the Water Quality Based Effluent Limit (WQBEL) as prescribed in the Everglades Forever Act (EFA) and National Pollution Discharge Elimination System (NPDES) consent orders and permits. Shortly after the EFA and NPDES permits and consent orders became final in September 2012, the South Florida Water Management District began discussions with the landowners within the STA-1W Expansion Area, namely, Florida Crystals subsidiaries (Crystals) and Gladeview Holdings, LC (Gladeview). Such discussions were tabled for approximately seven months pending resolution of third party legal challenges to extensions of Crystals' leases of Trustees of the Internal Improvement Trust Fund lands within the Everglades Agricultural Area. Discussions resumed in July 2013 after the litigation had been resolved. At its October 10, 2013 meeting, the District's Governing Board approved a non-binding letter of intent that provided the general terms of the proposed acquisition and exchange transaction. The Governing Board presentation and memorandum summarized the cost components of the transaction for all the parties. Crystals, Gladeview, and District staff have since worked out all other terms in a Land Exchange Agreement. The significant terms of the Land Exchange Agreement include:

- The District will acquire a total of approximately 4,604.22 acres of land. The breakdown of the acreage is that the subsidiaries of Crystals will convey approximately 2,003.38 acres (Crystals Parcel) to the District and Gladeview will convey approximately 2,600.84 acres (Gladeview Parcel) to the District.
- The District will convey to Crystals approximately 8,700 acres of land (District Parcel), and Crystals has the option to acquire a remaining additional 55 acres of land (the Option Lands).
- Gladeview will acquire approximately 2,865 acres from Crystals (2,865 Acre Parcel).

- The District will provide cash consideration to Gladeview in the amount of \$5,978,474.
- The District will receive \$450,000 from Crystals as detailed in the "Environmental Analysis."
- The Option Lands consist of four (4) separate parcels that are currently being evaluated by Crystals for point source contamination.
- The District will lease back the 4,604.22 acres to Crystals on an interim basis consistent with the STA-1W Expansion Project, as detailed in the "Leases."
- The District will extend two existing leases with Crystals containing approximately 1,691 acres, as detailed in the "Leases."
- Crystals will acquire the District Parcel from the District subject to the existing U.S. Sugar Corporation lease.
- The Closing of the land exchange is targeted for April or May of 2014.
- Each party will pay for the closing costs (documentary stamp tax and title insurance) in connection with the lands they are acquiring. The District is exempt from paying documentary stamp tax in connection with its acquisition of the Crystals and Gladeview Parcels.
- Each party will be responsible for any environmental remediation disclosed in the parties environmental audit for the lands they are acquiring.

Staff Recommendation

Staff recommends approval of the acquisitions, exchanges and other considerations as detailed herein.

33. **Resolution No. 2014 - 0113** Authorize entering into a 790-day contract with Douglas N. Higgins, Inc., the lowest responsive and responsible bidder, for the S-13 Repowering and Automation project, for a total amount of \$6,841,000 for which ad valorem funds of \$1,800,000 are budgeted and the remainder is subject to Governing Board approval of the FY15-FY16 budgets. (Contract Number 4600002993) (OMC, John Mitnik, ext. 2679)

Summary

The S-13 Pump Station was built in 1954 by the United States Army Corps of Engineers (USACE). The pump station is a coastal structure located on the C-11 canal in Broward County near the Town of Davie. This station provides area flood protection and acts as a barrier to the inland movement of salt water. Due to age and current condition of the facility, the District initiated the S-13 Pump Station Repowering and Automation Project in February 2011 with the following goals: provide new electronically-controlled low-emissions engines, refurbish right-angle gear reducer and pump, provide new gen-sets, provide new ventilation fans for station, provide new trash rake and conveyor and provide complete station electrical upgrades. Construction is scheduled to start in February of 2014 and continue 790 days through April of 2016. The project is phased for dry season construction. The District contracted in June 2013 for the purchase of three engines to meet the December 31, 2013 engine production deadline and December 31, 2015 installation date to meet Tier 4i engine emission requirements.

Staff Recommendation

The project should proceed in a timely manner with a construction notice-to-proceed to meet the requirements of dry season / wet season construction and the Tier 4i statutory requirements. Staff recommends approval to enter into a 790 day contract in the amount of \$6,841,000.00 with Douglas N. Higgins, Inc., the lowest responsive and responsible bidder, for the construction of the S-13 Repowering and Automation.

34. General Public Comment

Public Hearing

35. **Resolution No. 2014 - 0114** Adopting the SFWMD Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report. (OMC, Ray Palmer, ext. 2246)

Summary

Work Plan updates include:

- Added the Lake Hicpochee Hydrologic Enhancement and Rio St. Lucie Stormwater Quality - Sediment Nutrients, NEEPP projects.
- Removed the Hybrid Wetland Treatment Technology, NEEPP project that has been transferred to FDACS as the lead agency.
- Removed the inactive Strazzulla Wetlands, CERP project. The land acquired for this project will be exchanged for U.S. Department of Interior land, located on the western side of Loxahatchee National Wildlife Refuge, which will become part of the Restoration Strategies Program.
- The Picayune Strand Restoration, CERP project land acquisition boundary has been revised to identify for acquisition the Fakahatchee Strand and Belle Meade land to be hydrologically impacted by the project, as determined by a revised 2013 Takings Analysis completed by the US Army Corps of Engineers.
- The conceptual land acquisition boundary for the Loxahatchee River Watershed Restoration Project (LRWRP), CERP has been updated, refining the acquisition area for the LRWRP Flow-way 2 Storage feature.

Staff Recommendation

Adopt the SFWMD Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report, providing an effective date.

36. Adopt Proposed Rules 40E-40E-1.021, 40E-1.602, 40E-1.603, 40E-1.6065, 40E-1.607, 40E-1.6107, 40E-1.615, 40E-1.659, 40E-2.011, 40E-2.041, 40E-2.061, 40E-2.071, 40E-2.091, 40E-2.101, 40E-2.301, 40E-2.321, 40E-2.331, 40E-2.381, 40E-3.011, 40E-3.021, 40E-3.040, 40E-3.051, 40E-3.301, 40E-3.451, 40E-5.011, 40E-5.041, 40E-5.301, 40E-8.011, 40E-8.421, 40E-8.431, 40E-10.011, 40E-10.031, 40E-10.051, 40E-20.010, 40E-20.011, 40E-20.061, 40E-20.091, 40E-20.101, 40E-20.301, 40E-20.302, 40E-20.321, 40E-20.331, 40E-20.351, 40E-20.381, 40E-24.011, 40E-24.101, 40E-24.201, F.A.C., and reorganize and rename the Basis of Review For Water Use Permit Applications Within the South Florida Water Management District to improve consistency among the WMDs' consumptive use permitting programs. (REG, Maria Clemente, ext. 2308) - **ITEM REVISED**

Summary

The Florida Department of Environmental Protection (DEP) is leading a statewide effort (referred to as CUPcon) to improve consistency in the consumptive use permitting programs implemented by the water management districts (WMDs). The CUPcon goals include: 1) making the consumptive use permitting program less confusing for applicants; 2) treating applicants equitably statewide; 3) providing consistent protection of the environment; 4) streamlining the process; and 5) incentivizing behavior that protects water resources. The key changes to the rules include:

- Incorporation of updates to Chapter 62-40, F.A.C.;

- Revision of permit types to include: 1) General Permits by Rule for landscape irrigation, short-term dewatering and closed-loop systems; 2) Noticed General Permits; and 3) Individual Permits for those that do not qualify for a general permit;
- Revision of standard public water supply conservation plan and inclusion of goal based plans;
- Consistent standard permit conditions with the other WMDs and updating existing permit conditions;
- Reorganization of Applicant's Handbook (formerly Basis of Review);
- Inclusion of semi-annual pumpage reporting instead of quarterly reporting; and
- Incorporation of standardized application and compliance forms

Staff Recommendation

Adopt Proposed Rules 40E-40E-1.021, 40E-1.602, 40E-1.603, 40E-1.6065, 40E-1.607, 40E-1.6107, 40E-1.615, 40E-1.659, 40E-2.011, 40E-2.041, 40E-2.061, 40E-2.071, 40E-2.091, 40E-2.101, 40E-2.301, 40E-2.321, 40E-2.331, 40E-2.381, 40E-3.011, 40E-3.021, 40E-3.040, 40E-3.051, 40E-3.301, 40E-3.451, 40E-5.011, 40E-5.041, 40E-5.301, 40E-8.011, 40E-8.421, 40E-8.431, 40E-10.011, 40E-10.031, 40E-10.051, 40E-20.010, 40E-20.011, 40E-20.061, 40E-20.091, 40E-20.101, 40E-20.301, 40E-20.302, 40E-20.321, 40E-20.331, 40E-20.351, 40E-20.381, 40E-24.011, 40E-24.101, 40E-24.201, F.A.C., and reorganize and rename the Basis of Review For Water Use Permit Applications Within the South Florida Water Management District to improve consistency among the WMDs' consumptive use permitting programs. The proposed rules are included in the Governing Board materials for this agenda item.

Staff Reports

37. Monthly Financial Report - Doug Bergstrom, Division Director, Administrative Services Division
38. General Counsel's Report - Carolyn Ansay
39. Executive Director's Report - Blake Guillory
Report on permits issued by authority delegated to the Executive Director from December 1-31, 2013.
40. Board Comment

Attorney Client Sessions

41. Attorney Client Session - *ITEM DELETED*

Attorney client session pursuant to Section 286.011(8), Florida Statutes (2012), to discuss strategy related to litigation expenditures and/or settlement negotiations in United States of America v. South Florida Water Management District, et al., United States District Court, Southern District of Florida, Case No. 88-1886-CIV-Moreno.

ATTENDEES: Governing Board Members F. Barber, S. Batchelor, M. Hutchcraft, J. Moran, D. O'Keefe, J. Portuondo, K. Powers, T. Sargent, G. Waldman; Executive Director B. Guillory; District attorneys C. Ansay, K. Burns, C. Kowalsky, D. MacLaughlin. (Carolyn S. Ansay, ext. 6976)

Action Items (if any) Stemming from Attorney Client Session

Attorney client session pursuant to Section 286.011(8), Florida Statutes (2013), to discuss strategy related to litigation expenditures and/or settlement negotiations in United States of America v. South Florida Water Management District, et al., United States District Court, Southern District of Florida, Case No. 88-1886-CIV-Moreno. (Carolyn S. Ansay, ext. 6976)

42. Attorney Client Session - *ITEM DELETED*

Attorney client session pursuant to Section 286.011(8), Florida Statutes (2013), to discuss strategy related to litigation expenditures and/or settlement negotiations in South Florida Water Management District v. FEMA, et al., United States District Court, Southern District of Florida, Case No. 13-80533-CIV-Middlebrooks/Brannon and the Administrative Appeal dated November 15, 2012, by the South Florida Water Management District to Major Phillip May, Regional Administrator, Region IV, Federal Emergency Management Agency (FEMA) of the FEMA decision to deobligate funds for the 2004-2005 Hurricanes. (Carolyn S. Ansay, ext. 6976)

ATTENDEES: Governing Board Members F. Barber, S. Batchelor, M. Hutchcraft, J. Moran, D. O'Keefe, J. Portuondo, K. Powers, T. Sargent, G. Waldman; Executive Director B. Guillory; District attorneys C. Ansay, K. Burns, C. Kowalsky, D. MacLaughlin. (Carolyn S. Ansay, ext. 6976)

Action Items (if any) Stemming from Attorney Client Session

Attorney client session pursuant to Section 286.011(8), Florida Statutes (2012), to discuss strategy related to litigation expenditures and/or settlement negotiations in Administrative Appeal dated November 15, 2012, by the South Florida Water Management District to Major Phillip May, Regional Administrator, Region IV, Federal Emergency Management Agency (FEMA) of the FEMA decision to deobligate funds for the 2004-2005 Hurricanes. (Carolyn S. Ansay, ext. 6976)

43. Adjourn

January Employee of the Month
Brian Garrett – Scientist 3
Operations, Maintenance and Construction Division

As the District's wildlife coordinator, Brian monitors and assesses wildlife populations – especially those that are threatened or endangered. He works with state and federal wildlife regulators to resolve wildlife issues that have the potential to effect critical District operations.

Brian's knowledge and communication skills yield successful inter-agency coordination. He manages the District's STA Avian Protection Plan for submittal to the U.S. Fish and Wildlife Service. He assists the STA management team in determining appropriate water levels that minimize impacts to black-necked stilts and Everglade snail kites during the nesting season. His wildlife activity reports are critical to STA operational decisions.

On any given day, Brian could be inspecting burrows for the presence of gopher tortoises or burrowing owls or conducting successful release of a manatee from an STA into a more natural environment. He recently removed a tussock on Lake Kissimmee containing juvenile snail kite nests that was floating dangerously close to the S-65 lock. Brian gives employees a close-up look at wildlife management by writing articles and taking photographs for "Freddy's Flash."

Congratulations, Brian and thanks for your dedication to the job.

January Team of the Month
Statewide Environmental Resource Permitting Team
Interdistrict Team Representing
Regulation, Office of Counsel and Information Technology

Hugo Carter

Beth Colavecchio

Jennifer Krumlauf

Susan Martin

Mindy Parrot

Erica Tyska-Gould

Cathy Widness

This team participated in a year-long effort with the state's water management districts and DEP to revamp the ERP rules to ensure statewide consistency and reduce regulatory burdens on the public. The rule changes required extensive updates to the ePermitting system and regulatory database.

The team wrote rule language and provided feedback to the larger group to ensure that the District's interests along with the regulated public in our area were properly represented. They also conducted internal and external webinars and workshops to ensure that everyone is well informed. The Statewide ERP rule was successfully implemented on October 1, 2013 thanks to the tireless efforts of this team. Congratulations!

2013 Employee of the Year
Walter Wilcox - Section Leader
Hydrologic and Environmental Modeling Bureau

Walter conducted a multi-agency team comprised of modeling staff from the Corps of Engineers, Department of the Interior and the District. This team provided the modeling and analyses support for the Central Everglades Planning Project (CEPP). The result was the successful identification of a Tentatively Selected Plan in January 2013.

Walter led the development and implementation of the modeling strategy to ensure that the modeling was sound, high quality, defensible and met the project objectives. A key role was to represent the project and communicate the modeling and technical analyses work to agency leadership, partner agencies, other project teams and stakeholders.

The success of the entire CEPP modeling team is outstanding and worthy of recognition but would not have been possible without the leadership and tenacity exhibited by Walter.

Congratulations, Walter!

**2013 Team of the Year
Land Assessment Team
Operations, Maintenance and Construction
Administrative Services
Office of the Chief of Staff**

Ray Palmer

David Foote

Sarah Franklin

Andrea Schluter

Kimberley Montero

Susan Bennett

Jane Walters

Jeremy Ashton

This interdisciplinary team worked tirelessly for an entire year on the statewide priority of successfully completing a comprehensive, District-wide land assessment. The team's expertise and close collaboration also achieved the goals of timely completion and maximum transparency set by District leadership. In an organized and well-planned effort, the team produced more than 600 pages of land profile data on more than 734,000 acres.

The team reviewed approximately 1,200 pages of comments from internal and external subject matter experts as well as the general public. They analyzed all comments and synthesized and presented draft recommendations for final vetting by District leadership and presentation to the Governing Board.

To engage the public, the team developed a dedicated web page with a public comment form and relevant links, wrote fact sheets, prepared maps and uploaded more than 2,200 pages of information. By the end of the year, the website had garnered more than 15,000 page views.

To keep the press informed with accurate information, the project's timelines and milestones were announced in 16 news releases and media advisories. And to engage stakeholders and policy makers, the team conducted 12 regional public meetings and made 24 presentations to WRAC and the Governing Board.

The team's unflagging attention to detail, collaborative spirit and commitment to task serve as a model of District professionalism and achievement. They are the primary reason for our success and "smooth sailing" in completing this monumental effort.

30-Year Service Recognition

Jenni Hiscock – Project Development Section Leader

Regulation Division

Jenni began her career at the District in Surface Water Management in Regulation. She soon moved into the Lower East Coast Planning Division where she assisted in the development of CERP, the Lower East Coast Regional Water Supply Plan and the Florida Forever Work Plan.

She was Project Engineer on Broward County Water Preserve Area Projects such as the C-9 and C-11 Impoundments, 3A/3B Levee Seepage Management as well as the Site 1 Impoundment Project.

Jenni was instrumental in developing a process to improve communications between the RECOVER system-wide perspective and the planning and design of CERP projects. Scientific endeavors included: adaptive management principals; protocols to review performance measures; evaluation of project alternatives; and project monitoring.

In her current role, Jenni's work is crucial to the development and prioritization of the Capital Plan. Her dedication to staff shows in their comments about her managing skills and their work product.

With her vast knowledge of the organization, Jenni's technical expertise is tapped into for special programs as well. She is integral to the levee program to manage deficiencies and repairs noted in USACE inspections.

Congratulations, Jenni, for 30 years of outstanding public service!

FORM 4A DISCLOSURE OF BUSINESS TRANSACTION, RELATIONSHIP OR INTEREST

| | | | | | |
|--|---------------------|-------------------------|---|--|--|
| LAST NAME - FIRST NAME - MIDDLE INITIAL Turner, Karson | | | OFFICE / POSITION HELD WRAC Member | | |
| MAILING ADDRESS P.O. Box 1688 | | | AGENCY OR ADVISORY BOARD WRAC | | |
| CITY Clewiston | ZIP 33440 | COUNTY Hendry | ADDRESS OF AGENCY 3301 Gun Club Road, WPB, FL 33406 | | |

HOW TO COMPLETE AND FILE THIS FORM:

Parts A and B of this form serve two different purposes. Part A is for advisory board members who wish to use an exemption in the ethics laws that is applicable only to advisory board members. Part B is for public officers and employees who wish to use a separate exemption that is applicable when the business entity involved is the sole source of supply within the political subdivision. In order to complete and file this form:

- **Fill out** Part A or Part B, as applicable.
- **Sign** and date the form on the reverse side.
- **File Part A** with the appointing body or person that will be waiving the restrictions of 112.313(3) or (7), Fla. Stat., prior to the waiver.
- **File Part B** with the governing body of the political subdivision in which the reporting person is serving, prior to the transaction.

PART A - DISCLOSURE OF TRANSACTION OR RELATIONSHIP CONCERNING ADVISORY BOARD MEMBER

WHO MUST COMPLETE THIS PART:

Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit certain business relationships on the part of public officers and employees, including persons serving on advisory boards. See Part III, Chapter 112, Florida Statutes, and/or the brochure entitled "A Guide to the Sunshine Amendment and Code of Ethics for Public Officers and Employees" for more details on these prohibitions. However, Section 112.313(12), Florida Statutes, permits the appointing official or body to waive these requirements in a *particular instance* provided: (a) waiver by the appointing body must be upon a two-thirds affirmative vote of that body; or (b) waiver by the appointing person must be effected after a public hearing; *and* (c) in either case the advisory board member must fully disclose the transaction or relationship which would otherwise be prohibited by Subsections (3) of (7) of Section 112.313, Florida Statutes. This Part of Form 4A has been prescribed by the Commission on Ethics for such disclosure, *if and when applicable* to an advisory board member.

PLEASE COMPLETE THE FOLLOWING:

1. The partnership, directorship, proprietorship, ownership of a material interest, position of officer, employment, or contractual relationship which would otherwise violate Subsection (3) or (7) of Section 112.313, Florida Statutes, is held by [please check applicable space(s)]:
 - The reporting person;
 - The spouse of the reporting person, whose name is _____; or
 - A child of the reporting person, whose name is _____.

2. The particular transaction or relationship for which this waiver is sought involves [check applicable space]:
 - Supplying the following realty, goods, and/or services: Electrical Services; Contract 46000002952
 - Regulation of the business entity by the governmental agency served by the advisory board member.

3. The following business entity is doing business with or regulated by the governmental agency:

Quality Electric Contracting, Inc. 1377 Evercane Rd, Clewiston, FL 33440

4. The relationship of the undersigned advisory board member, or spouse or child of the advisory board member, to the business entity transacting this business is [check applicable spaces]:
 - Officer; Partner; Associate; Sole proprietor; Stockholder; Director; Owner of in excess of 5% of the assets of capital stock in such business entity; Employee; Contractual relationship with the business entity;
 - Other, please describe:

PART B - DISCLOSURE OF INTEREST IN SOLE SOURCE OF SUPPLY

WHO MUST COMPLETE THIS PART:

Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit certain employment and business relationships on the part of public officers and employees. See Part III, Chapter 112, Florida Statutes, and/or the brochure entitled "A Guide to the Sunshine Amendment and Code of Ethics for Public Officers and Employees" for more details on these prohibitions. However, Section 112.313(12)(e), Florida Statutes, provides an exemption from the above-mentioned restrictions in the event that the business entity involved is the only source of supply within the political subdivision of the officer or employee. In such cases the officer's or employee's interest in the business entity must be fully disclosed to the governing body of the political subdivision. This Part of Form 4A has been prescribed by the Commission on Ethics for such disclosure, *if and when applicable*.

PLEASE COMPLETE THE FOLLOWING:

1. The partnership, directorship, proprietorship, ownership of a material interest, position of officer, employment, or contractual relationship which would otherwise violate Subsection (3) or (7) of Section 112.313, Florida Statutes, is held by [please check applicable space(s)]:
 - () The reporting person;
 - () The spouse of the reporting person, whose name is _____; or
 - () A child of the reporting person, whose name is _____.

2. The following are the goods, realty, or services being supplied by a business entity with which the public officer or employee, or spouse or child of such officer or employee, is involved is:

3. The business entity which is the only source of supply of the goods, realty, or services within the political subdivision is:

(NAME OF ENTITY) (ADDRESS OF ENTITY)

4. The relationship of the undersigned public officer or employee, or spouse or child of such officer or employee, to the business entity named in Item 3 above is [check applicable spaces]:
 - () Officer; () Partner; () Associate; () Sole proprietor; () Stockholder; () Director; () Owner of in excess of 5% of the assets or capital stock in such business entity; () Employee; () Contractual relationship with the business entity;
 - () Other, please describe:

SIGNATURE

| SIGNATURE | DATE SIGNED | DATE FILED |
|---|-------------|------------|
|  | 11/12/2013 | |

NOTICE: UNDER PROVISIONS OF FLORIDA STATUTES s. 112.317, A FAILURE TO MAKE ANY REQUIRED DISCLOSURE CONSTITUTES GROUNDS FOR AND MAY BE PUNISHED BY ONE OR MORE OF THE FOLLOWING: IMPEACHMENT, REMOVAL OR SUSPENSION FROM OFFICE OR EMPLOYMENT, DEMOTION, REDUCTION IN SALARY REPRIMAND, OR A CIVIL PENALTY NOT TO EXCEED \$10,000.

FORM 4A DISCLOSURE OF BUSINESS TRANSACTION, RELATIONSHIP OR INTEREST

| | | | |
|---|-------|--------|-----------------------------------|
| LAST NAME - FIRST NAME - MIDDLE INITIAL | | | OFFICE / POSITION HELD |
| Turner, Karson | | | WRAC Member |
| MAILING ADDRESS | | | AGENCY OR ADVISORY BOARD |
| P.O. Box 1688 | | | WRAC |
| CITY | ZIP | COUNTY | ADDRESS OF AGENCY |
| Clewiston | 33440 | Hendry | 3301 Gun Club Road, WPB, FL 33406 |

HOW TO COMPLETE AND FILE THIS FORM:

Parts A and B of this form serve two different purposes. Part A is for advisory board members who wish to use an exemption in the ethics laws that is applicable only to advisory board members. Part B is for public officers and employees who wish to use a separate exemption that is applicable when the business entity involved is the sole source of supply within the political subdivision. In order to complete and file this form:

- Fill out Part A or Part B, as applicable.
- Sign and date the form on the reverse side.
- File Part A with the appointing body or person that will be waiving the restrictions of 112.313(3) or (7), Fla. Stat., prior to the waiver.
- File Part B with the governing body of the political subdivision in which the reporting person is serving, prior to the transaction.

PART A - DISCLOSURE OF TRANSACTION OR RELATIONSHIP CONCERNING ADVISORY BOARD MEMBER

WHO MUST COMPLETE THIS PART:

Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit certain business relationships on the part of public officers and employees, including persons serving on advisory boards. See Part III, Chapter 112, Florida Statutes, and/or the brochure entitled "A Guide to the Sunshine Amendment and Code of Ethics for Public Officers and Employees" for more details on these prohibitions. However, Section 112.313(12), Florida Statutes, permits the appointing official or body to waive these requirements in a *particular instance* provided: (a) waiver by the appointing body must be upon a two-thirds affirmative vote of that body; or (b) waiver by the appointing person must be effected after a public hearing; and (c) in either case the advisory board member must fully disclose the transaction or relationship which would otherwise be prohibited by Subsections (3) of (7) of Section 112.313, Florida Statutes. This Part of Form 4A has been prescribed by the Commission on Ethics for such disclosure, *if and when applicable* to an advisory board member.

PLEASE COMPLETE THE FOLLOWING:

1. The partnership, directorship, proprietorship, ownership of a material interest, position of officer, employment, or contractual relationship which would otherwise violate Subsection (3) or (7) of Section 112.313, Florida Statutes, is held by [please check applicable space(s)]:
 - The reporting person;
 - The spouse of the reporting person, whose name is _____; or
 - A child of the reporting person, whose name is _____.
2. The particular transaction or relationship for which this waiver is sought involves [check applicable space]:
 - Supplying the following realty, goods, and/or services: Lease on SFWMD Property; Lease #4600002392
 - Regulation of the business entity by the governmental agency served by the advisory board member.
3. The following business entity is doing business with or regulated by the governmental agency:

Quality Cattle, LLC, P.O. Box 1688, Clewiston, FL 33440
4. The relationship of the undersigned advisory board member, or spouse or child of the advisory board member, to the business entity transacting this business is [check applicable spaces]:
 - Officer; Partner; Associate; Sole proprietor; Stockholder; Director; Owner of in excess of 5% of the assets of capital stock in such business entity; Employee; Contractual relationship with the business entity;
 - Other, please describe:

PART B - DISCLOSURE OF INTEREST IN SOLE SOURCE OF SUPPLY

WHO MUST COMPLETE THIS PART:

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PLEASE COMPLETE THE FOLLOWING:

1. The partnership, directorship, proprietorship, ownership of a material interest, position of officer, employment, or contractual relationship which would otherwise violate Subsection (3) or (7) of Section 112.313, Florida Statutes, is held by [please check applicable space(s)]:

- () The reporting person;
() The spouse of the reporting person, whose name is _____; or
() A child of the reporting person, whose name is _____

2. The following are the goods, realty, or services being supplied by a business entity with which the public officer or employee, or spouse or child of such officer or employee, is involved is:

3. The business entity which is the only source of supply of the goods, realty, or services within the political subdivision is:

(NAME OF ENTITY)

(ADDRESS OF ENTITY)

4. The relationship of the undersigned public officer or employee, or spouse or child of such officer or employee, to the business entity named in Item 3 above is [check applicable spaces]:

- () Officer; () Partner; () Associate; () Sole proprietor; () Stockholder; () Director; () Owner of in excess of 5% of the assets or capital stock in such business entity; () Employee; () Contractual relationship with the business entity; () Other, please describe:

SIGNATURE

Table with 3 columns: SIGNATURE, DATE SIGNED, DATE FILED. Contains handwritten signature and date 11/12/2013.

NOTICE: UNDER PROVISIONS OF FLORIDA STATUTES s. 112.317, A FAILURE TO MAKE ANY REQUIRED DISCLOSURE CONSTITUTES GROUNDS FOR AND MAY BE PUNISHED BY ONE OR MORE OF THE FOLLOWING: IMPEACHMENT, REMOVAL OR SUSPENSION FROM OFFICE OR EMPLOYMENT, DEMOTION, REDUCTION IN SALARY REPRIMAND, OR A CIVIL PENALTY NOT TO EXCEED \$10,000.

Attachment: KTurner_Form4A_2Docs (1713 : WRAC Waivers)

CONSENT AGENDA TABLE OF CONTENTS
REGULATORY ITEMS FOR GOVERNING BOARD ACTION
January 9, 2014

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| II CONSERVATION EASEMENT AMENDMENTS AND RELEASES | 2 |
| III SEMINOLE TRIBE WORK PLANS | 3 |

REGULATION AGENDA ITEMS

PERMIT DENIAL: Those listed on the consent agenda are routine in nature and non-controversial. Such denials are typically due to failure of applicant to complete the application. Unique or controversial projects or those requiring a policy decision are normally listed as discussion items. Permit types include:

Environmental Resource (ERP): Permits that consider such factors as the storage of storm water to prevent flooding of a project (upstream or downstream projects); the treatment of stormwater prior to discharge from the site to remove pollutants; and the protection of wetlands on the project site.

Surface Water Management: Permits for drainage systems, which address flood protection, water quality, and environmental protection of wetlands.

Water Use: Permits for the use of ground and/or surface water from wells, canals, or lakes.

Lake Okeechobee Works of the District: Permits that set concentration limits for total phosphorus in surface discharge from individual parcels in the Lake Okeechobee Basin.

EAA Works of the District: Permits to reduce the total phosphorus load from the EAA by 25 percent in water discharged to Works of the District.

Wetland Resource: Permits for dredge and fill activities within Waters of the State and their associated wetlands.

ADMINISTRATIVE HEARING: A case in litigation conducted pursuant to the Administrative Procedures Act (Chapter 120, Florida Statutes) involving the determination of a suit upon its merits. Administrative hearings provide for a timely and cost effective dispute resolution forum for interested persons objecting to agency action.

FINAL ORDER: The Administrative Procedures Act requires the District to timely render a final order for an administrative hearing after the hearing officer submits a recommended order. The final order must be in writing and include findings of fact and conclusions of law.

CONSENT ORDER: A voluntary contractual agreement between the District and a party in dispute which legally binds the parties to the terms and conditions contained in the agreement. Normally used as a vehicle to outline the terms and conditions regarding settlement of an enforcement action.

CONSERVATION EASEMENT: A perpetual interest to the District in real property that retains land or water areas in their existing, natural, vegetative, hydrologic, scenic, open or wooded condition and retains such areas as suitable habitat for fish, plants, or wildlife in accordance with Section 704.06, F.S.

TECHNICAL DENIAL: This action normally takes place when a proposed project design does not meet water management criteria or the applicant does not supply information necessary to complete the technical review of an application.

EMERGENCY ORDER and AUTHORIZATION: An immediate final order issued without notice by the Executive Director, with the concurrence and advice of the Governing Board, pursuant to (Section 373.119(2), Florida Statutes, when a situation arises that requires timely action to protect the public health, safety or welfare and other resources enumerated by rule and statute.

MEMORANDUM OF AGREEMENT/UNDERSTANDING: A contractual arrangement between the District and a named party or parties. This instrument typically is used to define or explain parameters of a long-term relationship and may establish certain procedures or joint operating decisions.

PETITION: An objection in writing to the District, requesting either a formal or an informal administrative hearing, regarding an agency action or a proposed agency action. Usually a petition filed pursuant to Chapter 120, Florida Statutes, challenges agency action, a permit, or a rule. Virtually all agency action is subject to petition by substantially affected persons.

SEMINOLE TRIBE WORK PLAN: The District and the Seminole Indians signed a Water Use Compact in 1987. Under the compact, annual work plans are submitted to the District for review and approval. This plan keeps the District informed about the tribe plans for use of their land and the natural resources. Although this is not a permit, the staff has water resource related input to this plan.

SITE CERTIFICATIONS: Certain types of projects (power plants, transmission lines, etc.) are permitted by the Governor and Cabinet under special one-stop permitting processes that supercede normal District permits. The Water Management Districts, DEP, DCA, FGFWFC, and other public agencies are mandatory participants. DEP usually coordinates these processes for the Governor and Cabinet.

VARIANCES FROM, OR WAIVERS OF, PERMIT CRITERIA: The Florida Administrative Procedures Act provides that persons subject to an agency rule may petition the agency for a variance from, or waiver of, a permitting rule. The Governing Board may grant a petition for variance or waiver when the petitioner demonstrates that 1) the purpose of the underlying statute will be or has been achieved by other means and, 2) when application of the rule would create a substantial hardship or would violate principles of fairness.

CONSENT ORDERS

1. RESPONDENT: TOWN OF WINDERMERE
PROJECT: 618 W SECOND AVENUE DRAINAGE IMPROVEMENTS / 903 SECOND AVENUE
DRAINAGE IMPROVEMENTS

SEC 7 TWP 23S RGE 28E ORANGE COUNTY
SETTLEMENT OF AN ENFORCEMENT ACTION REGARDING UNPERMITTED DEWATERING AND NON-
COMPLIANCE WITH PERMIT CONDITIONS DUE TO UNAUTHORIZED OFFSITE DEWATERING INTO
OUTSTANDING FLORIDA WATERS

2. RESPONDENT: BIRCHWOOD ACRES LIMITED PARTNERSHIP
PROJECT: HARMONY COMMUNITY DEVELOPMENT

SEC 30 TWP 26S RGE 32E OSCEOLA COUNTY
SETTLEMENT OF AN ENFORCEMENT ACTION REGARDING UNPERMITTED DEWATERING WITH
OFFSITE DISCHARGE

-
1. PERMITTEE: OKEECHOBEE COUNTY BOARD OF COUNTY COMMISSIONERS
PROJECT: AGRI-CIVIC CENTER

OKEECHOBEE COUNTY

APPROVE RELEASE OF A 0.083 ACRE (3,632 SQUARE FEET) PORTION OF THE CONSERVATION EASEMENT OVER A WETLAND MITIGATION AREA AND UPLAND BUFFER ASSOCIATED WITH THE OKEECHOBEE COUNTY AGRI-CIVIC CENTER PROJECT IN OKEECHOBEE COUNTY (ENVIRONMENTAL RESOURCE PERMIT 47-00582-P, APPLICATION NO. 020909-5).

THE FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 1 HAS RECENTLY ACQUIRED A SMALL PARCEL OF LAND IMMEDIATELY ADJACENT TO THE SOUTH SIDE OF SR 70 WHICH WAS PREVIOUSLY PART OF THE NORTHEAST QUADRANT OF THE OKEECHOBEE AGRI-CIVIC CENTER PROPERTY. THIS SMALL ACQUISITION AREA IS NEEDED FOR IMPROVEMENTS TO THE SR 70 ROADWAY FACILITY WHICH WAS PERMITTED ON NOVEMBER 18, 2013 (PERMIT NO. 47-01151-P, APPLICATION NO. 131212-9). THE PARTIAL RELEASE OF EASEMENT IS BEING PROCESSED CONCURRENTLY WITH AN INDIVIDUAL MAJOR ENVIRONMENTAL RESOURCE PERMIT MODIFICATION OF THE STATE ROAD 70 IMPROVEMENTS PERMIT.

-
1. CONCUR WITH THE FIFTH AMENDMENT TO THE TWENTY SEVENTH ANNUAL WORK PLAN FOR THE SEMINOLE TRIBE OF FLORIDA. WORKS IN THE BRIGHTON RESERVATION INCLUDE THE CONSTRUCTION OF A RECREATION AND MAINTENANCE FACILITY INCLUDING A GRAVEL PARKING AREA.
-

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RIGHT OF WAY OCCUPANCY CONSENT AGENDA FOR GOVERNING BOARD APPROVAL January 9, 2014

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| I | RIGHT OF WAY OCCUPANCY PERMIT REQUESTS WITH WAIVER OF DISTRICT CRITERIA: | 2 |
| | <p>Governing Board action is required on petitions received requesting a waiver of District criteria. Section 120.542, F.S. and Rule 28-104.002, F.A.C., requires agencies to grant variances and waivers to their own rules when a person subject to the rules files a petition and demonstrates that he or she can achieve, or has achieved, the purpose of the underlying statute by other means and when application of rule would create a substantial hardship or would violate principles of fairness. A "substantial hardship" is defined as a demonstrated economic, technological, legal or other type of hardship to the person requesting the waiver. "Principles of fairness" are violated when the literal application of a rule affects a particular person in a manner significantly different from the way it affects other similarly situated persons who are subject to the rule. A "waiver" is defined as an agency decision not to apply all or part of a rule to the person subject to the rule.</p> | |

RIGHT OF WAY OCCUPANCY PERMIT REQUESTS WITH WAIVER OF DISTRICT CRITERIA

1. Consideration of a request by **Craig Ehrnst on behalf of Peninsula Corporate Center** (Application Number 13-1030-1) for issuance of a Modification to Right of Way Occupancy Permit No. 10934M and waiver of criteria to allow an existing culvert connection to remain within the south right of way of C-15. Location: Palm Beach County, Section 31, Township 46 South, Range 43 East.

The applicant's request for waiver of the District's criteria, which governs the invert elevation of culvert connections within Works or Lands of the District, is based on substantial hardship. The applicant states it would present a hardship to change the invert elevation of an existing culvert in service to the community. Also, the invert elevation of the previously permitted culvert caused the pipe to become blocked due to an existing littoral shelf and did not provide proper drainage. The Field Operations and Land Management Division has stated that the existing facilities do not interfere with their ability to perform necessary construction, alteration, operation and routine maintenance activities, so the purpose of the underlying statute will be achieved.

The applicant's petition has been reviewed by the Office of Counsel for compliance with the applicable legal requirements. Pursuant to section 120.542(6), F.S., notice of the petition was provided to the Department of State and was published in *Volume 39, Number 219* of the *Florida Administrative Weekly* on November 8, 2013. No public comments were received.

Therefore, staff recommends **approval** of the issuance of a Modification of Right of Way Occupancy Permit Number 10934M and **approval** of the petition for waiver of the District's criteria, which governs the invert elevation of culvert connections within Works or Lands of the District.
(Fee)

MEMORANDUM

TO: Governing Board Members
FROM: Karen Estock, Division Director
DATE: January 09, 2014
SUBJECT: Release of Reservations

Summary

The District has jurisdiction over certain reserved rights to construct canal and road right of ways, and mineral rights, together with the right of ingress, egress and exploration. Applications requesting releases of these reservations are routinely received from landowners, attorneys, title companies and lending institutions, who consider the reservations to be title defects. Applications are reviewed by appropriate District staff and applicable local governmental agencies to determine that there is no present or future need for the reservations.

Staff Recommendation

A Resolution of the Governing Board of the South Florida Water Management District approving release of canal, road and mineral reservations; providing an effective date.

Additional Background

See Memorandum Exhibit "A" and maps attached hereto and made a part hereof, which contains the details and locations of releases to be approved and issued.

Core Mission and Strategic Priorities

Pursuant to Section 373.096 of the Florida Statutes, the Governing Board of the District may release any reservation for which it has no present or apparent use under terms and conditions determined by the Board.

Funding Source

None; reservations were acquired at no cost to the District.

Staff Contact and/or Presenter

Kathy Massey, ext. 6835

MEMORANDUM - EXHIBIT "A"

File No.: 18564
 Applicant: Lutheran Church of the Holy Cross West Palm Beach, Inc., a Florida not for profit corporation
 Reserving Deed: E-250 (DB 681-119, 2/18/1944)
 Fee paid: \$250.00
 Action: Approve release of District canal and road reservations
 Acres: 6.12 acres, more or less
 Legal Description: The North 920.00 feet of the E ¼ of the NE ¼ of the SE ¼ of Section 12, Township 44 South, Range 42 East
 Location: 1591 Kirk Road, West Palm Beach, Palm Beach County
 Reviewed by: Water Supply Development Section, Right of Way Section, Environmental Resource Permitting Bureau, Survey Section, Office of Everglades Policy and Coordination, FDOT, Palm Beach County, and Lake Worth Drainage District

File No.: 10-13-3
 Applicant: Bridgewater Lake Osborne, LLC, a Florida limited liability company
 Reserving Deed: T-18679 (DB 650-519, 1/18/1942)
 Fee paid: \$250.00
 Action: Approve release of Trustees canal reservations
 Acres: 9.86 acres, more or less
 Legal Description: All of the Plat of Bridgewater at Lake Osborne, A P.U.D., PB 108-5, Section 5, Township 45 South, Range 43 East
 Location: 2282 Lantana Road, Lake Worth, Palm Beach County
 Reviewed by: Water Supply Development Section, Right of Way Section, Environmental Resource Permitting Bureau, Survey Section, Office of Everglades Policy and Coordination, and Lake Worth Drainage District

File No.: 10-13-2
 Applicant: Avenir Holdings, LLC, a Florida limited liability company
 Reserving Deed: BOE-4390 (DB 948-454, 5/10/1950)
 Fee paid: \$250.00
 Action: Approve release of Board of Education canal reservations
 Acres: 480.00 acres, more or less
 Legal Description: All of the W ½ and the NE ¼ of Section 16, Township 42 South, Range 41 East
 Location: 12200 Northlake Boulevard, Palm Beach Gardens, Palm Beach County
 Reviewed by: Water Supply Development Section, Right of Way Section, Environmental Resource Permitting Bureau, Survey Section, Office of Everglades Policy and Coordination, and Northern Palm Beach County Improvement District

File No.: 18569
Applicant: Charles Kenneth Deese, as Personal Representative of the Estate of
Anna Louise Deese, deceased
Reserving Deed: QCD (DB 910-675, 5/27/1950)
Fee paid: \$250.00
Action: Approve release of District mineral reservations
Acres: 1 acre, more or less
Legal Description: A portion of Tract 76, Block 29, PALM BEACH FARMS COMPANY'S
PLAT NO. 3, PB 2-45, Section 28, Township 44 South, Range 42 East
Location: 67 West Mango Road, Lake Worth, Palm Beach County
Reviewed by: No routing due to size and use

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0101

A Resolution of the Governing Board of the South Florida Water Management District approving release of canal, road and mineral reservations; providing an effective date.

WHEREAS, certain underlying landowners have requested that the South Florida Water Management District (District) release certain canal, road and mineral reservations;

WHEREAS, the District is empowered to grant such releases pursuant to Section 373.096, Florida Statutes;

NOW THEREFORE, BE IT RESOLVED by the Governing Board of the South Florida Water Management District:

Section 1. The Governing Board of the South Florida Water Management District hereby approves the release of canal, road and mineral reservations, as described in Resolution Exhibit "A", attached hereto and made a part hereof.

Section 2. This Resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD
By:

_____ Chairman

Attest:

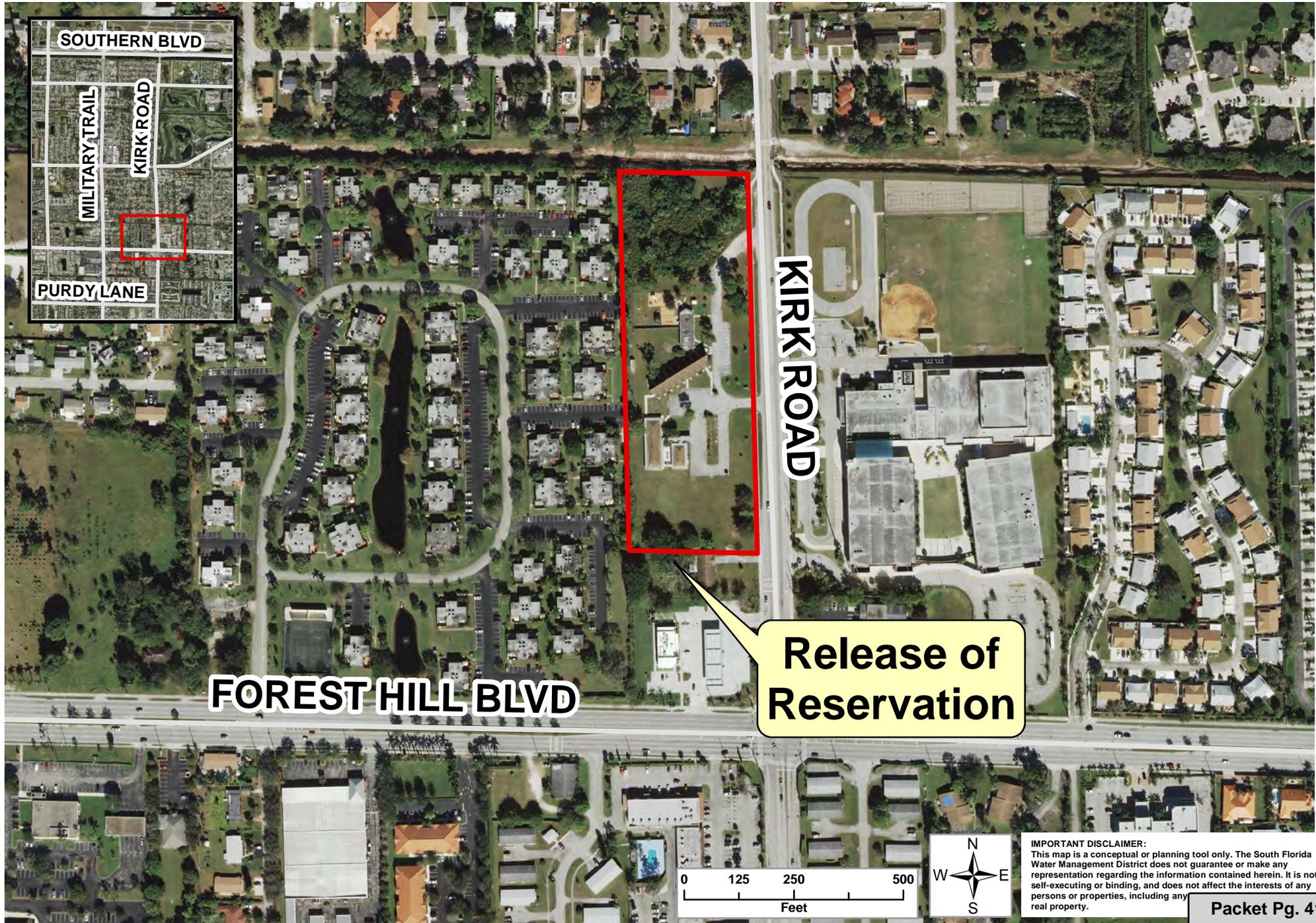
Legal form approved:
By:

_____ District Clerk/Secretary

_____ Office of Counsel

Print name:

18564 Palm Beach County



**Release of
Reservation**

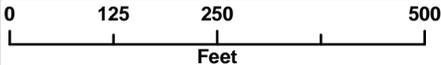
IMPORTANT DISCLAIMER:
 This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any real property.

For copies of this map (\\Ad.sfwmd.gov\dfsroot\data\aa_gis\arc_data\maps\ReleaseofReservation\GB_2013-12-19_18564.mxd), created on 12/19/2013 by NRK. Contact the Real Estate Section.

10-13-3 Palm Beach County

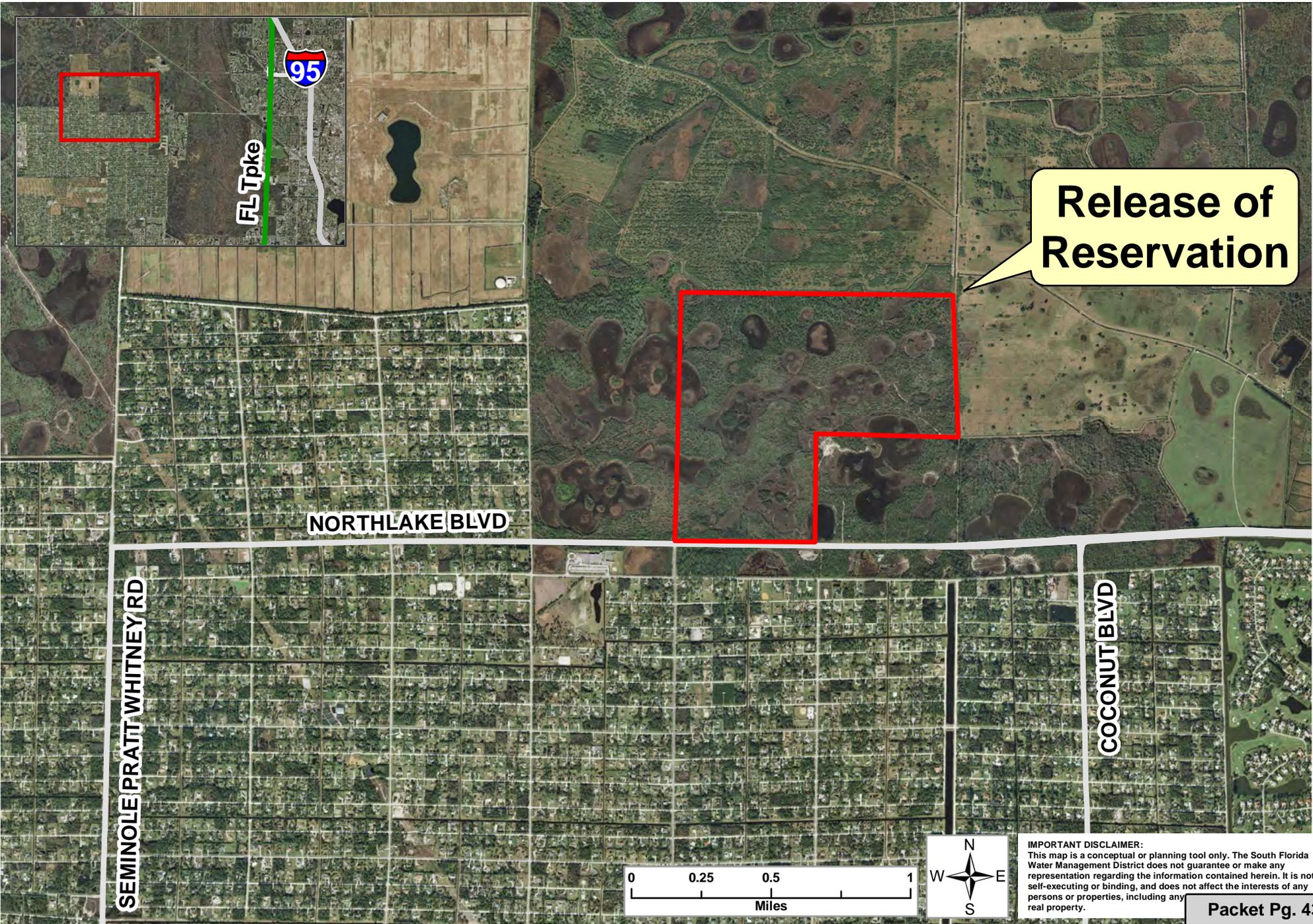


**Release of
Reservation**



IMPORTANT DISCLAIMER:
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10-13-2 Palm Beach County



**Release of
Reservation**

Attachment: ca_om_200_Memorandum_Maps_ExhibitA (Resolution No. 2014 - 0101 : Release of

IMPORTANT DISCLAIMER:
 This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any real property.

For copies of this map (\\Ad.slwmd.gov\dfsroot\data\aa_gis\arc_data\maps\ReleaseofReservation\GB_2013-12-19_10-13-2.mxd), created on 12/19/2013 by NRK. Contact the Real Estate Section.

18569 Palm Beach County



**Release of
Reservation**

Attachment: ca_om_200_Memorandum_Maps_ExhibitA (Resolution No. 2014 - 0101 : Release of

IMPORTANT DISCLAIMER:
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Packet Pg. 44

RESOLUTION - EXHIBIT "A"RELEASE OF DISTRICT CANAL, ROAD AND/OR MINERAL RESERVATIONS:

File No.: 18564
 Applicant: Lutheran Church of the Holy Cross West Palm Beach, Inc., a Florida not for profit corporation
 Reserving Deed: E-250 (DB 681-119, 2/18/1944)
 Acres: 6.12 acres, more or less
 Legal Description: The North 920.00 feet of the E ¼ of the NE ¼ of the SE ¼ of Section 12, Township 44 South, Range 42 East
 Location: 1591 Kirk Road, West Palm Beach, Palm Beach County

File No.: 18569
 Applicant: Charles Kenneth Deese, as Personal Representative of the Estate of Anna Louise Deese, deceased
 Reserving Deed: QCD (DB 910-675, 5/27/1950)
 Fee paid: \$250.00
 Acres: 1 acre, more or less
 Legal Description: A portion of Tract 76, Block 29, PALM BEACH FARMS COMPANY'S PLAT NO. 3, PB 2-45, Section 28, Township 44 South, Range 42 East
 Location: 67 West Mango Road, Lake Worth, Palm Beach County

RELEASE OF TIITF CANAL RESERVATIONS:

File No.: 10-13-3
 Applicant: Bridgewater Lake Osborne, LLC, a Florida limited liability company
 Reserving Deed: T-18679 (DB 650-519, 1/18/1942)
 Acres: 9.86 acres, more or less
 Legal Description: All of the Plat of Bridgewater at Lake Osborne, A P.U.D., PB 108-5, Section 5, Township 45 South, Range 43 East
 Location: 2282 Lantana Road, Lake Worth, Palm Beach County

File No.: 10-13-2
 Applicant: Avenir Holdings, LLC, a Florida limited liability company
 Reserving Deed: BOE-4390 (DB 948-454, 5/10/1950)
 Action: Approve release of Board of Education canal reservations
 Acres: 480.00 acres, more or less
 Legal Description: All of the W ½ and the NE ¼ of Section 16, Township 42 South, Range 41 East
 Location: 12200 Northlake Boulevard, Palm Beach Gardens, Palm Beach County

MEMORANDUM

TO: Governing Board Members

FROM: Sharon M. Trost, PG, AICP, Director, Regulatory Division

DATE: January 09, 2014

SUBJECT: Approve Interagency Agreement for permitting responsibilities for Eagle Island Farm

Summary

The SFWMD is reviewing a water use permit application for an agricultural project in Okeechobee County, Florida known as Eagle Island Farm. However, the project crosses water management district boundaries. In order to issue a single permit for the entire project, an interagency agreement is necessary to delegate SJRWMD's Part II, Chapter 373, Fla. Stat., jurisdiction and responsibility to SFWMD.

Recommendation

Approve an Interagency Agreement between the SJRWMD and the SFWMD authorizing the SFWMD to issue any Water Use Permits under Part II of Chapter 373, Fla. Stat., for the portion of Eagle Island Farm that lies within the jurisdictional boundaries of SJRWMD.

Background

The Eagle Island Farm is an existing agricultural project located within the jurisdictional boundaries of both the SFWMD and SJRWMD. Joseph S. Hall is requesting authorization to withdraw 2,532.36 million gallons on an annual average basis and 371.67 million gallons on a peak month basis to irrigate potatoes, silage corn, and small vegetables. The SFWMD has previously issued water use permits and oversaw post-permit issuance compliance for Eagle Island Farm.

Section 373.046(6), Fla. Stat., authorizes a water management district to designate, through an interagency agreement, regulatory responsibility to another water management district over a project which crosses the jurisdictional boundaries of both districts. For efficiency and effectiveness, both districts desire to designate SFWMD all regulatory responsibilities under Part II of Chapter 373, Fla. Stat., for the portion of Eagle Island Farm that lies within the jurisdictional boundaries of SJRWMD.

Core Mission and Strategic Priorities

The Interagency Agreement allows for the protection of existing legal users and the water resources of the area while increasing the efficiency of the permitting process. The Water Use Bureau is responsible for implementing this item.

Funding Source

No funding is necessary for the Interagency Agreement.

Staff Contact

Maria Clemente, P.E., Bureau Chief, Water Use Bureau, (561) 682- 2308

Jennifer Bokankowitz, Attorney, Office of Counsel, (561) 682- 2258

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0102

A Resolution of the Governing Board of the South Florida Water Management District to authorize entering into an Interagency Agreement between the South Florida Water Management District (SFWMD) and the St. Johns River Water Management District (SJRWMD) for designation of regulatory responsibility for permitting under Part II of Chapter 373, Florida Statutes, for the project known as Eagle Island Farm that crosses the jurisdictional boundaries of both Water Management Districts; providing an effective date.

WHEREAS, on October 4, 2013, Joseph S. Hall submitted Water Use Permit (WUP) Application No. 131004-4 (Application) to the SFWMD to renew its existing WUP 43-00043-W for the Eagle Island Farm (Property) in Okeechobee County, Florida; and

WHEREAS, the Application requests authorization to withdraw 2,532.36 million gallons on an annual average basis and 371.67 million gallons on a peak month basis for agricultural use; and

WHEREAS, the Property is located within the jurisdictional boundaries of both the SFWMD and SJRWMD; and

WHEREAS, although the predominant portion of the Property lies within the jurisdictional boundaries of the SFWMD, a small portion of the Property lies within the jurisdictional boundaries of the SJRWMD, as depicted on the map attached hereto as Exhibit A; and

WHEREAS, SFWMD has previously issued various permits to Joseph S. Hall pursuant to Parts II and IV, Chapter 373, Florida Statutes (F.S.); and

WHEREAS, Subsection 373.046(6), F.S., authorizes a water management district to designate, via an interagency agreement, regulatory responsibility to another water management district when the geographic area of a project or local government crosses water management district boundaries; and

WHEREAS, the designation of the SFWMD as the water management district with Part II, Chapter 373, F.S., regulatory responsibility for the Application would allow for more efficient processing of permit applications under that part; and

WHEREAS, the SFWMD and the SJRWMD desire to designate the SFWMD as the water management district with Part II, Chapter 373, F.S., regulatory responsibility for the Application pursuant to part II, Chapter 373, F.S.

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the SFWMD hereby authorizes the execution of

the Interagency Agreement with SJRWMD, which is attached hereto and incorporated herein.

Section 2. This resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

By:

Chairman

Attest:

Legal form approved:

By:

District Clerk/Secretary

Office of Counsel

Print name:

**INTERAGENCY AGREEMENT BETWEEN THE SOUTH FLORIDA WATER
MANAGEMENT DISTRICT AND ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT FOR THE DESIGNATION OF REGULATORY RESPONSIBILITY
FOR A WATER USE PERMIT FOR EAGLE ISLAND**

THIS INTERAGENCY AGREEMENT (Agreement) is made and entered into by and between the SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD) and the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD).

WITNESSETH:

WHEREAS, on October 4, 2013, Joseph S. Hall submitted Water Use Permit (WUP) Application No. 131004-4 (Application) to the SFWMD to renew its existing WUP for the Eagle Island (Property) in Okeechobee County, Florida; and

WHEREAS, the Application requests authorization to withdraw 2,532 million gallons per year and a maximum monthly allocation of 371.7 million gallons for agricultural use; and

WHEREAS, although the predominant portion of the Property lies within the jurisdictional boundaries of the SFWMD, a small portion of the Property lies within the jurisdictional boundaries of the SJRWMD, as depicted on the map attached hereto as Exhibit A; and

WHEREAS, SFWMD has previously issued various permits to Joseph S. Hall pursuant to Parts II and IV, Chapter 373, Florida Statutes (F.S.); and

WHEREAS, Subsection 373.046(6), F.S., authorizes a water management district to designate, via an interagency agreement, regulatory responsibility to another water management district when the geographic area of a project or local government crosses water management district boundaries; and

WHEREAS, the designation of the SFWMD as the water management district with Part II, Chapter 373, F.S., regulatory responsibility for the Application would allow for more efficient processing of permit applications under that part; and

WHEREAS, the SFWMD and the SJRWMD desire to designate the SFWMD as the water management district with Part II, Chapter 373, F.S., regulatory responsibility for the Application pursuant to Part II, Chapter 373, F.S.;

NOW THEREFORE, the SFWMD and the SJRWMD, under the authority of Subsection 373.406(6), F.S., hereby agree as follows:

1. In order to facilitate a more coordinated and efficient review of the permit application, SJRWMD hereby designates to SFWMD all regulatory responsibilities under Part II of Chapter 373, F.S., for the consumptive use of water for Eagle Island for those portions of the proposed project that lie within the

jurisdictional boundaries of the SJRWMD. Such regulatory responsibilities shall include receiving, processing, and taking final agency action on all water use permit applications, or modifications thereof, and taking any compliance and enforcement action with regard to such permit.

- 2. This Agreement will commence upon execution by all parties and will remain in effect until either party terminates such agreement for its convenience upon ninety (90) days written notice to the other party.
- 3. This Agreement may be executed in counterparts, each of which shall constitute an original, but all of which taken together shall constitute one and the same document. Facsimile signature shall be deemed an equivalent to an original for each and every counterpart.

IN WITNESS WHEREOF, each party, or its lawful representative, has executed this Agreement on the date set forth next to their signature below.

SOUTH FLORIDA WATER
MANAGEMENT DISTRICT

Daniel O’Keefe, Chairman

ATTEST:

District Clerk/Asst. Secretary

LEGAL FORM APPROVED:

Jennifer Bokankowitz, Esq.

SAINT JOHNS RIVER WATER
MANAGEMENT DISTRICT

Hans G. Tanzler, III, Executive Director

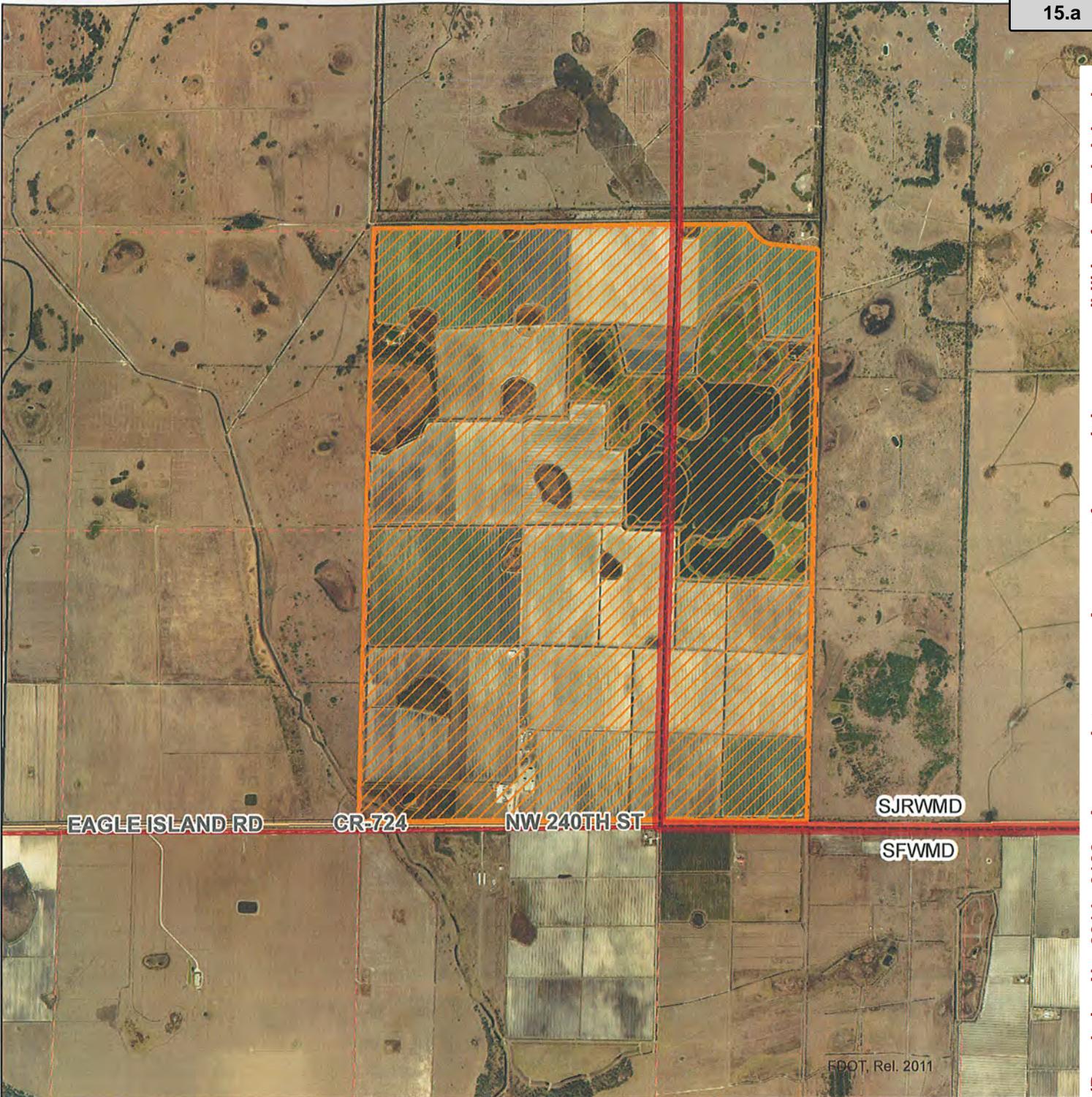
ATTEST:

District Clerk/Asst. Secretary

LEGAL FORM APPROVED:

Gail Hankinson, Esq.

Attachment: ca_reg_rm_102_sd (Resolution No. 2014 - 0102 : Approve Interagency Agreement for permitting responsibilities for Eagle Island



Attachment: ca_reg_rm_102_sd (Resolution No. 2014 - 0102 : Approve Interagency Agreement for permitting responsibilities for Eagle Island



OKEECHOBEE COUNTY, FLORIDA

Legend

 Application

Application No: 131004-4

Sec 26,27,34,35 / Twp 34 / Rge 34

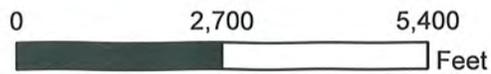
Project Name: EAGLE ISLAND FARM

N



Map Date: 2013-12-16

Permit No: 47-00043-W



MEMORANDUM

TO: Governing Board Members

FROM: Karen Estock, Division Director

DATE: January 09, 2014

SUBJECT: Dupuis and Kissimmee River Ten Year General Management Plan Updates, 2014-2024

Summary

Section 373.591, Florida Statutes, and Section 140.25(6)(b), South Florida Water Management District Policies Code, direct the District to develop a General Management Plan that follows a designated format and provides recommended management actions for Land Stewardship Management Areas. The District updates these plans every ten (10) years concurrent with conducting a multi-party land management review of the subject property which is consistent with the timeframe and process followed by State agencies. The management plan describes the historical, physical, and ecological aspects of the property, existing public recreational opportunities, and the various land management functions necessary to properly manage the area. The purpose of the management plan is to provide guidance to District land managers for the implementation of appropriate and consistent land management practices, to identify goals and objectives for the management of the property, and to present the findings of the land management review team.

Staff Recommendation

Staff recommends approval of the updated Dupuis and Kissimmee River General Management Plans (2014-2024) in accordance with Section 373.591, Florida Statutes.

Core Mission and Strategic Priorities

This Governing Board item supports the District's Natural Systems Strategic Priorities and ensures compliance with Section 373.591, Florida Statutes, which requires Water Management Districts to develop General Management Plans for all District owned conservation, preservation, or recreational lands.

Funding Source

This item does not require the expenditure of additional District funds. Funding for the implementation of General Management Plans is provided through the District's standard budgetary process.

Staff Contact and/or Presenter

Steve Coughlin, x2603

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0103

A Resolution of the Governing Board of the South Florida Water Management District to approve the ten year update of the Dupuis and Kissimmee River General Management Plans (2014-2024); providing an effective date.

WHEREAS, the Dupuis and Kissimmee River Management Areas were acquired by the District under the Save Our Rivers and Florida Forever programs; and

WHEREAS, Section 373.591, Florida Statutes, and Section 140.25(6)(b), South Florida Water Management District Policies Code, direct the District to develop a General Management Plan for each Land Stewardship Management Area that follows a designated form and provides recommended management for the area; and

WHEREAS, the District updates its General Management Plans every ten (10) years, consistent with State agencies; and

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby approves the ten year update of the Dupuis and Kissimmee River General Management Plans (2014-2024), copies of which are attached hereto as Exhibit "A".

Section 2. This Resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

Legal form approved:
By:

District Clerk/Secretary

Office of Counsel

Print name:

Land Stewardship Section
3301 Gun Club Road
West Palm Beach, Florida 33406



DuPuis
Management Area
Ten-Year
General Management Plan
2014 through 2024



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

DuPuis Management Area Ten-Year General Management Plan (2014 through 2024)

January, 2014

Land Stewardship Section
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

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DuPuis Management Area General Management Plan 2014 through 2024
 South Florida Water Management District, Land Stewardship Section

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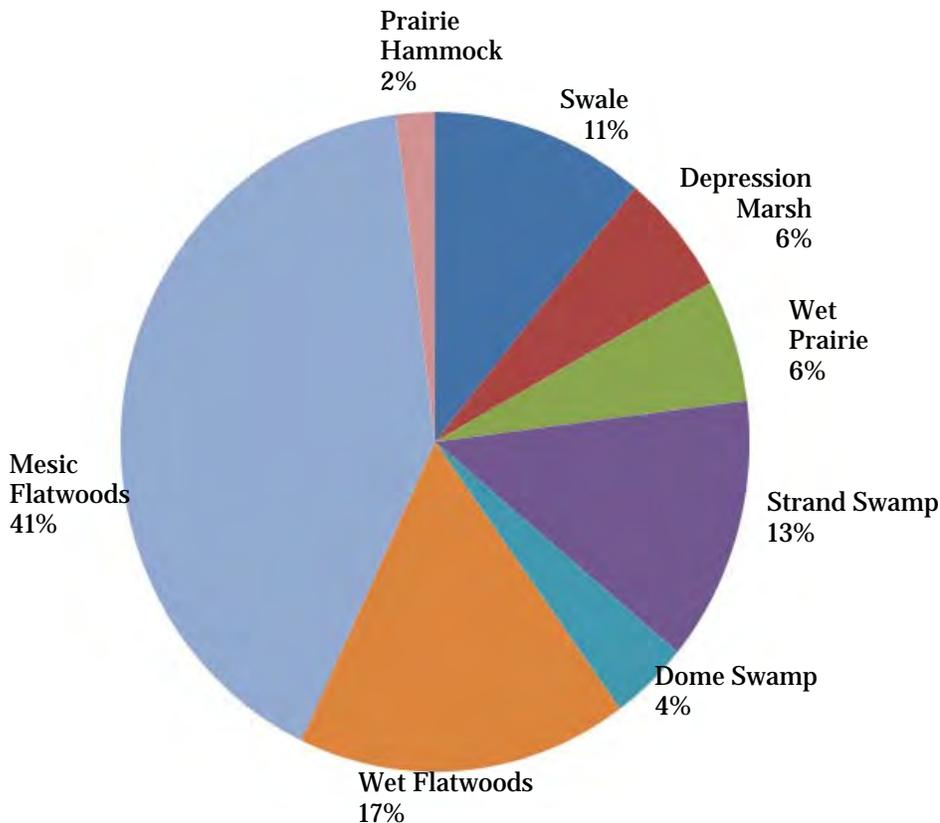
1. Executive Summary

The South Florida Water Management District (District) is directed by statute to acquire and manage lands which are vital to the restoration of the Everglades. In the 1980s the District targeted the DuPuis Management Area (Management Area) which contains the northernmost edge of the Everglades marsh as a Save Our Rivers project. This plan addresses management for the 21,858 acres that have been acquired by the District within the project area.

This General Management Plan describes the historical, ecological, and managerial aspects of the area as a means to coordinate effective management programs. The plan serves as a guidance document for the implementation of resource-based land management practices. It also provides information on operational procedures and organizational structures within the District and of management activities and objectives for the management areas.

NATURAL SETTING

The natural character of the management area are defined by 4 distinct soil categories classified by the Natural Soil Landscape Positions soil classification system: flatwood soils, flats soils, sand depression soils, and muck depression soils. These soils support 8 distinct plant communities that are defined by criteria established by the Florida Natural Areas Inventory; and have the following coverage:



RESOURCE MANAGEMENT

Resource management programs for the management area consist of:

- Prescribed fire to mimic the natural fire frequency in fire-dependent plant communities.
- Forestry and vegetation management such as shredding or mowing overgrown understories, or thinning pine flatwoods for silvicultural purposes.
- Wildlife management, including surveys, habitat management, and hunting programs.
- Exotic vegetation treatment.
- Monitoring the health of the natural communities and the impact of management practices on them.
- Restoring sites that have previously been altered by drainage and/or agriculture.

RESTORATION PROJECTS

The District has used water management trust funds and mitigation funds to fund the restoration of wetland systems and upland pine forests. This has involved hydrologic restoration, groundcover restoration, exotic species control, vegetation management, and prescribed burning.

MONITORING

The Florida Fish and Wildlife Conservation Commission monitors wildlife on the site including red-cockaded woodpeckers, turkeys, bald eagles, wading birds, deer, and bobwhite quail.

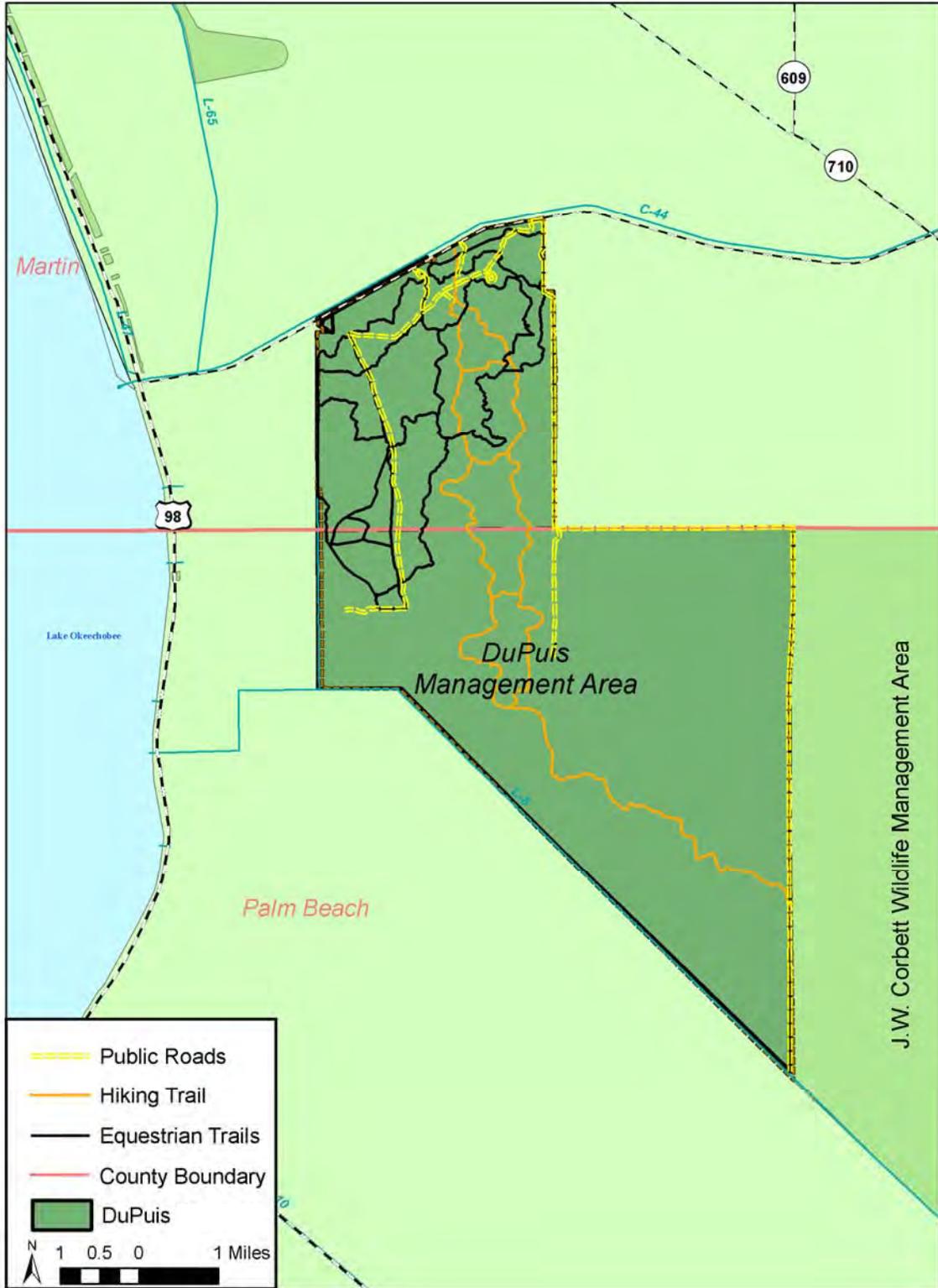
WILDLIFE MANAGEMENT

Wildlife management, including hunting programs, is conducted by the Florida Fish and Wildlife Conservation Commission through a multi-site cooperative agreement. The hunting program includes a general gun, muzzle loading, and archery season for deer and feral hogs; small game; special hog hunts; dove hunting on an established dove field; and spring turkey hunting.

PUBLIC USE

A variety recreational activities are provided for and encouraged in the management area including canoeing, bicycling, mountain biking, camping, birding, equestrian use, fishing, hiking, geocaching, and hunting. The Ocean to Lake Trail, which connects to the Florida National Scenic Trail at Lake Okeechobee, winds its way through portions of the management area. The management area also includes equestrian facilities (stables, barn, and campground), a visitor center, a boardwalk, a fishing pier, and several established campsites and picnic areas.

Map 1. DuPuis Management Area



2. Introduction and Management Plan Purpose

The District purchased the DuPuis Management Area in 1986 through the Save Our Rivers program. The management area comprises 21,858 acres in northwest Palm Beach and southwest Martin counties. The southwestern boundary contains the L8 Marsh, this area was the historic northeastern edge of the Everglades, and is bounded by a sand ridge with a long narrow oak hammock. The southeastern half of the site is dominated by cypress swamps; the area is part of a historic flow-way that extended north along the east side of the Osceola Plain to St. Lucie County where the waters of the everglades would seasonally connect to waters of the St. Johns River system. The northern portion of the site has many public use facilities. The property hosts a large equestrian campground with several barn-stables and paddocks, a family campground for tent camping, a large group campground, a boardwalk, a mountain biking trail, a fishing pier, picnic shelters, a visitor center and butterfly garden, and many miles of equestrian and hiking trails. The Ocean-to-Lake trail runs through the site; this is a regional trail that extends from Lake Okeechobee to the Atlantic Ocean.

This General Management Plan consolidates relevant information about the DuPuis Management Area (**Maps 1-2**) including land management goals and objectives, past and present land uses, resource data, restoration and management needs, public use programs, and administrative duties to guide management actions for the period 2014 through 2024. Management activities described in this plan are based on requirements and directives of Florida Statutes and established District policies. Section 373.591(4), Florida Statutes, requires that management plans be developed for District conservation, preservation, and recreation lands.

State statutes further directs the District to provide natural resource protection and management while allowing compatible multiple uses on designated public lands. This mission statement and requirements set forth in Florida Statutes provide three primary goals for the Land Stewardship Section:

- Conserve and protect water resources
- Protect and/or restore land to its natural state and condition
- Provide appropriate public use

To accomplish these goals, the Land Stewardship Section performs six major functions:

- Strategic, project, and management planning
- Operation and maintenance of land resources
- Development of public use programs
- Development of restoration projects
- Evaluation of management activities

- Administration of land management service contracts

The plan consolidates current site information and general guidelines for management of the area. It also updates and replaces the 2008-2013 General Management Plan for the area. As such, it serves as a collective information source for management staff, partners, and the general public.

2.1 DuPuis Management Area Goals and Objectives

The Land Stewardship Section's primary functions and management priorities for 2014-2024 are contained in the following Goals and Objectives:

Goal 1: Manage natural communities and modified habitats to protect and enhance water, floral, and faunal resources.

Objectives:

- Maintain an appropriate hydroperiod through the installation, operation, and maintenance of water control structures, culverts, and ditch plugs as needed.
- Continue to regularly apply prescribed fire to manage fire dependent plant communities through the use of a well-planned and documented prescribed burning program. Maintain a fire return interval of 2-5 years in pine flatwoods, with the majority of burns to be conducted during the months of April through September if possible.
- Continue to treat exotic vegetation through the use of herbicides and biological control measures and reduce exotic plant infestations to maintenance control levels by 2020.
- Continue appropriate forest management activities to enhance natural communities. Evaluate the need for additional cabbage palm removal using low ground pressure harvest equipment.
- Continue to reforest deteriorated areas within the northern portion of the management area with slash pine.
- Continue to monitor and evaluate vegetation and wildlife responses to on-going restoration and land management activities.
- Coordinate with the Florida Fish and Wildlife Conservation Commission to manage and enhance area wildlife. Continue to improve habitat conditions and fund the reintroduction of the federally endangered red-cockaded woodpecker with the assistance of the Florida Fish and Wildlife Conservation Commission and U.S. Fish and Wildlife Service in order to establish stable and interconnected woodpecker populations on the DuPuis and Corbett Management Areas.
- Provide resource protection through partnerships with the Florida Fish and Wildlife Conservation Commission's Division of Law Enforcement and with local law enforcement agencies for the enforcement of pertinent resource based laws and regulations.

Goal 2: Provide resource-based public use opportunities.

Objectives:

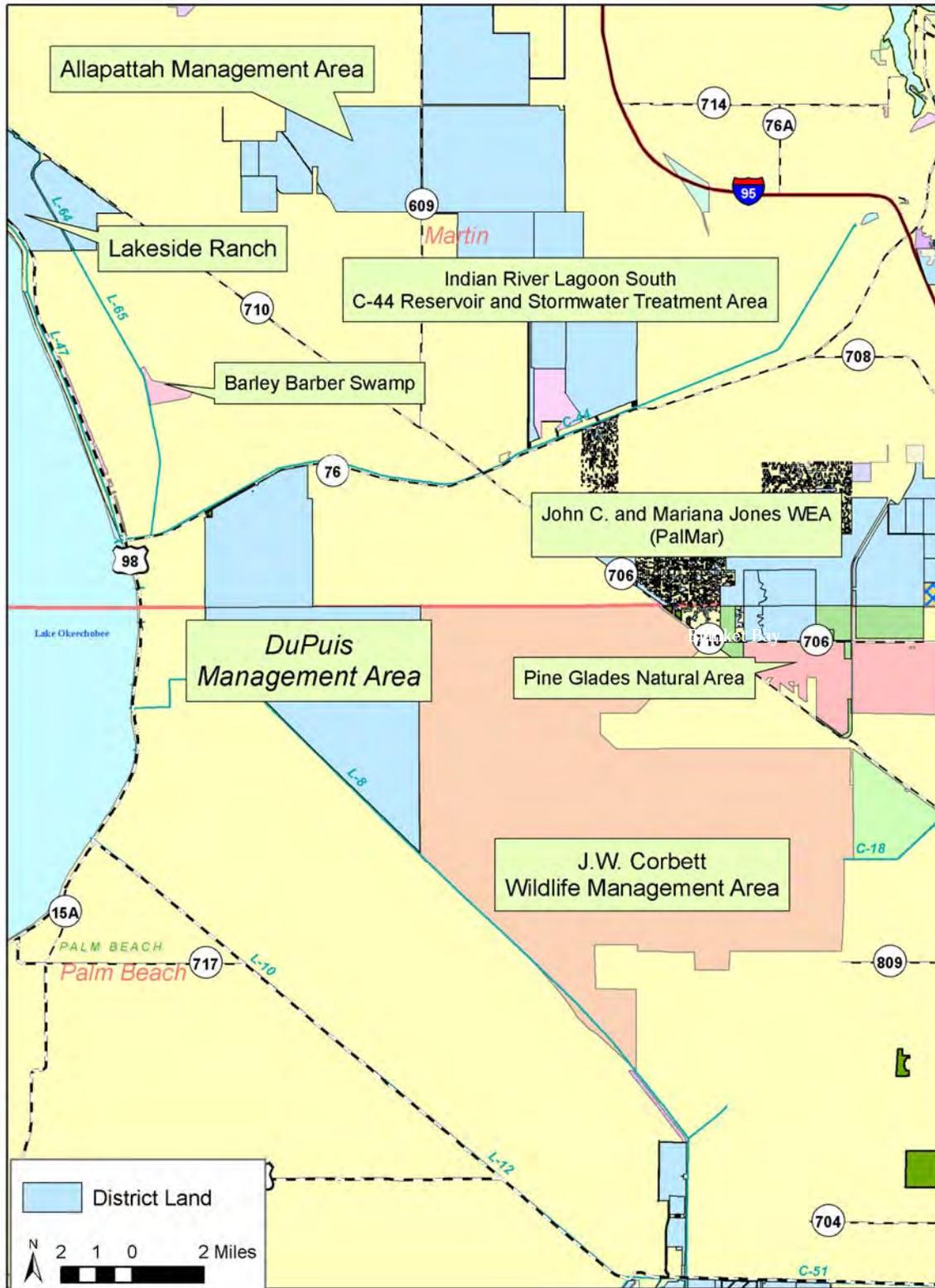
- Maintain environmental education and outreach programs through continued partnership with the Florida Atlantic University's Center for Environmental Studies.
- Maintain recreational improvements such as roads, trails, signs, trail heads, parking areas, campgrounds and public use facilities in an operational condition using District staff, the Department of Corrections inmate crew, contracted services, and volunteers.
- Install a Clivus Mulstum self-composting toilet at the fishing pier parking lot during the plan period.
- Update the Self-Guided Auto Tour along Jim Lake and DuPuis Grades.
- Maintain, and expand if appropriate, existing nature based recreational opportunities including hiking, biking, equestrian use, camping, hunting, birding, and wildlife viewing.
- Coordinate with local cooperating land managers on expanding future recreational opportunities on the Ocean to Lake Trail.
- Utilize quarterly Water Resource Advisory Committee – Recreation Issues Workshop meetings to receive public input on the management and coordination of recreational activities provided on the management area.

Goal 3: Maintain public use facilities and area infrastructure.

Objectives:

- Replace the existing equestrian campground bathroom which receives a high level of use by the public and is currently in poor condition and in need of replacement.
- Replace three water control structures necessary to control the retention and release of water from the restored L-8 marsh.
- Remove two dilapidated and hurricane damaged pole barns located within the equipment and shop compound area.
- Add two equipment bays to the existing shop and maintenance building.
- Construct a chemical storage building for storing herbicides and other chemicals in a secured manner.
- Construct a new pole barn for storing tractors, implements, and other pieces of large equipment out of direct sunlight and extreme weather in order to minimize maintenance costs and maximize equipment life.

Map 2. DuPuis and other public lands



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

3. Site History

The DuPuis Management Area has been inhabited by humans for at least 2000 years. A detailed report of the early history of the site through the mid-1900s is included as **Appendix A** (See also **Maps 3-10**, and **Table 1**, which further illustrate the historic character of the property).

In 1981, the Florida Legislature established the Save Our Rivers program for the five water management districts to acquire environmentally sensitive land. The legislation (Chapter 373.59 F.S.) produced the Water Management Lands Trust Fund and empowered the water management districts to acquire lands needed to manage, protect, and conserve the state's water resources. Once acquired, the lands are to be managed in an environmentally acceptable manner and restored to their natural state. Districts may make certain capital improvements, i.e. fencing, access roads/trails, public use facilities, and are directed to provide appropriate public use compatible with the resource. The legislation also requires the districts develop appropriate public use. In addition, management practices such as control of exotic species and controlled burning are to be conducted to properly manage public lands acquired by the District.

The District purchased the DuPuis Management Area in 1986 through the Save Our Rivers program. The management area comprises 21,858 acres in northwest Palm Beach and southwest Martin counties. Prior to acquisition, the property was managed as the White Belt Ranch for the production of beef cattle, sheep, and goats. Ranch improvements included the construction of an extensive interior network of drainage ditches and the planting of exotic pasture grasses. As part of the initial environmental assessment, the District completed a wetland and hydroperiod restoration plan. Subsequently, a hydrologic restoration program was initiated to seasonally re-flood historic wetland areas. The Land Stewardship Program also developed a burn program to reintroduce regular fire to the property including those portions where fire had been suppressed. The District initiated exotic plant control, forest management, upland restoration, and development of an environmental education center.

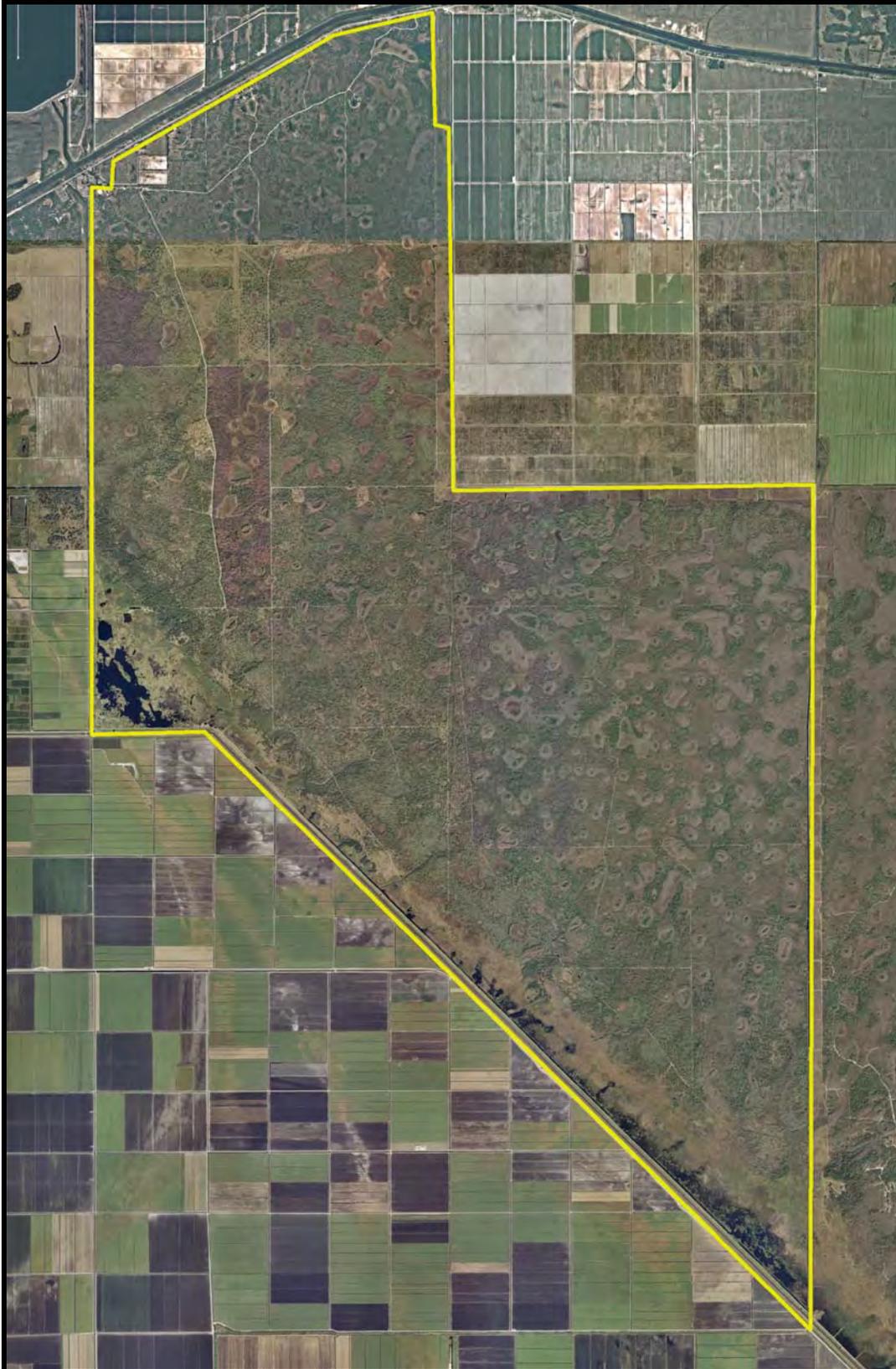
Lead management responsibility for the management area has changed over time. From acquisition until 1990, the District managed the DuPuis area jointly with the Florida Fish and Wildlife Conservation Commission. During this time, initial resource management, restoration activities, and public use programs were started. In 1990, the Florida Division of Forestry began a 5-year contract as lead manager of the area with the Commission and the District as cooperative managers. During this time, the area was operated as the DuPuis State Forest. Continuation of this arrangement was contingent upon the Florida Legislature authorizing the necessary funds for the Division of Forestry (now the Florida Forest Service) to conduct management beyond the contract expiration. As a result of the legislature not appropriating the required funding, the contract with the Division of Forestry was allowed to expire and the District solicited proposals

to manage the property from the public/private sector in 1995. A cooperative management proposal submitted by the District and the Fish and Wildlife Conservation Commission was selected by the review committee; this cooperative agreement was rolled into a Districtwide multi-site cooperative agreement with the Commission in 2007.

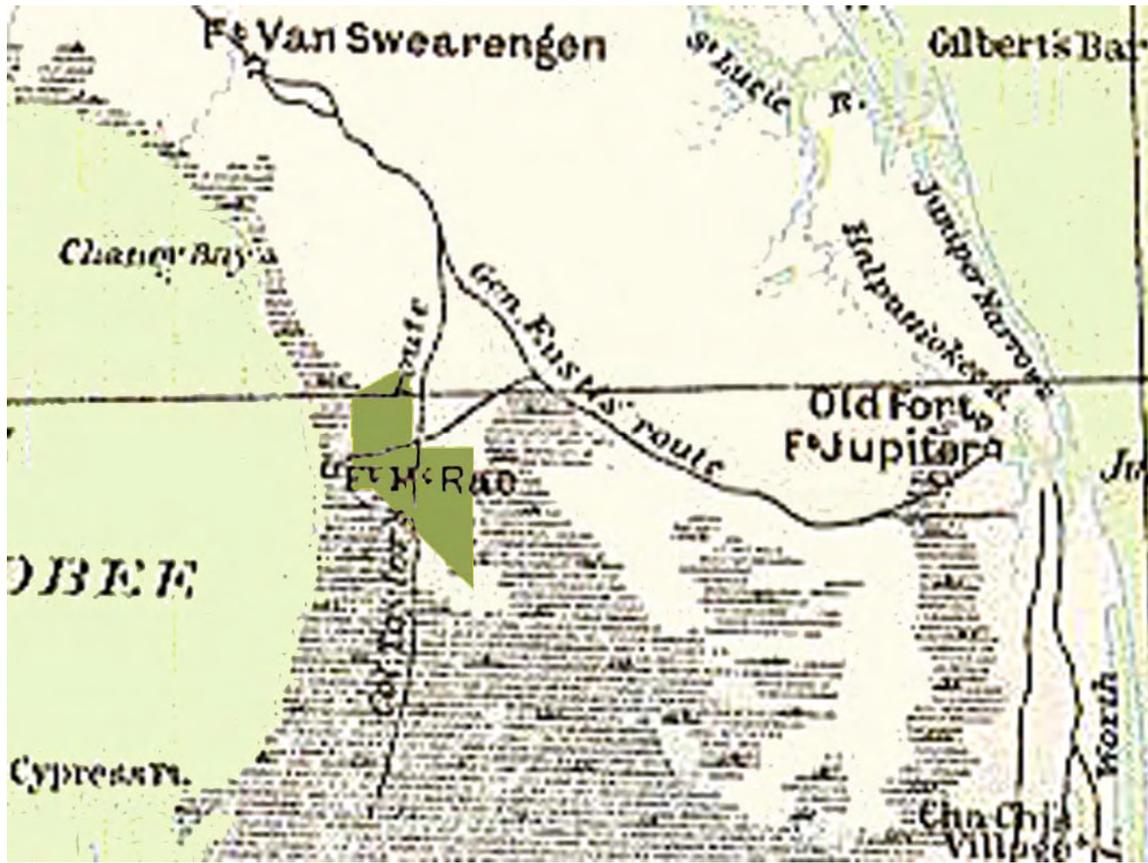
Map 3. DuPuis Management Area with 1938 (west half) and 1949 (east half) aerials



Map 4: DuPuis Management Area Aerial Imagery, 2011-2012



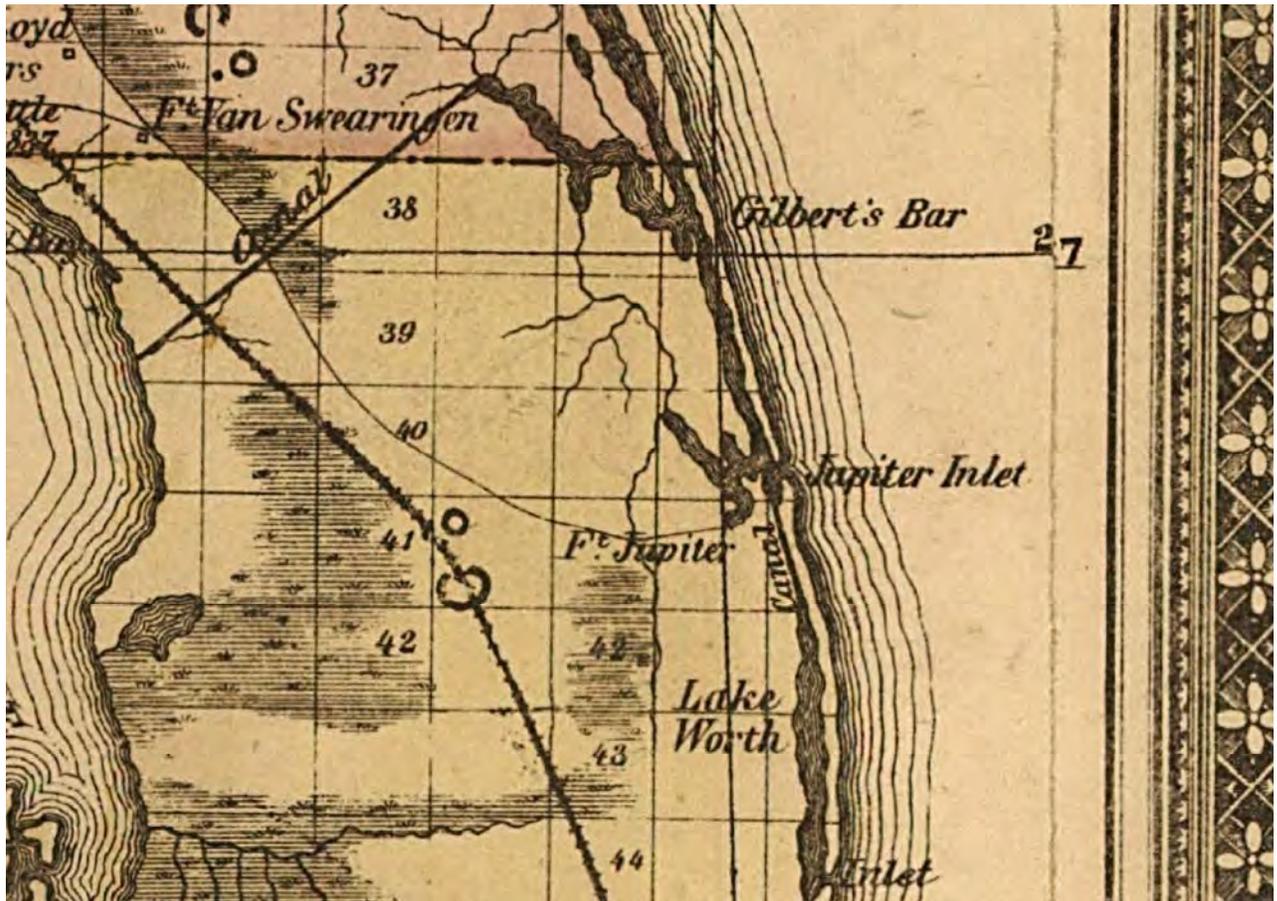
Map 5. 1895 - J. Bien Military General Topographic Map



The above map is from an 1895 reproduction of Leut. J.C. Ives 1856 "A Military Map of the Peninsula of Florida South of Tampa Bay". The boundary of the DuPuis Management area has been added in green. In Leut. Ives memoir, the route from Ft. McRae to Ft. Jupiter is described as

"The only continuous route between the eastern shore of Lake Okeechobee and Fort Jupiter, that has been traversed and reported upon, leads nearly east from Fort McRae to General Eustis' Road, and along that road to the Fort. The trail passes over the hammock that borders the beach; here a hundred yards wide. This hammock can be passed on foot, by wading from one cypress root to another, and making use of the dead branches of trees. The marsh beyond is about a mile and a-half wide, having the same character as the Everglades; the sawgrass being six feet in height; the water of variable depth, and the mud so soft that a pole can be thrust down with the hand 'to a depth of from six to ten feet. This marsh can be crossed only at dry seasons, and then with great difficulty, by men on foot, though unincumbered by arms or burdens of any description. East of the marsh, the route, for five miles, passes over a low pine country with occasional ponds and marshes that can be easily turned. It then crosses another difficult marsh, a quarter of a mile wide. From surveys that have been made in the vicinity it appears that this marsh might be avoided by keeping a mile or two to the north. A high pine and palmetto region then commences; continuing as far as the point where the trail from the lake intersects General Eustis' Route. This route traverses a low and somewhat marshy country, but a road practicable for wagons, during a greater portion if not all of the year, could be easily constructed upon it."

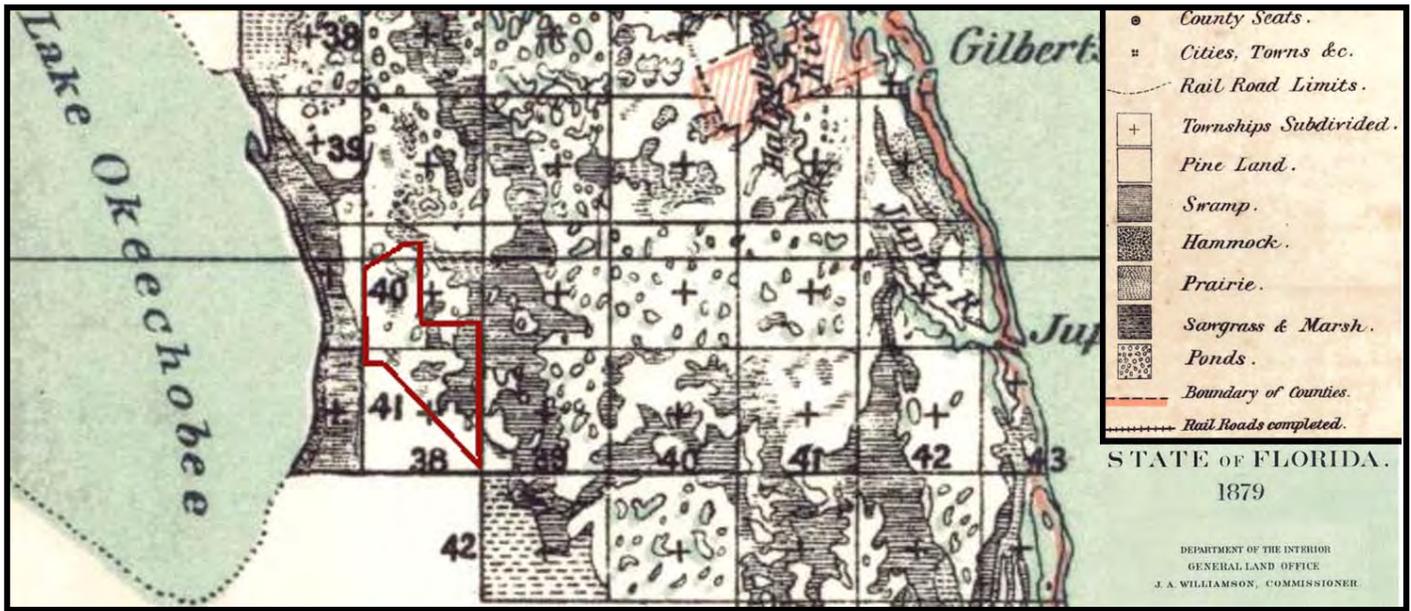
Map 6: 1874 Map of Florida



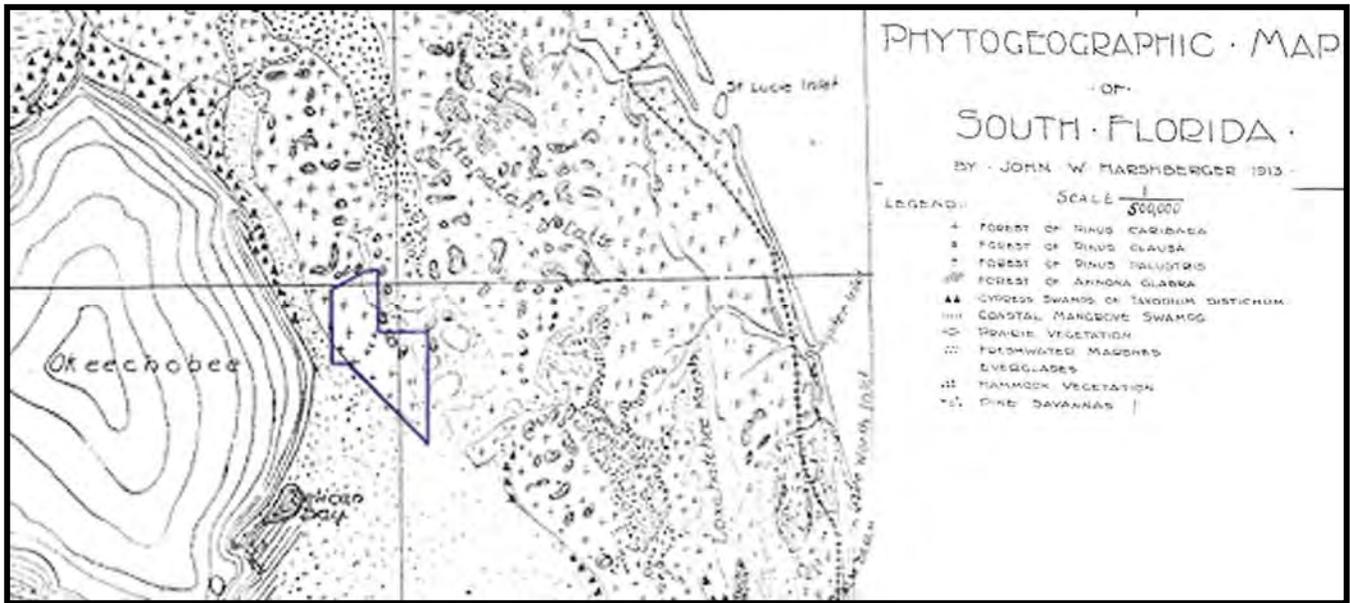
The above map is from the 1874 “Drew’s New Map of the State of Florida.” It shows the proposed St. Lucie canal and the railway that would become the Seaboard East Coast Rail line. The March, 1884 issue of Harper New Monthly had an article titled “The Drainage of the Everglades” that described the planned canal being:

“... a proposed canal from Cahoney Bay, in Okeechobee, to the St. Lucea, is to be cut one hundred and twenty feet wide and ten feet deep, having a fall of one foot per mile, with a mean velocity of 3.86 lineal feet per second, capable of lowering the estimated 1000 square miles of surface four feet in a season.”

Map 7. 1879 - General Land Office Map with land cover classification

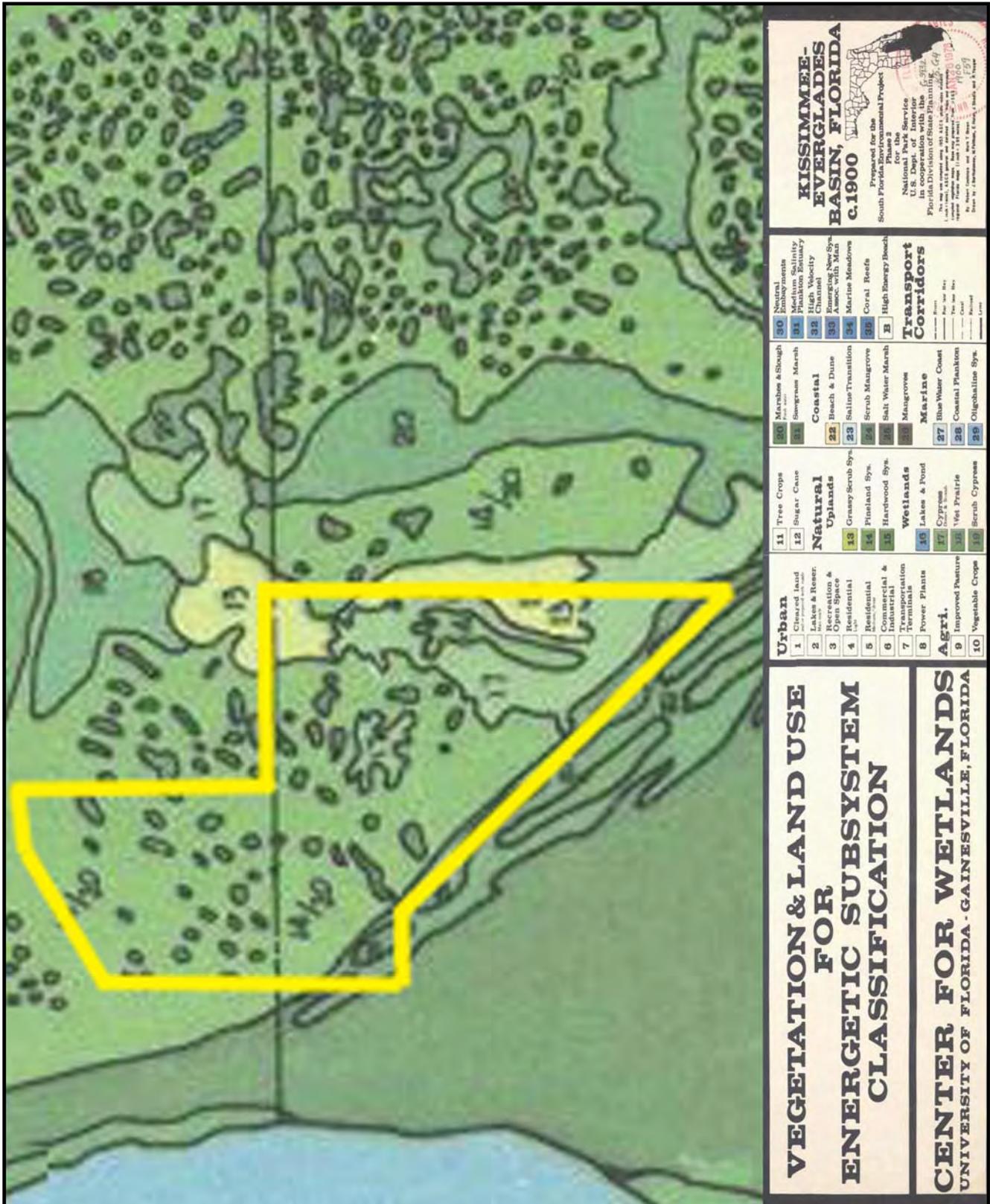


Map 8. 1913 - Harshberger Phytographic Map

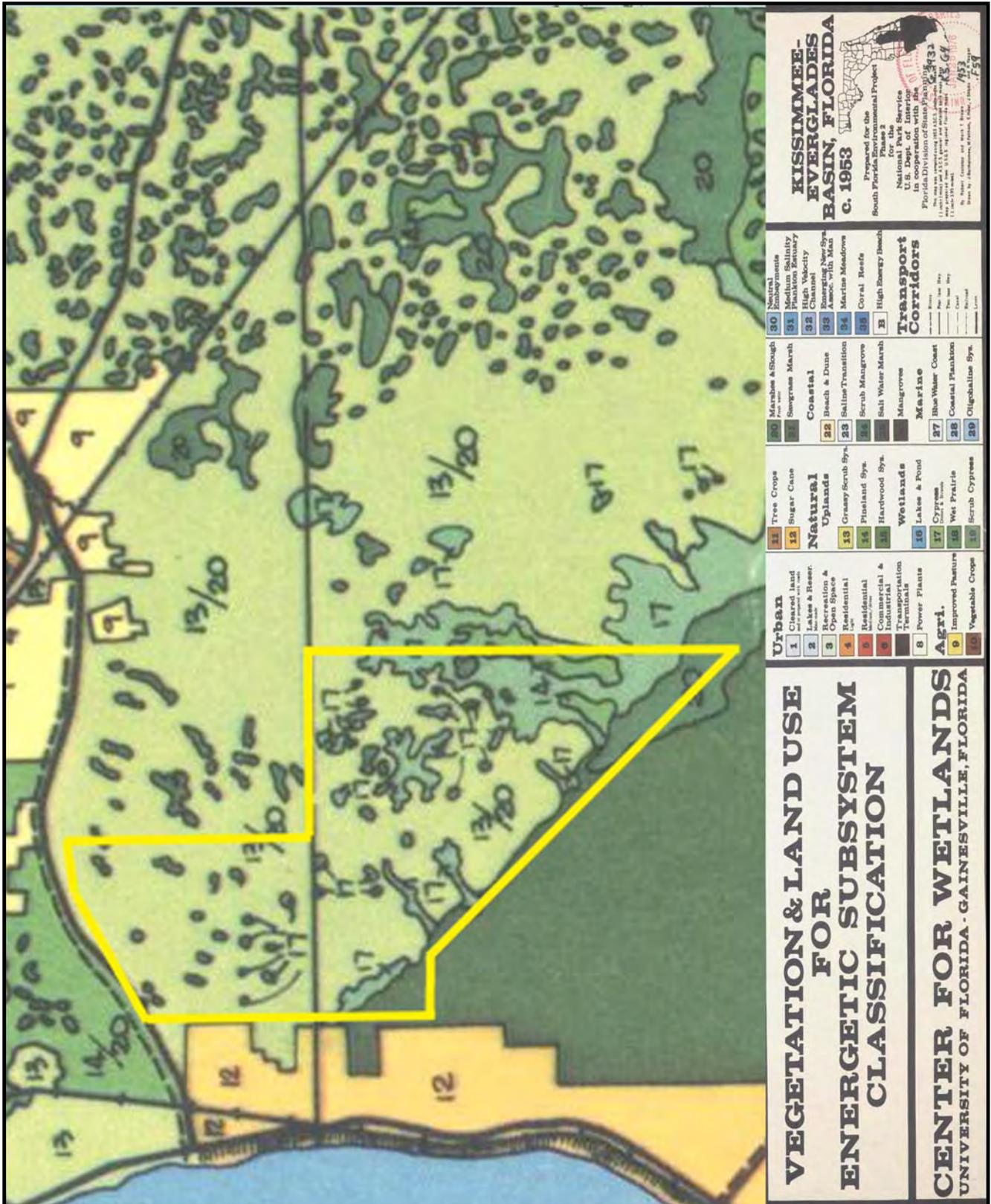


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Map 9. 1900 UF Land Cover Map, Local Vicinity



Map 10. 1953 UF Land Cover Map, Local Vicinity



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DuPuis Management Area General Management Plan 2014 through 2024
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Table 1 – DuPuis Management Area History

| | ACTIVITY | EFFECT ON MANAGEMENT AREA |
|-----------|--|--|
| 1838 | Fort McRae constructed | Trails constructed between forts spaced approximately 20 miles apart, laid the foundation for settlement of the area when the Armed Occupation Act was passed in 1842. |
| 1850 | U. S. Congress passed the Swamp and Overflowed Land Act | Allowed the state legislatures to transfer the ownership of swamp and overflowed lands to private entities to reclaim the land through drainage and levee projects. |
| 1881-1884 | Hamilton Disston’s Atlantic and Gulf Coast Canal and Okeechobee Land Company completes canals and dredging projects throughout the region creating a navigable water way from Fort Myers to St. Cloud. | The St. Lucie canal was proposed at this time. The original proposal would have placed it a few miles north of its current location. Its final location at the north boundary of the management area significantly drained the northern portion of the site. |
| 1902 | Southern States Land and Timber Company acquired the management area and surrounding lands. | The acquisition started the opportunistic logging of the easiest old-growth trees in the management area. |
| 1915-1923 | The St. Lucie Canal was constructed, as well as the Stuart-Annie Highway (later called SR 76 and Kanner Hwy), and the Seaboard Rail line. | The canal significantly drained the northern portion of the site. Both the canal, road, and railroad improved access to the management area that made it more accessible to logging. |
| 1944 | Robert Chastain acquired the management area from Southern States Land and Timber for use as a cattle ranch | By 1948 most of the infrastructure was constructed such as the cooter creek canal, interior wetland ditches, main buildings, and road grades. |
| 1954 | The L-8 Canal was constructed along the southerly border of the management area | The L-8 canal allowed most of the wetlands within the management area to be significantly drained. |
| 1955 | The management area was sold to John G. DuPuis Sr.’s White Belt Dairy Farms | The DuPuis family and the White Belt Dairy Farm continued the agricultural operations until acquisition by the District |
| 1986 | The management area was acquired by the South Florida Water Management District | A restoration program was implemented that included hydrologic restoration, vegetation management, and exotic species control |

4. Resource Inventory

*Policy 140-25(3)(e) Inventories of natural and historic resources shall be performed to provide information for effective land management planning, natural community maintenance and ecological restoration. (District policies are reprinted in **Appendix B**)*

Floral and faunal species are inventoried and natural communities are mapped by Land Stewardship personnel, other governmental entities, volunteers, or private contractors. The data helps District land managers with resource management planning.

Inventory data is on file with the Land Stewardship Section. Land Stewardship shares natural areas and species data with the Florida Natural Areas Inventory through a Memorandum of Understanding.

Floral and faunal inventories in the DuPuis Management Area were included in the environmental assessment initiated shortly after acquisition. Additional surveys have been completed with species' lists being updated regularly by volunteers, contractors, and District and Florida Fish and Wildlife Conservation Commission staff. Archaeological and cultural resource inventories were conducted in coordination with the Department of State, Division of Historical Resources and are described in the State's Master Site File.

4.1 Hydrology

Policy 140-25(1) The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources.

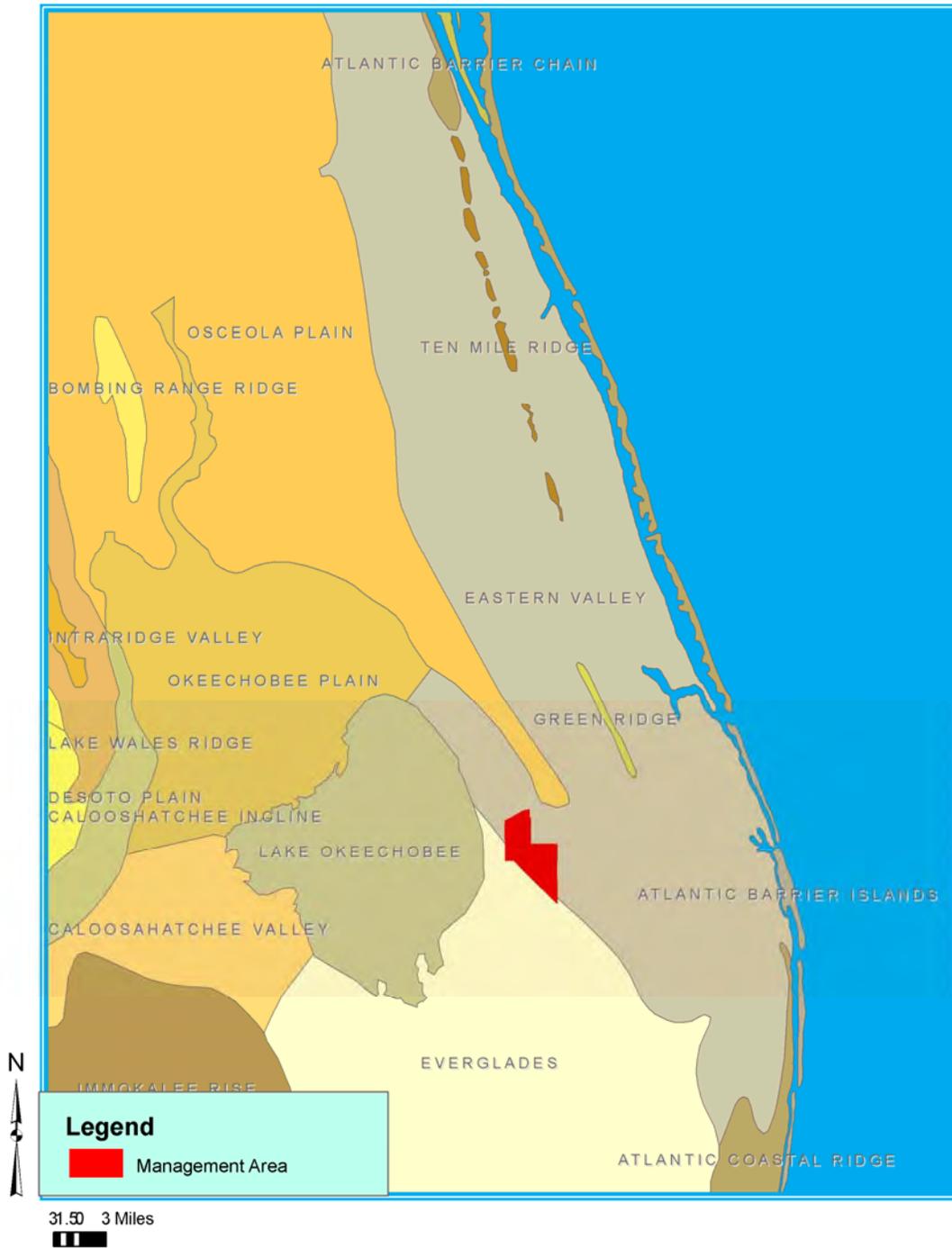
In general, relief on the management area is slight with ground elevations ranging between 23 and 25 feet over most of the property. Elevation gradually declines from northeast to southwest (**Maps 11-13**). Overland sheet flow on the property occurs in a south-southwest direction through a connected series of wet prairie, marsh and cypress wetlands (**Map 14**). Wetlands may be inundated for long periods, beginning with the wet season. The greatest change in elevation occurs in the L-8 marsh along the southerly boundary where elevation declines from 20 ft at the treeline to less than 15 ft at several locations near the canal levee. From the treeline, elevation increases gradually reaching 24 to 25 ft in the north and northeast sections of the property.

Elevations of pine flatwood communities in the Martin County portion of the area exist at elevations of approximately 25 ft with slight declines to 23-24 ft at the west property boundary. Broad leaf marsh and wet prairie depressions occur between the elevations of 20-23 ft, with the cypress dome centers representing the lowest elevations (20-21 ft). In the Palm Beach County portion, pine flatwoods and wet prairie communities fluctuate between 24 and 25 ft with

cypress domes and strands occurring at elevations between 20 and 23 ft. Elevations decline to the southwest towards the L-8 marsh where elevations range from 15 ft to 19 ft.

Over the years, three off-site developments had major impacts on area hydrology. In the 1920s, the St. Lucie Canal (C-44) was dredged parallel to the property's northern boundary completely severing historic inflows from the north while providing a means of increased offsite drainage (see **Map 15**, the northern and southern portions of the property are in two separate basins). Along the southern boundary, the L-8 canal was completed in the early 1950s facilitating additional drainage. In the 1970s a canal and elevated road along the east boundary stopped historic inflows from the Corbett Management Area. During ranch development, an extensive network of interior canals and ditches were constructed that significantly decreased surface water retention and increased drainage offsite. One of the District's primary goals was to complete a hydroperiod restoration plan to reverse overdrainage and re-establish wetland structure and function. (see **Restoration Projects**, section **5.1**).

Map 11. Regional Major Geomorphic Features



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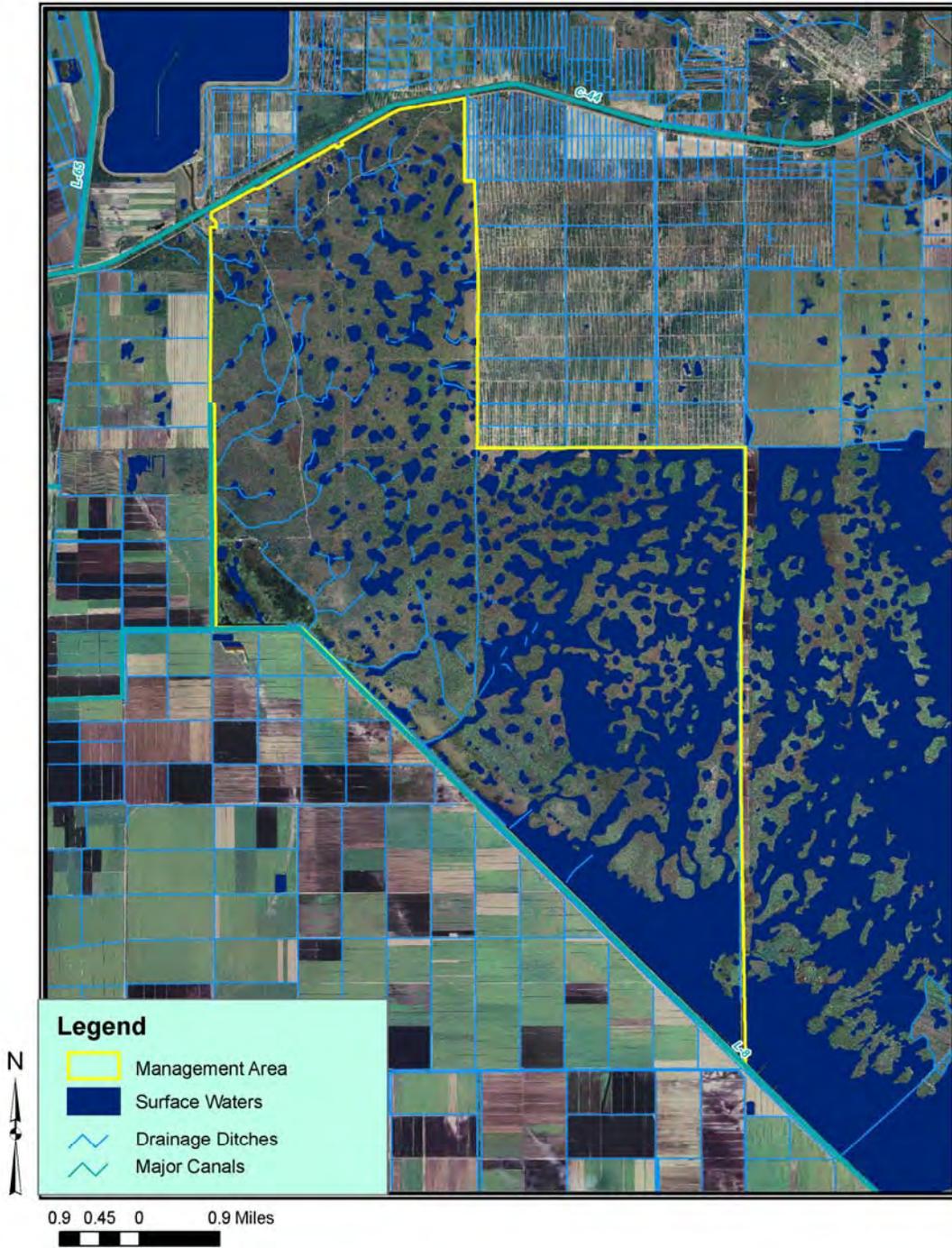
Map 12. Regional Topographic Setting



Map 13. DuPuis Topography

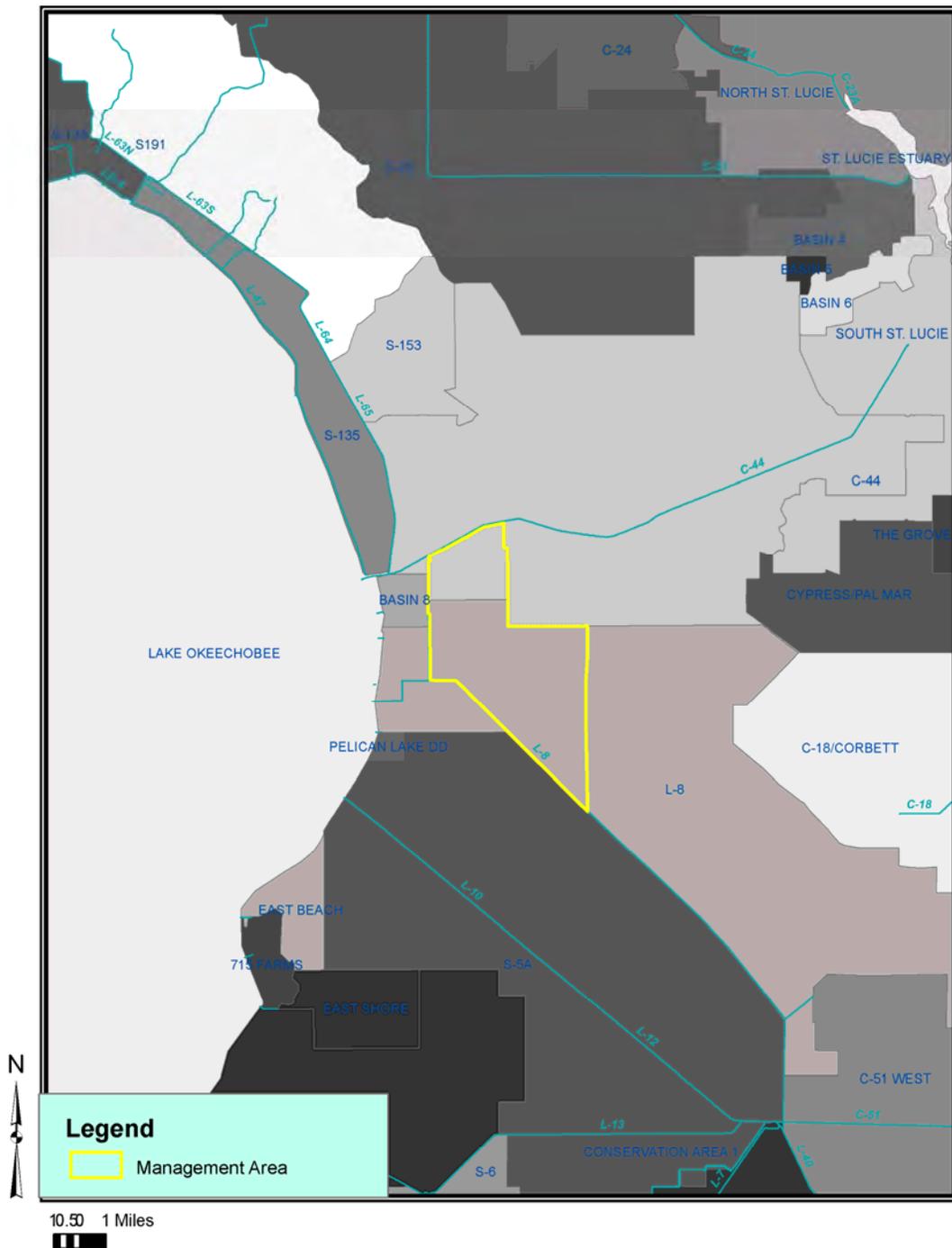


Map 14. Surface Waters



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Map 15. Hydrologic Basins



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4.2 Soils

There are four distinct soil categories within the DuPuis Management Area as defined by the Natural Soil Landscape Positions soil classification system: flatwoods soils, flat soils, sand depression soils, and muck depression soils (**Map 16**). This classification system groups South Florida soils into 12 categories based on hydrology and soil morphology that reflect the local relative topography, hydrology, and vegetation of the area. Soil classification descriptions are included as **Appendix C**.

Soil Contamination and Excavation Sites

A cattle dipping area that was located at the present Gate 3 equestrian area was removed by the District in the late 1980's. This chemical treatment area was one of the 3,200 cattle dipping vats constructed statewide between 1906 and 1961 for a tick fever eradication program that was mandated by state law. At these locations, soils became polluted with insecticides as cattle were either lead through in-ground dipping vats or sprayed in holding pens. Shortly after acquisition, the District began appropriate corrective actions to remediate soil contamination associated with the cattle dipping vat.

Five other soil contamination sites were identified on the property at the time of acquisition. These sites were used for petroleum or chemical storage or equipment maintenance areas. The District had these contaminated sites chemically and physically analyzed as the first phase of a two-part remedial strategy that developed site-specific, risk-based action levels. The second phase of this process determined the appropriate degree of corrective actions. The Florida Department of Environmental Protection Waste Cleanup Section staff assisted in decision-making with regard to the appropriate land use classification and required corrective actions. In the early 1990s, a remediation plan was designed and implemented at the five contaminated sites. In June 2001, a final site rehabilitation order was issued by the Department of Environmental Protection which completed the District's remediation activities.

Four small inactive borrow pits exist that were used to supply fill for road building and repair. The largest pit is about 3 acres in size and located at the south end of the DuPuis Grade. This pit was re-contoured and re-planted with native vegetation in 2001 (See **Restoration Projects**, section 5.1).

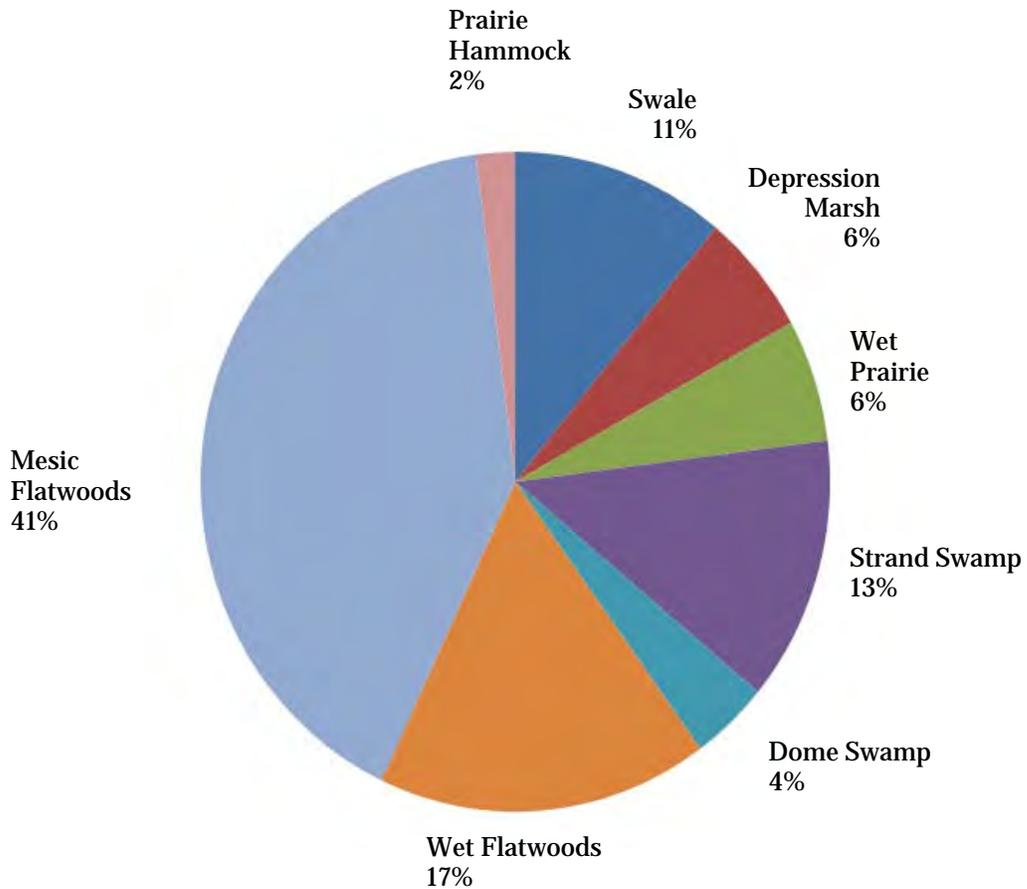
Map 16. Soils



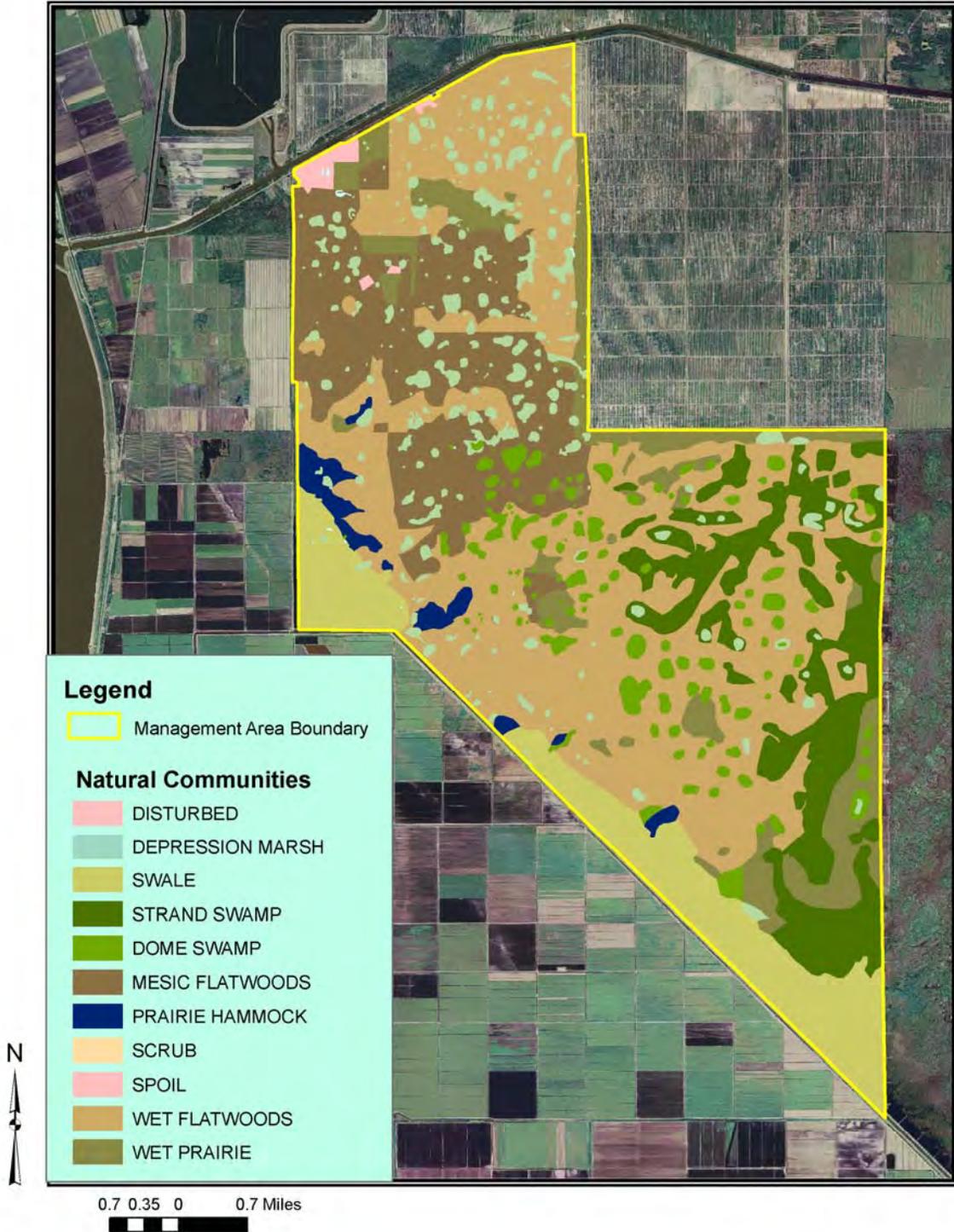
4.3 Natural Communities

The District classifies natural community types by the Florida Natural Areas Inventory Classification system. Eight natural community types occur on the DuPuis Management Area (**Figure 1**, and **Map 17**). Community condition varies widely, depending on previous and current land use, hydrologic alteration, exotic infestation, and current management activities. Natural community descriptions and acreage figures are included in **Appendix D**.

Figure 1 Natural Community Types



Map 17. Natural Communities



4.4 Wildlife

The natural communities within the project provide habitat for numerous bird, fish, amphibian, reptile, and mammal species, several of which are listed federally or by the state. Initial wildlife inventories on the management area were conducted from 1987-1989. Regular surveys are ongoing by the Florida Fish and Wildlife Conservation Commission and species lists are updated accordingly. Wildlife species observed utilizing the property include 139 bird, 25 mammal, 19 reptile, and 10 amphibian species (**Appendix E**). At least 15 species considered rare, endangered, threatened, or of special concern have been noted.

4.5 Cultural Resources

Policy 140-25(3)(j) Archaeological and historic resources are protected by site identification and inter-agency coordination with the Florida Division of Historical Resources. Land Stewardship planning shall include an analysis of archaeological data accompanied by appropriate public education opportunities.

The District's management goal for cultural resources is historic preservation by identification, evaluation, documentation, protection, and stabilization of known historic or prehistoric sites. The District maintains a database of all known archeological and historical sites on District properties that is periodically updated through the Department of State's Master Site File. Due to its sensitive nature, site-specific data is not made available to the general public.

Four archaeological sites of Native American earthworks are present on the management area and are registered in the Florida Master Site File as sites of archaeological significance. The department of State, Division of Historic resources has visited the sites to conduct mapping and sampling. Research assistance has been provided by the Southeast Florida Archaeological Society and Florida Museum of Natural History. Information was summarized in "Cultural Resource Assessment of Four Archaeological Sites at Dupuis Reserve, Palm Beach County," (Wheeler, 2000) and subsequent reports (Wheeler, 2001; Rich, 2001). Studies concluded that the four DuPuis sites represented important examples of Lake Okeechobee mounded earthwork complex that is well preserved. Management recommendations included keeping the area in public ownership, prohibiting grazing or agricultural activities, prohibiting vehicle traffic at mound sites, and monitoring sites for feral hog rooting and vandalism (Wheeler, 2000). Management activities will continue to promote research on these sites and continue to safeguard site integrity. Management activities planned for these areas are the treatment of invasive exotic vegetation and the periodic application of prescribed burns. Ground disturbing activities will be avoided in these areas. Staff from the Division of Historic Resources may revisit these sites at times to conduct additional investigations.



A representation of the mound and earthwork complex at DuPuis

It appears from maps from the Seminole wars that two of the Army patrol routes between the frontier forts passed through DuPuis, including one that was traveled by a column under the command of President Zachary Taylor when he was a colonel in the Army. (**Map 18**).

There are several structures on site that exhibit vernacular architecture typical of older Florida ranches including three horse barns in the equestrian area, the sheep shearer's cabin and the mound house (a hunting cabin). Management of these structures mainly involves security patrols and signage; repairs are made as necessary to the horse barns.

In 2002, District staff contracted local historian, Steve Farnsworth, to research the history of the DuPuis property. A detailed description of the history of the area from pre-European settlement to acquisition by the District is contained in **Appendix A**.

Map 18. Seminole War Era Military Maps



Military maps from the Seminole Wars: 1839 (above) and 1856 (below) The boundary of the DuPuis Management area has been added in green.

5. Natural Resource Management

Policy 140-23 The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands.

Resource management includes all applied programs wherein activities manipulate, modify, and control natural features within the management area. All lands acquired through the Save Our Rivers program are managed and maintained in an environmentally acceptable manner and, to the extent practicable, restored and protected in their natural state and condition. Management responsibilities are defined by statute, and directed by best management practices. Goals and objectives for the management area clarify resource management guidelines necessary to fulfill the District's land stewardship responsibilities. Land Stewardship resource management activities include the implementation of projects to restore a more natural hydrologic regime, the application of vegetation control activities to restore natural forest structure and composition, the continuation of an aggressive exotic plant control program, the application of a prescribed burn program for the maintenance of fire dependent plant communities, and coordination with the Florida Fish and Wildlife Conservation Commission to implement wildlife management programs.

5.1 Restoration Projects

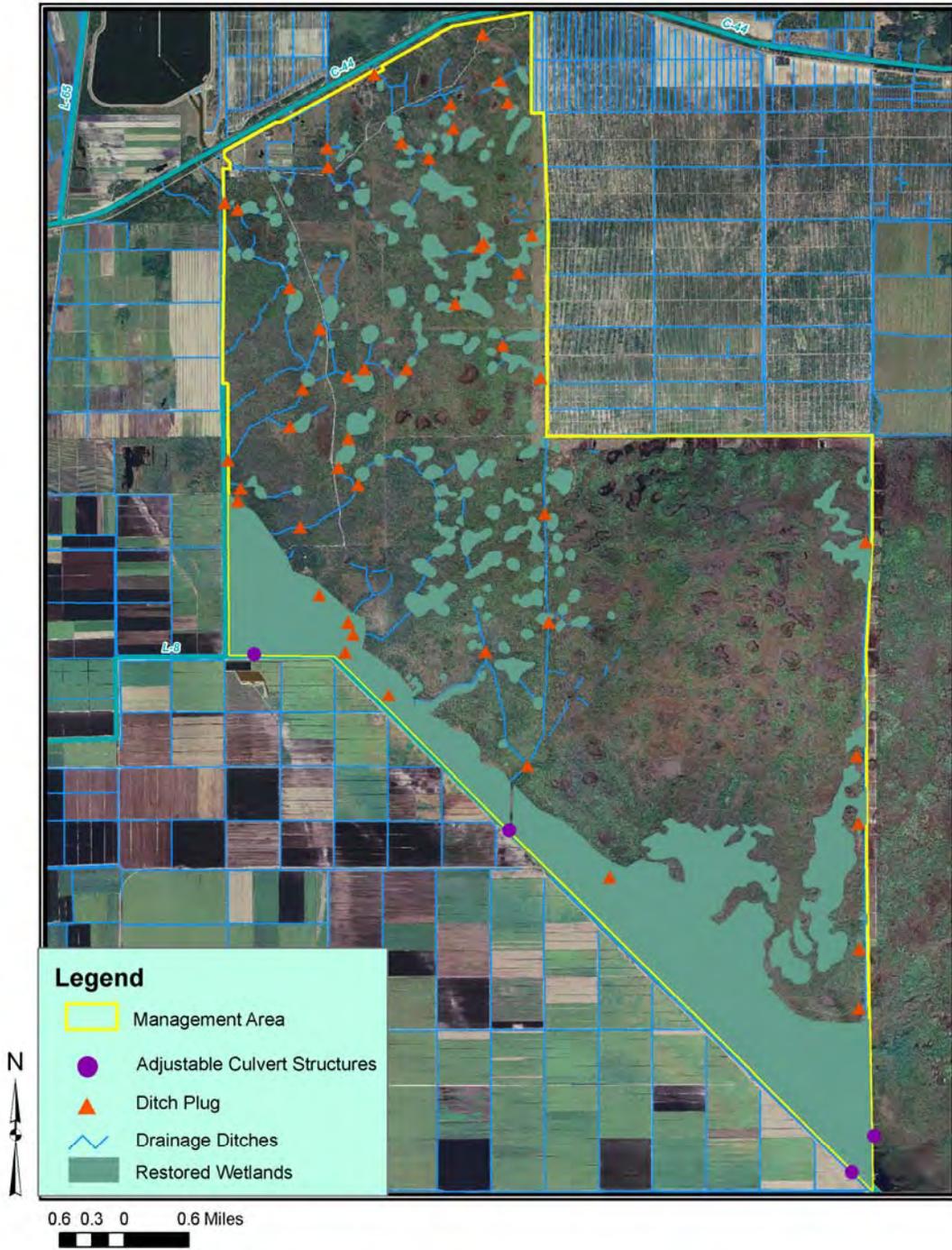
Policy 140-25(1) The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources.

Policy 140-25(1)(c) Where feasible, an attempt shall be made to restore a more natural hydroperiod on tracts where the drainage patterns have been altered.

Wetland Restoration

An environmental assessment completed for the property shortly after acquisition included a wetland and hydroperiod restoration plan as a primary management goal. The plan recognized that severe overdrainage of the property had occurred through the construction of a major network of swales and canals built to facilitate the drainage of water north to the St. Lucie Canal and south to the L-8 canal. The plan outlined a three-phase restoration project targeting restoration of both the interior wetlands and 2,341 acres of historic Everglades referred to as the L-8 marsh. In 1990 and 1991, 41 earthen ditchplugs were installed at strategic interior ditches to re-hydrate isolated wetlands and reestablish sheetflow across the property interior (**Map 19**). Approximately 4,000 acres of wetlands were restored through the use of ditch plugs. Monitoring has demonstrated that re-hydrating the wetlands resulted in native wetland plant species replacing upland species. However, exotic wetland plants such as torpedo grass have also invaded some re-hydrated wetlands requiring additional exotic plant control efforts.

Map 19. Wetland Restoration



The second phase of the restoration project entailed the construction of an eight-mile levee separating the management area from the L-8 canal and the Everglades Agricultural Area. This project included installation of three water control structures that became operational in December 1996. The District utilizes mitigation funds to pay for this portion of the restoration project.

The final restoration phase consisted of re-establishing the hydrologic connection between the L-8 marsh and similar habitat on the adjacent Corbett Area. In 1992, two sections in the roadway separating the DuPuis Management Area and Corbett Wildlife Management Area were degraded and stabilized with geo-web swales to reconnect historic water pathways. In 2001, installation of six culverts with adjustable control gates was completed to increase flow to DuPuis and help provide drainage from the adjacent Corbett Area.

Upland Restoration

In the mid 1990's, managers began additional work to restore DuPuis' upland areas. Prescribed burning was initiated shortly after property acquisition to reintroduce the beneficial effects of fire to the area, however, fire alone could not effectively reduce the overgrown structure of some upland areas. This overgrown condition negatively affected the diversity of native vegetation and wildlife, and was a probable contributor to the extirpation of the indigenous red-cockaded woodpecker from the area. Due to the heavy shrub layer and lack of herbaceous fuel, managers began using mechanical means to remove overgrown shrubby understory followed by prescribed burning. Vegetation throughout most of the site is now able to be maintained in a cost-effective manner using primarily prescribed fire.

Beginning in 2005, approximately 17 acres of Bahia grass was targeted with multiple herbicide treatments to encourage the recruitment of native species in a pilot project for groundcover restoration. This pilot project used chemical treatment and prescribed fire over successive years to break-up the solid Bahia cover and encourage the recruitment of native groundcover species. Many areas of DuPuis have seen a reduction in Bahia grass cover due to frequent inundation following hydrologic restoration. The pilot project has demonstrated that the chemical and prescribed fire treatment approach may be successfully employed in areas where hydrologic restoration alone is insufficient in restoring pasture areas.

The District has also utilized timber thinning revenue contracts to relieve the overcrowding of pines and cabbage palms. This thinning helps prevent the spread of pine bark beetles and revitalizes the understory by exposing more surface area to sunlight and increasing primary productivity. The dense pine stands were likely a combined result of a lower water table due to past drainage efforts, and the suppression of fire. To date, most upland restoration has been conducted on the more overgrown west portion of DuPuis, however, future work will include additional areas. The combined restoration effort has restored conditions suitable for red-cockaded woodpeckers and has led to a reintroduction program for this species (see **Rare, Threatened, and Endangered Animal Species** section 5.4.3).

Visitor Center Restoration

The District initiated an effort to restore native plant communities representative of the management area on a three-acre site immediately east of the main administration office that will become part of the visitor's center. The previous landowner had planted the area with imported exotic trees and the area subsequently became infested with invasive shrubs. A small concrete pond on the site had also become choked with invasive aquatic plants. In 1999, the District cleared the exotic trees and shrubs from the site, cleaned out the concrete pond, and re-shaped the contours around the pond to simulate a cypress dome. The District planted 35 nursery grown mature cypress trees, and over 100 slash pines and live oaks that were relocated from other sites on the property. In 2001, a new pump system was installed in the pond to control water levels. The pond was filled with a gravel base and topped with soil. The District planted over 20 native aquatic plant species to re-create various wetland plant communities that occur on the property. The site is used for environmental education purposes documenting the various plant communities found on DuPuis.

Borrow Pit Restoration

Work has continued on restoration of a 3 acre borrow pit located at the end of DuPuis Grade that was enlarged in the early 1990's to provide shell material for construction of a portion of the area's public roads. After the pit was closed in 1995, the shoreline and adjacent disturbed areas became heavily infested with cattails and exotics. Work began in 2001 to remove undesirable plants, re-contour a portion of the pond, and plant a variety of native vegetation to create a more natural landscape. A large berm of overburden material along one side of the pond was lowered and contoured to create areas where cypress, native shoreline plants, and marsh vegetation were planted. The top of the re-contoured berm was planted with cabbage palms, oaks, and native ground vegetation to create a small hammock. Cabbage palms were also planted in spots around the pond perimeter. A hydrological connection to the surrounding marsh was established by lowering another berm to permit seasonal inundation and water exchange. A similar project occurred in 2013 at the borrow pit pond within the family campground, where fill was brought in to create a littoral shelf that was planted with native wetland species.

5.1.1 Monitoring

Policy 140-25(3)(f)(2) Monitoring shall be conducted to identify landscape changes resulting from management activities.

Tracking environmental response to management and restoration activities provides valuable information on progress toward restoration objectives. Information obtained by monitoring specific sites assists land managers in making sound ecological choices for each unique parcel.

Monitoring has focused on documenting vegetative changes from restoration of the area's hydroperiod. In May 1988, the District established a monitoring program to determine the progress of hydrologic restoration in the L-8 marsh and in re-flooded interior marshes. Digital recorders were installed at four locations to record changes in water levels. Vegetation monitoring consisted of repeated counts along transects at varying elevations both before and after completion of the restoration project. In addition, photomonitoring was conducted at marked plots in the marsh. Results of the restoration/monitoring program were included in unpublished annual monitoring reports completed in 1997-2001. Reports indicated a positive vegetative shift occurred in the direction of more obligate wetland species as a result of increased inundation. Periodic monitoring will continue in the L-8 marsh to evaluate the influence of increased hydroperiod and also evaluate the effects of the additional water flows through the connection with the Corbett area marsh constructed in 2001.

Additionally, twenty-six 360 degree photomonitoring points have been installed throughout the management area with additional points being added as needed. Twenty of the photopoints have been installed within the 17-acre Bahia grass groundcover restoration area and were accompanied by groundcover vegetation survey plots. These photo points were utilized between 2007 and 2010 to observe and document the vegetative character of the property at that time. The photopoints have been established with permanent monuments that can be located with GPS coordinates and a metal detector, and are available for use in the future to compare site conditions with the 2007-2010 baseline condition.

5.2 Vegetation Management

Policy 140-25(2)(d) Where practicable, an attempt shall be made to restore and maintain desirable vegetation to promote habitat diversity in areas where invasive exotic vegetation, grazing practices, or improved land uses have substantially altered the historic landscape.

Policy 140-25(3)(l) Mechanical equipment may be used in conjunction with prescribed burning and other management tools to control vegetation and restore habitat structure.

Vegetation management is a program component where the composition and/or structure of a vegetative community is physically altered to meet a management objective. The techniques used in vegetation management include mowing, disking, shredding, roller-chopping, timber thinning, and planting. These techniques are applied to one or more management objectives that may include:

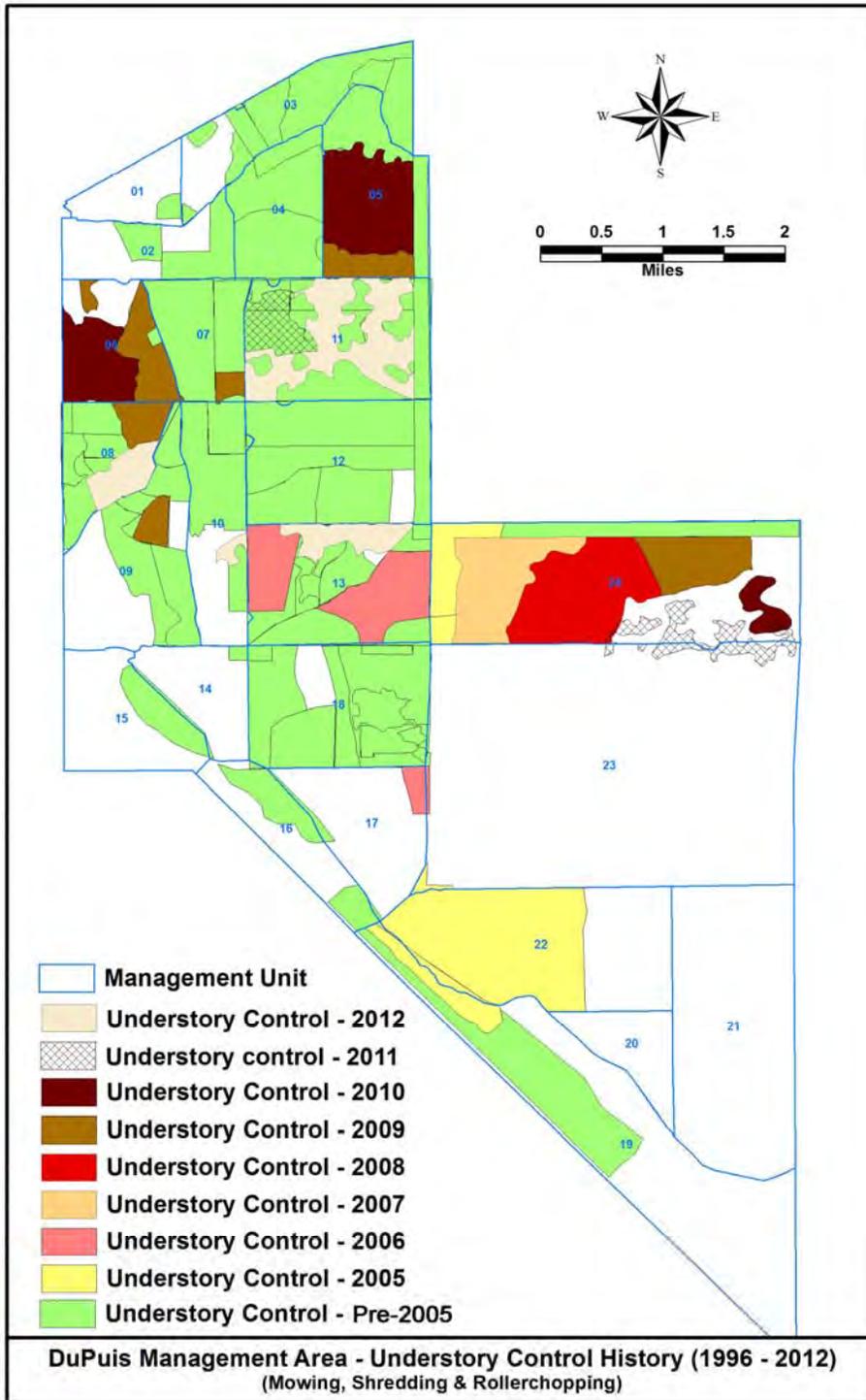
- Restoring a degraded vegetative community
- Improving an area's suitability as wildlife habitat
- Exotic species control or weed management

- Fuel management in relation to prescribed burning or minimizing wildfires
- Clearing for maintenance or project management purposes

Vegetation maintenance needs are identified annually by the regional land manager. Vegetation control and maintenance is executed by District or Florida Fish and Wildlife Conservation Commission field personnel or through contracts (**Map 20**). To date, several thousand acres of the DuPuis Management Area's understory have been mechanically treated using roller choppers or by shredding. Mechanical vegetation control will continue to be used in select areas where necessary to control understory brush species with the goal of maintaining these areas in a more cost-effective manner through the use of prescribed fire.

Past fire suppression and hydrologic alterations has resulted in the growth of dense stands of slash pine. This unnatural density reduces stand health and increases the stand's susceptibility to attacks from bark beetles and disease. Dense areas of slash pine have been thinned through selective harvests to attain more natural stand density. These projects were planned and conducted with sensitivity to surrounding environmental conditions and in coordination with public use schedules. These stands may also have locally heavy concentrations of cabbage palms in the midstory. Cabbage palms are thinned or eliminated through cutting or harvesting in select areas such as those being managed for red-cockaded woodpeckers. Through upland management, the extensive pine flatwoods are being restored to a more open natural condition that can be maintained through restored seasonal flooding and recurring prescribed fire.

Map 20. Mechanical Vegetation Treatments, 1996 – 2013 *



*no treatments conducted in FY 2013, budgeted funds were directed to other areas of higher priority within the management region.

5.2.1 Exotic/Invasive Plants

Policy 140-25(2)(c) Management practices will strive to identify existing infestations and implement appropriate control or eradication measures.

Policy 140-25(3)(b) Exotic plant control in all management areas shall strive to attain a level of success where periodic maintenance eliminates the infestation or reduces the coverage of exotic plants.

South Florida's subtropical climate provides an excellent growth environment for the rapid spread of exotic plants that can cause extensive alterations to natural ecosystems. Environmental changes caused by extensive hydroperiod alterations have been an important factor in the spread of exotic vegetation. Exotic plant infestations can result in partial or total displacement of native plants, loss of wildlife habitat, and the degradation of public use areas.

Land Stewardship targets Category I and II non-native plant species as identified on the Exotic Pest Plant Council's biennially updated list of *Florida's Most Invasive Species* (<http://www.fleppc.org/>). Category I species include non-native plants that invade and disrupt Florida native plant communities. Category II plants have the potential to invade and disrupt natural successional processes. Both Category I and II exotics are considered invasive and a threat to the function and ecological stability of Florida's natural communities.

Invasive and exotic plant control measures can include a combination of herbicide application, biological control, prescribed fire, roller chopping, mowing, and physical removal. Selection of control measures is dependent upon species type, environmental factors, and natural communities impacted. Private contractors conduct exotic plant control activities in cooperation with the District's Vegetation Management Section. In addition the U.S. Department of agriculture has released the lygodium moth and melaueca weevils within the management area; these are biological control agents that have assisted in the control of melaueca and to a lesser extent, lygodium.

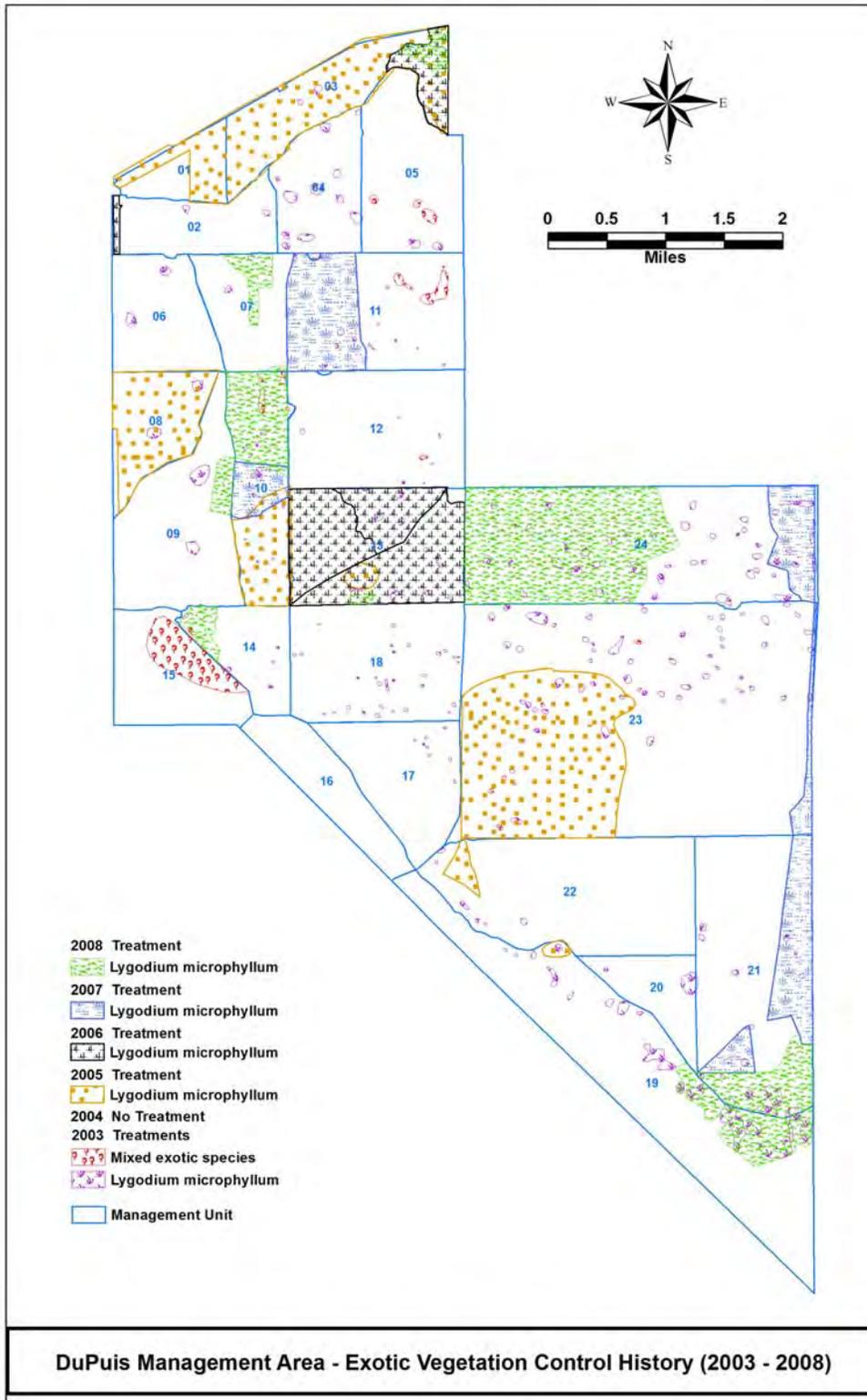
Melaleuca (*Melaleuca quinquenervia*) and Brazilian pepper (*Schinus terebinthifolius*) have received most control efforts since the acquisition of the management area. At present, all large infestations of Melaleuca have been eliminated and scattered young infestations are searched for and treated. Brazilian pepper remains prevalent and continues to require vigilance and control. Over the last decade, Old World climbing fern (*Lygodium microphyllum*) began spreading throughout the area and is now found in all habitat types, though heavy infestations are infrequent due to previous control efforts. This species poses the most significant threat to native plant communities on the property and recent additional funding has allowed aggressive and concentrated control efforts. Presently, Lygodium is sporadically scattered throughout the area and control efforts have significantly decreased

infestations. Because of this, per acre treatment costs are continuing to decrease. However, continued treatment is needed and will be applied to lower the prevalence of this aggressive exotic species into maintenance level.

Other terrestrial species such as cogon grass (*Imperata cylindrica*) and napier grass (*Pennisetum purpureum*) are controlled by regular herbicide applications. Water-hyacinth (*Eichhornia crassipes*) and waterlettuce (*Pistia stratiotes*) are present in canals located near the DuPuis marsh and require regular treatment. Smaller localized infestations of West Indian marsh grass (*Hymenachne amplexicaulis*), shoebutton ardisia (*Ardisia elliptica*), Indian laurel fig (*Ficus microcarpa*), bladder pod (*Sesbania sp.*), Primrose willow (*Ludwigia peruviana*) and Ceasar weed (*Urena lobata*) are increasing but are not currently being targeted due to budgetary constraints, but will continue to be monitored.

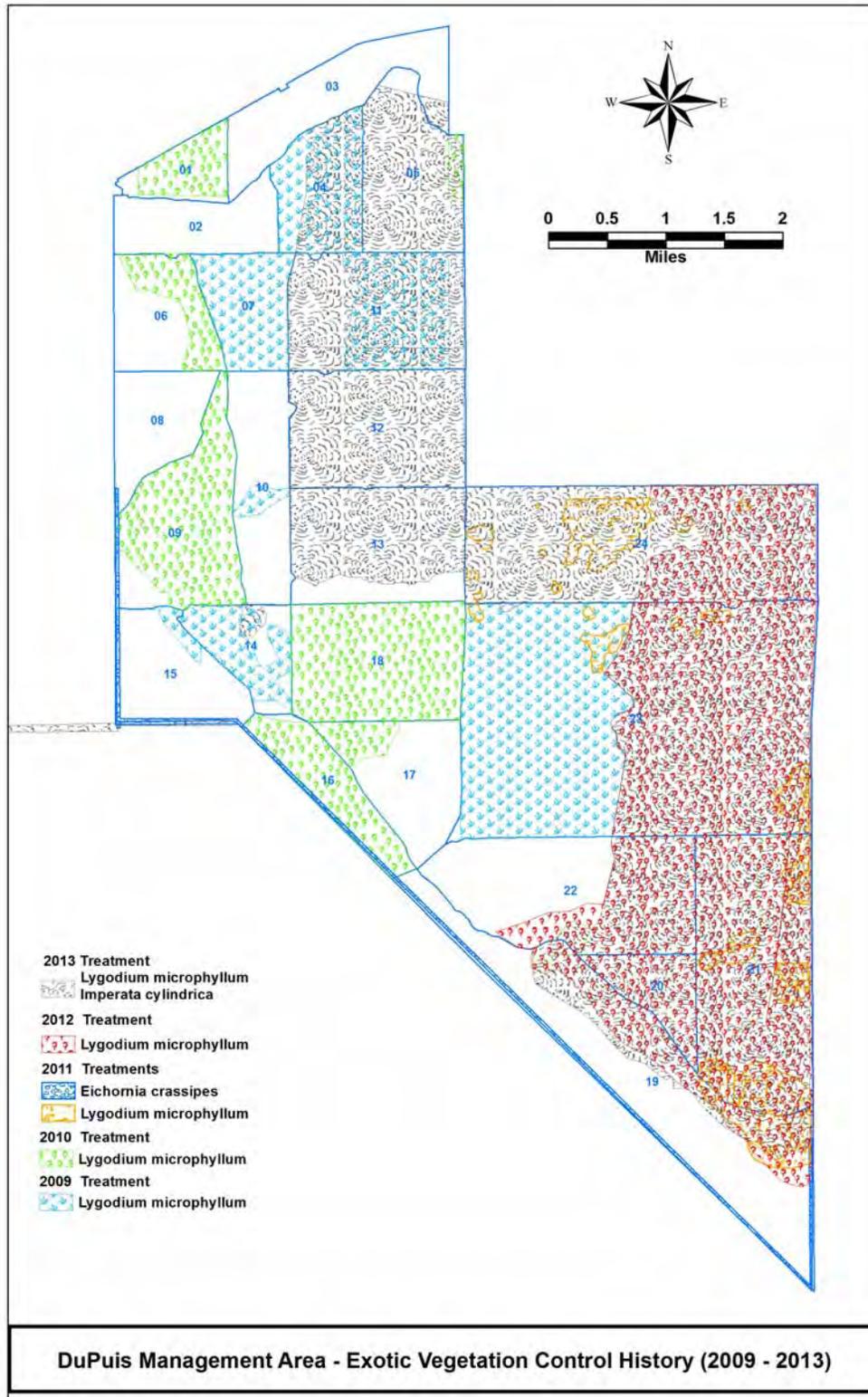
Exotic plant control is conducted primarily by a contracted crew of applicators, supervised by Land Stewardship staff. District field technicians also provide supplemental support especially on small or sporadically distributed infestations. Generally, treatments are scheduled so that each unit is covered bi-annually, however schedules are adjusted based on current conditions. The District treats and surveys the climbing fern-infested areas several times a year to control established infestations and locate new ones. Areas of treatment are scheduled based on groundwater conditions, time since last treatment, virulence of infestation, public use, and in accordance with other management operations. All treatments follow herbicide Best Management Practices and use the best available science. Treatment dates, locations, and herbicide are noted and recorded in a GIS database. **(Maps 21a-21b)**

Map 21a. Exotic Plant Control, 2003 – 2008



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

Map 21b. Exotic Plant Control, 2009 – 2013



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

5.2.2 Rare, Threatened and Endangered Plant Species

Policy 140-25(2)(b) Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

Listed species are those plants and animals considered rare within a specific geographic area by the U.S. Fish and Wildlife Service, the Florida Fish and Wildlife Conservation Commission, Florida Natural Areas Inventory, or the Florida Department of Agriculture and Consumer Services. The plant list of the management area (**Appendix E**) contain several listed species (**Table 2**).

Table 2. Plants Occuring in the DuPuis Management Area that are listed by the Florida Department of Agriculture and Consumer Services as Threatened (T), Endangered (E), or Commercially Exploited (C).

| Common Name | Scientific Name | Status |
|--------------------------|---------------------------------|--------|
| Giant Leather Fern | <i>Acrostichum danaeifolium</i> | C |
| Pinepink | <i>Bletia purpurea</i> | T |
| Manyflowered Grasspink | <i>Calopogon multiflorus</i> | E |
| Satinleaf | <i>Chrysophyllum oliviforme</i> | E |
| Florida Butterfly Orchid | <i>Encyclia tampensis</i> | C |
| Threadroot Orchid | <i>Harrisella filiformis</i> | T |
| Drysand Pinweed | <i>Lechea divaricata</i> | E |
| Catesby's Lily | <i>Lilium catesbaei</i> | T |
| Nodding Club-Moss | <i>Lycopodiella cernua</i> | C |
| Celestial-lily | <i>Nemastylus floridana</i> | E |
| Giant Sword Fern | <i>Nephrolepis biserrata</i> | T |
| Cinnamon Fern | <i>Osmunda cinnamomea</i> | C |
| Royal Fern | <i>Osmunda regalis</i> | C |
| Blue Butterwort | <i>Pinguicula caerulea</i> | T |
| Yellow Butterwort | <i>Pinguicula lutea</i> | T |
| Snowy Orchid | <i>Platanthera nivea</i> | T |
| Rose Pogonia | <i>Pogonia ophioglossoides</i> | T |
| Longlip Lady's-tresses | <i>Spiranthes longilabris</i> | T |
| Southern Lady's-tresses | <i>Spiranthes torta</i> | E |
| Reflexed Wild-pine | <i>Tillandsia balbisiana</i> | T |
| Cardinal Wild-pine | <i>Tillandsia fasciculata</i> | E |
| Twisted Wild-pine | <i>Tillandsia flexuosa</i> | T |
| Giant Wild-pine | <i>Tillandsia utriculata</i> | E |
| Simpson's Rainlily | <i>Zephyranthes simpsonii</i> | T |

Land Stewardship establishes appropriate fire and hydrologic regimes, and controls invasive exotics in natural communities to benefit plant species. District Public Use Rules aid in the protection of native habitat and specifically prohibit destroying, defacing, or removing any natural feature or native plant on District

lands. In this manner, listed plants are given lawful protection and environmental conditions suitable for their growth and continued existence.

In 1999, a population of state-designated endangered celestial lily, *Nemastylis floridana*, was found in numbers not previously reported in Florida. This population was observed following a prescribed burn in this unit the previous summer. Management efforts to protect this species include prescribed burning every 2-4 years, control of exotic vegetation, and limited public access (foot travel only). Periodic surveys will be conducted to evaluate the species status and determine the effects of management efforts.

5.2.3 Forest Resources

Policy 140-25(3)(h) Sustainable use of forest resources shall be conducted where these activities adhere to a series of environmental criteria (see 1999 Forest Management Plan) that meet Land Stewardship Program goals. Timber contractors will be required to meet silvicultural Best Management Practices (BMP) developed for Florida forests.

Policy 140-25(5)(b)(3) Timber sales will be conducted to improve forest health or to support specific forest management goals.

District policy designates its properties as multiple-use resources, which include timber harvesting. However, such activity must be compatible with Land Stewardship goals and objectives and meet strict environmental criteria:

- Sites considered for high-density pine plantings are currently in an “improved” or disturbed state (i.e. bahia pasture, existing pine plantation)
- Sites to be harvested are scheduled for hydrologic restoration and existing timber will likely be lost as a result of flooding
- The area does not contain any significant resources (e.g. endangered species) that may be harmed by changes in land use
- Forest operations would not require major road construction or improvement for accessing and processing timber, particularly within or across wetlands or other sensitive plant communities
- The area contains timber that requires salvage following fire and/or insect or disease damage, and could be subject to a sanitation harvest with minimal environmental impact
- The area has special needs for endangered species (e.g., red-cockaded woodpecker) management that requires timber stand improvement
- Harvest or planting would not negatively impact public use
- Timber harvests would return forests to a more natural structure and improved forest health

Several sites on the management area met the criteria for selective thinning, which last occurred in 2007. The thinning of dense stands adjacent to past beetle infestations improves stand health and lessened the chances of additional beetle expansion. All forest management activities were conducted in a manner consistent with good forest management practices and red-cockaded woodpecker recovery plans. There are currently no plans for additional thinning operations during this plan period.

Cabbage palms are also included in forest management planning. Occasionally palms become an unnaturally dense mid-story layer that shades out native vegetation and allows fires to reach pine canopies, often with catastrophic results. Revenue contracts have been utilized to selectively remove cabbage palms from areas where cabbage palms are growing too densely. Palms were individually spaded and the resulting holes were back-filled to required specifications. There are currently no plans for further thinning during this plan period, but land managers will continue to monitor areas where palms are likely to become too dense in the future.

To date timber and palm thinning has occurred in the following areas:

- In 1999, approximately 1200 acres of timber were harvested to salvage bark beetle-killed trees and thin overly-dense stands. This timber harvest also helped to promote and protect potential red-cockaded woodpecker nesting areas.
- In 2002, 180 acres of beetle-impacted former forest and areas of open pasture were planted with slash pine seedlings germinated from DuPuis seed stock. Future plans may include planting portions of the 60-acre citrus grove that had been previously cleared.
- In 2005, approximately 250 acres of over-dense stands of cabbage palms and 500 acres of pine trees were thinned to improve habitat quality.
- In 2006, 745 acres of pine timber were thinned to minimize the impact of a pine-beetle infestation. Additionally, 250 acres of palms were thinned to improve wildlife habitat at DuPuis through revenue generating contracts.
- In 2007, 350 acres of pine timber and 590 acres of cabbage palms were thinned through the use of two revenue generating contracts (continued from 2006).

5.2.4 Agricultural and Range Resources

Policy 140-25(3)i Range management and grazing will be considered on improved or native ranges when the introduction of cattle will not conflict with other natural resource management and public use goals.

Prior to District acquisition, the management area was managed as the White Belt Ranch where livestock grazing was the primary land use. The ranch supported 2500 head of cattle and 2000 sheep and goats at the time of acquisition. There are no plans to reintroduce livestock at this time.

When the District purchased the management area it contained a 60-acre citrus grove maintained by the previous owner for personal use. The District contracted the maintenance and operation of the grove from 1990 to 1998. In 2005 most of the remaining citrus trees were removed when canker was discovered on the north side of the St. Lucie Canal. Several mango, avocado, and lychee trees remain in the grove area.

5.3 Fire

Policy 140-25(5)(c)(3) Prescribed fire will be a primary management tool on District lands and will be applied within fire-maintained communities at appropriate intervals.

The majority of natural communities on District lands rely on frequent fire to maintain their vegetative characteristics and biodiversity. Wildfires no longer occur with historical frequency or extent, and this has altered natural community structure and function. Prescribed fire attempts to mimic the benefits of natural wildfires that historically reduced fuel loads, recycled soil nutrients, and maintained natural communities by inhibiting hardwood encroachment and stimulating fire-adapted plant growth and reproduction. The District recognizes the benefits of fire and has integrated prescribed fire planning and application into its land management strategy.

5.3.1 Fire History

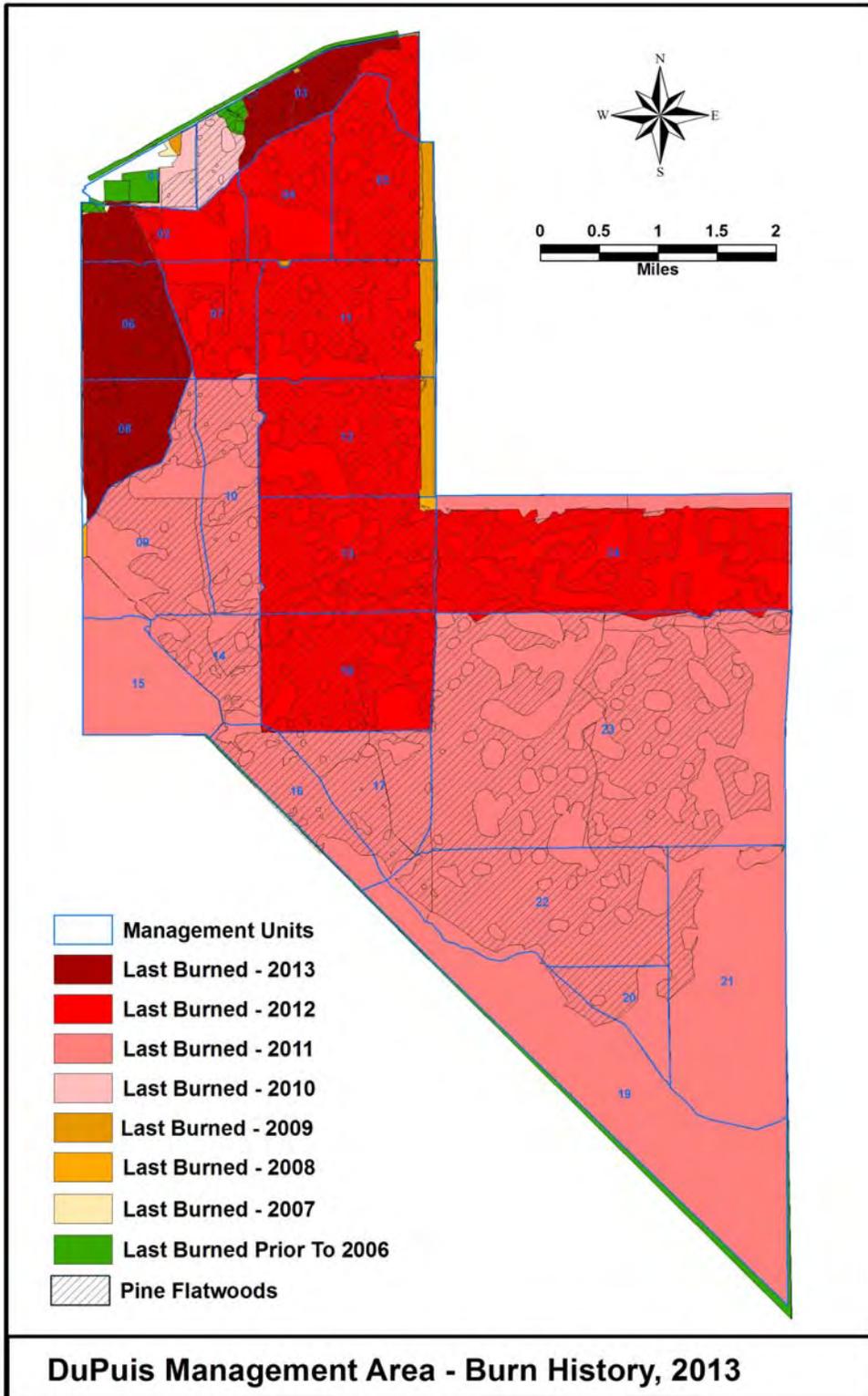
Only limited fire history is available for the management area prior to District acquisition in 1986. Burn history before the mid 1950s is unknown. However, grazing practices for this region indicate native range areas were probably burned regularly to improve forage. From 1955 (date of acquisition by previous owner) until 1980, winter burning was conducted annually throughout the pinelands until pasture improvement began on the western portion in the late 1950s and was completed by about 1970. Burning was not allowed on the improved western portion of DuPuis or on the improved pasture in what is now the L-8 marsh area. From 1980 until 1986, most of the east portion of the management area (east of Cooter Creek Grade) was burned annually each winter after hunting season.

DuPuis Management Area General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

After securing the appropriate side of a grazing unit with a blackline, ranch hands would ride the interior jeep trails setting spot fires or dragging a burning torch. Fires were low intensity, slow moving, and mainly grass fires (personal communication with former ranch manager).

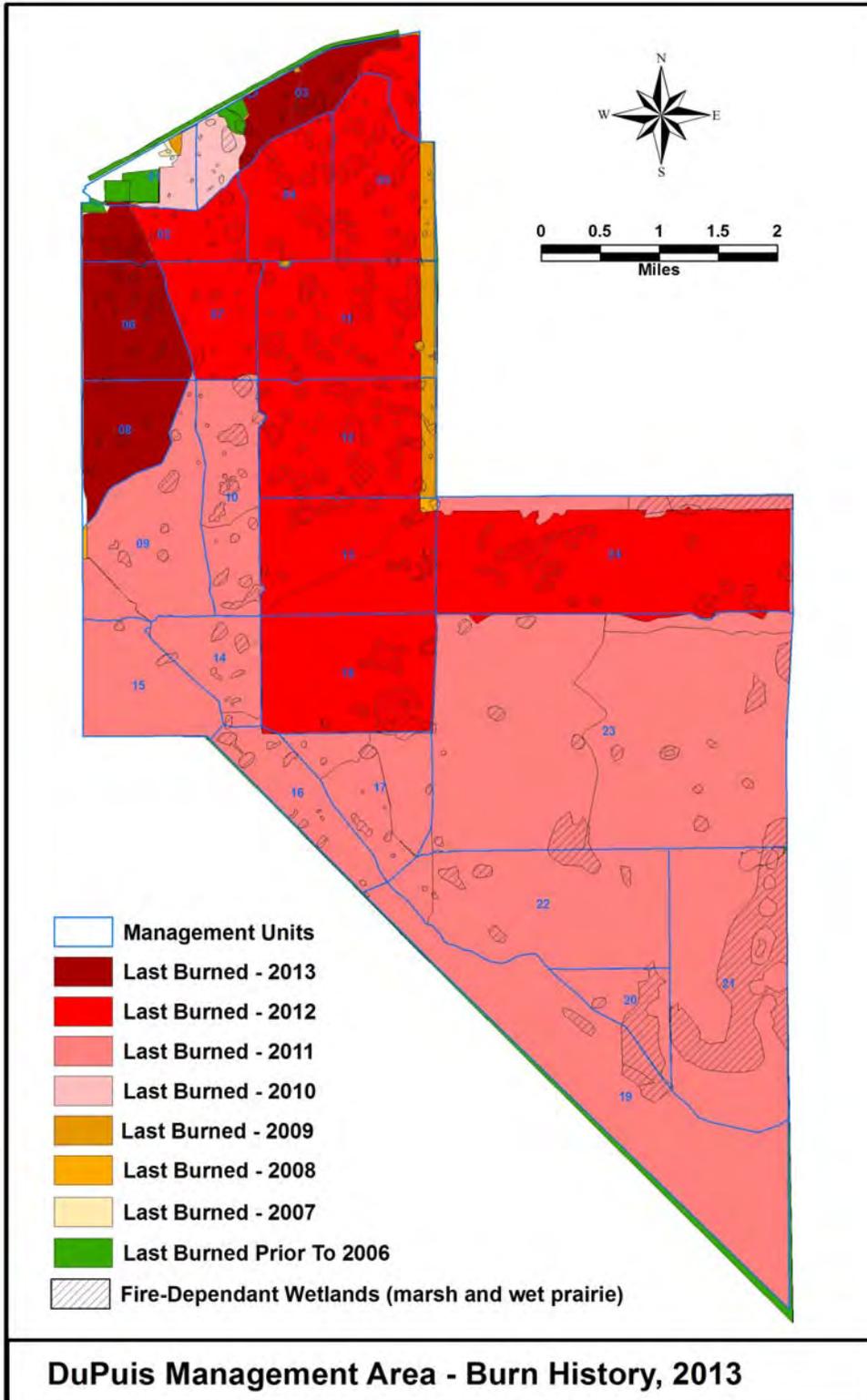
The District's prescribed fire program was initiated in the management area in 1989. Fire data (prescribed and wild) is maintained in GIS to produce historic burn maps of the property and is used for prescribed burn planning purposes (**Maps 22-23**).

Map 22. Fire History Map for DuPuis Upland Fire-Dependent Communities



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

Map 23. Fire History Map for DuPuis Wetland Fire-Dependent Communities



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

5.3.2 Prescribed Fire Planning

Burn units have been established in DuPuis, and seasonal planning considers potential burn areas based on their location, natural community types, fire history, and fire management objectives and constraints. The Land Stewardship Section bases fire management plans on ecological research and professional experience. Fire frequency schedules for each natural community consider recommendations provided in *The Natural Communities of Florida* (Florida Natural Areas Inventory, 1990). To mimic historic fire conditions, Land Stewardship emphasizes growing season burns (April-September) where practical. Natural firebreaks are utilized where possible to promote historic fire patterns, avoid soil disturbance, and reduce hydrologic flow disruption created by fire lines. Listed species life requirements are elements of prescribed fire planning. Application of fire, with appropriately timed herbicide treatments, is used as a tool for the control of exotic and invasive plants.

Burns are executed using methods as defined by the Prescribed Burning Act of 1990, Chapter 590.026, Florida Statutes. This legislation and associated administrative rules outline accepted forestry burn practices and are administered through the Florida Forest Service. Prescribed burns on DuPuis are conducted with a five person prescribed fire crew (Land Stewardship field crew) with assistance provided by other cooperating agency staff— especially the Florida Forest Service and the Florida Fish and Wildlife Conservation Commission. All Land Stewardship staff have completed the state certified burn course to ensure safety and proper technique.

Prescribed fire is applied within the management area at appropriate fire intervals for each natural community. The District concentrates on applying fire to each area of the property in order to reduce accumulated fuel loads, improve habitat, and provide a safer basis for future burns of increased frequency and lower intensity. Planning emphasizes prescriptions targeting control of woody vegetation using low intensity fires to achieve burn objectives. Adjustments to prescriptions are made based on effects of previous burns, with the goal to attain a 2-5 year rotation for flatwoods and 5-10 year rotation for marsh communities.

Large aerial burns have been used since 2004 to reduce the amount of burn preparation (and number of disked firelines), needed manpower, and the overall cost as compared to conducting a larger number of small burns. At DuPuis, aerial ignition can burn, in a single day, an area that would take several days of burning using ground crews alone.

Prescribed Fire and Carbon Sequestration

The District currently stores carbon on the lands it manages in vegetation and organic soils. Each year, the amount of carbon increases as young forests grow and marshes steadily fix carbon into peat. This is also known as carbon

sequestration. It is important to manage the District's land resources in a manner to maximize the amount of carbon that is sequestered, while minimizing carbon dioxide and other greenhouse gas emissions. Prescribed fire is a tool that when used under the right conditions and with the right frequency can increase the rate at which a fire-dependent natural community can grow and store carbon. Following a burn, there is a subsequent spike in primary productivity caused by a release of nutrients and exposure of more surface area to sunlight, as well as post-burn increases of both above and below ground carbon stores.

Prescribed fire guidelines for maximizing carbon storage that the District considers when conducting prescribed burns include:

- Burning at 3 to 5 year intervals
- Conducting late winter burns
- Implementing a proper mop-up phase of the prescribed fire to extinguish smoldering stumps is important to reduce unnecessary carbon and nitrous oxide releases, flaming combustion releases much less carbon than smoldering combustion
- Avoiding muck fires and conditions that lead to muck fires as they release large quantities of carbon and nitrous oxide
- Keeping fuel density low to avoid the possibility of massive carbon releases in wildfire

5.3.3 WILDFIRE SUPPRESSION

Policy 140-25(3)(d) The Florida Forest Service will be notified of all wildfires on District lands. Land Stewardship will provide initial suppression when commensurate personnel and equipment are available.

Lightning-caused wildfires are a common occurrence throughout Florida, including the DuPuis Management Area. It is District policy, and state law, that the Florida Forest Service is notified when a wildfire occurs on Land Stewardship-managed properties. Land Stewardship staff assigned to the area respond to and, if appropriate, begin suppression of area wildfires when detected. The Florida Forest Service is called immediately and a fire assessment is made.

If District manpower is available and other conditions are favorable, a permit will be requested from the Florida Forest Service to incorporate the wildfire into a prescribed burn. Although infrequent, allowing these wildfires to burn helps achieve burn objectives and prevents counterproductive and unnecessary suppression efforts. It is recognized that the best wildfire mitigation for the management area is to maintain the area with frequent prescribed fires which promote a healthy open forest with light fuel loads.

5.4 WILDLIFE MANAGEMENT

A primary land management priority on DuPuis is to maintain healthy fish and wildlife populations. Land Stewardship accomplishes this in several ways:

- Performing land management activities that maintain and/or improve native wildlife habitat
- Conducting specific management practices to benefit protected species
- Conducting wildlife inventories through a partnership with the Florida Fish and Wildlife Conservation Commission and prohibiting activities that have the potential to negatively impact listed species
- Following management guidelines for listed species protection as determined by the *Multi-species Recovery Plan for the Threatened and Endangered Species of South Florida, Volume 1*, (U.S. Fish and Wildlife Service. 1998)
- Reducing non-native pest species populations where appropriate
- Maintaining a master file of confirmed and potential wildlife species
- Cooperating with the Florida Fish and Wildlife Conservation Commission on wildlife management issues, including wildlife inventories and evaluating management actions.

Wildlife management in the management area is directed toward maintaining native species diversity consistent with the biological community types present. The Florida Fish and Wildlife Conservation Commission plays a lead role in wildlife management in the management areas by:

- Managing public hunts in a manner that provides sustainable game populations
- Releasing and monitoring wading bird, bobwhite quail, deer, and eagle populations
- Relocating and monitoring the red cockaded woodpeckers that have been translocated into DuPuis from donor sites
- Assisting the District with prescribed burns (recommendations, manpower, equipment, etc.)
- Posting of informational and regulatory signage
- Enforcing environmental and public use regulations

5.4.1 Game Management

Policy 140-25(4)(b)(4) Florida Fish and Wildlife Conservation Commission regulations shall govern hunting in areas opened for such use.

The DuPuis Management Area has been established as a Wildlife and Environmental Area by the Florida Fish and Wildlife Conservation Commission. The Commission administers several hunting seasons for deer, turkey, feral hogs, small game, doves, and migrating game birds. Management activities directed towards game management include establishing bag limits for game species, regulating hunting pressure, mowing openings for wildlife, assisting in vegetation

management activities, and providing hunting related law enforcement support. The Commission also maintains a small planted dove field on a previously disturbed portion of the area.

5.4.2 Exotic/Invasive Animal Species

Wildlife pest species are those non-native species that are harmful to native wildlife, that negatively impact native vegetation and wildlife or interfere with management objectives. The Land Stewardship's goal for wildlife pest management is to reduce populations to attain an acceptable level of impact to natural plant and animal communities. The District's Land Manager uses monitoring, visual observation, and and consultation with the Commission to define an acceptable level of impact. When population control measures are warranted, land managers consult with the Commission to determine effective and appropriate control techniques. The effects of pest population control efforts are monitored by periodic site evaluations.

The feral hog is a pest species that occurs within the management area. Disturbance caused by this species negatively impacts natural communities and interferes with land management operations. Although valued by some members of the public as a game animal, the feral hogs' high fecundity, adaptability, rooting behavior, omnivorous diet, and ability to quickly colonize areas raises environmental concerns. Their disruption of soil and vegetation alter natural communities and can be especially damaging in sensitive habitats that are slow to recover. Hog disturbance has occurred within most of the management area including wetland communities. Land management objectives are affected when rooting disturbance disrupts prescribed burns by preventing the spread of fire. Areas of disturbed soil are also more susceptible to exotic plant invasion. Rooting can also damage hiking trails, have a detrimental impact on small animal populations, and ground-nesting birds, and can damage infrastructure.

Feral hogs are harvested through recreational hunting on the management area in accordance with rules and regulations established by the Florida Fish and Wildlife Conservation Commission. Public quota hunts conducted in the fall and non-quota hunts during the small game and hog hunt seasons are the primary method of hog population control at this time. The number of permitted hog hunters has been increased over the years by adding additional hog hunts and removing quotas that limited the number of hunt participants. The increase in hunting pressure has helped to further control hog numbers and provide additional hunting opportunities. Public hog hunting will continue to be an important use of the area and will be looked upon as the preferred hog population control method. Presently, rooting disturbance occurs in the area but is considered to be at an acceptable level. Any additional control methods will be determined in cooperation with the Commission.

Other exotic fish and wildlife have been identified on the management area including the armadillo, brown anole, two-spotted cichlid, Cuban tree frog, coyote, iguana, Eurasian collared doves, Norway rats, and house mice. No control programs have been implemented for these species, as such actions have been determined to not be necessary.

5.4.3 Rare, Threatened and Endangered Animal Species

Policy 140-25(2)(b) Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

Several listed wildlife species are present or have been observed historically on the management area. Potential impacts to these species from planned land management and recreational activities are of special concern. Activities that might jeopardize the well being of these species are evaluated carefully and may be altered or cancelled if necessary. District land management activities including prescribed burning, hydrologic restoration, exotic vegetation eradication, understory control, and selective forest thinning improve natural environmental characteristics that benefit listed species as well as a variety of other indigenous wildlife. Special management attention is given to the area's bald eagle population and the reintroduction of the red-cockaded woodpecker.

The recommended buffer zones have recently been reduced from a 1500' radius to a 660' radius around the nest site (USFWS, 1987; USFWS, 2007; FWC, 2010), however because of the size of the DuPuis property, the District is able to keep disruptive land management activities the original 1500' distance away from active eagle's nests. This includes keeping nearby prescribed burns and smoke away from nest trees. Recreation activities are also modified to minimize disturbances in nesting season. When non-breeding season burns are conducted, nest trees are protected by cutting vegetation around the tree base to limit fire intensity. The Bald Eagle was de-listed from both the Federal and State imperiled species lists in 2007 and 2008 respectively, but this iconic species continues to be protected under other laws such as the Bald and Golden Eagle Protection Act and the state of Florida's Eagle Rules.

Several old red-cockaded woodpecker tree cavities scattered throughout the management area indicate there was probably a sizeable resident population at one time. The last active cavity was destroyed by wildfire in 1989 at which time birds were no longer observed on the area. A program is currently underway to reintroduce this species. In preparation, several land management activities were conducted to restore suitable habitat and protect remaining old growth slash pine trees. Heavy-duty mowing of overgrown understory, and selective thinning of pines and cabbage palms restored the open forest structure preferred by these birds. Frequent prescribed burning and the control of invasive exotic vegetation have maintained the open forest. Reintroduction sites were identified and artificial cavities were inserted into specific trees capable of supporting artificial

nest cavities. The translocated birds are being monitored by a Florida Fish and Wildlife Conservation Commission biologist to document movements, survival, and nesting success. At the time of publication, 71 birds have been introduced since the fall of 2006. These birds have fledged a total of 31 chicks. The management activities for red cockaded woodpeckers include:

- Annual inspection, maintenance, and installation of artificial cavities
- Monitor nesting activity and band young each spring
- Surveys at various times throughout the year to locate and identify individuals
- Surveys to find locations for new cavities
- Translocation of birds onto DuPuis from donor sites

Table 3. Listed Animal Species: (T) Threatened, (E) Endangered, (SSC) Species of Special Concern

| Scientific Name | Common Name | Status | |
|---------------------------------------|-------------------------------|--------|-------|
| | | Fed | State |
| <i>Aramus guarauna</i> | Limpkin | | SSC |
| <i>Caracara cheriway</i> | Crested caracara | T | |
| <i>Drymarchon corais couperi</i> | Eastern indigo snake | T | |
| <i>Egretta caerulea</i> | Little blue heron | | SSC |
| <i>Egretta thula</i> | Snowy egret | | SSC |
| <i>Egretta tricolor</i> | Tri-colored heron | | SSC |
| <i>Eudocimus albus</i> | White ibis | | SSC |
| <i>Falco sparverius paulus</i> | Southeastern American kestrel | | T |
| <i>Gopherus polyphemus</i> | Gopher tortoise | | T |
| <i>Grus canadensis pratensis</i> | Florida sandhill crane | | T |
| <i>Picoides borealis</i> | Red-Cockaded Woodpecker | E | |
| <i>Mycteria americana</i> | Wood stork | E | |
| <i>Pituophis melanoleucus mugitus</i> | Florida pine snake | | SSC |
| <i>Sciurus niger shermani</i> | Sherman's fox squirrel | | SSC |

6. Public Use

Policy 140-23 The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands.

Section 373.1391 (1)(a) Florida statute states that wherever practical, lands acquired by the District shall be open to the general public for recreational uses. The District encourages public use of management areas for appropriate natural resource-based activities. All District lands are available for public use, except in

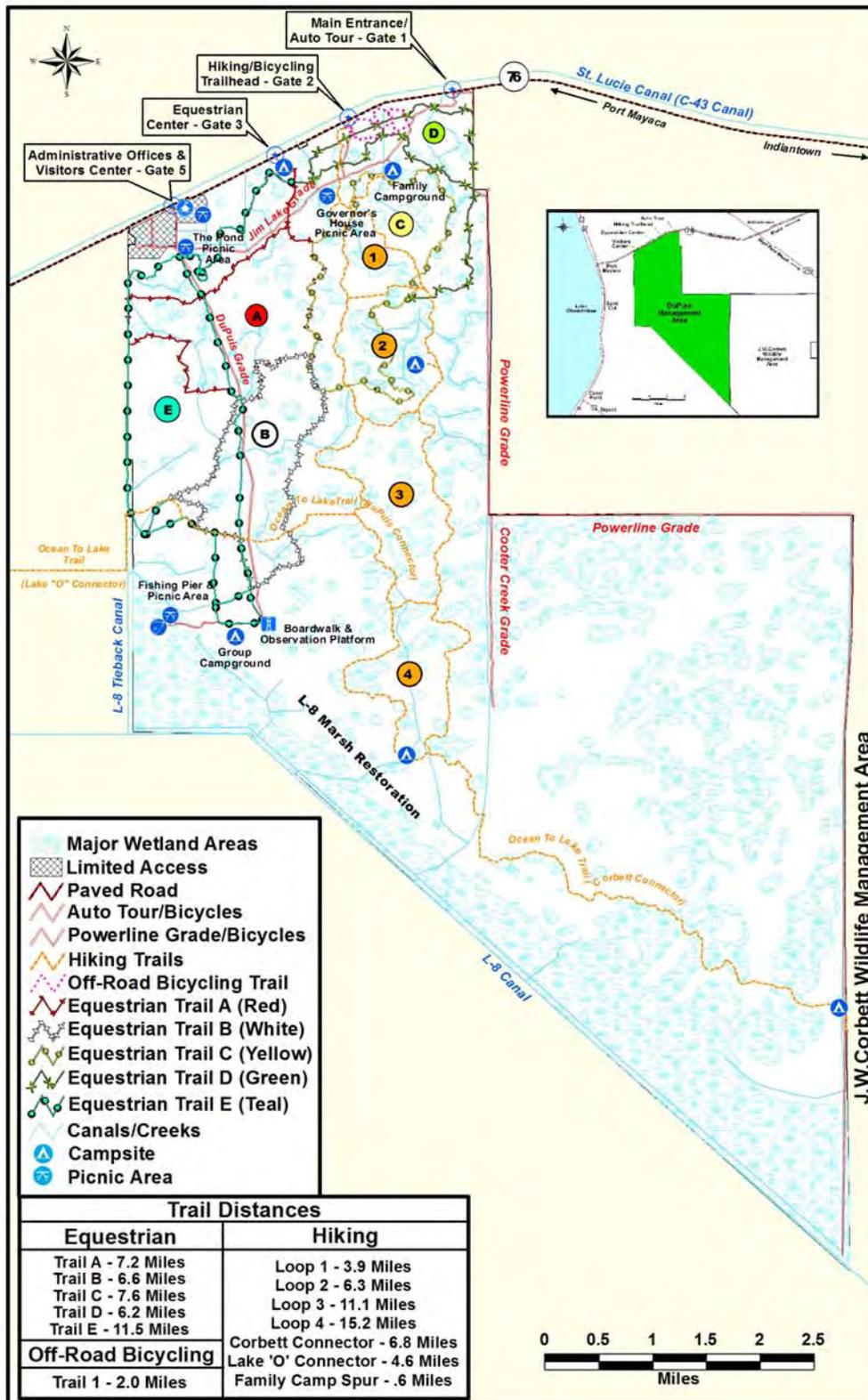
rare instances where there is no legal public access or where lease restrictions or construction activities prohibit public entry. Public input into the management of the area is solicited at quarterly Water Resource Advisory Committee Recreational Issues Workshops. Adjustments to public use opportunities are made on an ongoing-basis through the Recreational Issues Workshops and through amendments to the 40E-7, F.A.C., public use rule. This plan addresses public use matters only to describe the scope of public use opportunities available or planned as of the date of the plan, it is not intended to set public use policies through the plan period.

The determination of compatible public uses is based on the following criteria:

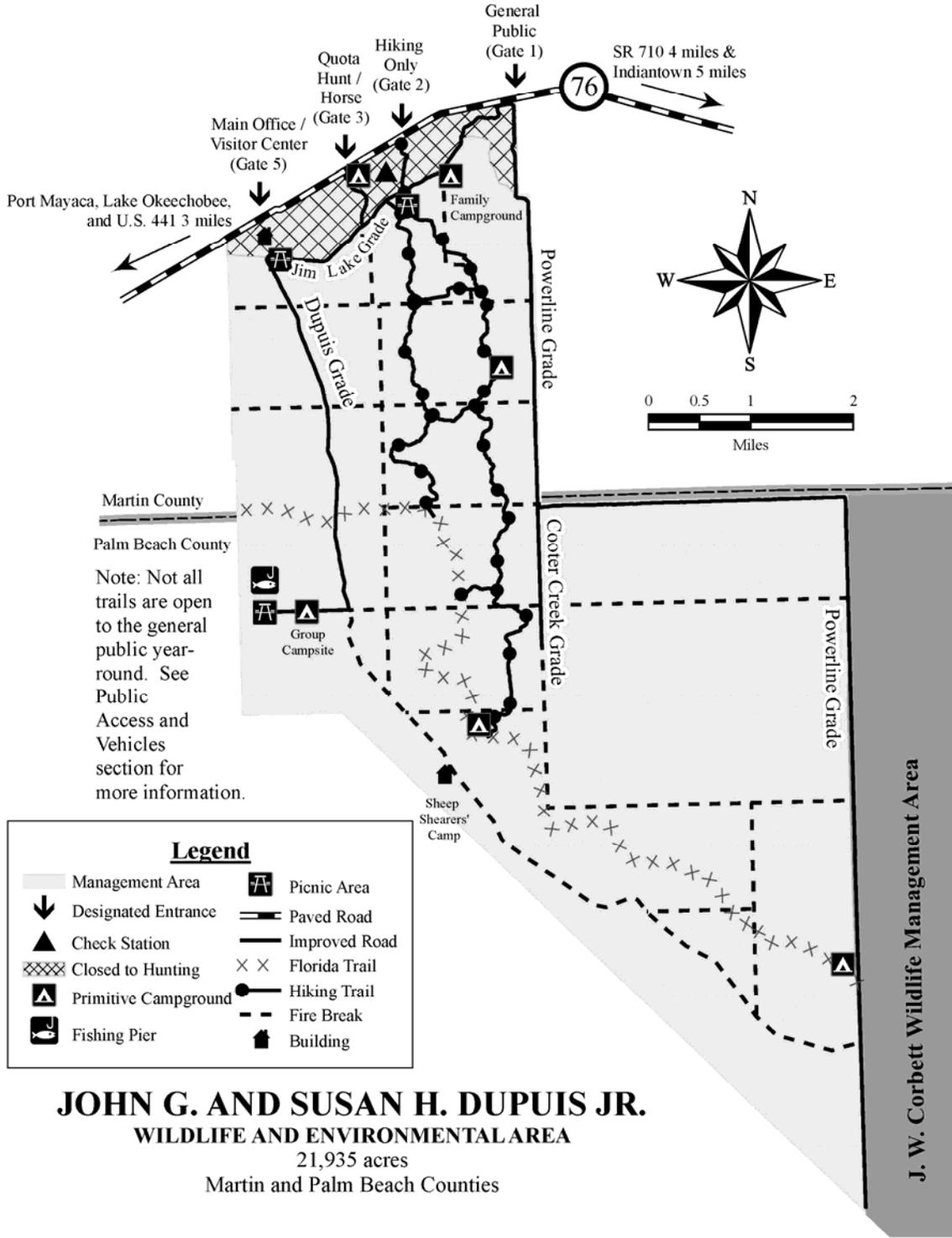
- Consistency with the reason the lands were acquired
- Restrictions and/or prohibitions imposed by easements, leases, reservations, purchase agreements, and other legal mandates
- Infrastructure and support facility requirements, such as fences, gates, signage, entry design, stabilized off-road parking, trails, campsites, maintenance, and other operational and budgetary impacts
- Opportunities for persons with disabilities
- Limitations on use resulting from endangered species, other sensitive natural resources, archeological resources, or land management practices
- Public health, safety and welfare
- Protection of resources

A wide variety of recreation activities are appropriate and encouraged in the management area including bicycling, mountain biking, canoeing, camping, equestrian use, fishing, hiking, amateur astronomy, geocaching, and hunting. Approximately 20 miles of interior roadway, 22 miles of hiking trails, and over 40 miles of equestrian trails provide access for public use. A self-guided auto tour along Jim Lake and DuPuis Grades highlight points of interest and management activities. A short trail with a boardwalk has been constructed off the DuPuis Grade, providing access through a nearby cypress dome community which enhances public use of this area. Campsites available include a family campground, an equestrian campground, a group campsite, and three backcountry sites. A public visitor's center at the DuPuis office and a fishing pier site off DuPuis Grade are handicapped accessible. Most of these sites have been significantly upgraded with new picnic shelters, landscaping, self-composting toilets, and other amenities. There are four access points to the management area for public use (**Maps 24 – 25**). User information concerning recreational activities is located at the DuPuis Management Area and West Palm Beach offices, and at each entrance to the management area. Information is also available on the District's recreation website and printed Recreation Guide.

Map 24. DuPuis Recreation Opportunities



Map 25. DuPuis Wildlife and Environmental Area



Attachment: DuPuis Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management Plan

6.1 Resource Protection

Policy 140-25(1)(d) Public use shall not result in detrimental impacts to water resources. When a public use activity produces detrimental effects on water resources, it shall be discontinued until an evaluation determines that such use is compatible.

Policy 140-25(3)(g) Resource protection shall be provided by professional law enforcement services through funded and unfunded contractual agreements to safeguard the public and protect natural and cultural resources on District-managed natural areas.

Policy 140-25(4)(b)(1) Public use regulations are set forth in 40E-7.511, Florida Administrative Code, to implement Section 373.1391(1)(b), Florida Statutes. Accordingly, the District shall publish and make available to the public a "Recreational Guide" for designated land management areas.

Regulations that govern activities within the management area are in the District's 40E-7 rule and the Commission's DuPuis Wildlife and Environmental Area regulations. The 40E-7 rules are available at agency headquarters in West Palm Beach and on the District's website. Allowed activities include hiking, fishing, boating, canoeing, camping, hunting, geocaching, equestrian use, biking, and nature study. The Florida Fish and Wildlife Conservation Commission is responsible for enforcing laws, rules, and regulations applicable to the management area, along with the local county sheriffs' offices.

Management of public activities on District lands requires a commitment to resource protection while simultaneously promoting all appropriate public uses. The District emphasizes the enforcement of pertinent rules and regulations to protect natural resources and enhance recreation opportunities. The resource protection program integrates law enforcement to protect the natural resources and District assets. As part of the establishment of the area as a Wildlife and Environmental Area by the Commission, law enforcement officers conduct regular patrols throughout the year, increasing their presence during hunting seasons and at other times when public use is high. Law enforcement surveillance protects natural and cultural resources, deters illegal activity, and safeguards the public. Patrols are conducted with 4-wheel drive vehicles, all terrain vehicles, aircraft, and on foot. The Land Stewardship Section's law enforcement coordinator reviews biweekly reports and meets with officers to structure patrols based on resource needs.

Resource protection is also greatly enhanced by the establishment and maintenance of posted fence lines that delineate property boundaries. The management area perimeter is fenced and posted in its entirety, and is maintained and repaired as necessary.

6.2 Environmental Education

Educational programs are developed and implemented on select management areas by cooperators interested in promoting increased visitor awareness and appreciation of area natural and cultural resources. A central theme to these programs is the vital role of water management in maintaining our natural resources.

A section of the main office building and part of the surrounding grounds have been developed into a visitor's center and environmental education area. Additional parking areas were constructed to accommodate school buses for larger visitor groups. The District is working through a contractual agreement with Florida Atlantic University's Center for Environmental Studies to provide educational programs. An indoor exhibit room and lobby contain interpretive information as well as diorama-like displays of native communities and animals. Outdoor areas contain interpretive signage along a short trail through planted natural communities representative of those found on the management area. The visitor's center is open on weekdays to area users and also accommodates specialized programs for larger school groups.

7. Administration

Administration of District land management is directed through the Land Stewardship Section. Policy decisions, planning and budgeting, procurement of personnel and equipment, contract administration, and issues of program development are administrative tasks coordinated through the Section. Input is provided from the public and regional land managers located at District Service Centers, Field Offices, or Field Stations over the 16-county area. Regional land managers handle regular administrative duties from their field locations to assure quick response to local concerns and management issues. Administrative activities for the management area are handled through the DuPuis field office.

7.1 Planning and Budgeting

Planning is a major function of the Land Stewardship mission and is critical to maintain proper program focus, direction, and coordination with other agencies. Planning is accomplished by section planning staff in coordination with land management staff. Section-level planning produces the Land Stewardship Activity Report for the Florida Forever Workplan, and coordinates land acquisition planning with other District and outside agency personnel.

Policy 140-25(6)(b) General Management Plan: Provides a description of recommended management and is required for each Land Stewardship Management Area. The GMP follows a designated format and is updated every ten years.

General Management Plans are developed that detail strategies to guide management activities on individual project areas. These plans define goals and objectives, identify major management issues, and describe management activities. Each plan is subject to a draft revision period where public comment and professional review is requested prior to plan approval. Each plan is revised on a ten-year cycle by planning team and land management staff.

Policy 140-25(5) The District will secure dedicated funding sources, personnel and other resources to support program goals and objectives. Project funding needs and sources for cooperative management agreements with government and non-government entities will be identified during acquisition. A cooperative management agreement will designate a lead manager and identify whether District funding is required.

The principal sources of funding for land management operations include revenue from commercial and agricultural leases, revenue generated from mitigation banks and interest earned on offsite mitigation funds, and ad valorem tax revenue. Historically, the Water Management Lands Trust Fund, administered by the Florida Department of Environmental Protection, had been the primary source of land management funding. Additional funding and support has been obtained from grants, the harvest of renewable resources, in-kind services from cooperating management partners, and no-cost services from user groups and volunteers.

Budget planning begins in November during the work planning process for the following fiscal year (October-September). Overall funding availability generally determines management activities. Site-specific priorities are generated and submitted by the regional land managers. Budget distribution among the District's five land management regions is based on a programmatic prioritization of management needs.

The continued operation and maintenance of the DuPuis Management Area includes costs to cover staffing, ongoing operational and land management expenses, and capital refurbishment/replacement of aging infrastructure and equipment. Capital infrastructure needs are determined by infrastructure condition and anticipated continued serviceability over the next fiscal year. Priorities for capital refurbishment/replacement are made on a District-wide basis. It is anticipated that several infrastructure features will require refurbishment/replacement during this plan period, these features include: the bathroom building and barn roofs at the equestrian campground, replacement of equipment sheds and pole barns in the shop compound, and other minor features such as septic systems and air-conditioning units.

The operational and land management expenses for FY 2014 are included in **Table 4**, below. Contracted Land Management Services include contracts with the Florida Fish and Wildlife Conservation Commission, the Department of

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Corrections (inmate labor for needs such as trailhead maintenance and fence repairs), and the Florida Center for Environmental Studies. Operational Expenses include supplies, janitorial services, septic service, business travel, and safety equipment. Public use costs are generally the maintenance costs associated with public use facilities. Site Security represents costs associated with contracted law enforcement services which currently are not budgeted for on DuPuis. It is anticipated that budget needs for the management area will increase during this planning period due to increased contracting costs and the need for infrastructure replacement as identified in Section 2.1 of this plan.

Table 4. Operational and Land Management Expenses for Fiscal Year 2014.

| DuPuis | FY2014 Budget |
|---|------------------|
| Contracted Land Mgt. Svcs | \$209,000 |
| Utilities and Operational Expenses | \$83,071 |
| Equipment and Infrastructure Maintenance | \$31,000 |
| Exotic Species Control | \$160,000 |
| Vegetation Management | \$81,350 |
| Public Use | \$29,000 |
| Site Security | \$0 |
| Total | \$593,420 |

7.2 Infrastructure

Policy 140-25(3)(k) Infrastructure support shall be developed and maintained to provide safe access for responsible management and public use on District lands. Such infrastructure may include access points, roads, trails, signs, utilities, and minimal public facilities.

Current infrastructure which requires regular maintenance includes recreation access points and trailheads, perimeter posting and fencing, firelines, hiking trails and roads, parking areas, kiosks, camp sites and rest rooms, the field office and visitor center, the equestrian center, and other structures.

7.3 Personnel and Equipment

The District is separated into five geographic regions, each staffed with professional land managers and technicians who are supervised by a Section Leader. The Land Stewardship Section administrator, recreation staff, and planning staff are headquartered at the main West Palm Beach office.

Stewardship of the management area is the primary responsibility of the District's East Coast senior land manager, who supervises an administrative assistant, a crew chief, and three land management technicians. The DuPuis staff manages an additional 34,389 acres of land throughout the East Coast land management region including Allapatta, Mecca, the Loxahatchee River, Cypress Creek, and portions of PalMar and the Atlantic Ridge. Additional management input and support comes from District planning and Field Station personnel, as well as the Vegetation Management Section. Staff has access to tools, supplies, four-wheel drive vehicles, fire suppression trucks, all terrain vehicles, swamp buggies, bull dozers, tractors, and other heavy equipment.

7.4 Volunteers and Alternative Work Force

Policy 140-25(5)(d)(1) Volunteers, interns and alternative work forces will be used when possible to supplement existing staff and services.

Section 373.1391(3) F.S. encourages the District to use volunteers for land stewardship and other services. The District recognizes the merits of volunteerism and welcomes participation in activities appropriate for public involvement. In Fiscal Year 2013, District lands benefited from 10,000 volunteer hours, or \$217,900 worth of volunteer services (using a \$21.79/hour national average for the value of volunteer service). Volunteer activities help accomplish management objectives, promote citizen involvement, and allow area staff to focus on other tasks. At DuPuis, the Loxahatchee chapter of the Florida Trail Association regularly provides volunteer services to maintain the Ocean to Lake Trail and the four other hiking trail loops onsite. The Florida Center for Environmental Studies coordinates a substantial amount of volunteer services including student service learning opportunities, and activities through the Friends of DuPuis. The DuPuis Horsemen's Association provides volunteer assistance in the maintenance of the equestrian facilities and trails. Land Stewardship also utilizes a volunteer campground host at both the equestrian and family campgrounds. Other volunteer services have been provided by the Eagle Scouts, and several other individual volunteers.

7.5 Contractual Management

Policy 140-25(5)(a). The private sector may be solicited to furnish certain management-related facilities and services through the execution of leases and agreements. These leases/agreements will assure mutual benefits to both the District and private parties and be consistent with the program management objectives.

Effective operation and management of District properties requires the services and cooperation of private organizations, other governmental agencies, and volunteers. Contractual relationships are formalized through management

agreements signed by both the District and contracting entity with the document defining the responsibilities of each party.

The District has established and maintains several contractual management agreements to assist with the cost and management of DuPuis which, at the time of this publication include:

Agreement #1
4600000961

This is a contractual multi-site agreement that authorizes the Florida Fish and Wildlife Conservation Commission to perform land management and public recreation services on District-owned properties, including the DuPuis Wildlife and Environmental Area.

Agreement #2
C89-0065

A Memorandum of Understanding with the Florida Trail Association to maintain the segment of the Ocean to Lake Trail that passes through the management area.

Agreement #3
3600000804

The District entered into a cooperative agreement (originally contract number C-12559) in April, 2000 with Florida Atlantic University's Center for Environmental Studies to develop a public use and education program at the management area visitor center. The agreement includes interpretive trail and sign development, supervision of volunteers, conducting service learning projects, and site maintenance.

Agreement #4
OT051110

A Memorandum of Understanding with the DuPuis Horsemen's Association to help maintain the equestrian trail system and equestrian campground at gate 3.

Agreement #5
4600002826

An agreement with the Florida Department of Corrections to provide inmate labor for land management and infrastructure maintenance. The agreement covers DuPuis and other lands within the East coast Land Management Region.

7.6 Management Review

Policy 140-22(j) Section 373.591, Florida Statutes, mandates the District to solicit input on current management programs through professional peer reviews.

A land management review team is identified for each project area with a General Management Plan. These ad hoc teams are comprised of state, county, and private entities that periodically review management activities to assure they are consistent with acquisition intent and program objectives. Management assessments are conducted in light of the goals and objectives defined in the area's general management plan and are scored on a scale of 1 to 5 with a '1' meaning the management is insufficient and a '5' meaning the management is extremely effective. If the review team determines that management is insufficient in any area, attaining an average score of less than 3.0, then the District is to provide a written explanation to the review team along with proposed corrective actions.

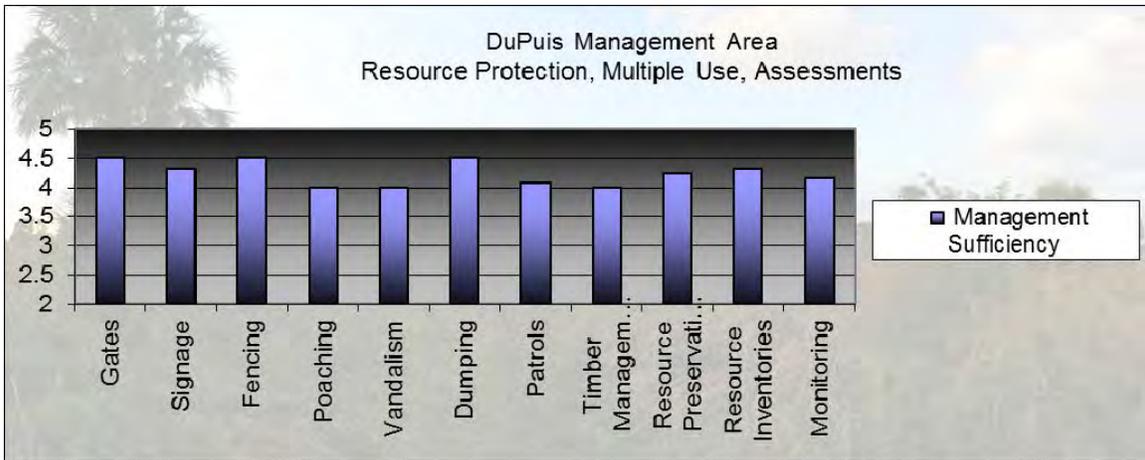
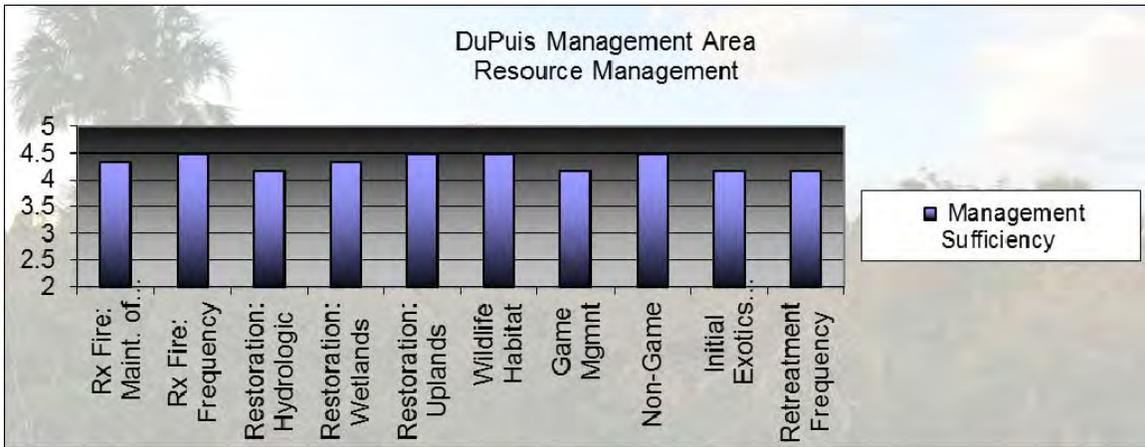
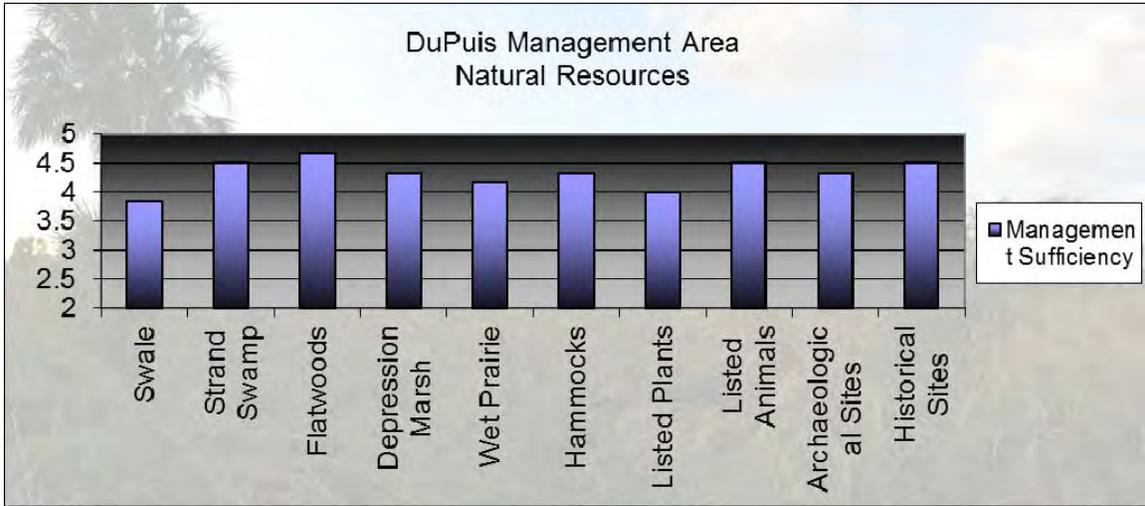
A management review of DuPuis was conducted in November, 2013. The review team provided comments on the condition of the land and scored the District's management of the site.

Positive comments were received on the prescribed fire program including that most of the sites have been burned on schedule for many years with good seasonal variability. Positive comments were also provided on the availability of diverse public use opportunities provided free-of-charge.

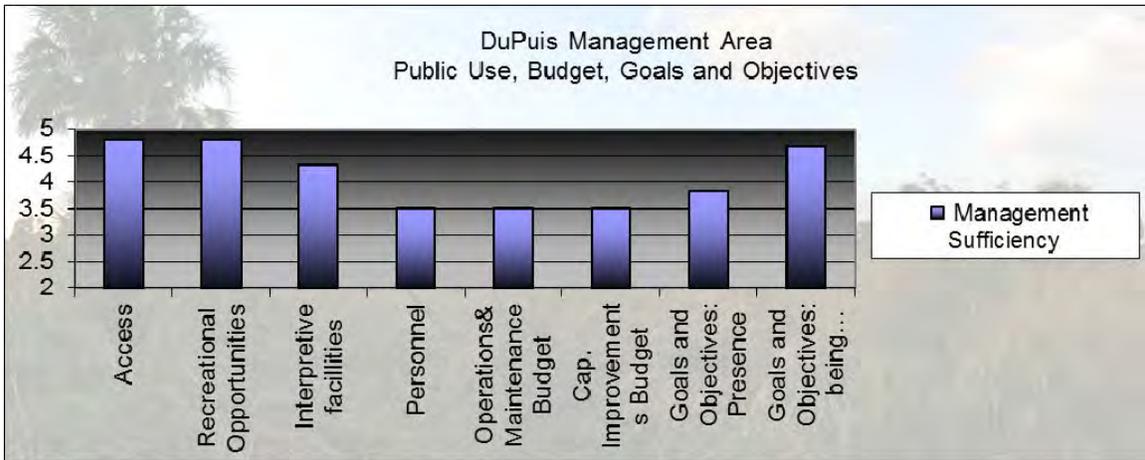
Several team members expressed a desire to see further work on hydrologic and understory restoration. One member of the management review team commented that the plan could better address poaching and vandalism issues. One member stated that the environmental education goals should be explicitly stated in the plan.

The team rated the overall management of the land on criteria such as: the natural resources, resource management activities, public use, budget, goals and objectives, resource protection, multiple use, and biological assessments and monitoring. The average scores by category are indicated on the graphs below:
 Adherence

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The average score for the 2013 for the condition of the Natural Resources was 4.3; Resource Management was 4.3; Resource Protection, Multiple Use, and Assessments was 4.2; and Public Use, Budget and Goals and Objectives was 4.1. The relatively low scores received in the categories of Personnel, Operations & Maintenance Budget, and Capital Improvements Budget reflect the review team’s recognition of the District’s current budgetary challenges.

Appendix A

History of the DuPuis property. Steve Farnsworth. Unpublished report to the SFWMD. 2003.

The DuPuis Reserve has a long history of human usage. The southern border of the reserve is part of a physiographical feature known as the Loxahatchee Scarp. Within a half mile distance, the sandy soils of the pine flatwoods at 20 to 25 feet in elevation drop down to the mucky soils of the Everglades sawgrass marshes at elevations below 15 feet (USGS 1971). Shallow wet prairies occupy the transitional areas. Upland areas in close proximity to large water bodies were attractive sites for early Americans, who would establish seasonal camps and permanent settlements in hammocks accessible by water. There are four known archeological sites, all located along the southern edge of the site (Wheeler 2000). Most of the sites are located in close proximity to sloughs that flow into the Everglades. These sites are associated with the Belle Glade culture and have the pottery, circular and linear earthworks, and the reliance on freshwater resources that characterize this culture. The presence of shark teeth, shell tools, sea turtle remains, and chert artifacts indicate that the inhabitants of these sites had trade networks with coastal areas and central Florida.

Site 1 contains a circular ditch feature nearly 900 feet in diameter. It is believed to have been constructed between 1000 B.C. and A.D. 200. Human habitation in the hammocks associated with the ditch appears to have continued until A.D.1100. Site 2 was a small crescent-shaped earthwork with a pair of linear earthworks extending southwards from the crescent. The earthworks have been obliterated by grazing sheep and cattle. Human habitation in the nearby hammock at this site was believed to be short-lived. Site 3 is in a large hammock and is believed to be a village or hamlet midden with a long period of occupation. There are no earthworks associated with this site and human habitation is believed to have ceased around A.D. 1100. Site 4 is a conical sand mound with outlying crescent-shaped earthworks. It is believed to be a burial mound and was in use into the Spanish contact period (Wheeler 2000).

The only historical account of the native Americans that lived near the reserve comes from Hernando d'Escalante Fonteneda, a Spanish shipwreck survivor taken captive as a young boy by the Calusa tribe in 1545 and rescued by Jean Ribault seventeen years later. He later wrote a account of his captivity, which was translated by True (1944). Fonteneda mentions a tribe called the Mayaimi which occupied the area north and east of the Lake of Mayaimi (present-day Lake Okeechobee). The Mayaimi had a major town called Guacata, which was located somewhere near present-day Pahokee, and numerous small settlements around the lake. The Mayaimi were probably the last users of the DuPuis Reserve burial mound.

The population of the Mayaimi declined rapidly in the early 1700s, as they were decimated by European diseases, slave raids, and warfare with other tribes. In the 1740s, a Spanish mission was established near present-day Miami. Documents related to this mission indicate that the “Maymies, Santaluzos (St. Lucie), and Mayacas “ had united and were living four days journey from the mission in the interior (Hann 1991). The Mayacas were originally from the upper St. John’s River area in Volusia County, but may have been forced to move south because of raids from tribes to the north in the English colonies. The Mayaca tribe is believed to be the origin of the name of Port Mayaca.

The native American inhabitants of southern Florida are believed to have mostly disappeared by 1760s. The few survivors are believed to have traveled to Cuba with their Spanish allies in 1763 when Florida became a British colony, or have been absorbed into the Seminoles. In the early 1700s, native Americans from the Creek and Cherokee tribes in Georgia and Alabama began to move south into north Florida. This movement accelerated in the early 1800s. These native Americans were being pushed out by white settlers or were on the losing side of a civil war among the Creek tribes. They welcomed runaway black slaves, who joined them as freed allies, or became subject to the native Americans in a less onerous form of slavery. This agglomeration of tribes became known as the Seminoles which was derived from a word meaning “wild“ in their language. Conflicts between white settlers in and the Seminoles and their black allies would lead to three periods of open warfare known as the Seminole Indian Wars after Florida became a U.S. Territory.

In the First Seminole Indian War in 1817-18, the Seminoles were forced out of North Florida. A disputed treaty confined them to a reservation in the interior of central and south Florida. After a drought and famine in 1825, the Seminoles and their black allies began to return to their old lands in central Florida and came into conflict with white settlers. In 1830, the U.S. Congress passed the Indian Removal Act, which gave the government the authority to forcibly remove native Americans in Florida and other states to the Indian Territory, which is present-day Oklahoma. Some of the Seminoles reluctantly moved, but were unhappy with the poor quality of the land and having to share a reservation with their old enemies in the Creek tribes. Others refused to leave and tensions mounted between the U.S. Army, white settlers and the Seminoles (Robison and Andrews 1995).

In late 1835, the Second Seminole Indian War began. The Seminoles ambushed and wiped out a column of U.S. Army soldiers under Major Dade, and attacked and burned sugar plantations along the east coast of Florida. The army retaliated by attacking and burning Seminole villages in central Florida, and building a series of forts. The Seminoles rarely attacked forts and large groups of soldiers, but engaged in guerrilla warfare with hit and run tactics, picking off a few soldiers here and there. The Army, with an enemy that would rarely stand and fight, concentrated on destroying Seminole villages and crops, and capturing

women and children to send to Oklahoma and runaway slaves to return to their owners (Robison and Andrews 1995).

At first, the Seminoles and their allies outnumbered the troops sent to fight them, and the war went badly for the U.S. Nearly half of the small U.S. Army was sent to Florida, along with often unreliable state militia units, and the tide of the war began to turn. By late 1837, virtually all of the remaining Seminoles had retreated to south Florida. The U.S. Army's commanding officer, General Thomas Jesup, divided his forces into four columns that moved southward from central Florida. A column under the command of future president Zachary Taylor encountered a large group of Seminoles at the north end of Lake Okeechobee and fought them in the Battle of Okeechobee on December 25, 1837. Colonel Taylor's men forced the Seminoles to retreat, but took far greater casualties (Hutchinson and Paige 1998).

General Joseph Hernandez's column came down the east coast of Florida, with a small naval force operating on the Indian River lagoon. The army column established Fort Pierce as a base of operations, while the naval forces explored the rivers and waterways. General Jesup's troops went to Fort Pierce for resupply, then moved west to join General Eustis' forces at Fort Lloyd. The combined columns moved southeast into northwestern Martin County, where they joined Col. Taylor's troops and constructed Fort Van Swearingen. General Eustis and Jesup continued southeast, and would fight the Battle of the Loxahatchee on January 24, 1838 (Hutchinson and Paige 1998). Col. Taylor's men moved south along the east shore of Lake Okeechobee and built Fort McRae on the north side of the mouth of the present-day St. Lucie Canal. It is believed that a small river entered the lake at that location, as such a river is present in an 1838 map (USDW 1838). Rifles dating to the Seminole Wars period were reportedly dredged up during the construction of the St. Lucie Canal, further supporting the location of Fort McRae. Fort McRae was little more than a rough cabbage palm trunk stockade designed to store supplies and house a small garrison to defend the supplies. It was used for only a short time, and was then abandoned.

After the Battles of Okeechobee and the Loxahatchee River, many of Seminoles displaced by these battles retreated to the area of the DuPuis Reserve, where they tried to live off the land. They quickly depleted the local game animal population, and there was no time to plant crops and little in the way of natural plant foods to gather. The area encompassing DuPuis and the adjacent J. W. Corbett Wildlife Management Area became known as the "Hungryland". The starving Seminoles were induced to camp near Ft. Jupiter under a flag of truce when General Jesup told them that he would try to obtain permission for them to stay in Florida on a reservation. They established a camp to about a mile from the fort under the flag of truce. In April, a letter arrived from Washington denying the request for a reservation. General Jesup ordered his men to quietly surround the Seminoles and take them captive. His reputation was already

damaged from capturing the Seminole leader Osceola under a flag of truce, so he may not be concerned about additional damage. He feared that there would be many more deaths of soldiers and Seminoles if he honored the flag of truce and allowed the Seminoles to leave. Over five hundred Seminoles were shipped out from Jupiter to Oklahoma (DuBois 1981).

In 1842, the Army declared the Second Seminole Indian War to be over and an uneasy truce was maintained between the white settlers, the Army and the Seminoles. In 1855, the Army began harassing the Seminoles again, and two more years of fighting ensued. A new Fort McRae was built as a base for patrols (Hutchinson and Paige 1998). In 1858, Billy Bowlegs, the Seminoles' main chief at that time, was induced to move to Oklahoma with his followers. Just before the Civil War started, the Army gave up on trying to capture the remaining 300 or so Seminoles (Robison and Andrews 1995). The network of wooden forts, including Fort McRae, was abandoned, and quickly disappeared under the twin attacks of termites and wildfire. The Seminole Indian Wars would be one of the longest and most costly native American conflicts in U.S. history.

After the Third Seminole Indian War ended, the Seminoles slowly emerged from their hideouts deep in the Everglades. A settlement was established near present-day Indiantown, and in 1898, Joe Bowers established a trading post where he would trade store goods for animal skins. He would later plant citrus and establish the Bowers Groves. That same year, Francis and Annie Platt established a cattle ranch near present-day Indiantown. Mr. Platt named the settlement "Annie" after his wife and it was granted a post office with him as postmaster in 1902. In 1902-3, Mr. Platt and his sons cut a wagon road from Annie to Stuart, which they called the Stuart-Annie Road. This road would eventually become today's State Road 76 or Kanner Highway. Annie became Indiantown in 1917 when the post office was renamed (Hutchinson and Paige 1998).

In 1902, a group of New Orleans investors, the Southern States Land and Timber Company, purchased approximately two million acres of land around Lake Okeechobee from the State of Florida for fifty cents an acre. The purchase included large areas of western present-day Palm Beach and Martin Counties, and virtually all of the DuPuis Reserve except for the low-lying areas along the present-day L-8 Canal. Southern States was primarily a real estate investment company. It did start cutting the old growth pine trees on its purchase, although in the absence of railroads, the sawmills had to be initially located on Lake Okeechobee, where water could be used to transport the logs (Hutchinson and Paige 1998).

The railroads, however, were apparently interested in serving the area. By 1911, the Indiantown area had enough white children (they were the only ones receiving public education at that time) to warrant a public school. Of the three families sending children to the school, two were listed as railroad engineers

(Hutchinson and Paige 1998). It is not clear what the engineers were doing, but the railroads would not come to the area until the 1920s.

In 1914, the U.S. Army Corps of Engineers proposed a canal to link the St. Lucie River on the east coast of Florida with the Caloosahatchee River on the west coast, and connecting to Lake Okeechobee in the middle. There was heavy local lobbying in favor of the canal. This canal has been called various official names, such as the Cross-State Waterway, and the Okeechobee Waterway, but for purposes of this history it will be referred to by its local name, the St. Lucie Canal. The dredging contract for the canal was signed on February 19, 1915, and the work began on May 28th (Hutchinson and Paige 1998), starting at the lake. It is believed that the western end of the canal at Lake Okeechobee was located in a natural small river that flowed into the lake. Some Seminole War-era military maps show a small river entering the lake in the vicinity of the canal (USDW 1838). Small tributaries that emptied into the lake were common and Will (1984) noted eight “dead rivers” between Clewiston and Belle Glade. 1940 aerial photographs of the reserve and vicinity (USDA 1940) show what clearly appears to be a creek leaving the canal and circling south of the Port Mayaca cemetery before petering out in the extreme northwest corner of the preserve. Another small creek is visible just east of the western reserve property line.

Spoil deposition patterns also support the river hypothesis. The spoil was deposited on the northern bank of the canal and the 1940 photographs shows very little spoil present until the western border of the reserve is reached. It is possible, however, that the spoil near the lake was removed for road or railroad building purposes. The path of the canal also supports a river route. The western end of the canal north of the reserve has a very convoluted route, as does the eastern end where it joins the South Fork of the St. Lucie River. The middle of the canal, where there were no streams to follow is very straight and linear. In any case, if the canal followed the route of some former “Mayaca” River, that river is now gone.

A small “dipper” dredge made the initial cut for the canal, creating a channel wide enough for a larger suction dredge to follow. The suction dredge “Northwood” was still digging the canal in 1916 (Hutchinson and Paige 1998), and a dam burst on the canal in November 1916, indicating that work was still ongoing. An event summary by the Stuart News (Hutchinson and Paige 1998) indicate that the first water flowed from Lake Okeechobee through the canal on June 13, 1923, and the authors state the canal was widened in 1923, although no other sources support this claim. The St. Lucie Canal was definitely widened in the mid-1930s, and was completed on March 22, 1937, with new lock construction in 1940 eliminating the island in the canal near the lake. The 1940 aerial photographs show fresh spoil has been deposited on the north side of the canal, but the island is still present. The great hurricane of 1928 drowned several thousand persons around Lake Okeechobee when the lake overtopped a low levee. The federal government’s response to this was to build a huge dike

around the lake, and widen the St. Lucie Canal and the Caloosahatchee River to dump water from the lake. The Stuart News reported that a contract to widen the canal again for \$1,276,000 was let on June 11, 1948 (Hutchinson and Paige 1998). The final design specifications for the canal are believed to be 200 feet wide at the top, 160 feet wide at the bottom, and a minimum depth of twelve feet, although some maps show the depth as eight feet (USGS 1953).

World War II would prove to be the heyday of the St. Lucie Canal. Barges and small ships used the canal to avoid being exposed to German U-boat attacks if they rounded the southern tip of Florida in the open ocean. After the war, commercial use declined, with recreational and fishing boats becoming the main users of the canal. The construction of the canal had major impacts to the hydrology of the northern portions of the reserve. The canal would have been controlled at or below the water level in the lake, which averages around 15 feet. According the topographic maps (USGS 1971, 1953), the historic wetland (and groundwater) elevation in the northern part of the reserve was 25 feet. Since the canal lowered the ground water elevation by at least 10 feet at the canal, and by decreasing amounts with distance from the canal, it is not surprising that the 1940 photographs show the wetlands within 3/4 of a mile of the canal as being partially dried up and suffering from a decreased hydroperiod. The groundwater drawdown continues today.

The construction of one form of transportation often stimulates the construction of another form, and that certainly happened near the DuPuis Reserve. According to Hutchinson and Paige (1998), a \$120,000 bond issue was approved on August 12, 1919 for county roads between Stuart and Lake Okeechobee. A 1921 Palm Beach County road map (Carr and McFadden 1921) shows a dashed line paralleling the south side of the St Lucie Canal from Jupiter-Indiantown Road to the lake, but the map legend is not clear whether this is just a proposed road, instead of a real road. A 1923 road map (H.C. Fugate 1923) shows the road present as a graded dirt road. A 1926 Martin County road map (Associated Map Co. 1926) shows the road present as an improved road, which means it had been surfaced with shellrock. The 1926 map still shows the road as Stuart-Annie Highway, although it would be later renamed as Gaines Highway in honor of the Palm Beach County Commissioner Henry Gaines, who worked for its improvement.

The original 1920s road was built just south of the St. Lucie Canal, and may have been rendered unsafe by the 1930s canal widening. The State of Florida took over responsibility from maintaining the road in 1931, designating it State Road 76. The State built a new road farther south of the canal in the late 1930s (the present-day road) as a result of lobbying by A..O. Kanner, a Martin County legislator and judge. The road was renamed Kanner Highway after his death in 1976 (Hutchinson and Paige 1998). The 1940 aerial photograph shows both the old and new roads present. The older side roads connect to both roads, while the newer side roads only extend to the new road.

During this time, the Southern States Land and Timber Company had not been idle with its lands. It would sell land to anyone who met their price, and sold a large tract to the St. Lucie Land Company as early as 1904. (Hutchinson and Paige 1998). The secretary of the company, George Bensel, established an office in West Palm Beach and ran its south Florida operations for 48 years. The company is credited with laying the groundwork to drain the Everglades and pioneering the planting of sugar cane, cutting roads and trails on its lands, opening the area to ranchers, and introducing the first pure-bred cattle in Martin County. The Southern States Ranch was established by 1920 on the north side of the St. Lucie Canal in Section 13 west of the reserve. The ranch was located in the transitional area between the Everglades and the pine flatwoods, and shows up on the 1921 road map (Carr and McFadden 1921). A road ran northeastward from the ranch for approximately five miles until it joined the old Indiantown to Okeechobee graded road. The 1940 aerial photograph shows several buildings where the ranch should be located, and a cleared pasture area to the west. The road leading to Indiantown appears to be falling into disuse, as there is another road leading south to the north bank of the St. Lucie Canal, and then westwards to Conners Highway.

A number of trails appeared on the Southern States lands in the early 1920s, but it is not clear who constructed them. One trail, known as the Hungryland Trail, traversed the DuPuis Reserve from its northwest corner, at first running south and then turning southeasterly and running through the pine flatwoods just north of the edge of the Everglades. It exited the reserve at the southeast corner near Big Mound. At Big Mound, the trail was renamed the Big Mound Trail and continued southeasterly until it terminated at the intersection of present-day Okeechobee Road and "A" Road in Loxahatchee Groves. These trails appear to be little more than wagon roads. There is no evidence of actual road construction, such as the digging of shoulder ditches and the piling of fill in the middle to create an elevated roadway. It appears that the trails sought to traverse the highest open ground, and trees and palmettos were cut and removed only as necessary. The Hungryland Trail is first present on the 1921 road map (Carr and McFadden 1921), and is also present on the 1923 H. C. Fugate map and the 1926 Associated Map Company Map.

This trail appears on aerial photographs and topographic maps from 1940 to the present, and is still present on the reserve. The portions west of the DuPuis Grade are little-used and have become overgrown, but the portions east of the grade are still passable by four-wheel drive vehicles. The old trail is variously used as a management road, equestrian trail, or as part of the Florida Trail hiking trail in different portions of the reserve, although few persons are aware of its name or origin. The 1920s-era maps also show another trail crossing through the reserve. This unnamed trail departed from the Hungryland Trail about two miles west of Big Mound, and then arced northwestward through Sections 14, 10, 3, 4, and 33. It curved back northeastward towards Indiantown

in Section 33 and then through the present-day citrus groves north of the reserve. Traces of this trail are visible in the 1940, 1957 (USDA 1957) and 1965 (PBCPA 1965) aerial photographs and the 1971 topographical map (USGS 1971), with the most consistent trace in the eastern portion of Section 33, where the trail may be used today as a management road. Since construction of the Cooter Creek ditch in the 1940s would have severed the trail, the other portions of the trail may have fallen into disuse early and become overgrown.

It is not clear who made these trails or when they were cleared. The Hungryland Trail continued north of the reserve to connect to the old Indiantown to Okeechobee graded road. This seems to indicate that it predates the St. Lucie Canal which was dug in 1915, as there is no indication of a ferry or ford to cross the canal. This northern section appears to have fallen into disuse after the canal was constructed, although the construction of present-day Kanner and Connors Highways may be responsible for this. However, the Big Mound Trail connects to the roads in Loxahatchee Groves, which were not built until 1917. It does seem likely that the trails were created sometime in the 1910s. They do not show up on maps until the 1920s, but none of the 1910s maps showed any trails, including those known to be present prior to 1910.

Although the trails were largely on Southern States' land, it is not believed that the company cleared them. The Hungryland Trail passes almost one mile east of the Southern States Ranch. If the company had built the trails, they would have presumably connected to the Southern States' facilities. The 1920s maps all show an agricultural settlement at Big Mound, where the land was divided into 40-acre tracts. It seems more likely that the trails were built by the residents of Big Mound for access to other population centers, possibly with the blessings of Southern States. They gradually fell into disuse when better roads were constructed nearby.

In 1923, William "Fingy" Connors bought large amounts of land around Lake Okeechobee, and began building a toll road to provide access to the land. Beginning at Twenty Mile Bend, the road followed the West Palm Beach Canal northwestward to Canal Point, and then northwards around the Lake to Okeechobee City. The road was hailed as an engineering marvel and was completed in 1925 at a cost of \$1.8 million dollars. This road is located two miles west of the reserve along the lake shore, and is the present-day U.S. Highway 441/98. It is still known as Connors' Highway. Although the toll was 3 cents a mile, the road averaged \$2,000 per day in tolls. The 1926 road map shows a toll station just south of the St. Lucie Canal (Associated Map Co. 1926). After Connors' death in 1929, Palm Beach County acquired the road, abolished the toll, and turned it over to the State Road Department.

Also in 1925, the Florida East Coast Railroad was constructed 1.5 miles west of the reserve. This railroad had reached Okeechobee City in 1915 and was extended to Canal Point in 1925 and Belle Glade in 1928. The primary purpose of

this railroad extension appears to be to haul produce from the Everglades Farming regions to northern markets. An examination of the 1940 aerial photographs shows no sidings or structures that appear to be sawmills, and it is not believed that this railroad played any role in the logging of the reserve.

A competing railroad was nearing Indiantown about the same time. Although sources vary on whether the Seaboard Airline Railroad reached Indiantown in 1924 or 1925, the railroad and associated companies were active in the area in 1924 (Hutchinson and Paige 1998). The Seaboard railroad was run by S. Davies Warfield, a Baltimore banker. In 1924, the Land Company of Florida, which was controlled by Warfield, bought 100,000 acres in the Indiantown area from Southern States, as well as the Platt cattle ranch. Warfield had grand plans for Indiantown. He planned to make it the southern headquarter for his railroad, with an elaborate passenger station and a roundhouse for turning around the engines. The railroad laid out the first streets, built houses and a school, built the Seminole Inn as a social center for the new town, and converted a proposed sawmill building into railroad offices and apartments.

The Seaboard railroad abandoned Warfield's plans after his death in 1927. The Land Company of Florida ran into financial difficulties when the Florida land boom collapsed and announced that it was abandoning its \$4 million dollar investment in Martin County in 1930 (Hutchinson and Paige 1998). It sold its remaining land to the Indiantown Development Company in 1937. Sometime in the late 1920s, Warfield Highway was constructed along the north side of the Seaboard tracks from just east of Okeechobee City to Indiantown. The State took over responsibility for the road in 1931 and designated it State Road 710 (Hutchinson and Paige 1998). The old Indiantown to Okeechobee graded road that ran south of the railroad tracks fell into disuse, and portions were eliminated by orange groves and the Martin Power Plant reservoir. Only a three mile segment west of Indiantown is present today and it used for access to the orange groves on the north side of the St. Lucie Canal.

Although Indiantown did not become the grand city envisioned by Warfield, it did become the focus of the logging activities in the area. Cut pine trees were brought to the sawmills at Indiantown where they were cut up and loaded on the train. Since the reserve was at least six miles from Indiantown, it was a lower priority for logging. Indications are that the reserve was not logged in a systematic or organized pattern, but on a kind of hit or miss fashion, with the easiest trees harvested. It is believed that the reserve was logged in the 1930s, although logging may have continued into the 1940s. The cut trees would have been hauled out by trucks via present-day Kanner Highway. Slash pines can be identified on the 1940 aerial photographs (USDA 1940), and the photographs do not show the virtual absence of trees seen in other areas of Palm Beach County that were logged in the 1930s.

In 1925, the Phipps family purchased 6,500 acres of with five miles of lake frontage from “Fingy” Conners. This land included the four-mile western border of the reserve, which is currently occupied by sugarcane fields, citrus groves and vacant land. The Phipps had big plans for a grandiose city at Port Mayaca, but the bank financing disappeared and the plans were dropped. Prior to 1925, Port Mayaca was just a wide place in the road where the St. Lucie Canal entered Lake Okeechobee. In 1927, the Phipps formed Bessemer Properties to develop their holdings, primarily as an agricultural enterprise. The land was divided into 20-acre blocks and windbreaks of Australian pines planted. Citrus was the main crop, and Bessemer was among the first to use pumps to control water levels with the groves (Hutchinson and Paige 1998). The operation was a financial success.

The headquarters for the agricultural operation was on present-day Kanner Highway, just west of the Florida East Coast railroad tracks. The 1940 aerial photograph shows several large buildings near the railroad track, a water tower, and numerous workers’ houses lined up in neat rows. The rusting water tower is still present with Port Mayaca still readable on its side. The workers’ housing is long gone. This agricultural complex formed the majority of Port Mayaca, with the rest being scattered houses, a lodge, and a general store on the lakeshore ridge south of the St. Lucie Canal. Bessemer platted the Osceola Groves subdivision on the land west of Section 31 in the reserve in the mid 1940s. Perimeter dirt roads were built and the land divided into acre-plus lots. The subdivision was not successful, with most of the lots remaining unsold and no houses built. The perimeter roads for the subdivision are visible in the 1948 aerial photograph (USDA 1948).

The Port Mayaca cemetery on the northwestern corner of the reserve was reportedly established in the early 1920s. Approximately 1,600 victims of the 1928 hurricane are buried there in a mass grave (Hutchinson and Paige 1998). The City of Pahokee handles the administration of the cemetery, and it is the major burial site for residents of the Glades area, being the closest stable (non-muck) soil area. Some initial tree plantings and access roads are visible in the 1940 aerial photograph (USDA 1940) and increase in subsequent photographs.

Martin County was formed in 1925 out of the northern 17 miles of Palm Beach County and a small piece of coastal St. Lucie County. Stuart area voters were incensed when Palm Beach County announced a \$6 million dollar road bond issue in early 1925, but planned to spend less than \$250,000 of it in the Stuart area. They felt that they were continually getting less than their fair share of County benefits, and were tired of it. At first the legislation authorizing the new county was going nowhere, primarily because of opposition from West Palm Beach interests. The Stuart interests tried a new plan - proposing to name the new county after Governor John Martin. The plan worked, as the governor threw his support behind the legislation. Both Martin County and Indian River counties were created on May 19, 1925 (Hutchinson and Paige 1998). The

northern four miles of the reserve were part of the new county. Stuart was named the interim county seat. The Seaboard railroad interests pushed to have Indiantown named the permanent county seat, but gave up on this after Mr. Warfield's death in 1927.

Very little happened in the vicinity of the DuPuis Reserve in the 1930s other than the widening of the St. Lucie Canal and the construction of a new State Road 76. A 1937 Dolph's land atlas shows the land ownership in the reserve in Palm Beach County. Chase National Bank owned almost all of the northern two miles of the reserve. The Glades Land Corporation owned the land all along the southern edge of the reserve, while Southern States only owned six sections in the east central portion. The State Board of Education owned Section 15. The section of land containing Big Mound is shown as being divided into 40-acre sections. Although Southern States had sold most of its ownership in the reserve at that time, it bought back many of its properties for delinquent taxes during the Depression (Hutchinson and Paige 1998), and regained ownership at a later date.

The 1940 aerial photographs give the first comprehensive look at the reserve and its vicinity. To the west, the Bessemer groves and buildings are well-developed, and what appears to be a landing strip is present just west of Section 30. The Hungryland Trail is clearly visible and heavily used, with a few side trails branching off from it. Several large agricultural clearings are visible along the trail in the southern portions of the reserve, primarily west of Big Mound. Smaller clearings found in the central portion of the reserve appear to be associated with the unnamed trail to Indiantown, which is hard to distinguish on the photographs. The clearings appear to be associated with shallow wet prairie systems, and are probably a form of farming practiced at the time called "pothole" farming. Shallow wetlands would be planted with crops like tomatoes at the beginning of the dry season. These wetlands would be close enough to the water table to stay moist and keep the crops growing without irrigation, and were free from soil-borne diseases. By the time the wet season returned and water levels rose, the crops would have already been harvested. Pothole farming at the reserve seemed to stop shortly thereafter, possibly because World War II dried up the labor available.

Furrows, berms, and ditches are clearly visible in the 1940 aerial photographs, and remain visible on subsequent photographs and topographic maps into the 1970s. The farmed areas today appear to be densely vegetated with slash pine or pond cypress, who find the altered wet prairies favorable for colonization. This response is consistent with that seen on similarly-farmed areas in Palm Beach County. Along the northern edge of the reserve, the understory vegetation has been cleared in the area that would become the farmed fields around the reserve office building, and the wetlands appear partially dried up. Short trails radiate south and east from the cleared areas. A short entrance road extends southeast from SR 76, with a building present at the southern end. Another structure is

visible nearer SR 76, by it is not clear whether this is a corral or some other building. This entrance road would become the main entrance to the reserve and the building was expanded into the first ranchhouse.

In November 1944, Southern States Land and Timber sold 20,439 acres of land to Robert Chastain of Canal Point. This land includes most of the northern and central portions of the reserve, and included the land that would become citrus groves east of the reserve. It did not include the southern portions of the reserve, or the northern two miles. In 1946, Chastain purchased the 610 acres containing the current reserve office and farmed fields from Malcolm and Beatrice Chace. This gave him access to SR 76 from the western portion of his property. Also in 1946, Chastain purchased Section 15 from the State Board of Education for \$50 an acre. In 1942, U.S. Sugar Corporation purchased a large amount of land from Glades Land Corporation, including the southern portion of the reserve. In 1949, U.S. Sugar sold this land to Robert Chastain along with some other inholdings owned by U.S. Sugar in the land he had already purchased. As part of this purchase, Chastain acquired most of the four sections in the northeast corner of the reserve, almost all of the southern border, and five sections of muck land below the present-day L-8 Canal. After this last purchase, Chastain owned all of the reserve except the three sections in the southern tip.

By the end of 1948, Chastain had constructed most of the basic infrastructure on the reserve. The infrastructure is visible on aerial photographs from December 1948 (USDA 1948) and March 1949 (USDA 1949). The aerial photographs show that the ranchhouse building has been expanded, and a small building and tree plantings are present in the area of the present office building. Both the Jim Lake and DuPuis grades have been constructed, along with an extension of the DuPuis Grade that runs southeast along the edge of the Everglades south of the Hungryland Trail. At that time, the Jim Lake Grade ran past the eastern boundary of the reserve and then turned north and connected to SR 76 next to two houses (USGS 1953). Another road forks off the DuPuis Grade and runs south to the Mound House area. There is extensive understory clearing in the vicinity of Mound House, with windrows of debris visible in some areas. The Mound House road would fall into disuse in subsequent aerial photographs. The Hungryland Trail and its side trails are still visible and in active use at this time.

The current ditch and farm field system around the reserve office had been constructed by 1948, with spur ditches extending south and east into adjacent wetlands. This ditch system, which will be called the "Office" ditch system, empties into a small creek that flowed to the St. Lucie Canal in the northwest corner of the reserve. Another outfall for this system is visible under SR 76 approximately 1/4 mile east of the reserve office. Another ditch system is present in the northeastern portion of the reserve. This ditch system, which will be called the "Chastain" ditch system, linked wetlands for three miles south and 1.5 miles west of its main outfall just east of the reserve. Three additional smaller outfalls are present along SR 76 west of the main outfall. South of the

Chastain ditch system, the Cooter Creek ditch ran south for four miles to a slough emptying into the Everglades. Wetlands near this ditch were also connected to it. On the west side of the reserve, a canal had been constructed southwards from the Osceola Groves subdivision to the West Palm Beach Canal. This canal is known today as the L-8 stub canal, or North Tieback canal. A ditch system, which will be called the "Osceola" ditch system, ran through the western portion of the reserve, connecting the stub canal and cutting across the Hungryland Trail.

The Chastain Ranch was apparently not a big proponent of digging cattle watering holes in wetlands. Only eight are visible in the 1948/49 aerial photographs and are scattered along southern edge of the reserve. The ranch apparently thought that mowing shallow wetlands improved the cattle forage quality. The 1949 aerial photograph shows that the shallow areas of wetlands in the northeastern portion of the reserve appear to have been mowed. The deeper areas were not mowed, probably either because of high water levels or soft muck soils. Whatever the reason for this practice, it apparently was not repeated and little effects from it can be seen in the 1957 aerial photographs (USDA 1957). According to Hutchinson and Paige (1998), the Sam Chastain Ranch raised registered quarterhorses and Brahma bulls in the early 1950s. It is not known who Sam Chastain was and what his relationship to Robert Chastain was.

A small spur road led south from the DuPuis Grade extension along the edge of the Everglades to a small hammock, and is visible in the 1949 photograph (USDA 1949). At the edge of the hammock near the water is a small set of parallel brick foundations. Wheeler (2000) dated these as being pre-1955. The foundations were too small and too narrow to be any sort of dwelling place. Given that they are located near what may have been the easiest point on the ranch to get boat or airboat access to the Everglades, it is believed that they served some boating purpose, such as tie down or storage. Although the L-8 Canal was not present in 1949, a survey line for its construction is visible in the aerial photograph.

The western two miles of the L-8 Canal was constructed through the Bessemer lands in 1953, and the stretch bordering the reserve was dug in 1954. The L-8 Canal was generally controlled at 15 feet, which was lower than virtually all the land in the reserve, except for the extreme southwest corner. This canal created new opportunities for drainage systems along the southern border of the site, as drainage culverts were placed through the northern berm at intervals of a mile or so. Some new short drainage ditches along the L-8 are present in 1957 aerial photographs (USDA 1957). By 1953, the first citrus groves were being developed and planted on the north side of the St. Lucie Canal, just north of the northeast portion of the reserve (USGS 1953). In the 1950s, the Bessemer orange groves were sold to Ben Hill Griffin, Inc.

In August 1955, Robert Chastain sold almost all of the western three miles of the reserve to White Belt Dairy Farms, Inc., which was controlled by John G. DuPuis, Sr. The 1,586 acres in the northwestern portion of the reserve was sold directly to Mr. DuPuis. The White Belt purchase also included six sections of land below the L-8 Canal, including two that stretched to Lake Okeechobee. The 1957 aerial photographs of the reserve (USDA 1957) does not show that many changes, possibly because Mr. DuPuis, Sr. died in 1957. Most of the firebreaks that follow section lines were created at this time and are visible in the photographs, along with two new cattle watering holes.

The photographs show that additional understory clearing is visible extending eastward from Mound House and east of the farm field area in along SR 76. The western pond at Mound House has been dug, but it cannot be determined whether the house is present under the trees. A road with a causeway near the end has been extended to L-8 Canal in the southwestern portion of the reserve. A bridge crosses the canal at the end of the causeway - presumably to provide access to the White Belt lands south of the canal. Another bridge over the canal is present at the southwest corner of the reserve. A long linear clearing that may be a landing strip lies west of the causeway, although because of its connection to a L-8 Canal culvert, it could also be a clearing for a drainage ditch that was not constructed. In the southwest corner, there is evidence of some sort of agricultural activity, such as the mowing of rectangular blocks. Along the western border of the reserve, a new perimeter canal has been extended northward from the Bessemer lands through the Port Mayaca cemetery to the St. Lucie Canal. This new canal eliminated the old connection of the Hungryland Trail to SR 76, but by this time, the trail was only being used as an internal ranch road.

Control of the White Belt Dairy and the separate DuPuis tract passed to John G. DuPuis, Jr. in late 1957. Mr. DuPuis, Jr. was apparently a owner who wanted to experiment with a great many things. A series of aerial photographs was taken in early 1958 (USDA 1958). These photographs show that the first fruit trees have been planted in the trapezoidal field west of the ranchhouse and around the office building. Southern States sold the land bordering the southeastern edge of the reserve to the State in 1957 for the J.W. Corbett Wildlife Management Area. The Big Mound area was not part of this purchase and was not acquired by the State until the 1980s.

Another series of aerial photographs of the Palm Beach County and adjacent Martin County sections of the Reserve was made in 1965 (PBCPA 1965). These photographs indicate that not much was happening on the DuPuis-controlled lands except for the southwest corner. A new drainage system is present, which will be called the "Bamboo" ditch system after the bamboo plantings along the east side of the L-8 stub canal, which are visible for the first time in 1965. The Bamboo ditch system ran through the transitional area between the pine flatwoods and the Everglades muck soils in the southwest corner. This ditch

system was not present in 1957 (USDA 1957), although its route appears to have been cleared. The ditches seemed to be designed to intercept surface and groundwater flows that were keeping the muck soils too wet for their intended use as pasture.

The southern leg of the Bamboo ditch appears to have been constructed first. It started near Mound House and ran southeastward, linking up with several short ditches created prior to 1957, and then emptied into the L-8 Canal. The northern leg appears to be newly constructed in 1965. It started at a pre-1957 short ditch, and then ran northwestward to empty into the L-8 Stub canal. Spur ditches from both legs were extended northwards for a mile or two to drain additional wetlands. The Hungryland Trail was severed without a crossing by a north Bamboo spur ditch, which led to a further decline in the usage of the western portions of this trail. The Cooter Creek canal was extended southward to link to a L-8 Canal culvert. Elsewhere along the L-8 Canal in the reserve, culverts that are not connected to ditches show erosional channels radiating outwards from them. These channels may have been present in 1957, but could not be seen because of the small scale of the photographs. They do indicate that large amounts of water are flowing from the reserve into the L-8 Canal through the culverts. Only one new cattle watering hole is visible on the 1965 photograph on the White Belt lands.

In January 1964, Robert Chastain sold nine sections of land running north to south on the eastern edge of his land holdings to George Caulkins. The southernmost four sections of this sale form part of the present southeastern border of the reserve. Chastain passed away later in 1964, and his estate sold to Caulkins the remaining nine-plus sections of land between the White Belt dairy and the previous Caulkins purchase in March 1965. The 1965 aerial photographs show that Chastain had done little with the Palm Beach County portions of the reserve that he owned. Only one new cattle watering hole is visible, and the trails within his ownership appear to be falling into disuse.

Caulkins, on the other hand, was converting his land into citrus groves. By early 1965, he had already begun ditching and draining the land on the first five sections extending south from SR 76, preparing it for tree planting. He never developed groves more than five miles south of the St. Lucie Canal, even though he owned the land further south. It is possible that he could not get adequate drainage at that distance from the canal, or could pump irrigation water that far. The 1965 photograph does show a small agricultural clearing in a shallow wet prairie in the middle of Section 36 on the northern border of the reserve. It is believed to be caused by some freelance pothole farming, possible by one of Caulkins' employees. The southern three sections of the reserve were still owned at this time by U.S. Sugar. The 1965 aerial photographs show numerous vehicle tracks through the marshlands along the L-8 Canal in these sections. It is

believed that these tracks were caused by hunting vehicles. Just east of the U.S. Sugar lands, agricultural clearing in the Big Mound Area is still visible.

White Belt Dairy Farms signed a stumpage agreement with Heyden Newport Chemical Corp. to remove lighter pine stumps in 1961. Since it takes at least 20 years for slash pine stumps to rot enough that the resin-soaked cores can be easily removed, this dates the logging on the western portion of the reserve as prior to 1940. When White Belt and Mr. Caulkins exchanged quit claim deeds in 1967 to resolve a property line dispute, the stumpage agreement had to be released from the lands going to Caulkins. Since there was no stumpage agreement on the Caulkins lands, it raises the possibility that the eastern portions of the reserve were never logged.

The period 1965 to 1970 appears to be a period of very active development on the White Belt lands. The soil survey for Palm Beach County (USDA 1978) has 1970 aerial photographs, while the survey for Martin County (USDA 1981) has 1972 aerial photographs. These photographs allow the dating of the new development on the White Belt lands. In the Palm Beach County portion of the White Belt lands, numerous new cattle watering holes are present. The bridge crossing the L-8 canal from the causeway is not longer present. The eastern pond at Mound House has been recently dug, and it is believed that the house itself was constructed at this time. Although the aerial photographs are inconclusive, it is believed that the sheep shearers buildings were built at the same time because of similarities in construction. A new ditch system, which will be called the "South Fork" ditch system is present. It starts in Section 4, heading south, and then forks. The eastern fork continues southeast and joins the Cooter Creek canal, while the western fork heads southwest and then west and empties in the L-8 Canal. A peculiar kind of scarification is visible in 1972 on the shallow edges of wetlands in the northern half of Section 34 south of the citrus grove. This scarification appears to shallow ridges and furrows. The scarification is not present in 1970, but can still be seen in 1990 aerial photographs.

On the Martin County White Belt lands, numerous cattle watering holes and ditches have been constructed in wetlands. Spur ditches have been extended westward from the Cooter Creek canal to drain additional wetlands. The T-shaped landing strip has been constructed and there is extensive clearing in the east half of Section 20 east of the landing strip. Most of the buildings in the reserve maintenance compound appear to have been recently built, and a road extends from the compound to SR 76. The residences on the eastern and western borders of the office farm field area appear to be present. The reserve office building has been expanded, and new buildings are visible south of the ranchhouse. The entrance drive to the office and ranchhouse buildings, which previously had been to the east of the buildings, was now shifted to its present location west of the buildings.

The orange grove area south of the reserve office has been recently cleared, and the wetland there has been partially filed in. The wetland just south of the farm field area east of DuPuis Grade has been excavated to form parallel berms. The barn may be present at the equestrian area, but the aerial photograph is inconclusive. The planted hammock north of Governor's House is present, and the house itself appears to be visible. A comparison with the 1971 topographic map (USGS 1971) shows that the landing strip and the ditched wetland east of DuPuis Grade were present prior to 1971. East of the reserve, George Caulkins had almost finished development of this citrus groves, with only a few sections left unplanted. South of the groves, he was doing little with the land forming the eastern portion of the reserve. Five new cattle watering holes are visible in 1970, but otherwise there are no changes.

In January 1972, a complex series of land transactions resulted in White Belt Dairy Farms acquiring the eastern three miles of the reserve. In two separate transactions, George Caulkins sold most of the land that he owned south of the developed citrus groves to U.S. Sugar. U.S. Sugar then sold this land to White Belt Dairy Farms. U. S. Sugar also sold the southernmost three sections of land in the reserve to John G. DuPuis, Jr. It is believed that White Belt transferred its muck lands south of the L-8 Canal to U.S. Sugar at the same time, but it is not known whether this was a sale or a land swap. Finally, George Caulkins sold the last 2 1/2 sections of land south of the citrus groves to White Belt. This series of transactions brought the reserve into its final configuration with 100% ownership by the DuPuis family. This eastern section was much wetter than the rest of the reserve, and portions have been labeled on some old maps as a continuation of the Allapattah Flats (H.C. Fugate 1923).

White Belt moved quickly to develop the new lands in the eastern portion of the reserve. A parallel ditch was dug for three miles just north of the L-8 Canal and was extended northward seven miles along the eastern reserve boundary to the citrus groves. A new raised road with shoulder ditches was constructed through Section 25 to connect the canal berm road along the eastern border. As on the western portion of the site, the muck and transitional lands along the L-8 Canal appear to be the most valuable agricultural area. Spur ditches were extended from the ditch along the L-8 Canal to drain this area. In the northwest corner of Section 14, a square nursery area was created in a shallow wetland area to grow Limpopo grass. This grass was then planted in other wet areas to provide what was hoped to be improved cattle forage. Many of the management roads that follow section lines were also created at this time.

Three new cattle watering holes were created at this time in the eastern section near the L-8 Canal grazing areas. Elsewhere on the reserve, only two new watering holes were created and many of the older holes appear to be not maintained and falling into disuse. The South Fork ditch system was extended a half-mile farther north. Because of the gap between the aerial photographs of the early 1970s and those in the mid-1980s, it is difficult to date when the

changes in the eastern section of the reserve occurred. Since the appearance of the changes in the 1980s photographs is that of something that happened many years earlier, it appears that the mid-1970s was the last period of major changes at the reserve. The buildings in the equestrian complex appear to have been built about this time, while a number of tree plantings along the DuPuis Grade that were probably made in the 1970s became visible in the 1980s.

A high-voltage power line that forms the main north-south backbone of the Florida electrical grid was constructed along the eastern border of the reserve in the late 1970s or early 1980s. It consists of three groups of electrical lines on towers lined up three abreast. The line runs just over the eastern reserve border in the Corbett WMA for the first seven miles, then turns west and runs on the northern edge of the reserve just below the citrus groves. It then turns northward and runs just inside the reserve for the next three miles, before crossing into the citrus grove for the last mile before it reaches the St. Lucie Canal. All woody vegetation was removed underneath the power lines, and is being prevented from reestablishing itself by cutting and herbicides. The towers were placed on raised beds placed approximately every 0.25 miles. There are a few pits underneath the power line that apparently were dug to provide fill for the raised beds. Another high-voltage power line was constructed just over the western edge of the reserve in the early 1990s. It consisted of only a single set of towers and connected to the new Martin Power Plant that had been built to the north of the reserve.

Very little appeared to happen at the reserve in the early 1980s, possibly because Mr. DuPuis was in declining health. John G. DuPuis, Jr. died in 1984 and control of the reserve passed to his widow Susan DuPuis. Mrs. DuPuis sold the reserve to the South Florida Water Management District (SFWMD) in December 1986. Very little change in the reserve can be noted between 1984 and 1986 except that the office building was expanded to its present configuration. After acquiring the reserve, SFWMD sought partners in managing the reserve. Florida Game and Fresh Water Fish Commission, which is now the Florida Fish and Wildlife Conservation Commission, has managed the hunting on the reserve since the beginning.

In 1990, the State Division of Forestry (DOF) took over management of the reserve and it was known as DuPuis State Forest until 1996. During their time managing DuPuis, DOF rebuilt the DuPuis and Jim Lake Grades with shellrock excavated from a borrow pit in the southwest corner of the reserve. A new entrance road that connected to the Jim Lake Grade was established in the northeast corner of the reserve. A boardwalk has been recently constructed at the borrow pit. DOF may have also been responsible for the small borrow pits in the family camping area in the northeastern portion of the reserve. DOF also started prescribed burning at the reserve in 1990. Some of the initial burns were fairly hot because of excessive fuel buildups. The hot burns and sub-normal rainfall stressed the slash pines and left them vulnerable to pine bark beetle

infestation. Selective logging was done in 1992 to try to control the infestation, but it continued to spread and led to the logging of almost 900 acres in 1995 and 1996. DOF was unable to secure permanent funding for the state forest and turned the management back over to SFWMD in 1996.

SFWMD went through a bidding process for the management of the reserve and decided that SFWMD staff had the best proposal. The District has been managing the non-hunting functions at the reserve since 1986. The ranchhouse south of the reserve office was demolished in the 1990s. This was the oldest building on the reserve, dating back to 1940. The foundation of this building was recently removed for construction of a new shellrock parking area. The fruit orchards around the reserve office are not being maintained and are slowly dying out. The citrus grove was recently removed to help contain the spread of citrus canker.

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Appendix B.

Goals and Policies

ARTICLE II. LAND STEWARDSHIP

Sec. 140-21. Scope.

This policy shall apply to all lands managed by the Land Stewardship Program, including property acquired with Save Our Rivers, Preservation 2000 or mitigation funding. Nothing in this policy shall negate any statute, administrative rule, or other policy requirement. This policy may be reviewed and approved by the District Governing Board at five-year intervals or earlier and updated as required. Public comment may be solicited as part of the review process.

(R.M. No. 139)

Sec. 140-22. Purpose.

(a) This policy establishes a commitment to the responsible management of District lands in a manner consistent with legislative directives and the District's mission.

(b) In 1981, the Florida Legislature established the "Save Our Rivers" program (SOR) for the five water management Districts to acquire water resource lands. This legislation (Section 373.59, Florida Statutes) produced the Water Management Lands Trust Fund, empowering the water management Districts to acquire lands needed to protect, manage, and conserve the state's water resources. Preservation 2000 (P2000), enacted by the Legislature in 1990, also added land acquisition funds to the Save Our Rivers program. The 1999 Florida Forever Act consolidated the legislative directives of SOR/P2000 and expanded the funding to take over when P2000 terminates. The 1999 legislation authorized funds to be appropriated for acquisition, management, maintenance and capital improvements, including perimeter fencing, signs, control of invasive exotic species, controlled burning, habitat inventory and restoration, law enforcement, access roads and trails, and minimum public accommodations.

(c) Land acquired by the District's Save Our Rivers program and managed by the Land Stewardship program must satisfy several requirements set forth in Sections 373.139 and 373.1391, Florida Statutes. Section 373.139, Florida Statutes, declares it necessary for the public health and welfare that water and water-related resources be conserved and protected. The acquisition of real property for this objective shall constitute a public purpose for which public funds may be budgeted.

(d) Section 373.1391(1)(a), Florida Statutes, states that lands titled to the water management districts shall be managed and maintained to the extent practicable to ensure a balance between public access, general public recreational purposes, and restoration and protection of their natural state and condition.

(e) Section 373.1391(1)(b), Florida Statutes, states, in part, that "Whenever practicable, such lands shall be open to the general public for recreational uses. General public recreational uses shall include, but not be limited to, fishing,

hunting, horseback riding, swimming, camping, hiking, canoeing, boating, diving, birding, sailing, jogging, and other related outdoor activities to the maximum extent possible considering the environmental sensitivity and suitability of those lands."

(f) Section 373.1391(1)(d), Florida Statutes, states that the District shall first consider using soil and water conservation Districts to administer agricultural leases.

(g) Section 373.1391(3), Florida Statutes, encourages each District to use volunteers to provide land management and other services.

(h) Section 373.1391(4), Florida Statutes, encourages each District to enter into cooperative land management agreements with state agencies or local governments to provide the coordinated and cost-effective management of lands.

(i) Section 373.1391(5), Florida Statutes, authorizes water resource and supply projects, stormwater management projects, linear facilities, and sustainable agriculture and forestry where it is compatible with the natural resource values and the public interest and is consistent with the project management plan, the proposed use is appropriately located on the property and other lands have been considered, and the titleholder of the property has been properly compensated.

(j) Section 373.591, Florida Statutes, mandates the District to solicit input on current management programs through professional peer reviews.

(R.M. No. 139)

Sec. 140-23. Statements of Policy.

The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands. The mission statement, together with requirements set forth in the Florida Statutes, provide three primary goals for the District Land Stewardship Program, each of which is linked to sections in this Land Stewardship Policy document:

- (1) Conservation and protection of water resources (section 140-25(1)).
- (2) Protection and/or restoration of land to its natural state and condition:
 - a. Restoration and Protection of Natural Communities (section 140-25(2)); and
 - b. Resource Operations and Maintenance (section 140-25(3)).
- (3) Provide public use (section 140-25(4)).

(R.M. No. 139)

Sec. 140-24. Definitions.

For the purpose of this article, the following words and terms shall have the meanings respectively ascribed:

Archaeological/Historic Resources means any prehistoric or historic district site, building, object, or property of historic, architectural, or archaeological value relating to the history, government, and culture of a historic or pre-historic people.

Best Management Practice (BMP) means the best available technology or process that is practical and achieves the desired goal or objective.

Capital Improvement means activities relating to the restoration, public access, recreational uses and necessary services for land and water areas, including the

initial removal of invasive plants, and the construction, improvement, enlargement or extension of facilities' signs, fire lines, access roads, and trails. Such activities shall be identified prior to the acquisition of a parcel or the approval of a project.

Cooperating Agencies means two or more agencies working together to operate a specific management area.

Cooperative Management Agreement means an agreement between two or more agencies outlining the respective duties and responsibilities of each agency in the management of a specific tract of land.

Critical Habitat means areas designated for the survival and recovery of state/federally listed rare, threatened, endangered or other sensitive species.

Desirable Vegetation means native plant species that are appropriate for a specific community type and provide benefits to wildlife in the form of food, cover and nesting.

Habitat Diversity means richness and variety of native plant communities within a particular area of the landscape.

Hydroperiod means flooding duration, depth, and timing that influences species composition, ecosystem structure and function.

Interim Land Management means management of non-natural areas that provides revenue without impacting long-term water-development projects.

Invasive/Exotic Vegetation means certain plants that displace native species and adversely affect wildlife habitat, water quality, recreation, and biological diversity.

Lead Manager means the prime managing entity designated for a given tract of land; generally provides the on-site staff.

Management Area means a single tract or combination of tracts under one management program.

Mitigation means, for purposes of this policy, the actual acquisition, restoration, creation, or enhancement of wetlands to compensate for permitted wetland impacts.

Mitigation Banking means wetland acquisition, restoration, creation or enhancement undertaken expressly to provide compensation in advance of wetland losses from development activities.

Multiple-Use means the management of renewable resources for a variety of purposes such as recreation, range, timber, wildlife habitat, and water resource development.

Prescribed Fire means burning of vegetative fuels using controlled application of fire within specified environmental conditions.

Primary Resource Lands means lands having high water resource, fish, wildlife, and recreational values requiring acquisition or protection.

Regional Mitigation Area means, for purposes of this policy, permitted wetland impacts offset through payment for the acquisition, restoration and perpetual management of a Save Our Rivers identified and duly noticed project.

Responsible Management means level of management described in the General Management Plan.

Sustainable Use means to provide continued use of a natural resource without degradation or loss of that resource.

Water Resource Buffer means that portion of a Preservation 2000 or Save Our Rivers project necessary to protect the aquatic environment.

Wildlife Corridor means a connection between natural areas that allows the safe movement of wildlife.

(R.M. No. 139)

Cross references: Definitions and rules of construction, § 100-2.

Sec. 140-25. Responsibilities.

The Land Stewardship Program is responsible for:

(1) Water Resource Protection. The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources. The following policies guide implementation of this objective:

a. Acquired lands shall be managed to provide water resource-related benefits.

b. Land uses or activities that significantly or permanently alter or degrade the quality, quantity and/or natural movement of ground or surface water are not allowed unless they are a part of a regional water management system.

c. Where feasible, an attempt shall be made to restore a more natural hydroperiod on tracts where the drainage patterns have been altered.

d. Public use shall not result in detrimental impacts to water resources. When a public use activity produces detrimental effects on water resources, it shall be discontinued until an evaluation determines that such use is compatible.

e. Water resource lands designated as necessary to implement the Central and Southern Florida "Restudy" Project shall, upon acquisition, become the responsibility of the (Interim) Land Management Program, and follow the guidelines set forth under Section 373.1391(5), Florida Statutes.

(2) Restoration and Protection of Natural Communities:

a. The Land Stewardship Program will encourage the acquisition of large or regionally significant areas that protect important natural resources and provide wildlife corridors.

b. Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

c. The planting of invasive exotic plant species shall be prohibited in all management areas. Management practices will strive to identify existing infestations and implement appropriate control or eradication measures.

d. Where practicable, an attempt shall be made to restore and maintain desirable vegetation to promote habitat diversity in areas where invasive exotic vegetation, grazing practices, or improved land uses have substantially altered the historic landscape.

(3) Resource Operations and Maintenance:

a. Lands acquired for natural and/or hydrologic resource benefits shall be managed to conserve and protect those resources.

b. Exotic plant control in all management areas shall strive to attain a level of success where periodic maintenance eliminates the infestation or reduces the coverage of exotic plants.

c. Prescribed fire will be a primary management tool on District lands and will be applied within fire-maintained communities at appropriate intervals.

d. The Division of Forestry will be notified of all wildfires on District lands. Land Stewardship will provide initial suppression when commensurate personnel and equipment are available.

e. Inventories of natural and historic resources shall be performed to provide information for effective land management planning, natural community maintenance and ecological restoration.

f. Evaluation and monitoring of management activities shall be conducted to improve program effectiveness and efficiency.

1. Research shall evaluate the environmental response of certain management activities to assist staff in making appropriate management decisions.

2. Monitoring shall be conducted to identify landscape changes resulting from management activities.

3. Legislative-mandated management reviews will provide input from professional peers.

g. Resource protection shall be provided by professional law enforcement services through funded and unfunded contractual agreements to safeguard the public and protect natural and cultural resources on District-managed natural areas.

h. Sustainable use of forest resources shall be conducted where these activities adhere to a series of environmental criteria (see 1999 Forest Management Plan) that meet Land Stewardship Program goals. Timber contractors will be required to meet silvicultural Best Management Practices (BMP) developed for Florida forests.

i. Range management (grazing) will be considered on improved or native ranges when the introduction of cattle will not conflict with other natural resource management and public use goals.

j. Archaeological and historic resources are protected by site identification and inter-agency coordination with the Florida Division of Historical Resources. Land stewardship planning shall include an analysis of archeological data accompanied by appropriate public education opportunities.

k. Infrastructure support shall be developed and maintained to provide safe access for responsible management and public use on District lands. Such infrastructure may include access points, roads, trails, signs, utilities, and minimal public facilities.

l. Mechanical equipment may be used in conjunction with prescribed burning and other management tools to control vegetation and restore habitat structure.

m. Agricultural developments previously existing on acquired natural areas may be maintained if management of these developments is consistent with other land stewardship goals.

(4) Public Use and Environmental Education:

a. Public use of management areas that is consistent with other management goals shall be encouraged. Public use that may have detrimental impacts on sensitive environmental resources shall be restricted until an evaluation determines such use is compatible. A public use compatibility assessment will be included in the General Management Plan completed for each management area and will be based on the following criteria:

1. Consistency with the reason the lands were acquired.
2. Restrictions and/or prohibitions imposed by easements, leases, reservations, adjacent land ownership, conditions of the purchase agreement, and any other agreements concerning the property.
3. Infrastructure and support facility requirements, such as fences, gates, signage, entry design, stabilized off-road parking, trails, campsites, maintenance, and other operational and budgetary impacts.
4. Opportunities for persons with disabilities.
5. Limitations resulting from endangered species, other sensitive natural resources, archaeological resources, or land management practices.
6. Public health, safety and welfare.
7. Environmental education program opportunities.

b. Public Use Regulation:

1. Public use regulations are set forth in 40E-7.511, Florida Administrative Code, to implement Section 373.1391(1)(b), Florida Statutes. Accordingly, the District shall publish and make available to the public a "Public Use Guide" for designated land management areas. The Public Use Guide will be adopted by the Governing Board at a public meeting advertised in accordance with Chapter 120, Florida Statutes.
2. Rules and regulations governing the public use of each management area shall be enforced by agencies with appropriate law enforcement jurisdiction.
3. Pursuant to Section 373.609, Florida Statutes, the District shall seek the cooperation of every state and county attorney, sheriff, police officer, and appropriate city and county official in the enforcement of the provisions set forth according to 40E-7.511, Florida Administrative Code.
4. Florida Fish and Wildlife Conservation Commission regulations shall govern hunting in areas opened for such use.

(5) Implementation Strategies. The District will secure dedicated funding sources, personnel and other resources to support program goals and objectives. Project funding needs and sources for cooperative management agreements with government and non-government entities will be identified during acquisition. A cooperative management agreement will designate a lead Manager and identify whether District funding is required.

a. The private sector may be solicited to furnish certain management-related facilities and services through the execution of leases and agreements. These leases/agreements will assure mutual benefits to both the District and private parties and be consistent with the program management objectives.

- b. Mitigation:
1. Mitigation Banking: Mitigation banking provides an opportunity to accomplish large-scale restoration that may otherwise go unfunded. Pursuant to Section 373.4135, Florida Statutes, the District is encouraged to develop mitigation banks. Land managers will evaluate opportunities in their regions to implement mitigation banks that are consistent with the guidelines established in the Joint State and Federal Mitigation Bank Review Team Process for Florida.
 2. Regional Mitigation Areas: The acquisition, restoration and management of District lands as mitigation shall be consistent with Chapter 2000-133, amending Sections 373.414 and 373.4135, Florida Statutes. This includes the establishment of Memorandums of Agreement (MOA) that include restoration plans, success criteria, and monitoring requirements. The MOAs will be used to implement mitigation using full-cost accounting, public noticing, and approval by the Governing Board for use as a mitigation area. The mitigation shall meet restoration objectives as provided in the General Management Plan.
- c. Revenue Generation:
1. Private concessions and/or agreements with non-profit organizations will be considered to implement needed services through concession contracts.
 2. Entrance and user fees, permits, licenses and/or advance reservations may be required where considered necessary by the managing agency.
 3. Timber sales will be conducted to improve forest health or to support specific forest management goals.
 4. Grazing leases will be encouraged on selected rangeland to generate revenue or to provide services that offset program management costs.
- d. Volunteers and Interns:
1. Volunteers, interns and alternative work forces will be used when possible to supplement existing staff and services.
 2. Any volunteer services must meet the standards and procedures prescribed by the District (Risk Management Manual, Volume 1).
- (6) Program Components:**
- a. Management Assessment: A brief summary of the management issues completed when the site is identified for acquisition.
 - b. General Management Plan (GMP): Provides a description of recommended management and is required for each Land Stewardship Management Area. The GMP follows a designated format and is updated every five years.
 - c. Activity Plan (AP): Provides a detailed implementation strategy for specific activities such as prescribed burning, exotic removal and restoration. The plan shall be developed by the lead Manager in consultation with the cooperating agencies for each major tract of land (or group of tracts) to be operated as a single

DuPuis Management Area General Management Plan 2014 through 2024
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management unit. The AP may be included in the GMP and is updated when necessary.

d. **Annual Work Plan (AWP):** Summarizes activities corresponding with annual budget development and is prepared by the Operations Section of the Land Stewardship Program.

e. **Reporting:** Summaries of management activities for each management area will be reported quarterly within the District and annually as part of the Florida Forever Work Plan.

(R.M. No. 139)

Secs. 140-26--140-40. Reserved.

Appendix C. Soil Descriptions

Flatwood Soils

Flatwood soils are poorly drained non-hydric, upland soils with sandy marine sediments throughout the profile. The seasonal high water table can range from six to 18 inches below the soil surface for three to six months annually. This soil type is dominant in the uplands in the western portion of the site.

Flats Soils

Flats (previously referred to as slough) soils are poorly drained hydric soils with sandy marine sediments throughout the profile. Flats are located between the flatwoods and topographic depressions and are generally regarded as transition areas, e.g. a wet prairie or a slough. Generally, the seasonal high water table begins in June and ends from September or thereafter with inundation periods dependent upon seasonal rainfall or large storm events. Within the Management Area the wet flatwoods and wet prairies in the eastern portion of the site are representative of this classification.

Sand Depression Soils

Sand depression soils are very poorly drained hydric soils that typically have sandy marine sediments throughout the profile. Often, these areas are depressions adjacent to flatwoods. The seasonal high water table can range from one foot below to two feet above the soil surface for seven to 10 months annually. Wetland communities dominate this landscape position. Within the Management Area, most of the depression marshes represent this soil class.

Muck Depression Soils

Muck depression soils are very poorly drained hydric soils that have an organic surface layer underlain by sandy marine sediments. These areas are often depressions adjacent to Flatwood soil-types. The seasonal high water table can range from six inches below to two feet above the soil surface for seven to eleven months annually. Wetland communities dominate this soil type. Examples within the Management Area include the soil under the L-8 marsh.

Urban or Made Lands

Urban or made land areas have soils that have been altered, excavated, or disturbed and no longer possess their natural morphological features. These soils do not function as they did in their original state, and little information on this subject is available. The seasonal high water table varies by site and is usually controlled to inhibit flooding of developed areas. No ecological communities are representative of this landscape position. The L-8 levee falls into this classification.

Appendix D. FNAI Natural Communities

Mesic Flatwoods 9,138 acres

This is the dominant plant community on the DuPuis Management Area and is distinguished by the south Florida slash pine overstory and an open or dense understory, depending on degree of drainage and fire frequency. Where drainage and fire suppression has been most severe, the understory consists of dense saw palmetto and to a lesser extent live oak. Use of mechanical shrub control in conjunction with increased prescribed fire has been instrumental in enhancing native plant communities that include saw palmetto, gallberry (*Ilex glabra*), St. Johns-wort (*Hypericum myrtifolium*), shiny blueberry (*Vaccinium myrsinites*), beautyberry (*Callicarpa americana*), bog buttons (*Lachnocaulon anceps*), yellow-eyed grass (*Xyris* spp.), wire grass (*Aristida berychiana*), and numerous other native wildflowers.

This community occurs on similar soils as dry prairies and wet flatwoods, with minor changes in topography determining plant species composition. Acidic sandy soil overlays hardpan that reduces water exchange between the soil surface and subsurface. Native plants of this community have adapted to long intervals of inundation and desiccation combined with periodic fire.

An important physical factor in mesic flatwoods is fire, which probably occurred every one to eight years in pre-Columbian times. Nearly all plants and animals inhabiting this community are adapted to periodic fires; several species depend on fire for their continued existence. Without relatively frequent fires, mesic flatwoods succeed into hardwood-dominated forests whose closed canopy can essentially eliminate the herbaceous ground cover.

Wet Flatwoods 3,644 acres

Wet flatwoods are characterized as relatively open-canopy forests of scattered pine trees or cabbage palms with either a thick shrubby under-story and very sparse ground cover, or a sparse under-story and a dense ground cover of hydrophytic herbs and shrubs, with variations between these extremes (Florida Natural Areas Inventory, 1990). Other plants associated with this habitat type in the MA include wax myrtle, saw palmetto, beakrush (*Rhynchospora* sp.), St. John's-wort (*Hypericum* sp.), and blue maidencane (*Amphicarpum muhlenburgianum*).

Wet flatwoods develop on poorly drained acidic, low nutrient sands underlain by hardpan. Surface water appears a minimum of one month per year. Natural fire frequency is considered to be three to 10 years. Frequent fire postpones hardwood succession and thins canopy trees, while promoting under-story growth and fire-adapted species.

State ranking is "S4", apparently secure in the state, although it may be rare in some parts of its state range. Global ranking requires further research. Most wet

flatwoods are extremely vulnerable to hydrologic manipulation and exotic invasion.

Strand Swamp 2,740 acres

Strand swamps are shallow, forested, usually elongated depressions or channels dominated by bald cypress. They are generally situated in troughs in a flat limestone plain. Other typical plants include red maple, laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), pond apple (*Annona glabra*), sweet bay (*Magnolia virginiana*), coastal plain willow, wax myrtle, myrsine (*Myrsine guianensis*), buttonbush (*Cephalanthus occidentalis*), poison ivy (*Toxicodendron radicans*), leather fern (*Acrostichum danaeifolium*), swamp fern (*Blechnum serrulatum*), sawgrass, swamp primrose (*Ludwigia palustris*), smartweed (*Polygonum* sp.). Strand swamp soils are peat and sand over limestone with normal hydroperiods of 200 to 300 days per year. Periodic water flow is an integral component of strand swamps. Natural fire is infrequent in strand swamps, occurring on a cycle of 30 to 200 years. Fire, however, is essential for reduction of hardwood encroachment and reduction of peat accumulation that would convert this community to a bottomland forest. Strand swamps are extremely vulnerable to local and regional hydrologic modifications.

Swale 2,341 acres

Swales are marshes situated in broad shallow channels and characterized by emergent grasses, sedges and herbs up to 10 feet in height. The dominant species are sawgrass, pickerelweed, and maidencane.

Swale soils are peat or sands and are generally located over linear depressions in the underlying limestone. Swales typically have long hydroperiods and are valuable ecologically because they serve as water storage and recharge areas, water transportation corridors, nutrient filters, and saltwater intrusion barriers. Threats to this natural community are disruption of natural hydrologic flow and fire cycles, conversion to agriculture and invasion of exotics in disturbed areas.

Light ground fires occur every one to five years in swales, and may occur any time of the year, as sawgrass can carry fire over the water's surface. Fire during dry seasons may result in peat fire that lowers the ground surface, converting the swale into a slough. Lack of fire results in dominance of coastal plain willow and buttonbush thickets.

Wet Prairie 1,261 acres

Wet prairie is characterized as a treeless plain with a sparse to dense ground cover of grasses, sedges, rushes, and herbs; including wiregrass, toothache grass (*Ctenium aromaticum*), maidencane (*Panicum hemotomon*), spikerush (*Eleocharis* sp.), and beakrush (*Rhynchospora* sp.). Other typical plants include hatpins (*Lachnocaulon* sp.), marsh pinks (*Rhexia* sp.), crownbeard (*Verbesina chapmanii*), sundews (*Drosera* sp.), tickseed (*Bidens* sp.), wax myrtle, St. John's-wort (*Hypericum* sp.), and Panicums (Florida Natural Areas Inventory, 1990).

Wet prairies occur on low, flat, poorly drained terrain and are inundated from 50 to 100 days per year. Wet prairie species have adapted to long periods of drought conditions due to rainfall seasonality. Soils typically are sands with a major organic component. Fire plays an integral role in wet prairie ecology, and with sufficient fuel build-up, burns every two to four years. If deprived of fire, these grass-dominated flatlands succumb to shrub encroachment, and are especially vulnerable to wax myrtle infestations.

Wet prairie has a state ranking of “S4”, apparently secure in the state, although it may be rare in some parts of its state range. Global ranking requires further research.

Depression Marsh 1,234 acres

Depression marsh, also known as a flatwoods pond, is characterized as a shallow, usually rounded depression in sand substrate with herbaceous vegetation often occurring in concentric bands (Florida Natural Areas Inventory, 1990). Typical plants include St. John’s-wort, spikerush (*Eleocharis sp.*), yellow-eyed grass, chain fern, primrose willow (*Ludwigia peruviana*), maidencane (*Panicum hemitomon*), wax myrtle, buttonbush, pickerelweed, arrowhead, and bladderwort.

Where marshes occur, one of three geological conditions is present: surficial deposits are impermeable, the water table emerges through the permeable substrate, or the marsh is hydrologically connected to a river (Kushlan, 1991). Depression marshes are typically small in size and hydrologically isolated from other surface water bodies. Water is received by runoff, seepage or direct rainfall. Hydroperiods range widely from as few as 50 days or less to more than 200 days per year (Florida Natural Areas Inventory, 1990). Bottom soils are generally acidic peat, resulting from accumulation of decayed plant material. This community frequently grades into wet or mesic flatwoods.

Natural fire occurs in depression marshes every one to five years, depending on a combination of weather conditions and fuel build-up. Fire preserves the open canopy by limiting invasion of woody vegetation, promoting herbaceous growth, and slowing succession by deepening the marsh with an occasional peat fire. The Land Stewardship Program coordinates fire schedules to insure depression marshes burn at natural frequencies and during periods of adequate ground moisture.

Depression marshes provide critical breeding and foraging habitat for a wide assemblage of amphibians and reptiles not found in larger, more permanent systems. Cyclic surface water availability promotes foraging by numerous listed wading bird species such as the wood stork, white ibis, snowy egret, and sandhill crane.

Depression marsh is ranked statewide as “S”, either very rare throughout its range; or found locally, even abundantly at some of its locations in a restricted range; or because of other factors making it vulnerable to extinction throughout its range. Global ranking indicates it is apparently secure, though it may be quite rare in parts of its range, especially at the periphery. Further research is required for a definitive global classification.

Prairie Hammock 359 acres

Prairie hammock is characterized as a clump of tall cabbage palms and live oaks in the midst of prairie or marsh communities (Florida Natural Areas Inventory, 1990). Prairie hammocks establish on elevated soils surrounded by lower topography. These islands are generally flooded only for a short duration during the highest water levels. Naturally occurring fires are rare in these hammocks, due mainly to a lack of under-story fuel.

Canopy species are live oak and cabbage palm, with occasional laurel oak in lower elevations. An abundance of epiphytes, including listed species, are found in mature canopy trees. As in most prairie hammocks, those found here have a sparse under-story due to over-story shading, but cover is also reduced by cattle grazing and trampling of shrub and ground layer vegetation. Many species common to undisturbed hammocks are sparse or lacking, replaced by disturbance species such as broomweed (*Sida sp.*), tropical soda apple (*Solanum viarum*), and caesarweed (*Urena lobata*). Typical under-story plants of pristine prairie hammocks include wax myrtle, water oak, stoppers (*Eugenia sp.*), marlberry (*Ardisia escallonioides*), beautyberry (*Callicarpa americana*), and saw palmetto.

Florida Natural Areas Inventory ranks prairie hammocks as “G4” and “S4” both statewide and globally secure, although it may be quite rare in parts of its range, especially at the periphery. Land Stewardship management strives to minimize soil disturbance, restrict fire where appropriate and eradicate non-native invasive species within hammock areas.

Appendix E. Species List

Plant Species

(This list of DuPuis plants was compiled by D. Black (SFWMD) from lists by P. David, R. Woodbury, and The Institute for Regional Conservation.)

Trees, Shrubs, and Vines

| | |
|-----------------------|-------------------------------------|
| Earleaf Acacia | <i>Acacia auriculiformis</i> |
| Red Maple | <i>Acer rubrum</i> |
| Woman's Tongue | <i>Albizia lebbek</i> |
| Golden Trumpet | <i>Allamanda cathartica</i> |
| Pepper Vine | <i>Ampelopsis arborea</i> |
| Bastard Indigobush | <i>Amorpha fruticosa</i> |
| Pond Apple | <i>Annona glabra</i> |
| Coralvine | <i>Antigonon leptopus</i> |
| Groundnut | <i>Apios americana</i> |
| Northfolk Island Pine | <i>Araucaria excelsa</i> |
| Shoebuttton Ardisia | <i>Ardisia elliptica</i> |
| Sprenger's Asparagus | <i>Asparagus aethiopicus</i> |
| Common Asparagus-fern | <i>Asparagus setaceus</i> |
| Pawpaw | <i>Asimina reticulata</i> |
| Saltbush | <i>Baccharis halmifolia</i> |
| Silverling | <i>Baccharis glomeruliflora</i> |
| Bamboo | <i>Bambusa vulgaris</i> |
| Orchid Tree | <i>Bauhinia variegata</i> |
| Tarflower | <i>Befaria racemosa</i> |
| Gumbo-limbo | <i>Bursera simaruba</i> |
| Beauty Berry | <i>Callicarpa americana</i> |
| Hedge False Bindweed | <i>Calystegia sepium limnophila</i> |
| Love Vine | <i>Cassytha filiformis</i> |
| Gray Sheoak | <i>Casuarina glauca</i> |
| Sugarberry | <i>Celtis laevigata</i> |
| Buttonbush | <i>Cephalanthus occidentalis</i> |
| Cocoplum | <i>Chrysobalanus icaco</i> |
| Satinleaf | <i>Chrysophyllum oliviforme</i> |
| Orange | <i>Citrus aurantium</i> |
| Lemon | <i>Citrus limon</i> |
| Citron | <i>Citrus medica</i> |
| Tangerine | <i>Citrus reticulata</i> |
| Sweet Orange | <i>Citrus sinensis</i> |
| Grapefruit | <i>Citrus Xparadisi</i> |
| Cockspur Hawthorn | <i>Crataegus crus-galli</i> |
| Colombian Waxweed | <i>Cuphea carthagenensis</i> |
| Indian Rosewood | <i>Dalbergia sissoo</i> |
| Common Persimmon | <i>Diaspyros virginiana</i> |
| Air-potato | <i>Dioscorea bulbifera</i> |
| Eucalyptus | <i>Eucalyptus sp.</i> |
| Surinam Cherry | <i>Eugenia uniflora</i> |
| Florida Strangler Fig | <i>Ficus aurea</i> |

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| | |
|----------------------------|--------------------------------------|
| Indian Laurel | <i>Ficus microcarpa</i> |
| Pop Ash | <i>Fraxinus caroliniana</i> |
| Dwarf Huckleberry | <i>Gaylussacia dumosa</i> |
| Firebush | <i>Hamelia patens</i> |
| Lindenleaf Rosemallow | <i>Hibiscus furcellatus</i> |
| Swamp Rosemallow | <i>Hibiscus grandiflorus</i> |
| Sandweed | <i>Hypericum fasciculatum</i> |
| St. Johnswort | <i>Hypericum cistifolium</i> |
| St. Andrew's-cross | <i>Hypericum hypericoides</i> |
| Dwarf St. John's-wort | <i>Hypericum mutilum</i> |
| Four petal St. John's-wort | <i>Hypericum tetrapetalum</i> |
| Atlantic St. John'- wort | <i>Hypericum reductum</i> |
| Dahoon | <i>Ilex cassine</i> |
| Gallberry | <i>Ilex glabra</i> |
| Hairy Indigo | <i>Indigofera hirsuta</i> |
| Moonflower | <i>Ipomoea alba</i> |
| Morning-glory | <i>Ipomoea indica var. acuminata</i> |
| Arrowleaf morning-glory | <i>Ipomoea sagittata</i> |
| Virginia Willow | <i>Itea virginica</i> |
| Southern Red Cedar | <i>Juniperus silicicola</i> |
| Lantana | <i>Lantana camara</i> |
| White Leadtree | <i>Leucaena leucocephala</i> |
| Gopher Apple | <i>Licania michauxii</i> |
| Rusty Lyonia | <i>Lyonia fruticosa</i> |
| Fetterbush | <i>Lyonia lucida</i> |
| Winged Loosestrife | <i>Lythrum alatum</i> |
| Florida Loosestrife | <i>Lythrum flagellare</i> |
| Sweetbay | <i>Magnolia virginiana</i> |
| Mango | <i>Mangifera indica</i> |
| Cajeput Tree | <i>Melaleuca quinquenervia</i> |
| Chinaberry Tree | <i>Melia azedarach</i> |
| Creeping Cucumber | <i>Melothria pendula</i> |
| Florida Keys Hempvine | <i>Mikania cordifolia</i> |
| Climbing Hempweed | <i>Mikania scandens</i> |
| Balsam-pear | <i>Momordica charantia</i> |
| Red Mulberry | <i>Morus rubra</i> |
| Wax Myrtle | <i>Myrica cerifera</i> |
| Mexican Palo Verde | <i>Parkinsonia aculeata</i> |
| Corkystem Passionflower | <i>Passiflora suberosa</i> |
| Virginia Creeper | <i>Parthenocissus quinquefolia</i> |
| Avocado | <i>Persea americana</i> |
| Red Bay | <i>Persea borbonia</i> |
| Swamp Bay | <i>Persea palustris</i> |
| Date Palm | <i>Phoenix reclinata</i> |
| Slash Pine | <i>Pinus elliotti</i> |
| Strawberry Guava | <i>Psidium cattleianum</i> |
| Common Guava | <i>Psidium guajava</i> |
| Wild Coffee | <i>Psychotria sulzneri</i> |
| Flamevine | <i>Pyrostegia venusta</i> |

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| | |
|--------------------------------|-----------------------------------|
| Laurel Oak | <i>Quercus laurifolia</i> |
| Dwarf Live Oak | <i>Quercus minima</i> |
| Myrtle Oak | <i>Quercus myrtifolia</i> |
| Live Oak | <i>Quercus virginiana</i> |
| Myrsine | <i>Rapanea punctata</i> |
| White Indigoberry | <i>Randia aculeata</i> |
| Rose Myrtle | <i>Rhodomirtus tomentosa</i> |
| Winged Sumac | <i>Rhus copallinum</i> |
| Southern Dewberry | <i>Rubus trivialis</i> |
| Cabbage Palm | <i>Sabal palmetto</i> |
| Coastal Plain Willow | <i>Salix caroliniana</i> |
| Southern Elderberry | <i>Sambucus canadensis</i> |
| White-Vine | <i>Sarcostemma clausum</i> |
| Brazilian Pepper | <i>Schinus terebinthifolius</i> |
| Graytwig | <i>Schoepfia chrysophylloides</i> |
| Privet Wild Sensitive Plant | <i>Senna ligustrina</i> |
| Coffeeweed | <i>Senna obtusifolia</i> |
| Septicweed | <i>Senna occidentalis</i> |
| Saw Palmetto | <i>Serenoa repens</i> |
| Common Wireweed | <i>Sida acuta</i> |
| Llma | <i>Sida cordifolia</i> |
| Cuban Jute | <i>Sida rhombifolia</i> |
| Florida Bully | <i>Sideroxylon reclinatum</i> |
| Earleaf Greenbrier | <i>Smilax auriculata</i> |
| Saw Greenbrier | <i>Smilax bona-nox</i> |
| Catbrier | <i>Smilax laurifolia</i> |
| Shrubby False Buttonweed | <i>Spermacoce verticillata</i> |
| Blue Porterweed | <i>Stachytarpheta jamaicensis</i> |
| Corkwood | <i>Stillingia aquatica</i> |
| Queen's Delight | <i>Stillingia sylvatica</i> |
| Java-Plum | <i>Syzygium cumini</i> |
| Rose-Apple | <i>Syzygium jambos</i> |
| Pond Cypress | <i>Taxodium ascendens</i> |
| Bald Cypress | <i>Taxodium distichum</i> |
| Yellow Elder | <i>Tecoma stans</i> |
| West Indian Almond | <i>Terminalia catappa</i> |
| Blackeyed Susan Vine | <i>Thunbergia alata</i> |
| Poison Oak | <i>Toxicodendron radicans</i> |
| Nettletree | <i>Trema micranthum</i> |
| Virginia Marsh St. John's-wort | <i>Triadenum virginicum</i> |
| Forked Bluecurls | <i>Trichostema dichotomum</i> |
| Sacramento Burrbark | <i>Triumfetta semitriloba</i> |
| Shiney Blueberry | <i>Vaccinium myrsinites</i> |
| Black Haw | <i>Viburnum obovatum</i> |
| Fourleaf Vetch | <i>Vicia acutifolia</i> |
| Hairy-pod Cowpea | <i>Vigna luteola</i> |
| Simpleleaf Chaste Tree | <i>Vitex trifolia</i> |
| Summer Grape | <i>Vitis aestivalis</i> |
| Muscadine | <i>Vitis rotundifolia</i> |

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Calloose Grape
Creeping Oxeye
Arrowleaf Elephantear
Tallow Wood
Hercules' Club

Vitis shuttleworthii
Wedelia trilobata
Xanthosoma sagittifolium
Ximenia americana
Zanthoxylum clava-herculis

Herbaceous

Slender Threeseed Mercury
Shyleaf
Flaxleaf False Foxglove
Saltmarsh False Foxglove
Purple False Foxglove
Sisal Hemp
Hammock Snakeroot
Tropical Whiteweed
Colic root
Alligatorweed
Sessile Joyweed
White Moneywort
Ragweed
Pink Redstem
Nodding Nixie
Mexican poppy
Jack-in-the-pulpit
Ovateleaf Indian Plantain
Scarlet Milkweed
Swamp Milkweed
Lanceolate Milkweed
Longleaf Milkweed
Savannah Milkweed
Whorled Milkweed
Green Antelopehorn
Butterfly-weed
Scale-leaf Aster
Climbing Aster
Rice Button Aster
Annual Marsh Aster
Lemon Bacopa
Tropical Waterhyssop
Bacopa
Honeycomb Head
White Screwstem
Beggarticks
Smooth Beggarticks
Smallfruit Beggarticks
Pineland Rayless Goldenrod
Browne's Blechum
Pinepink
False Nettle

Acalypha gracilens
Aeschynomene americana
Agalinis linifolia
Agalinis maritima
Agalinis purpurea
Agave sisalana
Ageratina jucunda
Ageratum conyzoides
Aletris lutea
Alternanthera philoxeroides
Altenanthera sessilis
Alysicarpus vaginalis
Ambrosia artemisiifolia
Ammannia latifolia
Apteria aphylla
Argemone mexicana
Arisaema triphyllum
Arnoglossum ovatum
Asclepias curassavica
Asclepias incarnata
Asclepias lanceolata
Asclepias longifolia
Asclepias pedicellata
Asclepias verticillata
Asclepias viridis
Asclepias tuberosa
Aster adnatus
Aster carolinianus
Aster dumosus
Aster subulatus
Bacopa caroliniana
Bacopa innominata
Bacopa monnieri
Balduina angustifolia
Bartonia verna
Bidens alba var. radiata
Bidens laevis
Bidens mitis
Bigelovia nudata subsp. australis
Blechum pyramidatum
Bletia purpurea
Boehmeria cylindrica

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| | |
|---------------------------|---|
| Wineflower | <i>Boerhavia diffusa</i> |
| Leaf Mustard | <i>Brassica juncea</i> |
| American Bluehearts | <i>Buchnera americana</i> |
| Bluethread | <i>Burmannia biflora</i> |
| Southern Bluethread | <i>Burmannia capitata</i> |
| Bearded Grasspink | <i>Calopogon barbatus</i> |
| Manyflowered Grasspink | <i>Calopogon multiflorus</i> |
| Tuberous Grasspink | <i>Calopogon tuberosus</i> |
| Bandana-of-the-Everglades | <i>Canna flaccida</i> |
| Pineland Chaffhead | <i>Carphephorus carnosus</i> |
| Florida Paintbrush | <i>Carphephorus corymbosus</i> |
| Vanillaleaf | <i>Carphephorus odoratissimus</i> |
| Hairy Chaffhead | <i>Carphephorus paniculatus</i> |
| Periwinkle | <i>Catharanthus roseus</i> |
| Coinwort | <i>Centella asiatica</i> |
| Butterfly Pea | <i>Centrosema virginianum</i> |
| Coontail | <i>Ceratophyllum demersum</i> |
| Partridge Pea | <i>Chamaecrista fasciculata</i> |
| Sensitive Pea | <i>Chamaecrista nictitans var. aspera</i> |
| Pillpod Sandmat | <i>Chamaesyce hirta</i> |
| Graceful Sandmat | <i>Chamaesyce hypericifolia</i> |
| Spotted Sandmat | <i>Chamaesyce maculata</i> |
| Prostrate Sandmat | <i>Chamaesyce prostrata</i> |
| Pineland Daisy | <i>Chaptalia tomentosa</i> |
| Pigweed | <i>Chenopodium ambrosioides</i> |
| Jack-in-the-bush | <i>Chromolaena odorata</i> |
| Coastalplain Goldenaster | <i>Chrysopsis scabrella</i> |
| Spotted Water Hemlock | <i>Cicuta maculata</i> |
| Thistle | <i>Cirsium horridulum</i> |
| Nuttall's Thistle | <i>Cirsium nuttallii</i> |
| Seasonvine | <i>Cissus verticillata</i> |
| Pine Hyacinth | <i>Clematis baldwinii</i> |
| Finger-Rot | <i>Cnidioscolus stimulosus</i> |
| Wild Taro | <i>Colocasia esculenta</i> |
| Common Dayflower | <i>Commelina diffusa</i> |
| Whitemouth Dayflower | <i>Commelina erecta</i> |
| Blue Mistflower | <i>Conoclinium coelestinum</i> |
| Canadian Horseweed | <i>Conyza canadensis</i> |
| Florid Tickseed | <i>Coreopsis floridana</i> |
| Tickseed | <i>Coreopsis gladiata</i> |
| Leavenworth's Tickseed | <i>Coreopsis leavenworthii</i> |
| Swamp Lily | <i>Crinum americanum</i> |
| Shakeshake | <i>Crotalaria incana</i> |
| Lanceleaf Rattlebox | <i>Crotalaria lanceolata</i> |
| Low Rattlebox | <i>Crotalaria pumila</i> |
| Rattleweed | <i>Crotalaria retusa</i> |
| Rabbitbells | <i>Crotalaria rotundifolia</i> |
| Showy Rattlebox | <i>Crotalaria spectabilis</i> |
| Vente Connigo | <i>Croton glandulosus</i> |

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|-------------------------------|---------------------------------|
| Pineland Croton | <i>Croton linearis</i> |
| Florida Scrub Roseling | <i>Cuthbertia ornata</i> |
| Ticktrefoil | <i>Desmodium incanum</i> |
| Threeflower Ticktrefoil | <i>Desmodium triflorum</i> |
| Carolina Ponysfoot | <i>Dichondra carolinensis</i> |
| Poor Joe | <i>Diodia teres</i> |
| Virginia Buttonweed | <i>Diodia virginiana</i> |
| Dwarf Sundew | <i>Drosera brevifolia</i> |
| Pink Sundew | <i>Drosera capillaris</i> |
| Drymary | <i>Drymaria cordata</i> |
| Pineland Twinflower | <i>Dyschoriste angusta</i> |
| Water Hyacinth | <i>Eichhornia crassipes</i> |
| Tall Elephants Foot | <i>Elephantopus elatus</i> |
| Florida Tasselflower | <i>Emilia fosbergii</i> |
| Lilac Tasselflower | <i>Emilia sonchifolia</i> |
| Florida Butterfly Orchid | <i>Encyclia tampensis</i> |
| Fireweed | <i>Erechtites hieracifolia</i> |
| Oakleaf Fleabane | <i>Erigeron quercifolius</i> |
| Early Whitetop Fleabane | <i>Erigeron vernus</i> |
| Flattened Pipewort | <i>Eriocaulon compressum</i> |
| Hatpins | <i>Eriocaulon decangulare</i> |
| Rarenel's Pipewort | <i>Eriocaulon ravenelii</i> |
| Michaux's Cupgrass | <i>Eriochloa michauxii</i> |
| Dogtongue Wild Buckwheat | <i>Eriogonum tomentosum</i> |
| Button Snakeroot | <i>Eryngium aquaticum</i> |
| Baldwin's Eryngo | <i>Eryngium baldwinii</i> |
| Button Rattlesnakemaster | <i>Eryngium yuccifolium</i> |
| Wild Coco | <i>Eulophia alta</i> |
| Dog-fennel | <i>Eupatorium capillifolium</i> |
| False Fennel | <i>Eupatorium leptophyllum</i> |
| Semaphore Thoroughwort | <i>Eupatorium mikanioides</i> |
| Mohr's Thoroughwort | <i>Eupatorium mohrii</i> |
| Lesser Florida Spurge | <i>Euphorbia polyphylla</i> |
| Flat-topped Goldenrod | <i>Euthamia grominifolia</i> |
| Narrowleaf Yellowtops | <i>Flaveria linearis</i> |
| Cottonweed | <i>Froelichia floridana</i> |
| Elliott's Milkpea | <i>Galactia elliotii</i> |
| Eastern Milkpea | <i>Galactia regularis</i> |
| Downy Milkpea | <i>Galactia volubilis</i> |
| Bluntleaf Bedstraw | <i>Galium hispidulum</i> |
| Bedstraw | <i>Galium obtusum</i> |
| Stiff Marsh Bedstraw | <i>Galium tinctorium</i> |
| Oneflower Bedstraw | <i>Galium uniflorum</i> |
| Southern Beeblossom | <i>Gaura angustifolia</i> |
| Narrowleaf Purple Everlasting | <i>Gnaphalium falcatum</i> |
| Rabbit Tobacco | <i>Gnaphalium obtusifolium</i> |
| Pennsylvania Everlasting | <i>Gnaphalium pensylvanicum</i> |
| Spoonleaf Purple Everlasting | <i>Gnaphalium purpureum</i> |
| Arrasa Con Todo | <i>Gomphrena serrata</i> |

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| Rough Hedgehyssop | <i>Gratiola hispida</i> |
| Hedge Hyssop | <i>Gratiola pilosa</i> |
| Branched Hedgehyssop | <i>Gratiola ramosa</i> |
| Longhorn False Reinorchid | <i>Habenaria quinqueseta</i> |
| Waterspider False Reinorchid | <i>Habenaria repens</i> |
| Threadroot Orchid | <i>Harrisella filiformis</i> |
| Flatop Mille Graines | <i>Hedyotis corymbosa</i> |
| Clustered Mille Graines | <i>Hedyotis uniflora</i> |
| Southeastern Sneezeweed | <i>Helenium pinnatifidum</i> |
| Pinebarren Frostweed | <i>Helianthemum corymbosum</i> |
| Florida Scrub Frostweed | <i>Helianthemum nashii</i> |
| Scorpion's Tail | <i>Heliotropium angiospermum</i> |
| Pineland Heliotrope | <i>Heliotropium polyphyllum</i> |
| Camphorweed | <i>Heterotheca subaxillaris</i> |
| Queen-devil | <i>Hieracium gronovii</i> |
| Coastalplain Hawkweed | <i>Hieracium megacephalon</i> |
| Waterthyme | <i>Hydrilla verticillata</i> |
| Manyflower Marshpennywort | <i>Hydrocotyle umbellata</i> |
| Whorled Pennywort | <i>Hydrocotyle verticillata</i> |
| Skyflower | <i>Hydrolea corymbosa</i> |
| Alligator Lily | <i>Hymenocallis palmeri</i> |
| Fringed Yellow Stargrass | <i>Hypoxis juncea</i> |
| Bristleseed Yellow Stargrass | <i>Hypoxis wrightii</i> |
| Musky Mint | <i>Hyptis alata</i> |
| John Charles | <i>Hyptis verticillata</i> |
| Juba's Bush | <i>Iresine diffusa</i> |
| Southern Blue Flag | <i>Iris hexagona var. savannarum</i> |
| Piedmont Marshelder | <i>Iva microcephala</i> |
| Water Willow | <i>Justica crassifolia</i> |
| Cathedral Bells | <i>Kalanchoe pinnata</i> |
| Marsh Mallow | <i>Kosteletzkya virginica</i> |
| Red Root | <i>Lachnanthes caroliniana</i> |
| Engler's Bogbutton | <i>Lachnocaulon engleri</i> |
| Small's Bogbutton | <i>Lachnocaulon minus</i> |
| Grassleaf Lettuce | <i>Lactuca graminifolia</i> |
| Drysand Pinweed | <i>Lechea divaricata</i> |
| Piedmont Pinweed | <i>Lechea torreyi</i> |
| Valdivia Duckweed | <i>Lemna valdiviana</i> |
| Virginia Pepperweed | <i>Lepidium virginicum</i> |
| Chapman's Gayfeather | <i>Liatris chapmanii</i> |
| Garber's Gayfeather | <i>Liatris garberi</i> |
| Slender Gayfeather | <i>Liatris gracilis</i> |
| Dense Gayfeather | <i>Liatris spicata</i> |
| Shortleaf Gayfeather | <i>Liatris tenuifolia</i> |
| Catesby's Lily | <i>Lilium catesbaei</i> |
| Frog's Bit | <i>Limnobium spongia</i> |
| Asian Marshweed | <i>Limnophila sessiliflora</i> |
| Canada Toad Flax | <i>Linaria canadensis</i> |
| Apalachicola Toad Flax | <i>Linaria floridana</i> |

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| Yellowseed False Pimpernel | <i>Lindernia anagallidea</i> |
| Malaysian False Pimpernel | <i>Lindernia crustacea</i> |
| Savannah False Pimpernel | <i>Lindernia grandiflora</i> |
| Stiff Yellow Flax | <i>Linum medium var. texanum</i> |
| Bay Lobelia | <i>Lobelia feayana</i> |
| Glade Lobelia | <i>Lobelia glandulosa</i> |
| White Lobelia | <i>Lobelia paludosa</i> |
| Seedbox | <i>Ludwigia alternifolia</i> |
| Piedmont Primrosewillow | <i>Ludwigia arcuata</i> |
| Curtiss' Primrosewillow | <i>Ludwigia curtissii</i> |
| Yerba De Jicotea | <i>Ludwigia erecta</i> |
| Lanceleaf Primrosewillow | <i>Ludwigia lanceolata</i> |
| Anglestem Primrosewillow | <i>Ludwigia leptocarpa</i> |
| Southeastern Primrosewillow | <i>Ludwigia linifolia</i> |
| Seaside Primrosewillow | <i>Ludwigia maritima</i> |
| Mexican Primrosewillow | <i>Ludwigia octovalvis</i> |
| Marsh Seedbox | <i>Ludwigia palustris</i> |
| Peruvian Primrosewillow | <i>Ludwigia peruviana</i> |
| Hairy Primrosewillow | <i>Ludwigia pilosa</i> |
| Creeping Primrosewillow | <i>Ludwigia repens</i> |
| Shrubby Primrosewillow | <i>Ludwigia suffruticosa</i> |
| Savannah Primrosewillow | <i>Ludwigia virgata</i> |
| Sky Blue Lupine | <i>Lupinus diffusus</i> |
| Garden Tomato | <i>Lycopersicon esculentum</i> |
| Taperleaf Waterhorehound | <i>Lycopus rubellus</i> |
| Rose-Rush | <i>Lygodesmia aphylla</i> |
| Wild Bushbean | <i>Macroptilium lathyroides</i> |
| Grassleaf Barbara's Buttons | <i>Marshallia tenuifolia</i> |
| Axilflower | <i>Mecardonia acuminata</i> |
| Snow Squarestem | <i>Melanthera nivea</i> |
| White Sweetclover | <i>Melilotus albus</i> |
| Indian Sweetclover | <i>Melilotus indicus</i> |
| Manatee Mudflower | <i>Micranthemum glomeratum</i> |
| Lax Hornpod | <i>Mitreola petiolata</i> |
| Swamp Hornpod | <i>Mitreola sessilifolia</i> |
| Indian Chickweed | <i>Mollugo verticillata</i> |
| Nakedstem Dewflower | <i>Murdannia nudiflora</i> |
| Celestial-lily | <i>Nemastylus floridana</i> |
| American White Waterlily | <i>Nymphaea odorata</i> |
| Big Floatingheart | <i>Nymphoides aquatica</i> |
| Cut-leaf Evening-primrose | <i>Oenothera laciniata</i> |
| Exotic Prickly-pear | <i>Opuntia ficus-indica</i> |
| Prickley-pear | <i>Opuntia humifusa</i> |
| Lady's sorrel | <i>Oxalis corniculata</i> |
| Violet Wood-sorrel | <i>Oxalis debilis var. corymbosa</i> |
| Water Dropwort | <i>Oxypolis filiformis</i> |
| Florida Pellitory | <i>Parietaria floridana</i> |
| Santa Maria | <i>Parthenium hysterophorus</i> |
| Spreading Cinchweed | <i>Pectis prostrata</i> |

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| Greed Arum | <i>Peltandra virginica</i> |
| Frog-fruit | <i>Phyla nodiflora</i> |
| Drummond's Leaf-flower | <i>Phyllanthus abnormis</i> |
| Carry-me-seed | <i>Phyllanthus amarus</i> |
| Mascarene Island Leaf-flower | <i>Phyllanthus tenellus</i> |
| Cutleaf Groundcherry | <i>Physalis angulata</i> |
| Cypresshead Groundcherry | <i>Physalis arenicola</i> |
| Husk Tomato | <i>Physalis pubescens</i> |
| Pokeberry | <i>Phytolacca americana</i> |
| Pennyroyal | <i>Piloblephis rigida</i> |
| Artillery Plant | <i>Pilea microphylla</i> |
| Blue Butterwort | <i>Pinguicula caerulea</i> |
| Yellow Butterwort | <i>Pinguicula lutea</i> |
| Small Butterwort | <i>Pinguicula pumila</i> |
| Pitted Stripeseed | <i>Piriqueta caroliniana</i> |
| Water-lettuce | <i>Pistia stratiotes</i> |
| Narrowleaf Silkgrass | <i>Pityopsis graminifolia</i> |
| Lance-leaf Plantain | <i>Plantago lanceolata</i> |
| Large Plantain | <i>Plantago major</i> |
| Virginia Plantain | <i>Plantago virginica</i> |
| Snowy Orchid | <i>Platanthera nivea</i> |
| Stinking Camphorweed | <i>Pluchea foetida</i> |
| Sweetscent | <i>Pluchea odorata</i> |
| Rosy Camphorweed | <i>Pluchea rosea</i> |
| Paintedleaf | <i>Poinsettia cyathophora</i> |
| Fiddler's Spurge | <i>Poinsettia heterophylla</i> |
| Rose Pogonia | <i>Pogonia ophioglossoides</i> |
| Slenderleaf Chlammyweed | <i>Polanisia tenuifolia</i> |
| White Bachelor Button | <i>Polygala baldwinii</i> |
| Drumheads | <i>Polygala cruciata</i> |
| Tall Pinebarren Milkwort | <i>Polygala cymosa</i> |
| Candyweed | <i>Polygala grandiflora</i> |
| Procession Flower | <i>Polygala incarnata</i> |
| Yellow Milkwort | <i>Polygala lutea</i> |
| Candyroot | <i>Polygala nana</i> |
| Milkwort | <i>Polygala ramosa</i> |
| Bachelor Button | <i>Polygala rugellii</i> |
| Coastalplain Milkwort | <i>Polygala setacea</i> |
| Denseflower Knotweed | <i>Polygonum densiflorum</i> |
| Mild Waterpepper | <i>Polygonum hydropiperoides</i> |
| Dotted Smartweed | <i>Polygonum punctatum</i> |
| Rustweed | <i>Polyprum procumbens</i> |
| Pickerelweed | <i>Pontederia cordata</i> |
| Purslane | <i>Portulaca oleracea</i> |
| Pink Purslane | <i>Portulaca pilosa</i> |
| Marsh Mermaidweed | <i>Proserpinaca palustris</i> |
| Combleaf Mermaidweed | <i>Proserpinaca pectinata</i> |
| Blackroot | <i>Pterocaulon pycnostachyum</i> |
| Giant Orchid | <i>Pteroglossaspis ecristata</i> |

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| Mock Bishop Weed | <i>Ptilimnium capillaceum</i> |
| West Indian Meadowbeauty | <i>Rhexia cubensis</i> |
| Pale Meadowbeauty | <i>Rhexia mariana</i> |
| Meadowbeauty | <i>Rhexia nashii</i> |
| Nuttall's Meadowbeauty | <i>Rhexia nuttallii</i> |
| Least Snoutbean | <i>Rhynchosia minima</i> |
| Tropical Mexican-clover | <i>Richardia brasiliensis</i> |
| Large Flower Mexican-clover | <i>Richardia grandiflora</i> |
| Rough Mexican-clover | <i>Richardia scabra</i> |
| Castor Bean | <i>Ricinus communis</i> |
| Rougeplant | <i>Rivina humilis</i> |
| Toothcup | <i>Rotala ramosior</i> |
| Black-eyed Susan | <i>Rudbeckia hirta</i> |
| Ruellia | <i>Ruellia caroliniensis</i> |
| Swamp Dock | <i>Rumex verticillatus</i> |
| Marsh-pink | <i>Sabatia bartramii</i> |
| Slender Marsh-pink | <i>Sabatia calycina</i> |
| Large-flower Rose-gentian | <i>Sabatia grandiflora</i> |
| Rose-of-Plymouth | <i>Sabatia stellaris</i> |
| Lizard's tail | <i>Saururus cernuus</i> |
| Arrowhead | <i>Sagittaria lancifolia</i> |
| River Sage | <i>Salvia riparia</i> |
| Water Spangles | <i>Salvinia minima</i> |
| Limewater Brookweed | <i>Samolus ebracteatus</i> |
| | <i>Samolus valerandi subsp.</i> |
| | <i>parviflorus</i> |
| Pineland Pimpernel | <i>Schoenocaulon dubium</i> |
| Florida Feathershank | <i>Schoenolirion albiflorum</i> |
| Sunnybells | <i>Schoenus nigricans</i> |
| Black Bogrush | <i>Scoparia dulcis</i> |
| Sweetbroom | <i>Scutellaria integrifolia</i> |
| Rough Skullcap | <i>Senecio glabellus</i> |
| Golden Ragwort | <i>Sesbania herbacea</i> |
| Danglepod | <i>Sesbania vesicaria</i> |
| Bladderpod | <i>Sisyrinchium atlanticum</i> |
| Blue-eyed-grass | <i>Solanum americanum</i> |
| Common Nightshade | <i>Solanum diphyllum</i> |
| Twoleaf Nightshade | <i>Solanum erianthum</i> |
| Potato-tree | <i>Solanum seafortianum</i> |
| Climbing Nightshade | <i>Solanum torvum</i> |
| Turkeyberry | <i>Solanum viarum</i> |
| Tropical Soda Apple | <i>Solidago fistulosa</i> |
| Pinebarren Goldenrod | <i>Solidago odora var. chapmanii</i> |
| Chapman's Goldenrod | <i>Solidago stricta</i> |
| Narrow-leaved Goldenrod | <i>Sonchus asper</i> |
| Spiney Sowthistle | <i>Sonchus oleraceus</i> |
| Common Sowthistle | <i>Spermaceoce assurgens</i> |
| Woodland False Buttonweed | <i>Spiranthes longilabris</i> |
| Longlip Lady's-tresses | <i>Spiranthes odorata</i> |
| Fragrant Lady's-tresses | |

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| Greenvein Lady's-tresses | <i>Spiranthes praecox</i> |
| Southern Lady's-tresses | <i>Spiranthes torta</i> |
| Spring Lady's-tresses | <i>Spiranthes vernalis</i> |
| Florida Hedgenettle | <i>Stachys floridana</i> |
| Pineland Scaleypink | <i>Stipulicida setacea</i> |
| Yellow Hatpins | <i>Syngonanthus flavidulus</i> |
| Wood Sage | <i>Teucrium canadense</i> |
| Fire Flag | <i>Thalia geniculata</i> |
| Reflexed Wild-pine | <i>Tillandsia balbisiana</i> |
| Potbellied Wild-pine | <i>Tillandsia paucifolia</i> |
| Cardinal Wild-pine | <i>Tillandsia fasciculata</i> |
| Ball-moss | <i>Tillandsia recurvata</i> |
| Thin-leaved Wild-pine | <i>Tillandsia setacea</i> |
| Spanish Moss | <i>Tillandsia usneoides</i> |
| Giant Wild-pine | <i>Tillandsia utriculata</i> |
| Oysterplant | <i>Tradescantia spathacea</i> |
| Inchplant | <i>Tradescantia zebrina</i> |
| Brittleweed | <i>Tridax procumbens</i> |
| White Clover | <i>Trifolium repens</i> |
| Southern Cattail | <i>Typha domingensis</i> |
| Common Cattail | <i>Typha latifolia</i> |
| Caesar-weed | <i>Urena lobata</i> |
| Horned Bladderwort | <i>Utricularia cornuta</i> |
| Leafy Bladderwort | <i>Utricularia foliosa</i> |
| Humped Bladderwort | <i>Utricularia inflata</i> |
| Southern Bladderwort | <i>Utricularia juncea</i> |
| Eastern Purple Bladderwort | <i>Utricularia purpurea</i> |
| Small Purple Bladderwort | <i>Utricularia resupinata</i> |
| Fringed Bladderwort | <i>Utricularia simulans</i> |
| Zig-zag Bladderwort | <i>Utricularia subulata</i> |
| Harsh Verbena | <i>Verbena scabra</i> |
| Frostweed | <i>Verbesina virginica</i> |
| Florida Ironweed | |
| Little Ironweed | <i>Vernonia cinerea</i> |
| Long-leaf Violet | <i>Viola lanceolata</i> |
| Sleepy Morning | <i>Waltheria indica</i> |
| Rocketweed | <i>Youngia japonica</i> |
| Simpson's Rainlily | <i>Zephyranthes simpsonii</i> |
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| <u>Ferns</u> | |
| Lawn Orchid | <i>Zeuxine strateumatica</i> |
| Carolina Mosquito Fern | <i>Azolla caroliniana</i> |
| Giant Leather Fern | <i>Acrostichum danaeifolium</i> |
| Swamp Fern | <i>Blechnum serrulatum</i> |
| Strap Fern | <i>Campyloneurum phyllitidis</i> |
| Watersprite | <i>Ceratopteris thalictroides</i> |
| Southern Club-Moss | <i>Lycopodiella appressa</i> |
| Nodding Club-Moss | <i>Lycopodiella cernua</i> |
| Japanese Climbing Fern | <i>Lygodium microphyllum</i> |

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| Tuberous Sword Fern | <i>Nephrolepis cordifolia</i> |
| Boston Fern | <i>Nephrolepis exaltata</i> |
| Asian Sword Fern | <i>Nephrolepis multiflora</i> |
| Cinnamom Fern | <i>Osmunda cinnamomea</i> |
| Royal Fern | <i>Osmunda regalis</i> |
| Royal Fern | <i>Osmunda regalis var. spectabilis</i> |
| Golden Polybody | <i>Phlebodium aureum</i> |
| Resurrection Fern | <i>Polypodium polypodioides var. michauxiam</i> |
| Whisk-fern | <i>Psilotum nudum</i> |
| Bracken Fern | <i>Pteridium aquilinum var. caudatum</i> |
| Giant Brake | <i>Pteris tripartita</i> |
| Chinese Ladder Brake | <i>Pteris vittata</i> |
| Downy Maiden Fern | <i>Thelypteris dentata</i> |
| Hottentot Fern | <i>Thelypteris interrupta</i> |
| Widespread Maiden Fern | <i>Thelypteris kunthii</i> |
| Marsh Fern | <i>Thelypteris palustris var. pubescens</i> |
| Shoestring Fern | <i>Vittaria lineata</i> |
| Netted Chain Fern | <i>Woodwardia areolata</i> |
| Virginia Chain Fern | <i>Woodwardia virginica</i> |
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| <u>Graminoids</u> | |
| Flatspike Sedge | <i>Abildgaardia ovata</i> |
| Blue Maidencane | <i>Amphicarpum muhlenbergianum</i> |
| Bushybeard Bluestem | <i>Andropogon glomeratus</i> |
| | <i>Andropogon glomeratus var. glaucopsis</i> |
| Purple Bluestem | <i>Andropogon gyrans</i> |
| Elliott's Bluestem | <i>Andropogon longiberbis</i> |
| Hairy Bluestem | <i>Andropogon ternarius</i> |
| Splitbeard Bluestem | <i>Andropogon virginicus</i> |
| Broomsedge Bluestem | <i>Andropogon virginicus var. glaucus</i> |
| Chalky Bluestem | <i>Aristida stricta var. beyrichiana</i> |
| Wiregrass | <i>Aristida palustris</i> |
| Longleaf Threeawn | <i>Aristida patula</i> |
| Tall Threeawn | <i>Aristida rhizomophora</i> |
| Florida Threeawn | <i>Aristida spiciformis</i> |
| Bottlebrush Threeawn | <i>Axonopus fissifolius</i> |
| Common Carpetgrass | <i>Axonopus furcatus</i> |
| Big Carpetgrass | <i>Axonopus compressus</i> |
| Tropical Carpetgrass | <i>Bulbostylis barbata</i> |
| Bearded Hairsedge | <i>Bulbostylis ciliatifolia</i> |
| Capillary Hairsedge | <i>Bulbostylis stenophylla</i> |
| Sandy Field Hairsedge | <i>Carex glaucescens</i> |
| Clustered Sedge | <i>Carex longii</i> |
| Long's Sedge | <i>Carex lupulina</i> |
| Hop Sedge | <i>Carex vexans</i> |
| Florida Hammock Sedge | <i>Carica papaya</i> |
| Papaya | <i>Cenchrus incertus</i> |
| Coastal Sandbur | |

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| Souther Sandbur | <i>Cenchrus echinatus</i> |
| Sawgrass | <i>Cladium jamaicense</i> |
| Wrinkled Jointtailgrass | <i>Coelorachis rugosa</i> |
| Toothache Grass | <i>Ctenium aromaticum</i> |
| Bermuda Grass | <i>Cynodon dactylon</i> |
| Jointed Flatsedge | <i>Cyperus articulatus</i> |
| Poorland Flatsedge | <i>Cyperus compressus</i> |
| Baldwin's Flatsedge | <i>Cyperus croceus</i> |
| Variable Flatsedge | <i>Cyperus difformis</i> |
| Swamp Flatsedge | <i>Cyperus distinctus</i> |
| Chufa Flatsedge | <i>Cyperus esculentus</i> |
| Yellow Flatsedge | <i>Cyperus flavescens</i> |
| Haspan Flatsedge | <i>Cyperus haspan</i> |
| Epiphytic Flatsedge | <i>Cyperus lanceolatus</i> |
| Leconte's Flatsedge | <i>Cyperus lecontei</i> |
| Swamp Flatsedge | <i>Cyperus ligularis</i> |
| Fragrant Flatsedge | <i>Cyperus odoratus</i> |
| Many-spiked Flatsedge | <i>Cyperus polystachyos</i> |
| Low Flatsedge | <i>Cyperus pumilus</i> |
| Pinebarren Flatsedge | <i>Cyperus retrorsus</i> |
| Tropical Flatsedge | <i>Cyperus surinamensis</i> |
| Durban Crowfootgrass | <i>Dactyloctenium aegyptium</i> |
| Summer Farewell | <i>Dalea pinnata</i> |
| Needleleaf Witchgrass | <i>Dichanthelium aciculare</i> |
| Variable Witchgrass | <i>Dichanthelium commutatum</i> |
| Cypress Witchgrass | <i>Dichanthelium dichotomum</i> |
| Dwarf Cypress Witchgrass | <i>Dichanthelium ensifolium</i> |
| Erectleaf Witchgrass | <i>Dichanthelium erectifolium</i> |
| Openflower Witchgrass | <i>Dichanthelium laxiflorum</i> |
| Wooly Witchgrass | <i>Dichantheliumscabriusculum</i> |
| | <i>Dichanthelium</i> |
| | <i>strigosum</i> var. <i>glabrescens</i> |
| Roughhair Witchgrass | <i>Digitaria ciliaris</i> |
| Southern Crabgrass | <i>Digitaria pentzii</i> |
| Pangola Grass | <i>Digitaria floridana</i> |
| Florida Crabgrass | <i>Digitaria horizontalis</i> |
| Jamaican Crabgrass | <i>Digitaria longiflora</i> |
| Indian Crabgrass | <i>Digitaria villosa</i> |
| Slender Crabgrass | <i>Echinochloa colona</i> |
| Jungle Rice | <i>Echinochloa crusgalli</i> |
| Barnyard Grass | <i>Echinochloa walteri</i> |
| Coast Cockspur | <i>Eleocharis atropurpurea</i> |
| Purple Spikerush | <i>Eleocharis baldwinii</i> |
| Baldwin's Spikerush | <i>Eleocharis geniculata</i> |
| Canada Spikerush | <i>Eleocharis interstincta</i> |
| Knotted Spikerush | <i>Eleocharis nigrescens</i> |
| Black Spikerush | <i>Eleocharis vivipara</i> |
| Spikerush | <i>Eleusine indica</i> |
| Goose Grass | <i>Eragrostis atrovirens</i> |
| Thalia Lovegrass | |

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| Gophertail Lovegrass | <i>Eragrostis ciliaris</i> |
| Elliott's Lovegrass | <i>Eragrostis elliotti</i> |
| Teal Lovegrass | <i>Eragrostis hypnoides</i> |
| Tufted Lovegrass | <i>Eragrostis pectinacea</i> |
| Purple Lovegrass | <i>Eragrostis spectabilis</i> |
| Coastal Lovegrass | <i>Eragrostis virginica</i> |
| Centipede Grass | <i>Eremochloa ophiuroides</i> |
| Saltmarsh Fingergrass | <i>Eustachys glauca</i> |
| Pinewoods Fingergrass | <i>Eustachys petraea</i> |
| Slender Fimbry | <i>Fimbristylis autumnalis</i> |
| Forked Fimbry | <i>Fimbristylis dichotoma</i> |
| Hairy Fimbry | <i>Fimbristylis puberula</i> |
| Ditch Fimbry | <i>Fimbristylis schoenoides</i> |
| Saltmarsh Umbrellasedge | <i>Fuirena breviseta</i> |
| Dwarf Umbrellasedge | <i>Fuirena pumila</i> |
| Southern Umbrellasedge | <i>Fuirena scirpoidea</i> |
| Hairy Umbrellasedge | <i>Fuirena squarrosa</i> |
| Section 1.02Cogan Grass | <i>Imperata brasiliensis</i> |
| Soft Rush | <i>Juncus effusus subsp. sodutus</i> |
| Shore Rush | <i>Juncus marginatus</i> |
| Bighead Rush | <i>Juncus megacephalus</i> |
| Many-headed Rush | <i>Juncus polycephalus</i> |
| Lesser Creeping Rush | <i>Juncus repens</i> |
| Needlepod Rush | <i>Juncus scirpoides</i> |
| Shortleaf Spikesedge | <i>Kyllinga brevifolia</i> |
| Southern Cutgrass | <i>Leersia hexandra</i> |
| Molasses Grass | <i>Melinis minutiflora</i> |
| Hair-awn Muhly | <i>Muhlenbergia capillaris</i> |
| Woods Grass | <i>Oplismenus hirtellus</i> |
| Beaked Panicum | <i>Panicum anceps</i> |
| Fall Panicgrass | <i>Panicum dichotomiflorum</i> |
| | <i>Panicum dichotomiflorum var. bartowense</i> |
| Hairy Fall Panicgrass | <i>Panicum hemitomon</i> |
| Maidencane | <i>Panicum hians</i> |
| Gaping Panicum | <i>Panicum longifolium</i> |
| Long-leaf Panicum | <i>Panicum maximum</i> |
| Section 1.03Guinea Grass | <i>Panicum repens</i> |
| Torpedo grass | <i>Panicum rigidulum</i> |
| Red-top Panicum | <i>Panicum tenerum</i> |
| Bluejoint Panicum | <i>Panicum verrucosum</i> |
| Warty Panicum | <i>Panicum virgatum</i> |
| Switch Grass | <i>Paspalidium geminatum</i> |
| Egyptian Paspalidium | <i>Paspalum blodgettii</i> |
| Coral Paspalum | <i>Paspalum boscianum</i> |
| Bull Crowngrass | <i>Paspalum caespitosum</i> |
| Blue Crowngrass | <i>Paspalum conjugatum</i> |
| Sour Paspalum | <i>Paspalum dilatatum</i> |
| Dallis Grass | <i>Paspalum dissectum</i> |
| Mudbank Paspalum | |

DuPuis Management Area General Management Plan 2014 through 2024
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| | |
|--------------------------------|-----------------------------------|
| Florida Paspalum | <i>Paspalum floridanum</i> |
| Field Paspalum | <i>Paspalum laeve</i> |
| Gulfdume Paspalum | <i>Paspalum monostachyum</i> |
| Bahia Grass | <i>Paspalum notatum</i> |
| Brownseed Paspalum | <i>Paspalum plicatulum</i> |
| Early Paspalum | <i>Paspalum praecox</i> |
| Water Paspalum | <i>Paspalum repens</i> |
| Thin Paspalum | <i>Paspalum setaceum</i> |
| Vasey Grass | <i>Paspalum urvellei</i> |
| Seashore Paspalum | <i>Paspalum vaginatum</i> |
| Napier Grass | <i>Pennisetum purpureum</i> |
| Common Reed | <i>Phragmites australis</i> |
| Short-beaked Baldrush | <i>Psilocarya nitens</i> |
| Natal Grass | <i>Rhynchelytrum repens</i> |
| Shortbristle Beaksedge | <i>Rhynchospora breviseta</i> |
| Anglestem Beaksedge | <i>Rhynchospora caduca</i> |
| Bunched Beaksedge | <i>Rhynchospora cephalantha</i> |
| Chapman's Beaksedge | <i>Rhynchospora chapmanii</i> |
| Fringed Beaksedge | <i>Rhynchospora ciliaris</i> |
| White-tops | <i>Rhynchospora colorata</i> |
| Short-bristle Horned Beaksedge | <i>Rhynchospora corniculata</i> |
| Spreading Beaksedge | <i>Rhynchospora divergens</i> |
| Fascicled Beaksedge | <i>Rhynchospora fascicularis</i> |
| Threadleaf Beaksedge | <i>Rhynchospora filifolia</i> |
| Grass-like beaked-rush | <i>Rhynchospora globularis</i> |
| Pinebarren Beaksedge | <i>Rhynchospora intermedia</i> |
| Beaked-rush | <i>Rhynchospora inundata</i> |
| Giant White-tops | <i>Rhynchospora latifolia</i> |
| Millet Beaksedge | <i>Rhynchospora miliacea</i> |
| Littleseed Beaked-rush | <i>Rhynchospora microcarpa</i> |
| Fragrant Beaksedge | <i>Rhynchospora odorata</i> |
| Plumed Beaksedge | <i>Rhynchospora plumosa</i> |
| Fewflower Beaksedge | <i>Rhynchospora rariflora</i> |
| Narrow-leaf Beaksedge | <i>Rhynchospora stenophylla</i> |
| Tracy's Beaked-rush | <i>Rhynchospora tracyi</i> |
| Sugarcane Plumegrass | <i>Saccharum giganteum</i> |
| Indian Cupscale | <i>Sacciolepis indica</i> |
| American Cupscale | <i>Sacciolepis striata</i> |
| South Florida Bluestem | <i>Schizachyrium rhizomatum</i> |
| Creeping Bluestem (UR4) | <i>Schizachyrium stoloniferum</i> |
| Three-square Bulrush | <i>Scirpus pungens</i> |
| Balwin's Nutrush | <i>Scleria baldwinii</i> |
| Slenderfruit Nutrush | <i>Scleria georgiana</i> |
| Netted Nutrush | <i>Scleria reticularis</i> |
| Whip Nutrush | <i>Scleria triglomerata</i> |
| Low Nutrush | <i>Scleria verticillata</i> |
| Knot root Bristlegrass | <i>Setaria geniculata</i> |
| Lopsided Indiangrass | <i>Sorghastrum secundum</i> |
| Sand Cordgrass | <i>Spartina bakeri</i> |

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Coral Dropseed
Smutgrass
Pineywoods Dropseed
St. Augustine's Grass
Eastern Gamagrass
Paragrass
Signalgrass

Sporobolus domingensis
Sporobolus indicus
Sporobolus junceus
Stenotaphrum secundatum
Tripsacum dactyloides
Urochloa mutica
Urochloa subquadriflora

Birds

American white pelican
Brown pelican
Pied-billed grebe
Double-crested cormorant
American anhinga
Black-bellied whistling duck
Fulvous whistling duck
Mottled duck
American widgeon
Green-winged teal
Wood duck
Ring-necked duck
American coot
Purple gallinule
Great blue heron
Great white heron
Little blue heron
Tricolor heron
Snowy egret
Great egret
Cattle egret
Black-crowned night heron
Yellow-crowned night heron
Green heron
American bittern
Least bittern
Woodstork
Sandhill crane
Limpkin
Glossy ibis
White ibis
Roseate spoonbill
Common moorhen
Black-necked stilt
American avocet
Killdeer

Pelecanus erythrorhynchos
Pelecanus occidentalis
Podilymbus podiceps
Phalacrocorax auritus
Anhinga anhinga
Dendrocygna autumnalis
Dendrocygna bicolor
Anas fulvigula
Anas americana
Anas crecca
Aix sponsa
Aythya collaris
Fulica americana
Porphyrio martinica
Ardea herodias
Ardea herodias
Egretta caerulea (SSCs)
Egretta tricolor (SSCs)
Egretta thula (SSCs)
Casmerodius albus
Bubulcus ibis
Nycticorax nycticorax
Nyctanassa violacea
Butorides virescens
Botaurus lentiginosus
Ixobrychus exilis
Mycteria americana (Ef)
Grus canadensis pratensis(Ts)
Aramus guarauna (SSCs)
Plegadis falcinellus
Eudocimus albus (SSCs)
Platalea ajaja
Gallinula chloropus
Hemantopus mexicanus
Recurvirostra americana
Charadrius vociferus

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| | |
|---------------------------|-------------------------------------|
| Common snipe | <i>Gallinago delicata</i> |
| Short-billed dowitcher | <i>Limnodromus griseus</i> |
| Greater yellowlegs | <i>Tringa melanoleuca</i> |
| Lesser yellowlegs | <i>Tringa flavipes</i> |
| Solitary sandpiper | <i>Tringa solitaria</i> |
| Pectoral sandpiper | <i>Calidris melanotos</i> |
| Western sandpiper | <i>Calidris mauri</i> |
| Least sandpiper | <i>Calidris minutilla</i> |
| Wild turkey | <i>Meleagris gallopavo</i> |
| Northern bobwhite | <i>Colinus virginianus</i> |
| Everglades snail kite | <i>Rostrhamus sociabilis(E.f)</i> |
| Swallow-tailed kite | <i>Elanoides forficatus</i> |
| Cooper's hawk | <i>Accipiter cooperii</i> |
| Northern harrier | <i>Circus cyaneus</i> |
| Red-shouldered hawk | <i>Buteo lineatus</i> |
| Red-tailed hawk | <i>Buteo jamaicensis</i> |
| Sharp-shinned hawk | <i>Accipiter striatus</i> |
| Osprey | <i>Pandion haliaetus</i> |
| Bald eagle | <i>Haliaeetus leucocephalus(Ts)</i> |
| Black vulture | <i>Coragyps atratus</i> |
| Turkey vulture | <i>Cathartes aura</i> |
| Crested caracara | <i>Caracara cheriway(Tf)</i> |
| American kestrel | <i>Falco sparverius</i> |
| Merlin | <i>Falco columbarius</i> |
| Screech owl | <i>Otus asio</i> |
| Barred owl | <i>Strix varia</i> |
| Barn owl | <i>Tyto alba</i> |
| Great horned owl | <i>Bubo virginianus</i> |
| White-winged dove | <i>Zenaida asiatica</i> |
| Mourning dove | <i>Zenaida macroura</i> |
| Ground dove | <i>Columbina passerina</i> |
| Eurasian-collared dove | <i>Streptopelia decaocto</i> |
| Yellow-billed cuckoo | <i>Coccyzus americanus</i> |
| Smooth-billed ani | <i>Crotophaga ani</i> |
| Common nighthawk | <i>Chordeiles minor</i> |
| Chuck-wills-widow | <i>Caprimulgus carolinensis</i> |
| Ruby-throated hummingbird | <i>Archilochus colubris</i> |
| Belted kingfisher | <i>Ceryle alcyon</i> |
| Red-headed woodpecker | <i>Melanerpes erythrocephalus</i> |
| Northern flicker | <i>Colaptes auratus</i> |
| Red-bellied woodpecker | <i>Melanerpes carolinus</i> |
| Red-cockaded woodpecker | <i>Picoides borealis (Ef)</i> |
| Downy woodpecker | <i>Picoides pubescens</i> |
| Hairy woodpecker | <i>Picoides villosus</i> |
| Pileated woodpecker | <i>Dryocopus pileatus</i> |
| Yellow-bellied sapsucker | <i>Sphyrapicus varius</i> |
| Eastern kingbird | <i>Tyrannus tyrannus</i> |
| Great crested flycatcher | <i>Myiarchus crinitus</i> |
| Eastern Wood-Pee-wee | <i>Contopus virens</i> |

DuPuis Management Area General Management Plan 2014 through 2024
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| | |
|-------------------------------|-----------------------------------|
| Eastern phoebe | <i>Sayornis phoebe</i> |
| Chimney swift | <i>Chaetura pelagica</i> |
| Purple martin | <i>Progne subis</i> |
| Northern rough-winged swallow | <i>Stelgidopteryx serripennis</i> |
| Barn swallow | <i>Hirundo rustica</i> |
| Tree swallow | <i>Tachycineta bicolor</i> |
| American Crow | <i>Corvus brachyrhynchos</i> |
| Fish crow | <i>Corvus ossifragus</i> |
| Blue jay | <i>Cyanocitta cristata</i> |
| Ruby-crowned kinglet | <i>Regulus calendula</i> |
| Blue-gray gnatcatcher | <i>Polioptila melanura</i> |
| House wren | <i>Troglodytes aedon</i> |
| Carolina wren | <i>Thryothorus ludovicianus</i> |
| Brown thrasher | <i>Toxostoma rufum</i> |
| Gray catbird | <i>Dumetella carolinensis</i> |
| Northern Mockingbird | <i>Mimus polyglottos</i> |
| Eastern bluebird | <i>Sialia sialis</i> |
| Robin | <i>Turdus migratorius</i> |
| Wood thrush | <i>Hylocichla mustelina</i> |
| Loggerhead shrike | <i>Lanius ludovicianus</i> |
| White-eyed vireo | <i>Vireo griseus</i> |
| Blue-headed vireo | <i>Vireo solitarius</i> |
| Prothonotary warbler | <i>Protonotaria citrea</i> |
| Cape may warbler | <i>Dendroica tigrina</i> |
| Pine warbler | <i>Dendroica pinus</i> |
| Palm warbler | <i>Dendroica palmarum</i> |
| Prairie warbler | <i>Dendroica discolor</i> |
| Yellow-rumped warbler | <i>Dendroica conoata</i> |
| Yellow-throated warbler | <i>Dendroica dominica</i> |
| Black-throated green warbler | <i>Dendroica virens</i> |
| Black-throated blue warbler | <i>Dendroica caerulescens</i> |
| American redstart | <i>Setophaga ruticilla</i> |
| Black and white warbler | <i>Mniotilta varia</i> |
| Connecticut warbler | <i>Oporornis ogilis</i> |
| Northern parula warbler | <i>Parula americana</i> |
| Common yellowthroat | <i>Geothlypis trichas</i> |
| Ovenbird | <i>Seiurus aurocapilla</i> |
| Louisiana waterthrush | <i>Seiurus motacilla</i> |
| Red-winged blackbird | <i>Agelaius phoeniceus</i> |
| Boat-tailed grackle | <i>Quiscalus major</i> |
| Common grackle | <i>Quiscalus quisqualis</i> |
| Eastern meadowlark | <i>Sturnella magna</i> |
| Brown-headed cowbird | <i>Molothrus ater</i> |
| Northern cardinal | <i>Cardinalis cardinalis</i> |
| Rufous-sided towhee | <i>Pipilo erythrophthalmus</i> |
| Chipping sparrow | <i>Spizella passerina</i> |
| Bachman's sparrow | <i>Aimophila aestivalis</i> |
| Song sparrow | <i>Melospiza melodia</i> |
| Blue grosbeak | <i>Passerina caerulea</i> |

DuPuis Management Area General Management Plan 2014 through 2024
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Painted bunting
Indigo bunting
European starling
Cedar waxwing
American goldfinch

Passerina ciris
Passerina cyanea
Sturnus vulgaris
Bombycilla cedrorum
Carduelis tristis

Mammals

Florida panther*
Bobcat
White-tailed deer
Feral pig
Gray fox
Coyote
Raccoon
Opossum
River otter
Striped skunk
Nine-banded armadillo
Eastern cottontail
Marsh rabbit
Southern flying squirrel
Eastern gray squirrel
Sherman's fox squirrel
Oldfield mouse
Hispid cotton rat
Rice rat
Round-tailed muskrat
Black rat
Least shrew
Short-tailed shrew
Evening bat
Yellow bat

Felis concolor (Ef)
Lynx rufus
Odocoileus virginiana
Sus scrofa
Urocyon cinereoargenteus
Canis latrans
Procyon lotor
Didelphis virginiana
Lutra canadensis
Mephitis mephitis
Dasyurus novemcinctus
Sylvilagus floridanus
Sylvilagus palustris
Glaucomys volans
Sciurus carolinensis
Sciurus niger (SSCs)
Peromyscus polionotus
Sigmodon hispidus
Oryzomys palustris
Neofiber alleni
Rattus rattus
Cryptotis parva
Blarina brevicauda
Nycticeius humerdis
Lasiurus intermedius

* = Last documented sighting on Dupuis was in the 1980's.

Reptiles and Amphibians

Reptiles

American alligator
Florida red-bellied turtle
Peninsula cooter
Florida softshell
Green anole
Brown anole
Ground skink
Southeastern five-lined skink
Island glass lizard
Southern black racer
Southern ringneck snake

Alligator mississippiensis
Pseudemys nelsoni
Pseudemys floridana
Trionyx ferox
Anolis carolinensis
Anolis sagrei
Scincella laterale
Eumeces inexpectatus
Ophisaurus compressus
Coluber constrictor
Diadophis punctatus

DuPuis Management Area General Management Plan 2014 through 2024
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Florida kingsnake
Eastern garter snake
Peninsula ribbon snake
Florida brown snake
Rough green snake
Eastern indigo snake
Eastern diamondback rattlesnake
Gopher Tortoise

Lampropeltis getulus
Thamnophis sirtalis
Thamnophis sauritus
Storeria dekayi
Opheodrys aestivus
Drymarchon corais (Tf)
Crotalus adamanteus
Gopherus polyphemus (Ts)

Amphibians

Greater siren
Oak toad
Southern toad
Green treefrog
Squirrel treefrog
Greenhouse frog
Pig frog
Southern leopard frog
Cuban treefrog
Southern cricket frog

Siren lacertina
Bufo quercicus
Bufo terrestris
Hyla cinerea
Hyla squirella
Eleutherodactylus planirostris
Rana grylio
Rana utricularia
Osteopilus septentrionalis
Acris gryllus

Fish

Everglades pygmy sunfish
Bluespotted sunfish
Redear sunfish
Warmouth
Bluegill
Brown bullhead
Channel catfish
Brook silverside
Bluefin killifish
Mosquitofish
Flagfish
Golden topminnow
Two-spotted cichlid
Florida gar
Sailfin molly
Largemouth bass

Elassoma evergladei
Enneacanthus gloriosus
Lepomis microlophus
Lepomis gulosus
Lepomis machrochirus
Ictalurus nebulosus
Ictalurus punctatus
Labidesthes sicculus
Lucania goodei
Gambusia affinis
Jordanella floridae
Fundulus chrysotus
Cichlasoma bimaculatum
Lepisosteus platyrhincus
Poecilia latipinna
Micropterus salmoides

SSC = Species of Special Concern
E = Endangered
T = Threatened
f = federally designated
s = state designated

Land Stewardship Section
3301 Gun Club Road
West Palm Beach, Florida 33406



Kissimmee River
Management Areas
Ten-Year
General Management Plan
2014 through 2024



Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

Kissimmee River Management Areas Ten-Year General Management Plan (2014 through 2024)

January, 2014

Land Stewardship Section
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

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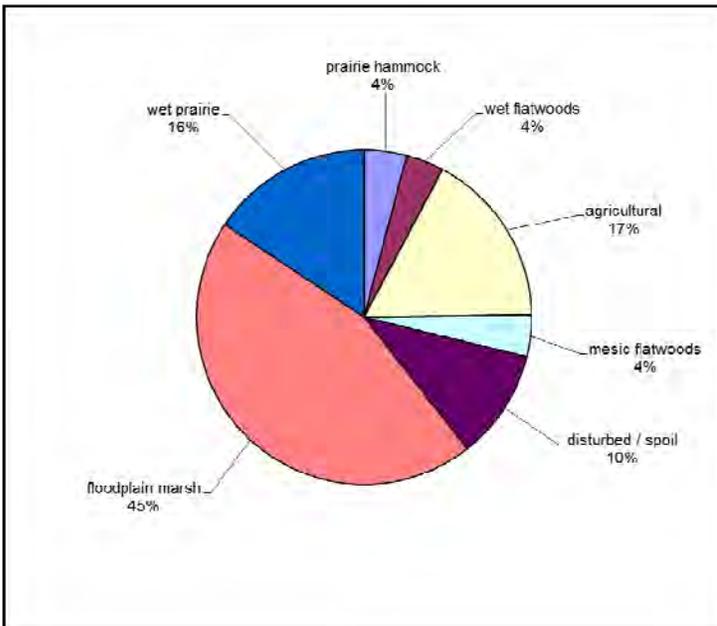
1. Executive Summary

The South Florida Water Management District (District) is directed to acquire and manage lands which are vital to the restoration of the Everglades, the Kissimmee River, the Kissimmee Chain of Lakes and its headwaters. In the 1980s the District targeted the floodplain of the Kissimmee River as a Save Our Rivers project. This plan addresses management for the 50,810 acres that have been acquired in fee-simple by the District within the Kissimmee River project area.

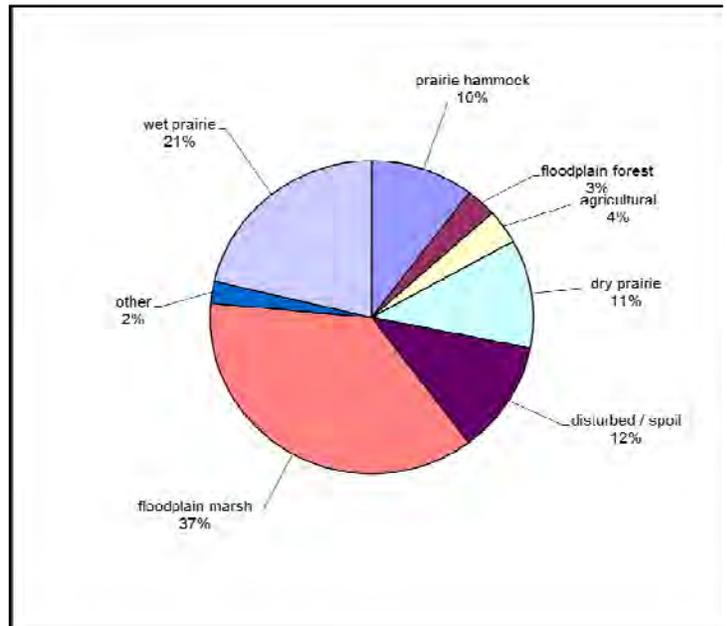
This General Management Plan describes the historical, ecological, and managerial aspects of the area as a means to coordinate effective management programs. The plan serves as a guidance document for the implementation of resource-based land management practices. It also provides information on operational procedures and organizational structures within the District and of management activities and objectives for the management areas.

NATURAL SETTING

The natural character of the management areas is defined by 6 distinct soil categories classified by the Natural Soil Landscape Positions soil classification system: flatwood soils, flats soils, knolls, sand depression soils, muck depression soils, and urban or man-made lands. These soils support distinct plant communities that are defined by criteria established by the Florida Natural Areas Inventory; the most common of which have the following coverage:



Upper River (Pool A) Natural Communities



Lower River (Pools C-D) Natural Communities

RESOURCE MANAGEMENT

Resource management programs for the management areas consist of:

- Prescribed fire to mimic the natural fire frequency in fire-dependent natural communities.
- Forestry and vegetation management such as shredding or mowing overgrown understories, or thinning pine communities where they are too dense.
- Wildlife management, including surveys, habitat management, and hunting programs.
- Exotic vegetation treatment.
- Monitoring the health of the natural communities and the impact of management practices on them.
- Restoring sites that have previously been altered by drainage and/or agriculture.

RESTORATION PROJECTS

In addition to the restoration of the middle pools of the Kissimmee River (formerly Pools B-D), the District is using in-house funds for the restoration of two former dry prairie areas in Starvation Slough and and one area of scrub at River Runt in Pool C. The scrub restoration involves filling old drainage ditches, while the dry prairie restoration involves disking sod fields, herbicide applications, and groundcover restoration.

MONITORING

The District performs vegetative community monitoring and faunal monitoring associated with the Kissimmee River Restoration Project. The Florida Fish and Wildlife Conservation Commission monitors bat houses and a swallow-tailed kite nesting colony, and the Archbold Biological Station monitors red-cockaded woodpeckers and scrub jays.

WILDLIFE MANAGEMENT

Wildlife management, including hunting programs, is conducted by the Florida Fish and Wildlife Conservation Commission through a multi-site cooperative agreement. The hunting program includes a general gun, muzzle loading, and archery season in the fall, small game hunts in late winter, and turkey hunting in early spring. In addition to hog hunts, the District manages feral swine through a managed hog removal program. This program uses no-cost hog control agents that use a variety of methods to remove feral swine including shooting, trapping and dogs.

PUBLIC USE

Infrastructure for several recreational activities is provided in the management areas including boating, airboating, canoeing, bicycling, camping, equestrian, fishing, hiking, and hunting. The Florida National Scenic Trail and Florida Cracker Trail wind their way through portions of the Management Areas.

2. Introduction and Management Plan Purpose

The Kissimmee River Restoration Act was passed in 1976 and authorized the initial studies and planning for the restoration of the river. A recommended restoration plan was developed and the Kissimmee River Restoration Project was authorized by Congress in the 1992 Water Resources Development Act as a joint partnership between the District and the US Army Corps of Engineers. The project was designed to restore over 40 square miles of river/floodplain ecosystem including 43 miles of meandering river channel and 27,000 acres of wetlands. To complete the restoration it was necessary to acquire land and flowage easements within the 100-year floodplain.

The Save Our Rivers program was created in 1981 and received dedicated funds derived from real estate documentary stamp taxes beginning in 1985 and Preservation 2000 funds beginning in 1990. Between 1985 and 2000, the District through the Save Our Rivers program acquired 49,000 acres of property fee title or in flowage easements to support the Kissimmee River Restoration Projects. This acreage was in addition to floodplain land that had been previously acquired during the river channelization works of the 1950s and 1960s. In total, the District has fee-simple ownership of 50,810 acres within the Kissimmee River corridor.

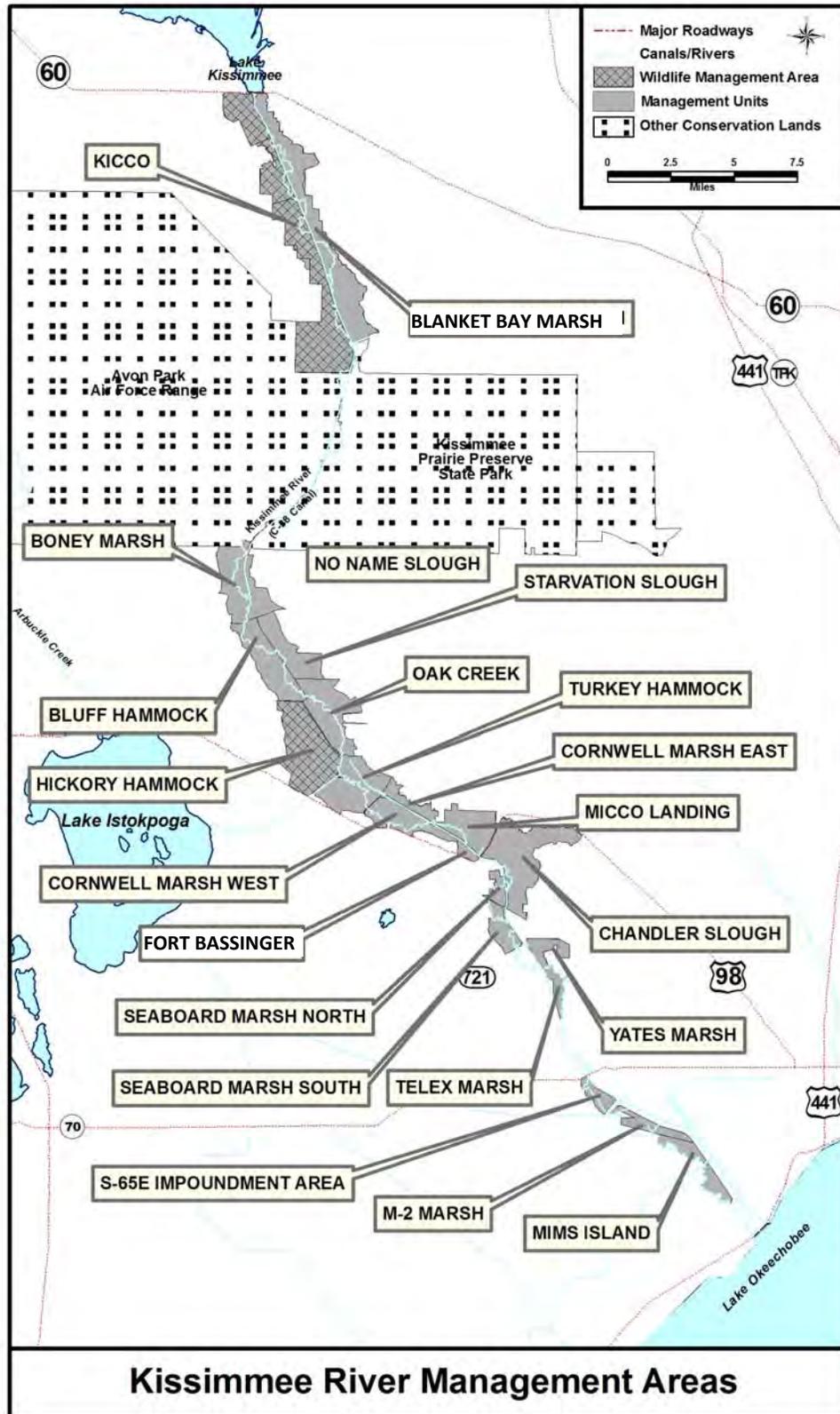
There Kissimmee River properties are divided into 21 management areas (**Table 1** and **Maps 1 - 2**). Most of the management areas have trailheads or other public use facilities accessible by road, while others are only accessible by river (see **Section 6 - Public Use**). The Avon Park Airforce Range, and the Kissimmee Prairie Preserve State Park manage the floodplain within the former Pool B of the middle river area. The 100 year floodplain, the point on either side of the river to which the District sought to acquire the rights necessary to implement the river restoration, is generally two miles wide and includes the river channel, oxbow lakes, marshes, and wet prairies surrounded by pockets of cypress and a large fringing oak hammock. Landward of the hammock may be small areas of oak scrub, dry prairie, or pine flatwoods.

This General Management Plan consolidates relevant information about the Kissimmee River Management Areas including land management goals and objectives, past and present land uses, resource data, restoration and management needs, public use programs, and administrative duties to guide management actions for the period 2014 through 2024. Management activities described in this plan are based on requirements and directives of Florida Statutes and established District policies. Section 373.591(4), Florida Statutes, requires that management plans be developed for District conservation, preservation, and recreation lands.

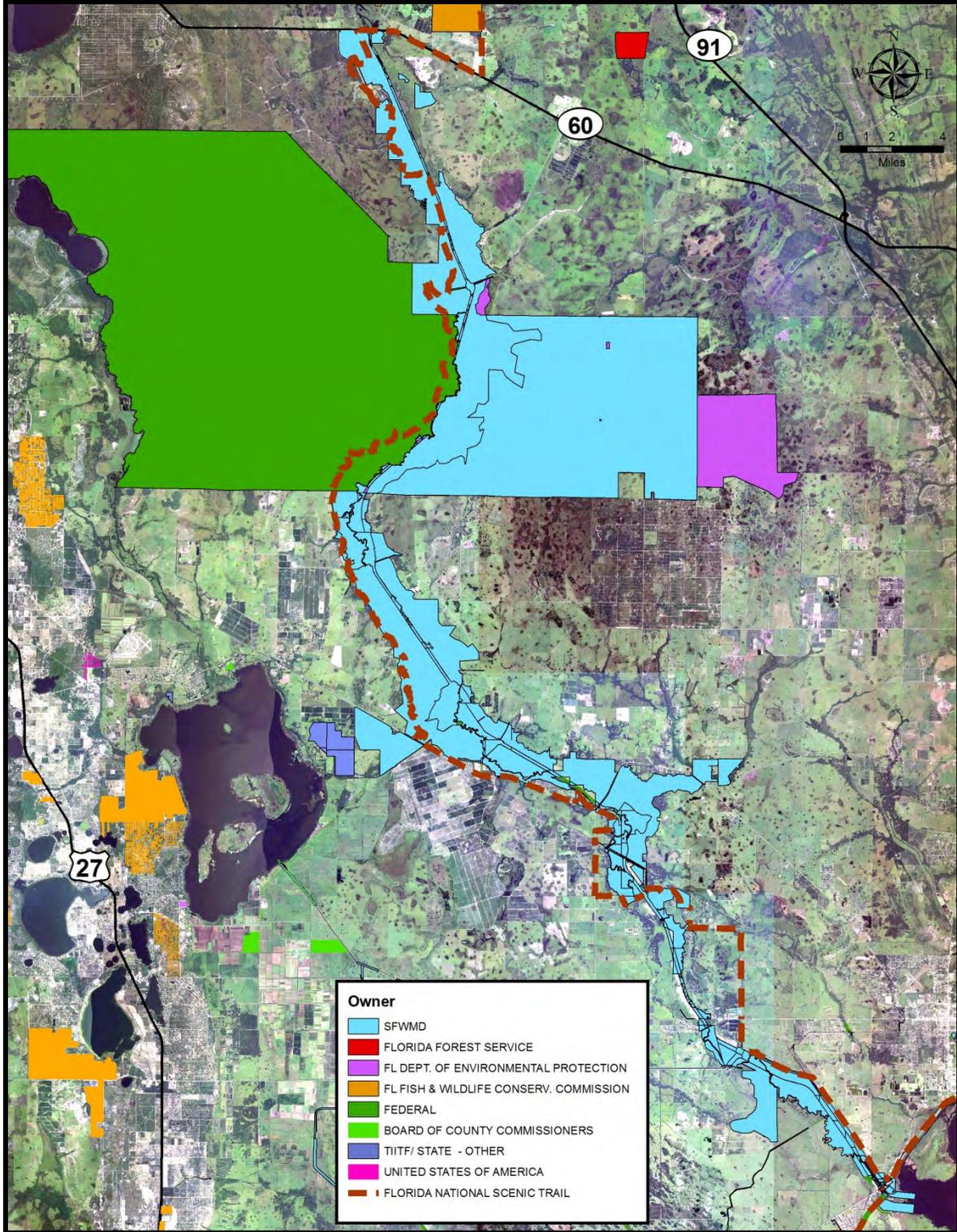
Table 1. Management Areas of the Kissimmee River

| | West Side of Channel | East Side of Channel |
|---------------------------------------|---|---|
| Upper River (Pool A) | KICCO | Blanket Bay |
| Middle River (Pools B-D) | Boney Marsh Bluff Hammock Hickory Hammock Cornwell Marsh West Fort Bassinger | No Name Slough Starvation Slough Oak Creek Turkey Hammock Cornwell Marsh East Micco Landing Chandler Slough |
| Lower River (Pool E and Paradise Run) | Seaboard Marsh North Seaboard Marsh South S-65E Impoundment M-2 Marsh Mims Island | Yates Marsh Telex Marsh |

Map 1. The Kissimmee River Management Areas



Map 2. Regional Public Land Ownership



State statutes further directs the District to provide natural resource protection and management while allowing compatible multiple uses on public lands. This mission statement and requirements set forth in Florida Statutes provide three primary goals for the Land Stewardship Section:

- Conserve and protect water resources
- Protect and/or restore land to its natural state and condition
- Provide appropriate public use

To accomplish these goals, the Land Stewardship Section performs six major functions:

- Strategic, project, and management planning
- Operation and maintenance of land resources
- Development of public use programs
- Development of restoration projects
- Evaluation of management activities
- Administration of land management service contracts

The plan consolidates current site information and general guidelines for management of the area. It also updates and replaces the Conceptual Management Plan developed by the Florida Fish and Wildlife Conservation Commission in 1994 for the KICCO Wildlife Management Area, and the 2008 – 2013 General Management Plan for the Kissimmee River Pools C&D developed by the District. As such, it serves as a collective information source for management staff, partners, and the general public.

2.1 Kissimmee River Management Area Goals and Objectives

The Land Stewardship Section's primary functions and management priorities for 2014-2024 are contained in the following Goals and Objectives:

Goal 1: Manage natural communities and modified habitats to protect and enhance water, floral, and faunal resources.

Objectives:

- Mechanically treat vegetation to reduce overgrown saw palmettos, wax myrtles, and hardwoods, as needed.
- Continue the regular application of fire through a well-planned and documented prescribed burning program.
- Continue an aggressive, integrated exotic plant management program to eliminate and control infestations of all invasive exotic plant species, with a special emphasis on lygodium. Treatments will be documented and coordinated with other management activities.
- Continue to use prescribed grazing as a resource management tool.

- Continue to provide selective herbicide applications at the River Runt restoration site to encourage the recruitment of native species.
- Continue to provide selective herbicide applications at the dry prairie restoration sites at Starvation Slough, and other groundcover restoration sites along Hwy 98 and Fort Bassinger, to encourage the recruitment of native species.

Goal 2: Provide resource-based public use opportunities.

Objectives:

- Maintain, and expand if appropriate, existing nature based recreational opportunities including hiking, biking, equestrian use, camping, hunting, birding, and wildlife viewing.
- Continue to coordinate with the Florida Trail Association, and local chapters, on the maintenance and use of the areas' trails, including the Florida National Scenic Trail.
- Continue to participate in the Water Resources Advisory Committee's Recreation Issues Workshop which facilitates public use planning with stakeholders and user groups.

Goal 3: Maintain public use facilities and area infrastructure.

Objectives:

- Maintain present public-use improvements (roads, parking/trailheads, signs, structures) using a combination of District resources, contracts, and volunteer involvement.
- Maintain boat ramps at the Istokpoga Canal and the S-65D water control structure.
- Install an equipment storage area at Istokpoga Canal public use area.
- Refurbish the pole barn at the Hickory Hammock campground.
- Replacement of the Boney Marsh boardwalk.
- Resurface the asphalt at the Istokpoga Canal public use area.
- Expand camping facilities at the Istokpoga Canal public use area.

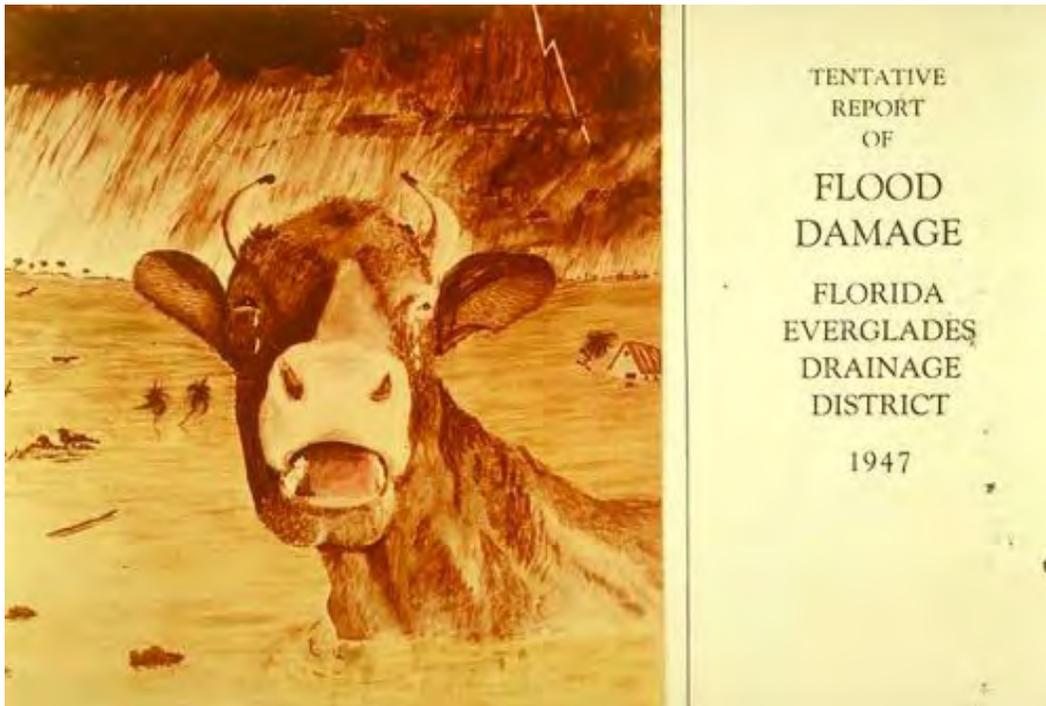
3. Site History

Historically, the Kissimmee River meandered over 103 miles within a one to two mile wide floodplain. The floodplain, approximately 56 miles long, sloped gradually to the south from an elevation of about 51 feet at Lake Kissimmee to about 15 feet at Lake Okeechobee; falling an average of about 4 inches in elevation over each mile of the river. Under historic conditions, river flows generally exceeded 250 cubic feet per second (cfs) 95 percent of the time, while overbank flooding occurred 35-50% of the time during the historic period of hydrologic record (1934-1960). The river moved very slowly, with normal river velocities averaging less than two feet per second.

The historic floodplain was covered by approximately 35,000 acres of wetlands. The distribution and maintenance of plant communities within the floodplain wetlands depended on prolonged inundation and seasonally fluctuating water levels. A fluctuating hydroperiod, along with the undulating topography of the floodplain, a meandering river channel, oxbows, and natural discontinuous sand banks, enhanced and maintained habitat diversity, including the mosaic of intermixed vegetation types.

Prior to 1940, human habitation was sparse within the Kissimmee Basin. Land use within the basin consisted primarily of farming and cattle ranching. However, rapid growth and development following World War II set the stage for extensive property damage when a severe hurricane occurred within the basin in 1947. The mass flooding during this period intensified public pressure for measures to reduce the threat of flood damage within the Kissimmee Basin. The State of Florida responded with a request to the federal government to design a flood-control plan for central and southern Florida.

In 1948, Congress authorized the U.S. Army Corps of Engineers to initiate construction of the Central & Southern Florida Project for Flood Control and Protection. In 1954, Congress specifically authorized the Kissimmee River portion of the project, which was planned and designed from 1954 to 1960. Between 1962 and 1971, the meandering river was transformed into a 56 mile-long, 30 foot deep, 300 foot-wide canal. Excavation of the canal and deposition of the resulting spoil eliminated approximately 35 miles of river channel and 6,200 acres of floodplain wetland habitat. The floodplain was transformed into a series of impounded reservoirs (Pools A-E). Inflow from the upper basin was regulated by six water control structures (S-65s). Water control structures and canals were built in the upper lakes region which allowed regulation of water flow within and between the lakes of the upper basin.



The “Crying Cow” report that demanded better flood protection

Transformation of the river-floodplain ecosystem into a series of deep impoundments drained much of the floodplain, eliminated historical water-level fluctuations, and greatly modified flow characteristics. Approximately 26,000-31,000 acres of pre-channelized floodplain wetlands were drained, covered with spoil, or converted canal. The floodplain at the lower end of each pool remained inundated, but pre-channelization water level fluctuations were eliminated and the upper pools dried out. The physical effects of channelization, including alteration of the system's hydrologic characteristics, largely eliminated river and floodplain wetlands and degraded fish and wildlife habitat of the Kissimmee River ecosystem.

In 1981, the Florida Legislature established the Save Our Rivers program for the five water management districts to acquire environmentally sensitive land. The legislation (Chapter 373.59 F.S.) produced the Water Management Lands Trust Fund and empowered the water management districts to acquire lands needed to manage, protect, and conserve the state's water resources. Once acquired, the lands were to be managed in an environmentally acceptable manner and restored to their natural state. Districts were authorized to make certain capital improvements, i.e. fencing, access roads/trails, and provide basic public facilities. The legislation also requires the districts to develop and provide appropriate public use opportunities. In addition, habitat management such as control of exotic species and controlled burning was to be conducted.



The Kissimmee River, prior to channelization

Massive flooding in the 1940s that prompted Congress to authorize the Central & Southern Florida Project for flood control and protection



The river during channelization in the 1950s and 60s (left), boating in the straightened and channelized river (right)

Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management



The planning of the restoration project was aided by the construction of a large scale-model of the river in a huge tank in a lab at Univ. of California, Berkley.

The Kissimmee River Restoration Project was authorized by Congress in the 1992 Water Resources Development Act as a joint partnership between the District and the US Army Corps of Engineers. The project was designed to restore over 40 square miles of river/floodplain ecosystem including 43 miles of meandering river channel and 27,000 acres of wetlands. The restoration plan calls for the reestablishment of inflows from Lake Kissimmee to provide flow velocities and volumes similar to the ones that existed prior to channelization.

Approximately 11,312 acres were purchased in the 1960s as part of the channelization of the Kissimmee River, of which 7,637 acres are managed today as part of the Kissimmee River Management Areas. Land continued to be acquired from the 1980s until present; first as Save Our Rivers projects and later through the Kissimmee River Restoration Project. Today the District owns fee-title interest in 50,810 acres along the river, of which 8,081 acres is managed by the Department of Environmental Protection as the Kissimmee Prairie Preserve State Park. The District also has less-than-fee interest in 14,520 acres of conservation and flowage easements. **Table 2** identifies the site history and dates of historical significance for the Kissimmee River. **Maps 3-5** provides historical information on plant communities along the river corridor. **Map 6** shows the channelized river as it existed from the 1960s until the 1990s, divided into five controlled impoundment areas or Pools.

Kissimmee River Management Areas General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

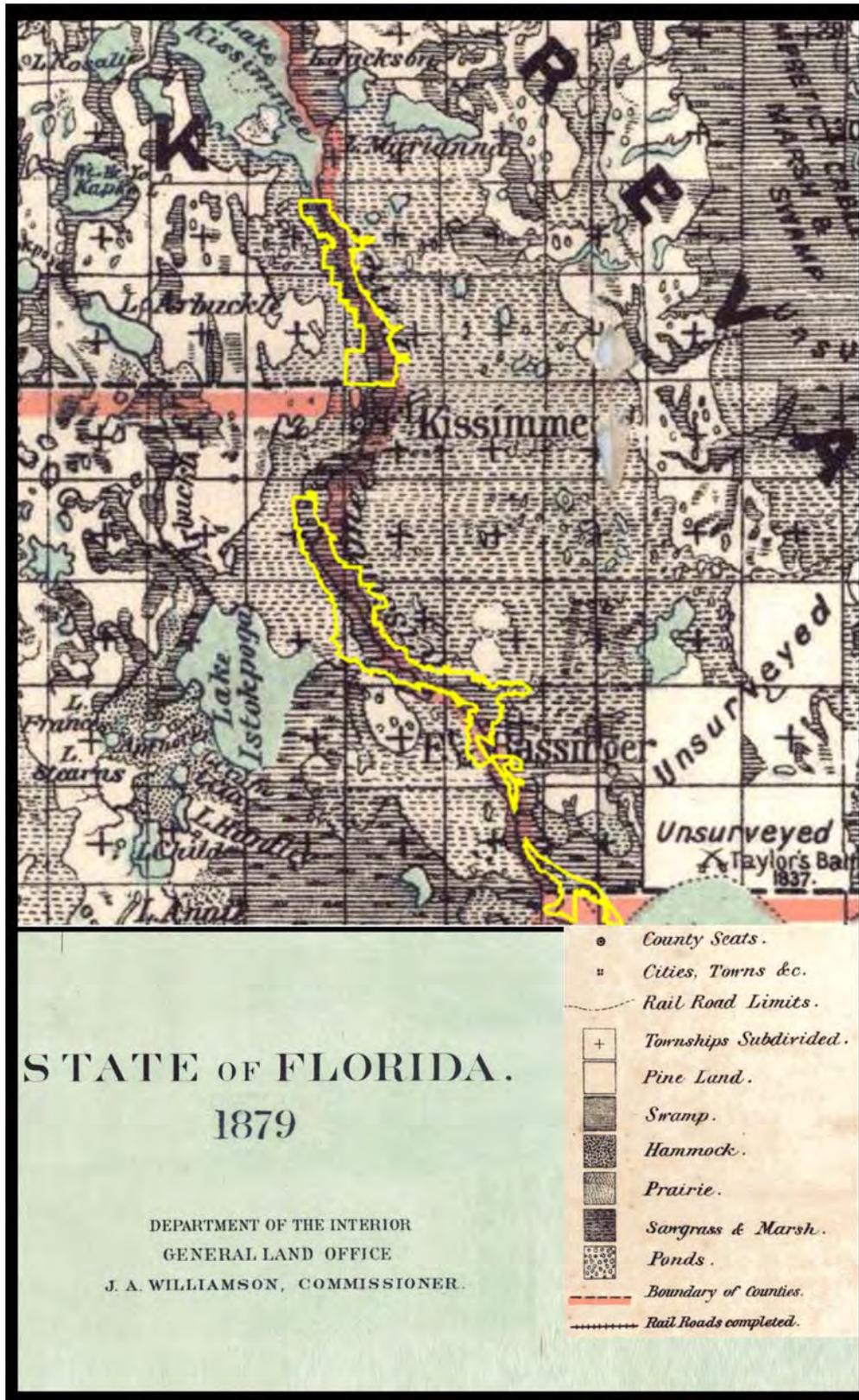
Table 2 – Site History

| | ACTIVITY | EFFECT ON FLOODPLAIN |
|-----------|--|---|
| 1837 | Fort Basinger constructed | Trails constructed between forts spaced approximately 20 miles apart, allowed settlement of the area when the Armed Occupation Act was passed in 1842. |
| 1850 | U. S. Congress passed the Swamp and Overflowed Land Act | Allowed the state legislatures to transfer the ownership of swamp and overflowed lands to private entities to reclaim the land through drainage and levee projects. |
| 1858 | Third Seminole War ended | Pushed the Seminoles south of Lake Okeechobee and opened the Kissimmee Basin to settlement |
| 1881-1884 | Hamilton Disston's Atlantic and Gulf Coast Canal and Okeechobee Land Company completes canals and dredging projects throughout the region creating a navigable water way from Fort Myers to St. Cloud. | Water levels in the Kissimmee Upper Basin dropped and the area was opened to steamboat traffic. Clearing and snagging operations began on the Kissimmee River to keep it navigable. |
| 1890's | Kissimmee Island Cattle Company (KICCO) acquired land south and west of Lake Kissimmee and used the native range for cattle ranching | While this would have been an intensification, cattle had been grazing the area since the land belonged to Spain. |
| 1915 | Small ditches were carved through the land west of the river for the establishment of KICCO's company town. | Drained wetlands and created an untenable situation of having a settlement and large operation in the 100-year floodplain. |
| Late 1947 | Major hurricane strikes with a 100 – year flood event in the Kissimmee River Valley. Subsequent “Crying Cow” report demanded better flood protection for agricultural lands in the Kissimmee River Valley. | The flood event revitalized the flood plain and surrounding wetlands. |
| 1948 | Congress authorizes the Central and Southern Florida Project for Flood Control and Protection | Set the stage for massive drainage and flood control projects. |
| 1954 | The Kissimmee River channelization is authorized by Congress | |
| 1954-1960 | Planning and design completed for the Kissimmee River flood control project | |
| 1962-1971 | Channelization of the Kissimmee River | Transformation of the river-floodplain ecosystem into a series of impoundments, it drained much of the floodplain |
| 1971-1974 | Environmental impacts from the channelization are recognized by the Central and South Florida Flood Control District and planning efforts to restore the River begin. | It was clear that any attempt to restore the River would require nearly all of its floodplain to be in public ownership so that the river could flood naturally |
| 1974 | The State purchased 1718 acres within Blanket Bay, and granted a flowage easement to the District | State acquisition kept Blanket Bay from being developed. |
| 1983-1985 | KICCO in Pool A acquired by the South Florida Water Management District | An existing development and incompatible use was removed. |
| 1992 | Kissimmee River Restoration Project authorized by Congress | Set the stage for the restoration of much of the River's former floodplain |

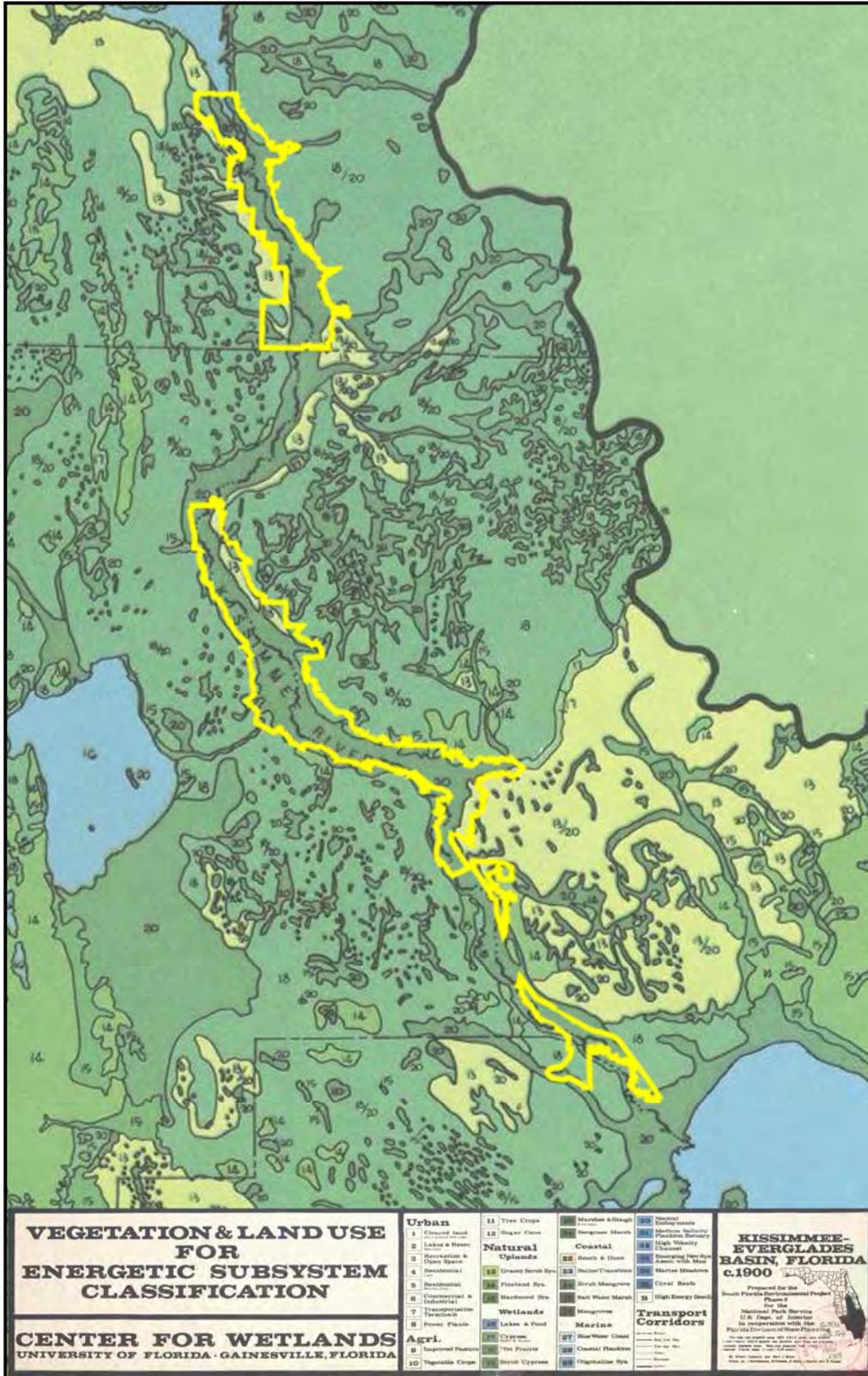
Kissimmee River Management Areas General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

| | | |
|-------------|--|---|
| 1994 | Ground breaking for the construction of the Kissimmee River Restoration Project | The first 1000 feet of backfilling was completed in Pool B |
| 1997 | Construction begins on Pool A restoration projects | Projects included increasing the amount of water that could be brought into the Kissimmee River, removing spoil mounds on the south side of Blanket Bay, and constructing tie-back levees at S-65A that allow Pool A wetlands to retain more water. |
| 1999-2001 | Phase I of the restoration project, removal of the S-65B structure and backfilling of the C-38 in Pool C | Emergent and shoreline vegetation has reappeared and is thriving. Waterfowl are returning. Water quality is improving. Wildlife populations are increasing. |
| 2003 | A drainage canal was filled at the south end of KICCO. | Improved hydrology of Tick Island Slough |
| 2006 | Phase IV backfilling in Pool B begins | Ecological improvements similar to Phase I are anticipated. |
| 2007 - 2013 | Backfilling continues into Pool D, land acquisition for restoration purposes nears completion. | Ecological improvements similar to Phase I are anticipated. |

Map 3. 1879 General Land Office Map with land cover classification



Map 4. University of Florida land cover map - 1900



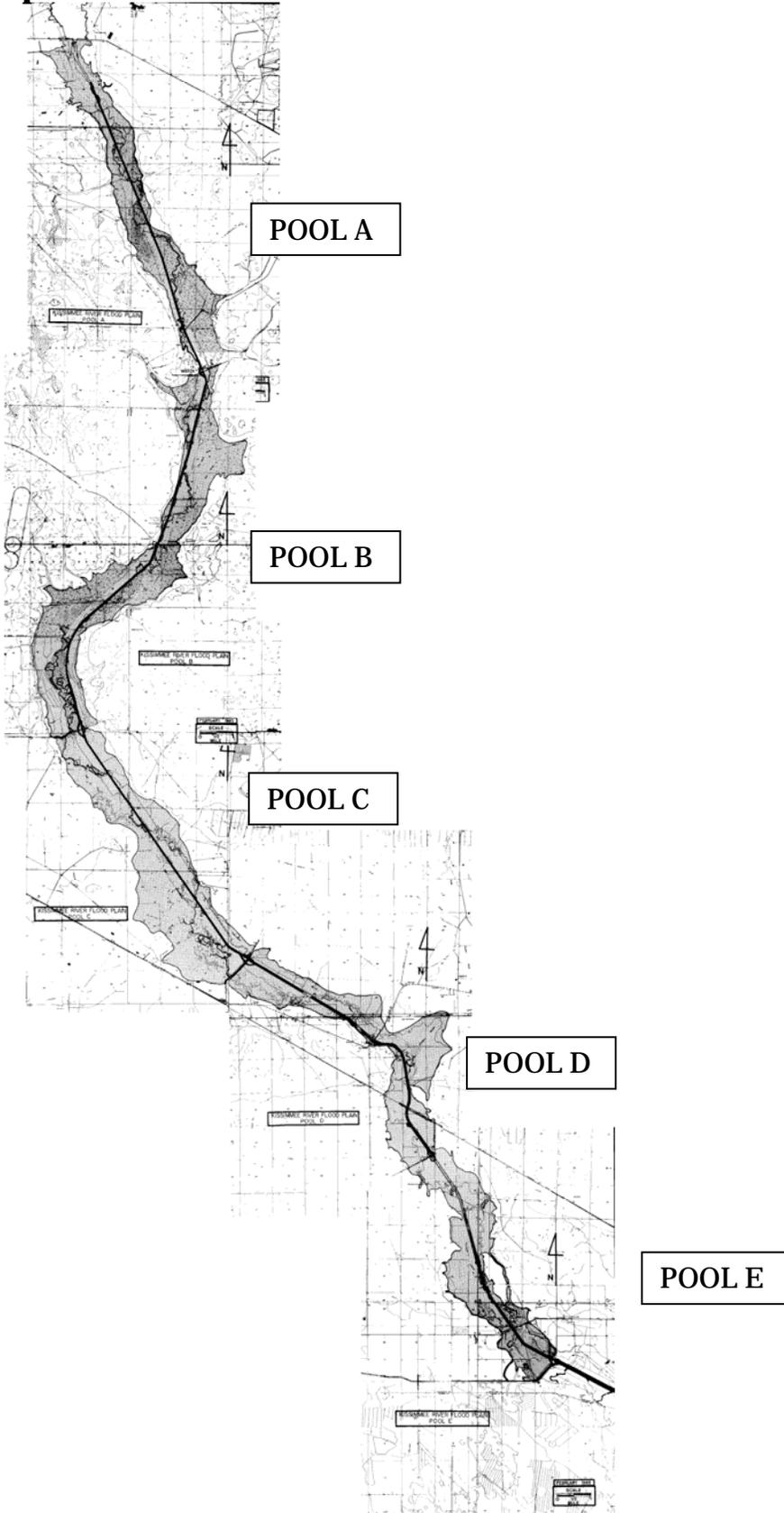
Kissimmee River Management Areas General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

Map 5. UF land cover map - 1953



Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

Map 6. Pools A-E of the Channelized River



4. Resource Inventory

Policy 140-25(3)(e) Inventories of natural and historic resources shall be performed to provide information for effective land management planning, natural community maintenance and ecological restoration. (District policies are reprinted in **Appendix A**)

Floral and faunal species are inventoried and natural communities are mapped by Land Stewardship personnel, volunteers, or private contractors. The data helps District land managers with resource management planning and monitoring efforts.

Inventory data is on file with the Land Stewardship Section. Land Stewardship shares natural areas and species data with the Florida Natural Areas Inventory through a Memorandum of Understanding.

Floral and faunal inventories of the Management Areas in the northern management areas (Pool A) were included in the environmental assessment initiated shortly after acquisition. The southern management units had a floral and faunal survey included as part of the 2002-2007 Kissimmee River Pools C and D General Management Plan. These served to determine the presence of listed species and to serve as ecological baselines. Additional surveys have been completed with species' lists being updated regularly by volunteers, contractors, and District & Florida Fish and Wildlife Conservation Commission staff. Archaeological and cultural resource inventories were conducted in coordination with the Department of State, Division of Historical Resources and are described in the State's Master Site File.

4.1 Hydrology

Policy 140-25(1) The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources.

The major geomorphic features which affect area hydrology are the Osceola Plain and Bombing Range Ridge, the Okeechobee Plain, small portions of the Caloosahatchee Incline, and the Lake Wales Ridge (**Map 7**). The Osceola Plain is a generally broad terrace bounded by the Lake Wales Ridge to the west and the Eastern Valley to the east, both of which are marine scarps. The Osceola Plain has little relief locally, and generally has an elevation of 60 to 70 feet above the National Geodetic Vertical Datum. The prominent feature of the Osceola Plain is known as the Bombing Range Ridge. The Kissimmee River passes through the length of the Osceola Plain slightly west of the center line roughly parallel with the axis of the peninsula. For the southernmost 25 miles of this route it occupies a valley 1.5 miles wide, which is cut rather sharply into the surface of the plain. The Okeechobee Plain gradually slopes to the south and is one of the flattest parts of the United States. At its northern boundary at the toe of the Osceola Plain, the

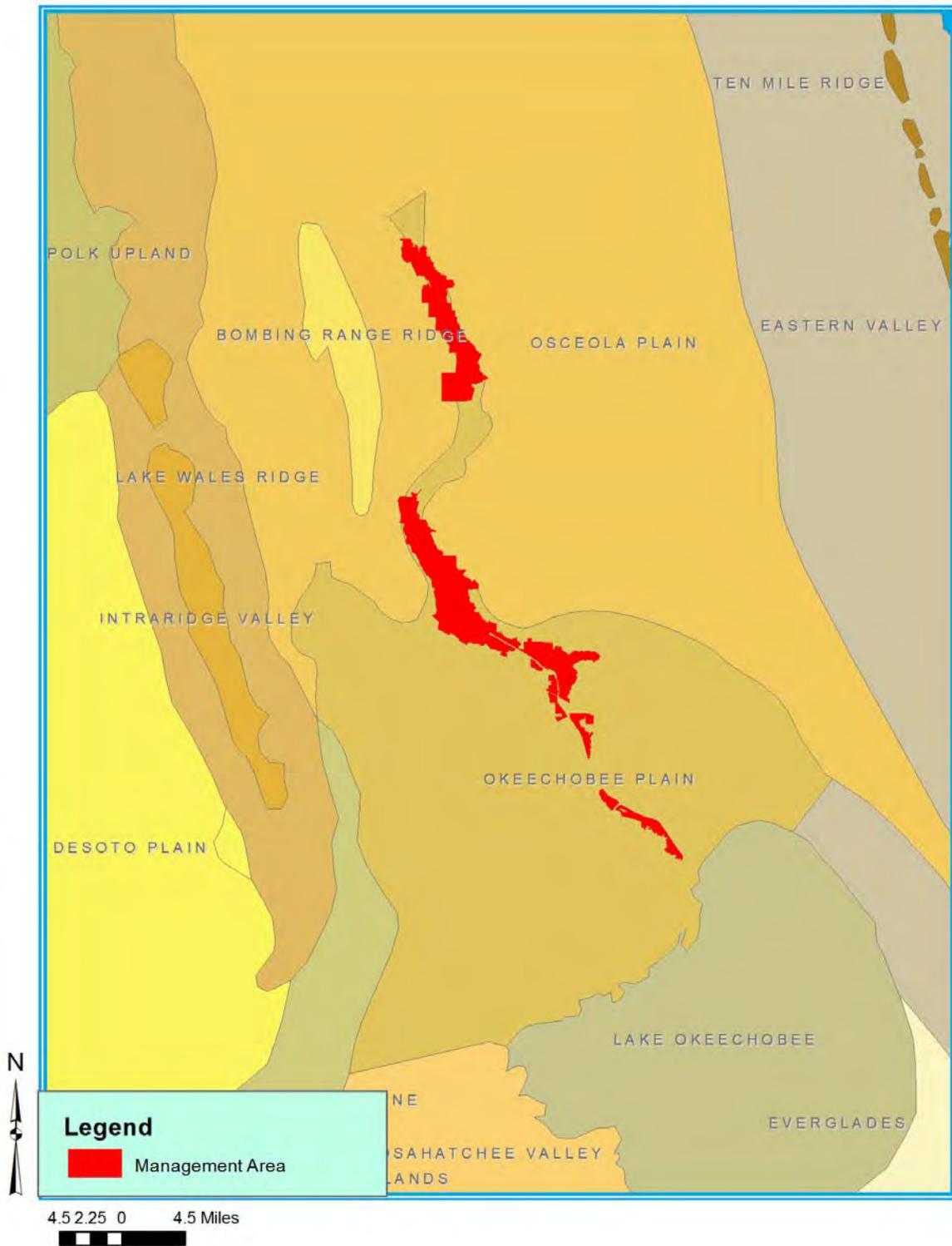
elevation is 30 to 40 feet above the National Geodetic Vertical Datum and slopes southward to an elevation of 20 feet at the north shore of Lake Okeechobee. The narrow northern portion of this plain consists of the Kissimmee River Valley. The Lake Wales Ridge, which forms the most prominent topographic feature of the Florida peninsula, rises above the Okeechobee Plain to an elevation of over 150 feet (**Map 8**).

Prior to channelization, surface water flow was dependent on rainfall-driven seasonal cycles that supplied water to the river system. (**Maps 9-10**) Most of the floodplain remained inundated for a major portion of the year. As much as 77% of the floodplain had mean annual hydroperiods of at least 265 days, with depths commonly exceeding one meter on the inner portions of the floodplain. Gently sloping elevations and seasonally fluctuating inflow produced slow drainage and periodic overflow onto the river floodplain. Water flow was delayed by dense wetland vegetation, a widely meandering channel, and organically rich river substrates. Packingham Slough, Buttermilk Slough, Tick Island Slough, Oak Creek, Istokpoga Creek, Turkey Hammock, Near Dinner Bay, Underhill Sawgrass, and Chandler Slough are tributaries that added to the basin's water retention capacity and flowage. Many small agricultural drainage ditches fed into the sloughs increasing the efficiency through which the depression marshes in those lands drain. During significant rainfall events, water was delivered to the main channel by overland sheetflow. Higher elevations were influenced by fluctuating water levels during the summer months. Water drawdown from elevated areas was a slow process. Pre-channelized stages typically receded at rates of less than one foot per month.

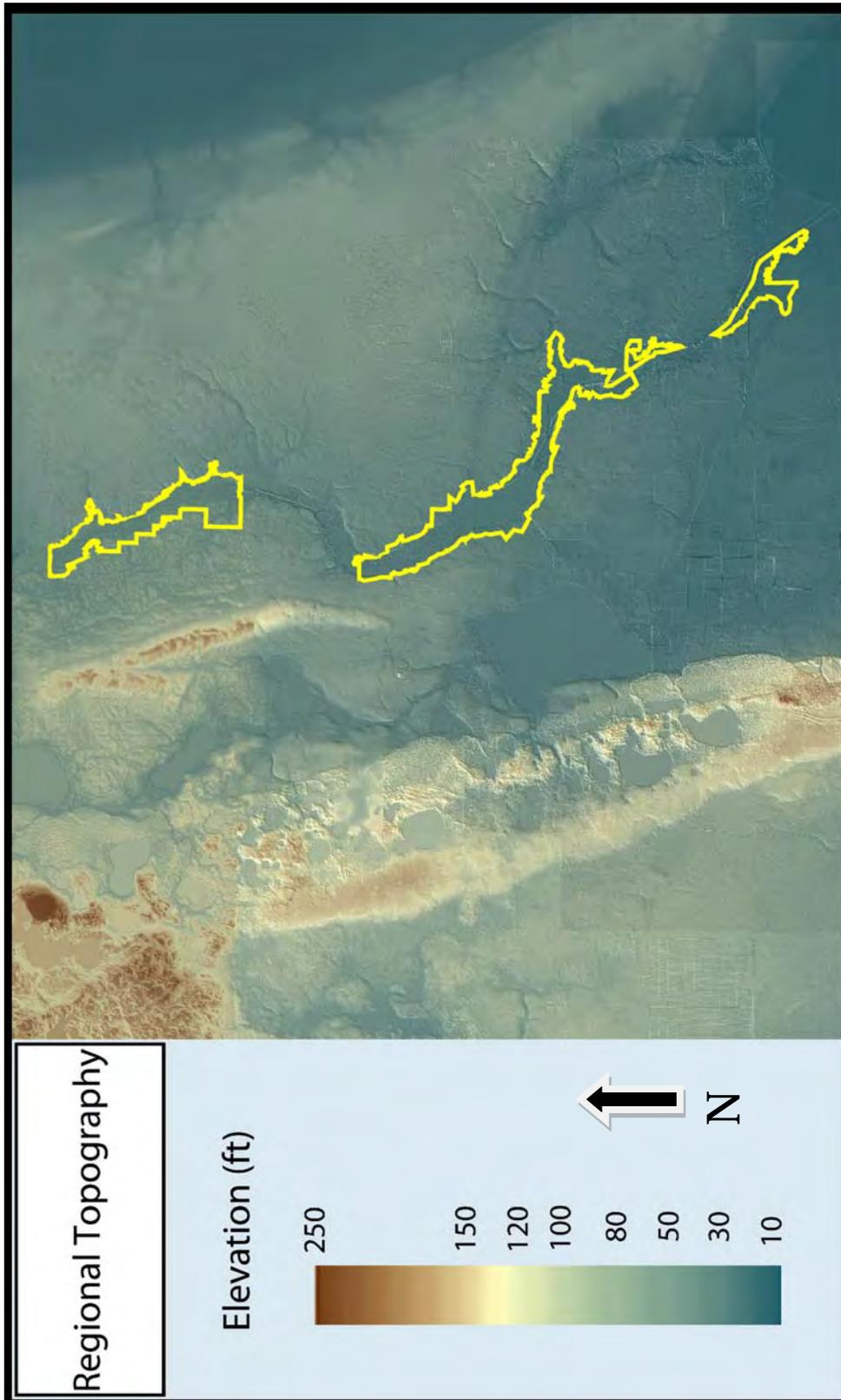
In the late 1960s, the lower portion of the river system was straightened and deepened, creating a linear 56 mile long canal (C-38) that bisects the Kissimmee River floodplain. The canal was divided into six elevational steps, or pools, by water control structures. Average depth of the canal is 30 feet and surface width ranges from 210 to 345 feet. The channelization changed the somewhat uniform, natural river gradient into a series of terraced impoundments, declining in elevation in six foot increments. Controlled water releases from the Upper Chain-of-Lakes Basin, through Lake Kissimmee, have eliminated wide seasonal fluctuations within the floodplain and hastened surface drainage. Istokpoga Creek is now a canal draining into Pool C. Chandler Slough remains the main tributary to Pool D.

Alterations within the region have combined to make a system that is unlike the historical system (**Maps 11-13**). To moderate the dynamic hydrology and create a more natural hydrologic pattern, the District has implemented several restoration projects, the largest of which is the Kissimmee River Restoration Project (see **Section 5.1 - Restoration Projects**).

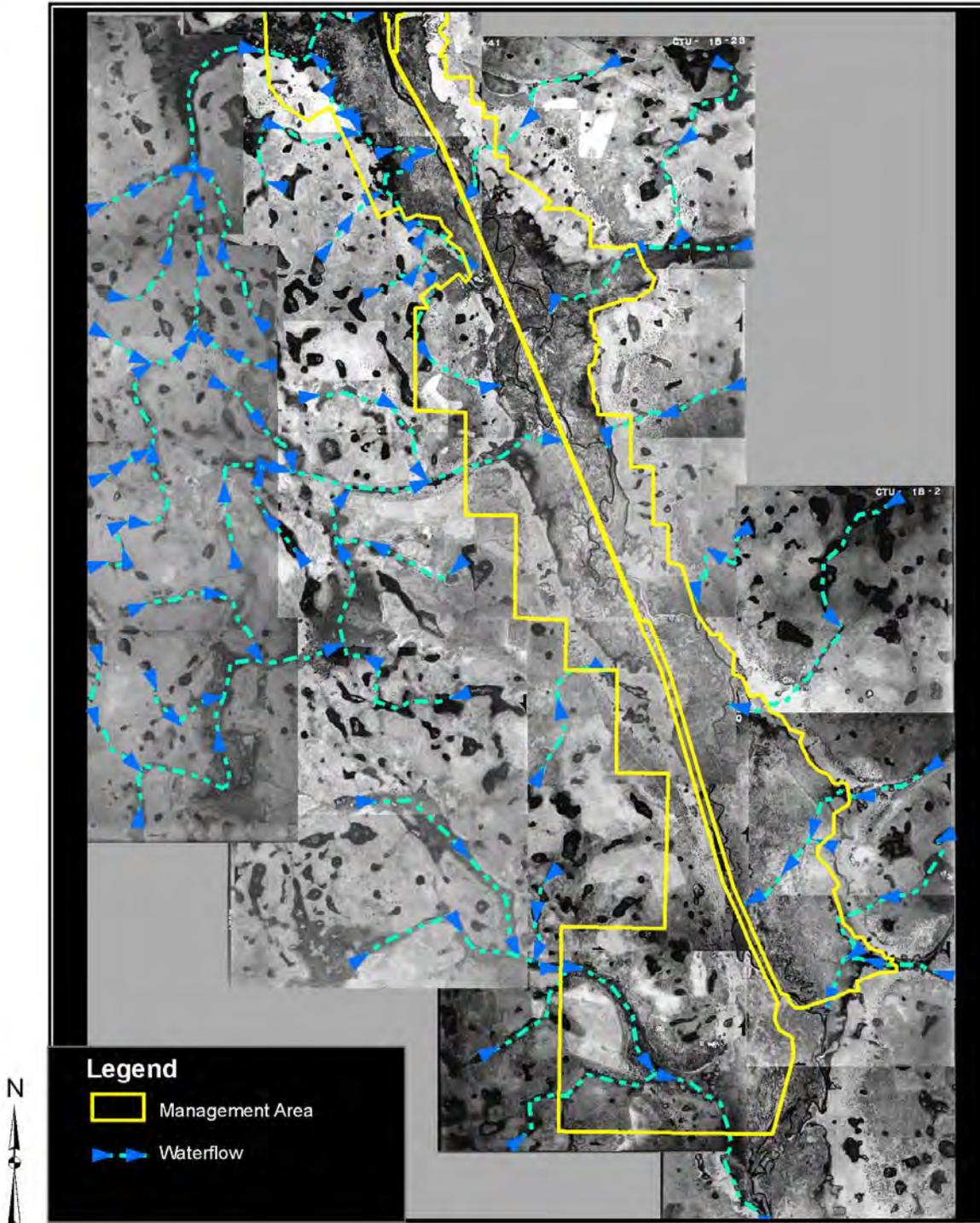
Map 7. Regional Major Geomorphic Features



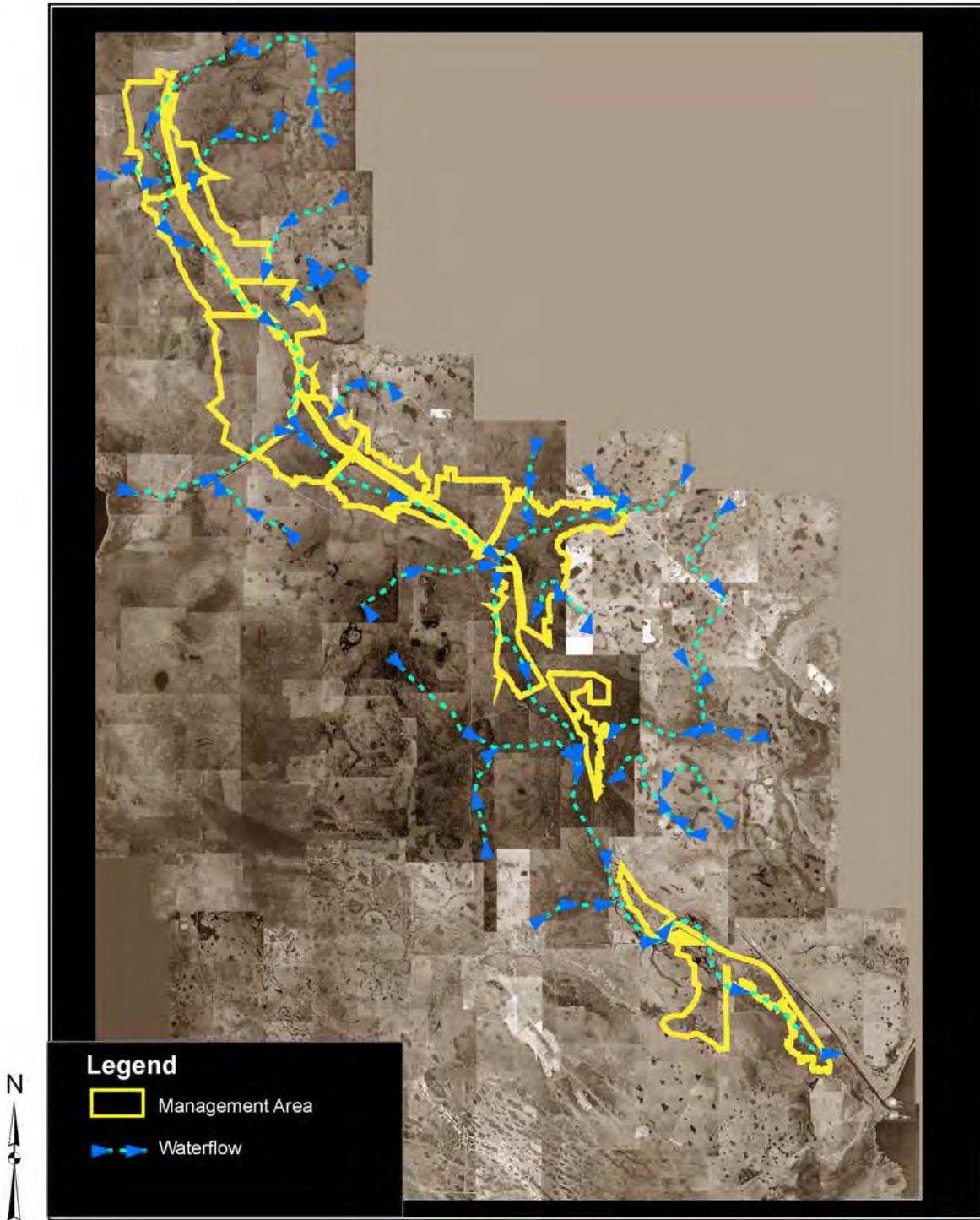
Map 8. Kissimmee River Valley Topographic Relief



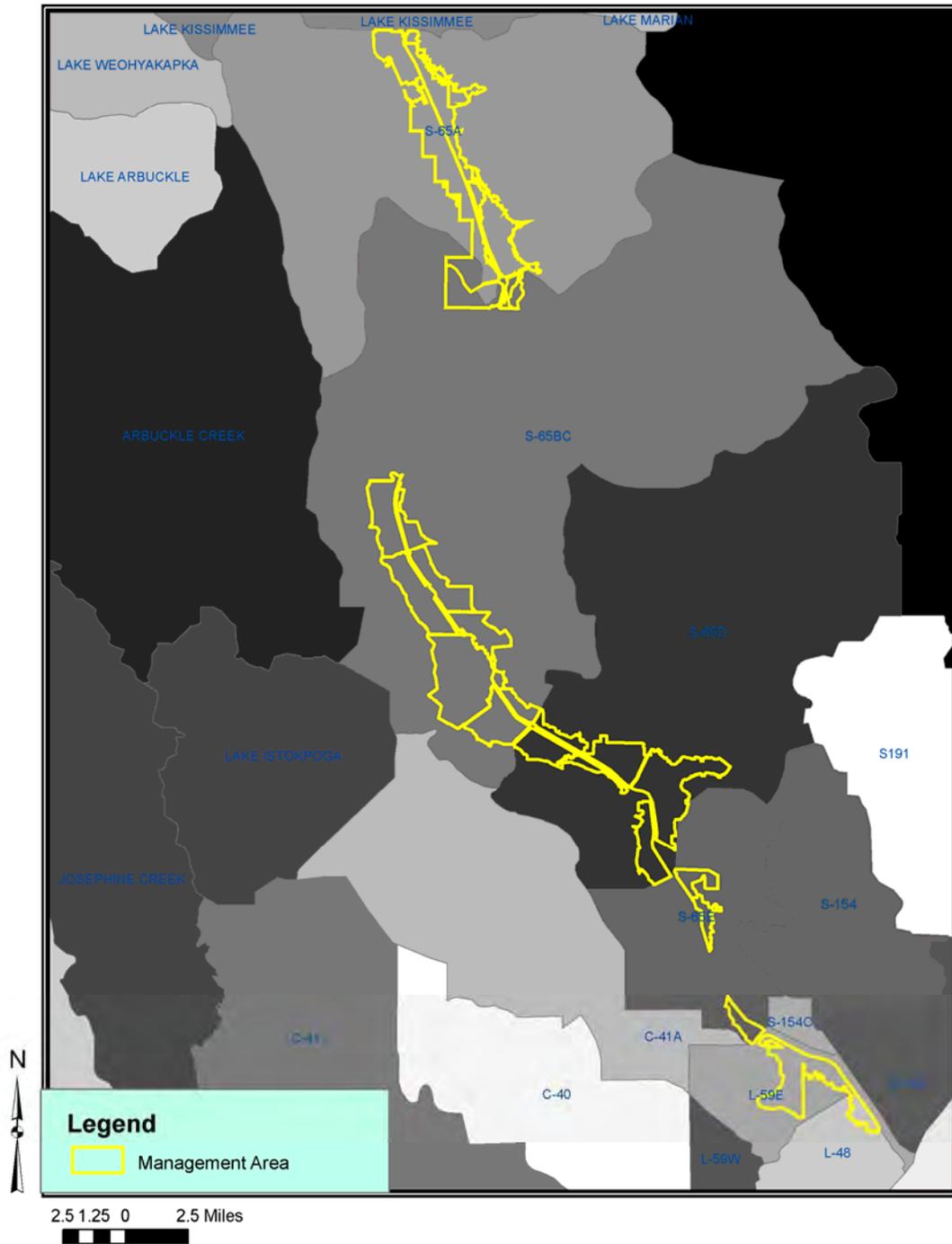
Map 9. Upper River Historic Hydrology (1941 aerial composite).



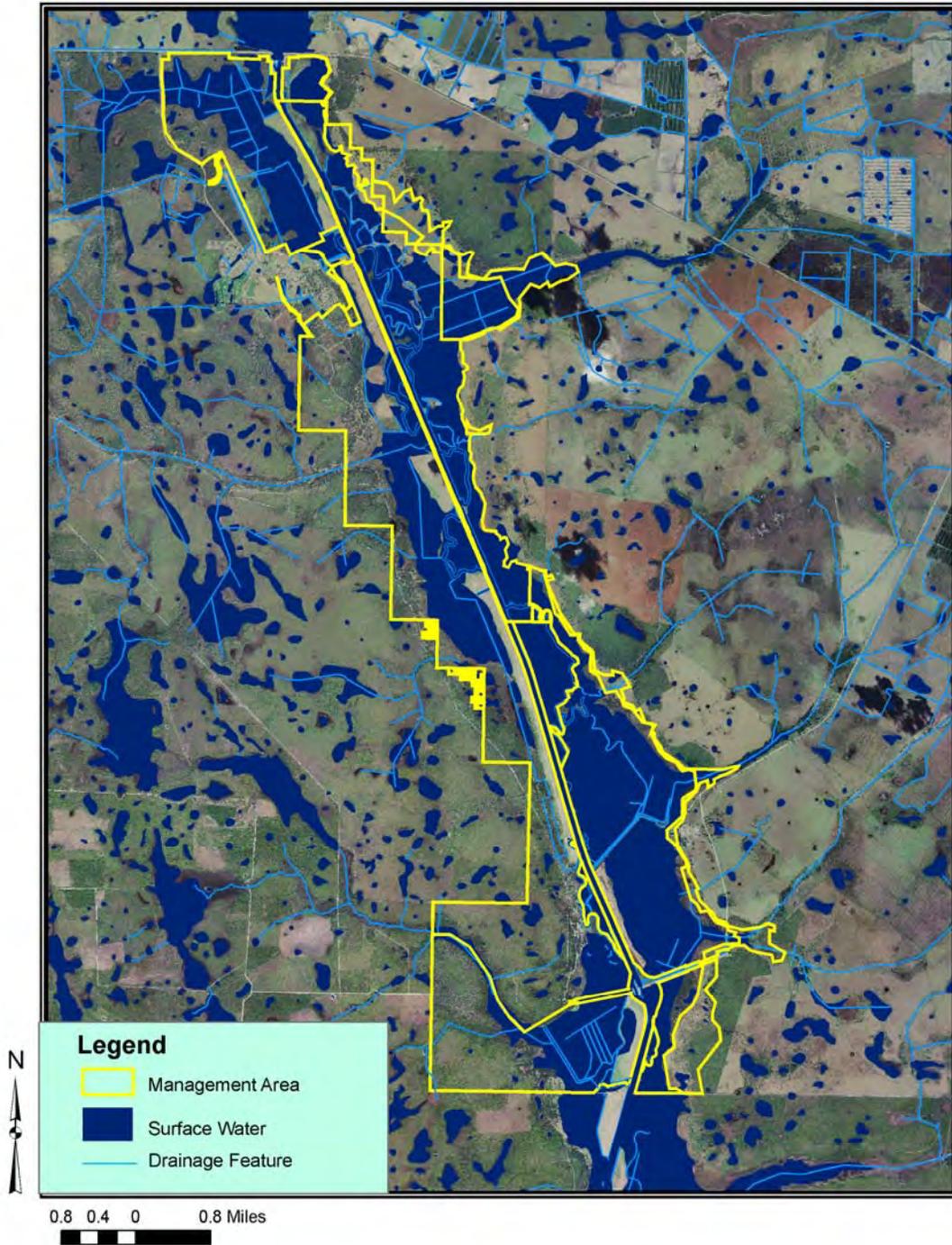
Map 10. Lower River Historic Hydrology (1938-47 aerial composite).



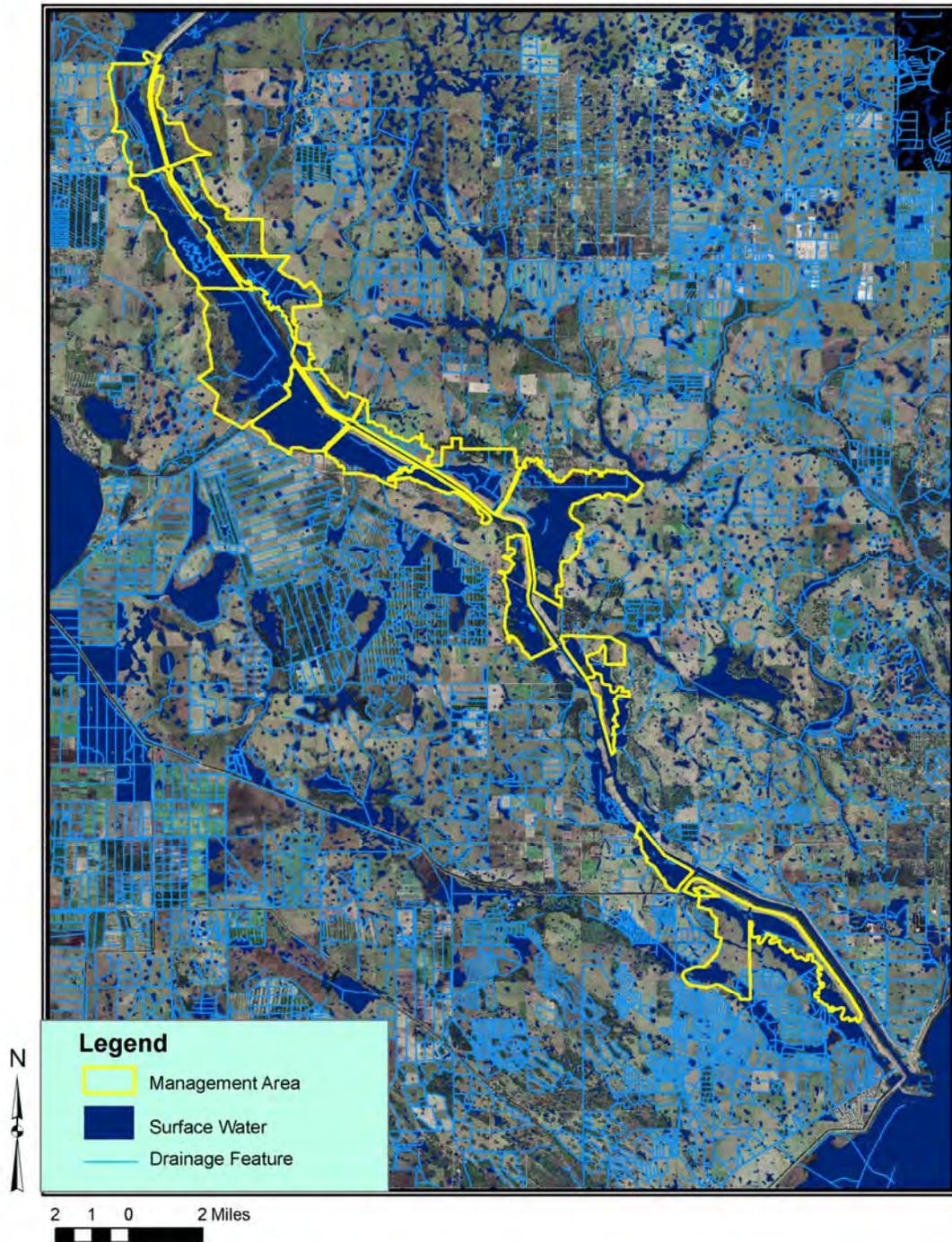
Map 11. Hydrologic Basins



Map 12. Surface Waters Upper Kissimmee River (Pool A)



Map 13. Surface Waters Lower Kissimmee River (Pools C-E)



4.2 Soils

There are six distinct soil categories within the Kissimmee River management areas as defined by the Natural Soil Landscape Positions soil classification system: flatwood soils, flats soils, knolls, sand depression soils, muck depression soils, and urban or made lands (**Maps 14a-b**). This classification system groups South Florida soils into 12 categories based on hydrology and soil morphology that reflect the local relative topography, hydrology, and vegetation of the area. Soil classification descriptions are included as **Appendix B**.

Soil Contamination and Excavation Sites

Several sites within the Kissimmee River Management Areas were identified as containing contaminated soils which in some cases required remediation. These sites included:

Pool A: KICCO

Three cattle dipping vats with associated arsenic contamination were remediated along with a recommendation that no water wells be installed near the site of the vats.

Pool C:

This site contained a cattle vise with a cattle spray pen. Testing for soil contaminants involved installation of two temporary test wells, one permanent test well, and collection of soil boring samples. Based on initial site investigations and characterization, concentrations of soil contaminants typically associated with cattle dipping vats did not exceed the human risk-based criteria for a Restricted I site or assumed ecological risk-based criteria (Dames and Moore 1997). Therefore this site required no corrective action or restriction on use.

Pool C:

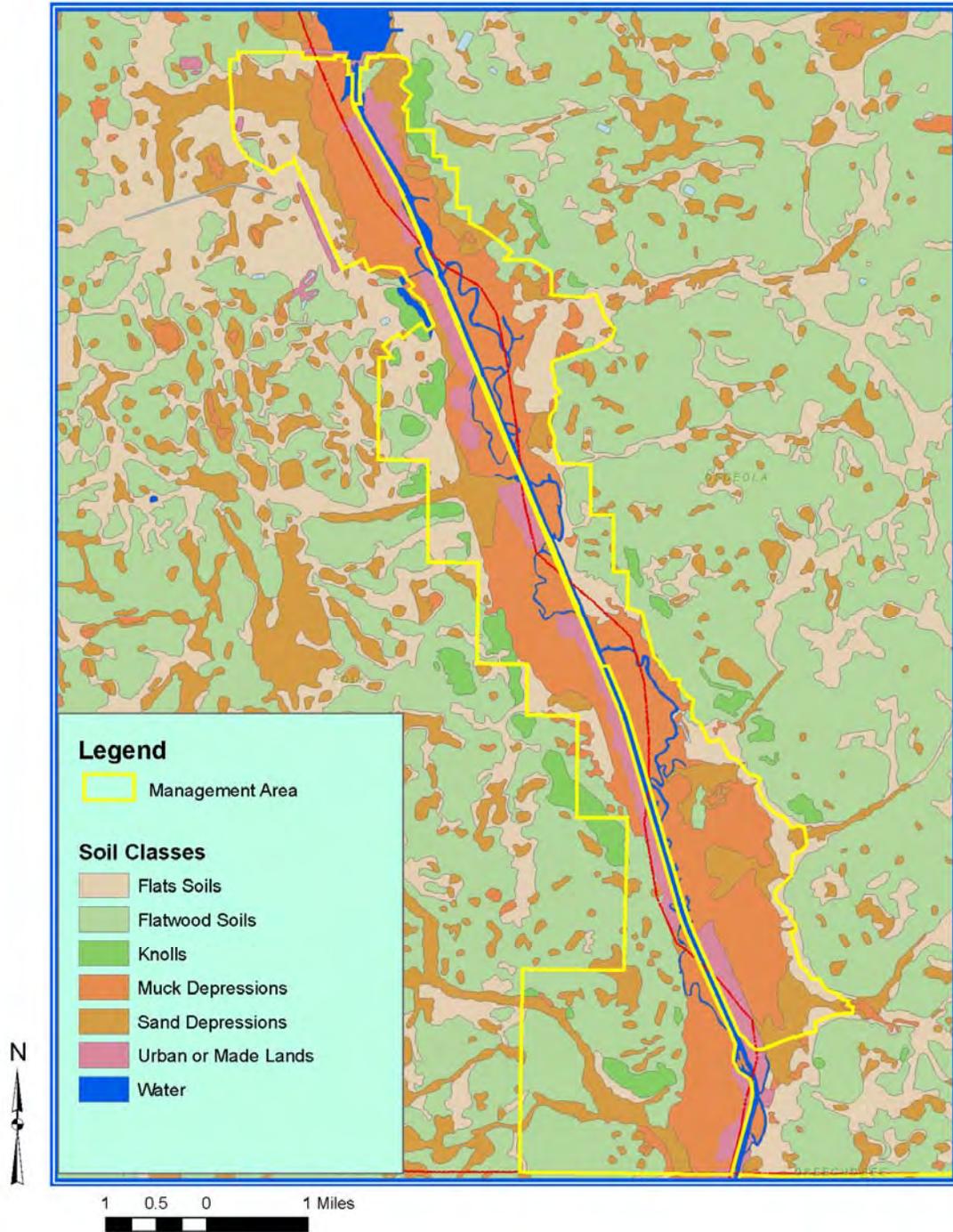
Soil and water samples were gathered using 27 soil borings, two piezometers (equipment that measures groundwater flow and duration) and four groundwater monitoring wells. Soil sample results indicated concentrations of DDT and other associated pollutants that exceeded the exposure scenario of a residential site. Corrective actions were completed.

Pool D:

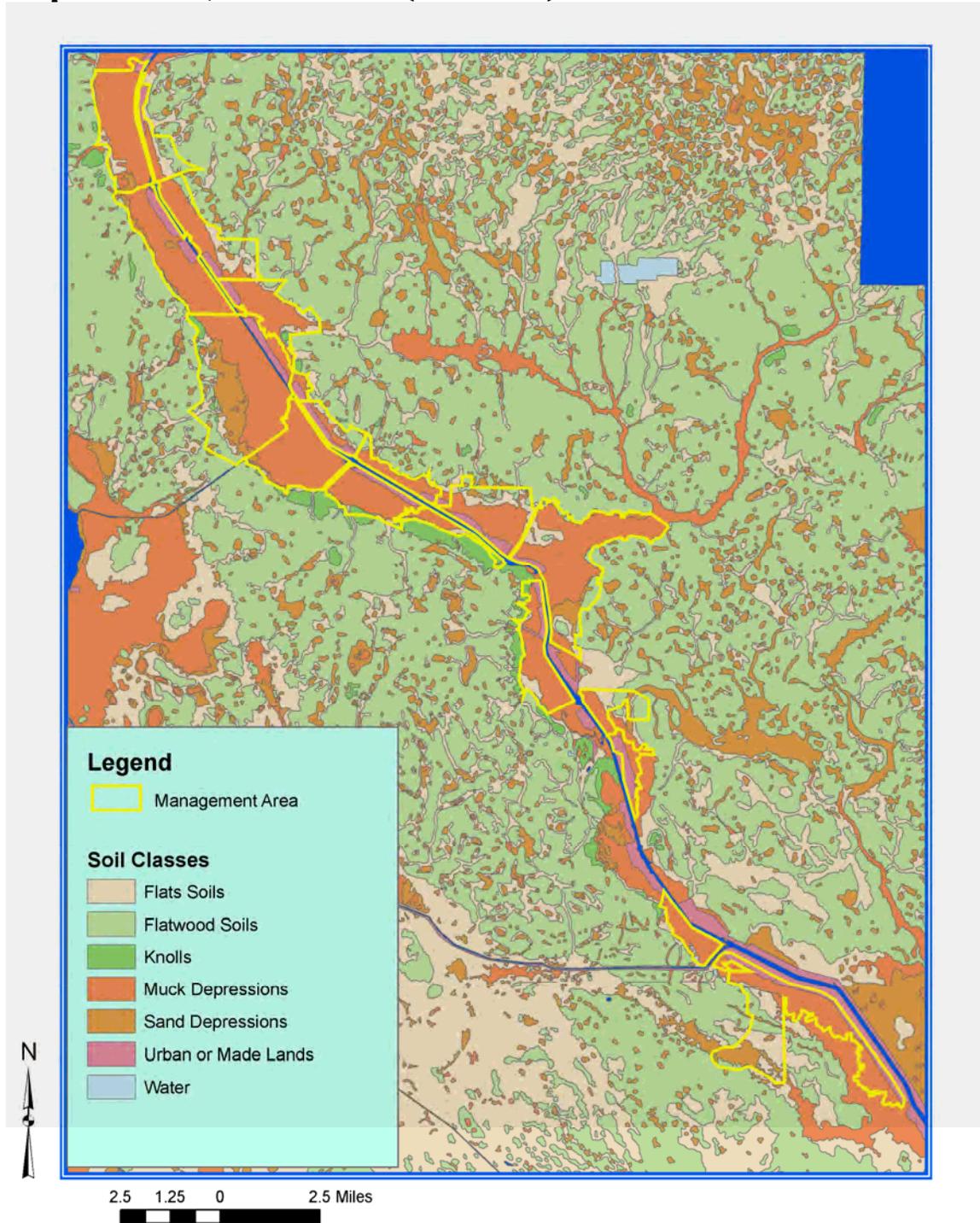
Similar to Pool A, this site also contained a cattle-dipping vat. Site analysis included soil borings, installation of three piezometers and four monitoring wells, collection of soil and groundwater samples, and site characterization. Analytical results indicated groundwater contaminants of potential concern did not exceed acceptable levels defined by the Florida Groundwater Guidance Concentrations (Dames and Moore 1997) There were, however, sample results indicating an area of arsenic-impacted soil. Remediation activities were implemented for a Restricted I scenario that allows extensive, but less than full-time contact with

the site. This designation allows for park or recreational areas that receive heavy use (soccer and baseball fields, parks and picnic areas close to residential areas) and agricultural sites where farming practices result in moderate site contact (approximately 100 days per year). To achieve this use-level category, sixty tons of arsenic-impacted soil immediately adjacent to the vat was excavated for off-site removal and the area was back-filled with clean soil. The concrete vat was decontaminated and disposed off-site. The Florida Department of Environmental Protection determined no further action was required.

Map 14a. Soils, Upper River (Pool A)



Map 14b. Soils, Lower River (Pools C-E)



4.3 Natural Communities

The Land Stewardship Program classifies natural community types by the Florida Natural Areas Inventory Classification system. Thirteen natural community types occur on the Management Areas (see **Figures 1a, 1b, and Maps 15-17**). Community condition varies widely, depending on previous and current land use, hydrologic alteration, exotic infestation, and the return frequency of fire. Descriptions are included as **Appendix C**.

Figure 1a. Pool A (northern) Dominant Community Types

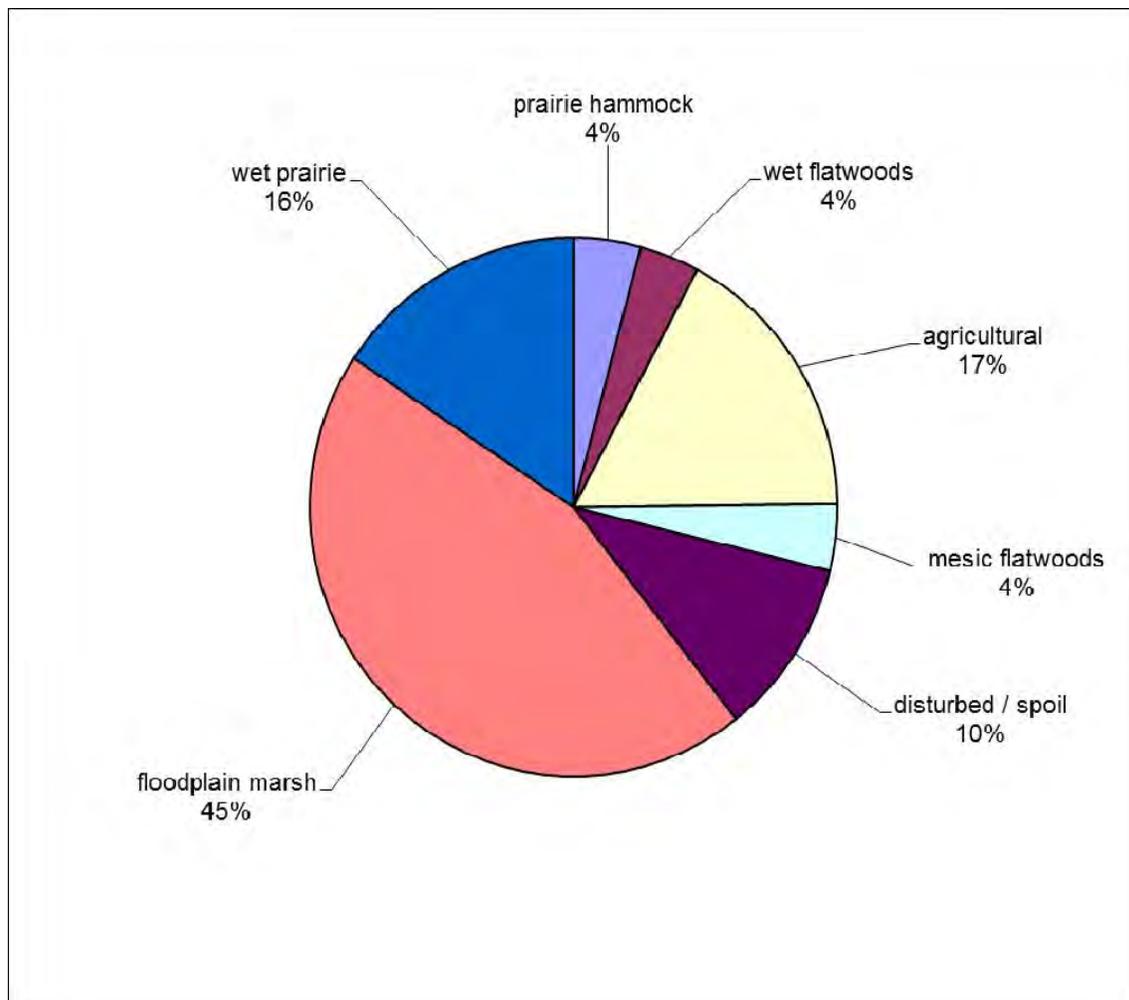
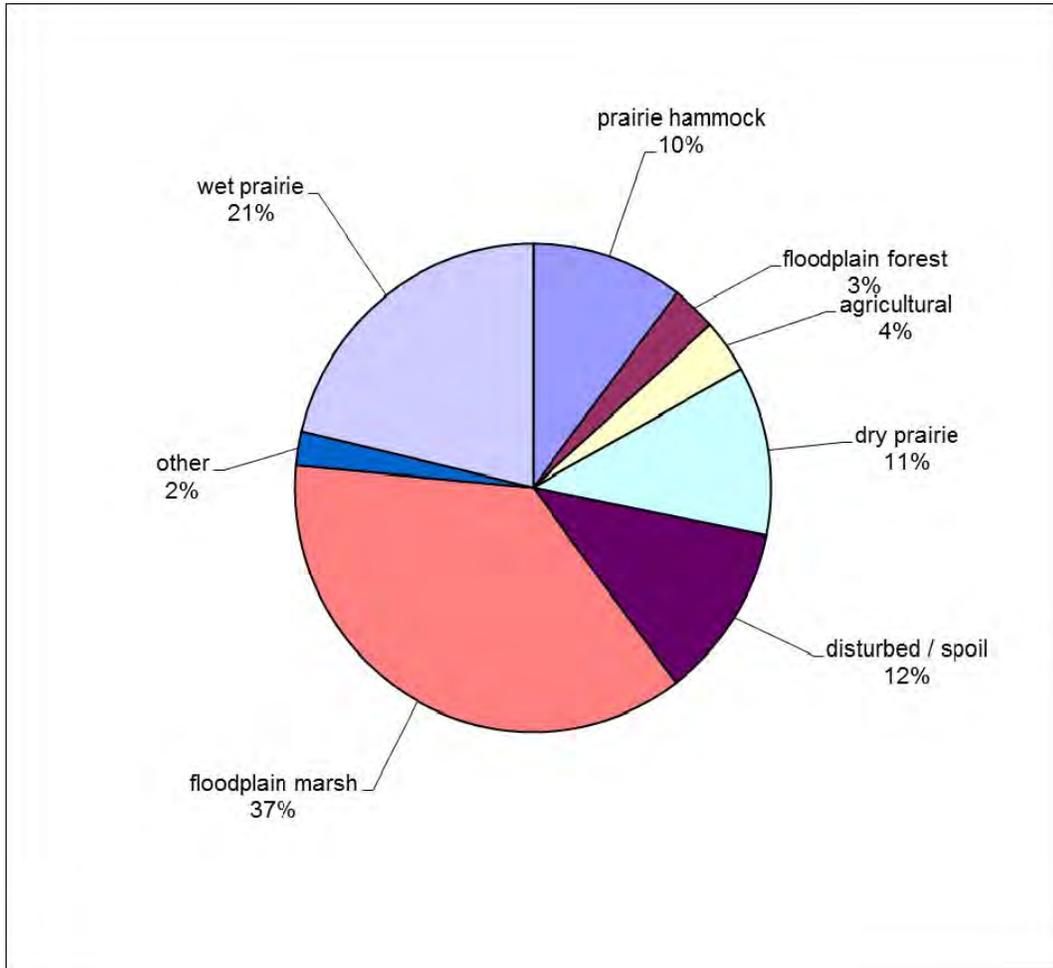
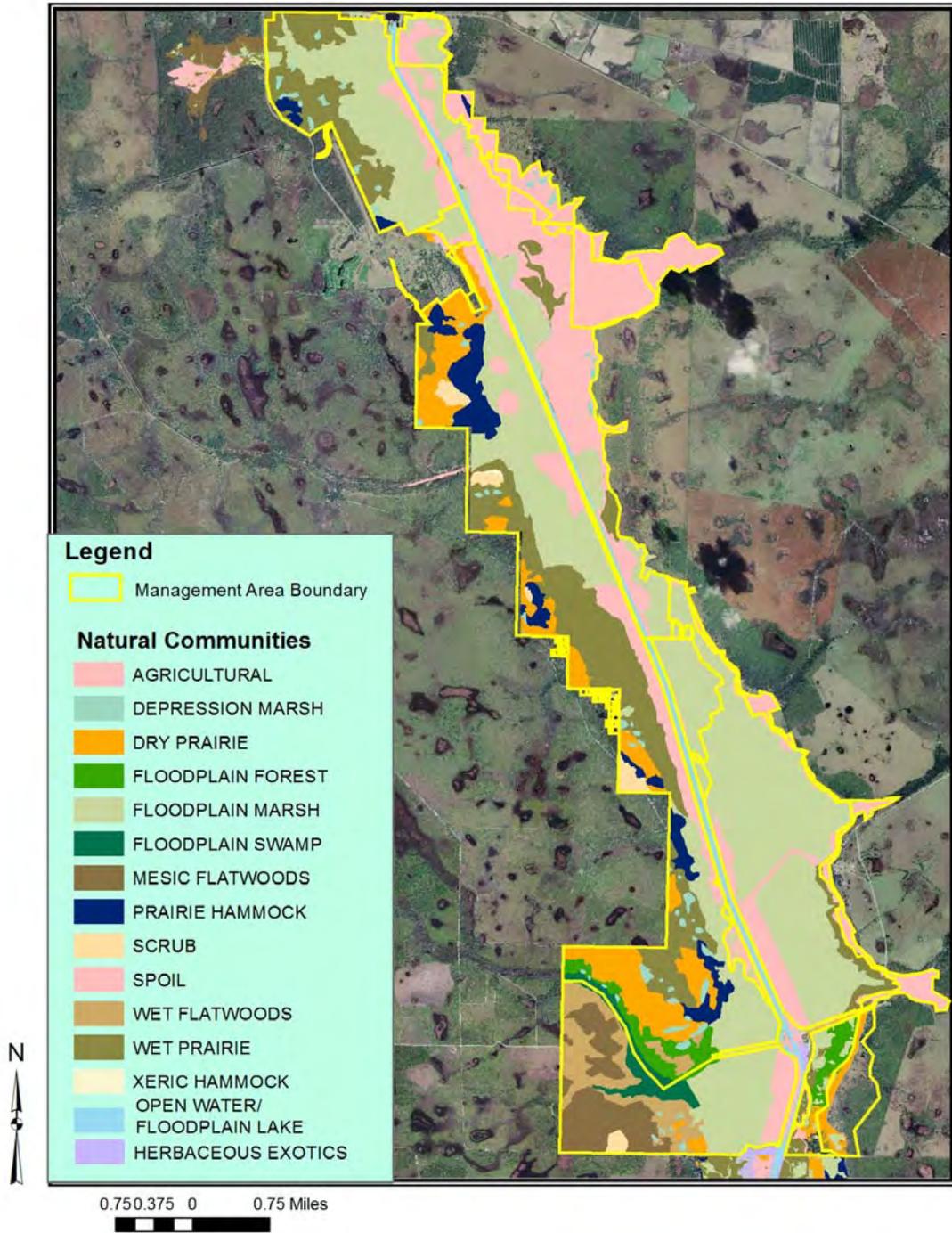


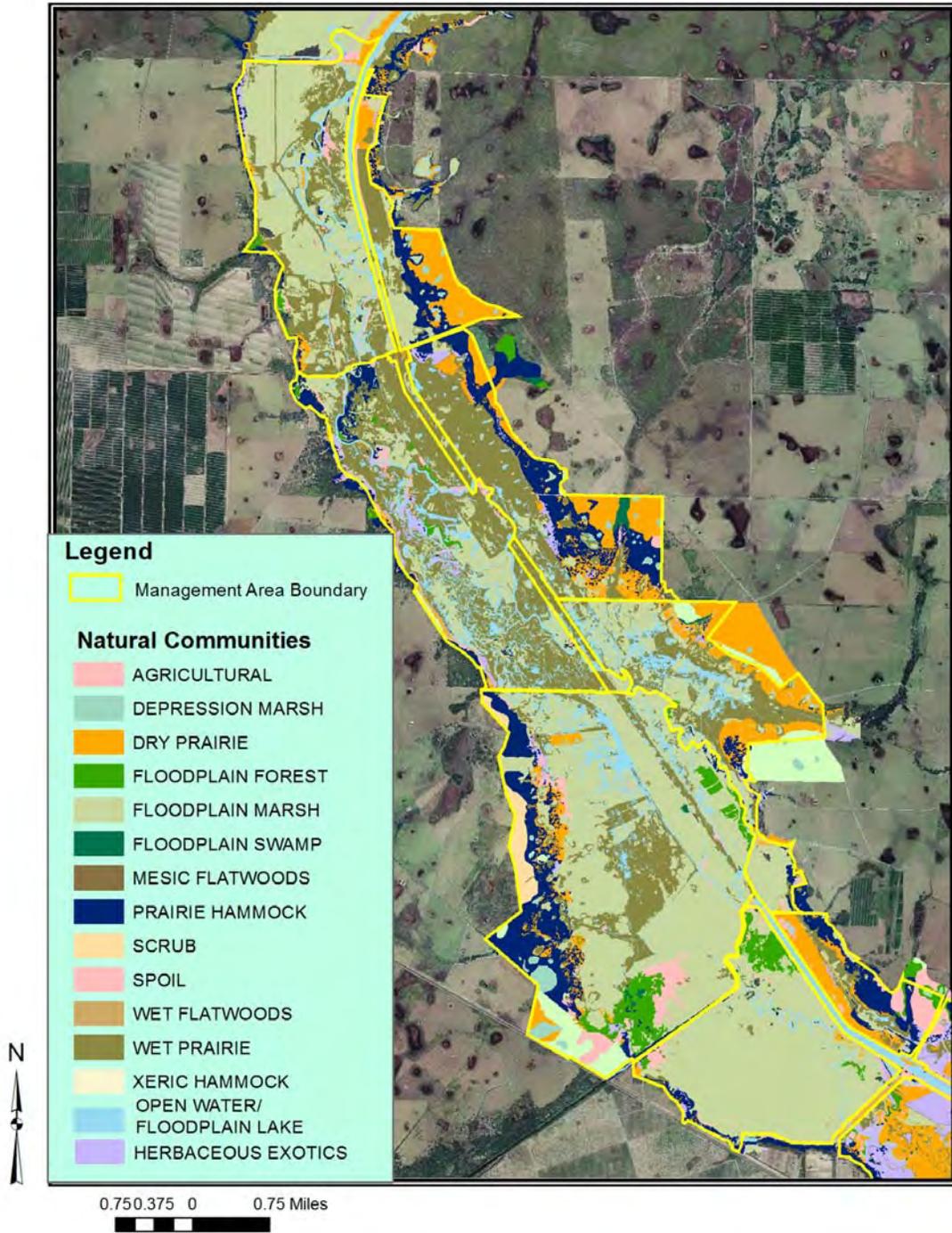
Figure 1b. Pool C and D (southern) Dominant Community Types



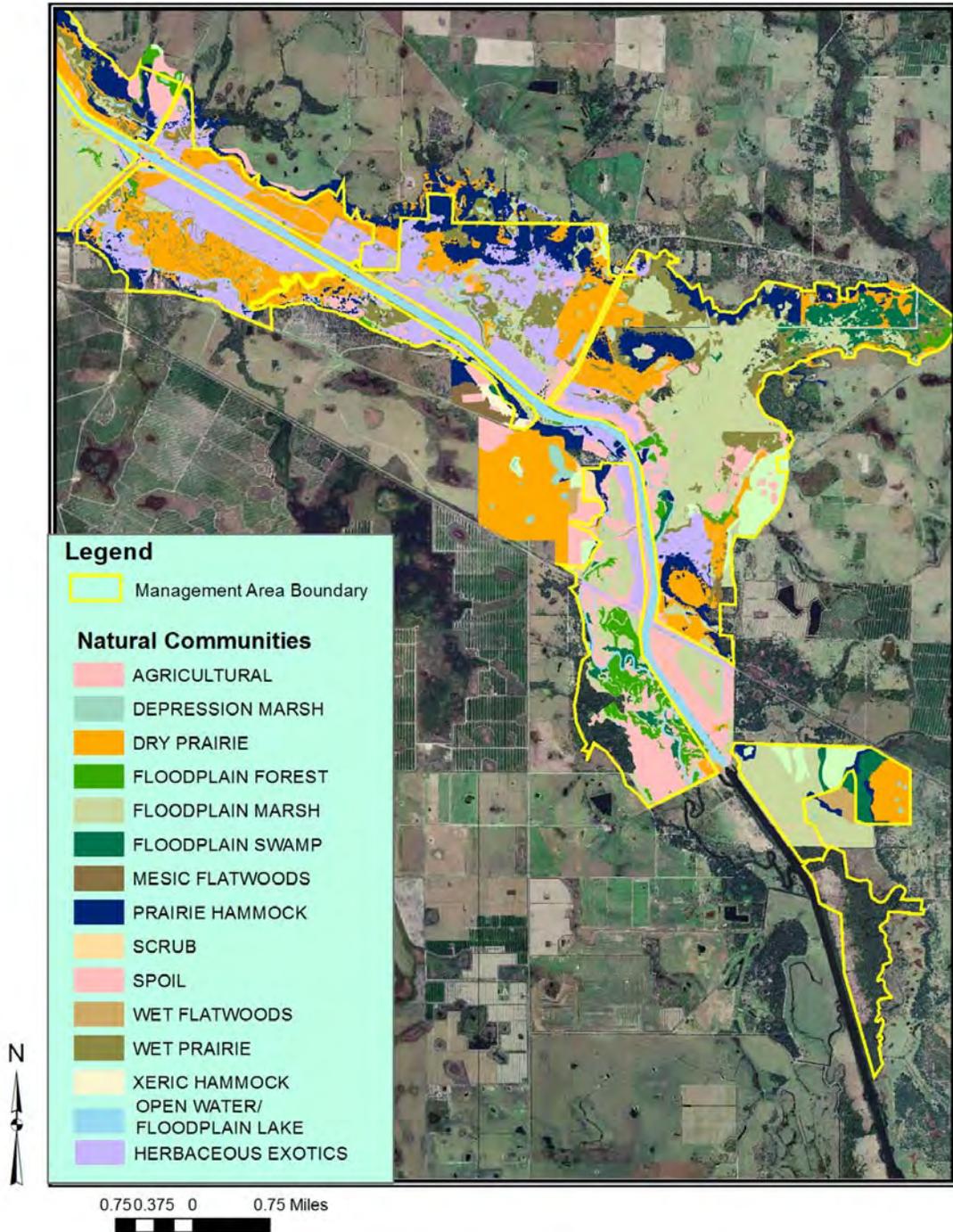
Map 15. Pool A Natural Communities.



Map 16. Pool C Natural Communities.



Map 17. Pool D Natural Communities.



4.4 Wildlife

The plant communities within the project provide habitat for numerous bird, fish, amphibian, reptile, and mammal species, several of which are listed federally or by the state (**Appendix D**). At least 22 species considered rare, endangered, threatened, or of special concern have been noted. Confirmed listed wildlife include the woodstork, American bald eagle, crested caracara, American alligator, burrowing owl, gopher tortoise, eastern indigo snake, red rat snake, gopher frog, scrub jay, grasshopper sparrow, Sherman's Fox squirrel, swallow-tailed kite, woodstork, sandhill crane, peregrine falcon, and osprey.

The river corridor historically served as wintering and breeding grounds for waterfowl; important habitat for indigenous mammals, amphibians and reptiles; and a key stronghold for protected species. Many of the bird species considered imperiled statewide depend on shallow wetlands to feed and nest. Wading bird populations have steadily declined within the basin since the 1800's. Prior to 1910, declines were attributed to commercial plume hunting. Following the channelization of the Kissimmee River, nesting failures were due to inadequate food production, marsh destruction, alteration of hydrological patterns, and competition from the non-native cattle egret. By the early 1970s, floodplain utilization by wintering waterfowl had declined by 92%.

The Sherman's fox squirrel is the only regularly observed documented listed mammal, however there is potential for the southern Florida mink, Sherman's short-tailed shrew, big cypress fox squirrel, Florida mastiff bat, and Florida mouse to occur in the area. The Florida black bear and Florida panther have been documented, as has the Florida bonneted bat (the northernmost extent of its range). Large game mammals include feral hog and whitetail deer. Feral hogs are considered exotic mammals. Coyotes have expanded their range to south Florida, and their presence in the Kissimmee River Basin has been documented as well.

Favorable climate and hydrologic conditions provide habitat for numerous species of reptiles and amphibians in the Management Areas, seven of which are listed species. There are also at least two non-native species: the brown anole and Cuban tree frog. The Kissimmee River Restoration Program uses amphibian and reptile community structure as an indication of river restoration success.

4.5 Cultural Resources

Policy 140-25(3)(j) Archaeological and historic resources are protected by site identification and inter-agency coordination with the Florida Division of Historical Resources. Land Stewardship planning shall include an analysis of archaeological data accompanied by appropriate public education opportunities.

Pool A: KICCO

The primary known cultural feature of the KICCO Management Area in Pool A is the site of the small KICCO company town (**Maps 18a-d**). Built at the location of a former riverboat landing, the town served KICCO employees from about 1915 until the late 1920s with at least some occupation continuing until the flood event of 1947 destroyed many of the structures. The Bureau of Archaeological Research within the Department of State's Division of Historic Resources surveyed the few remnant structures in the 1980s after the District acquired the property. Subsequently the buildings were demolished after no other agency or groups were willing or able to accept a relocation of the structures.



A 3D computer rendering of the KICCO town (looking south)



The houses (left) and school building (right) at KICCO

Maps 18a-d. Company town of KICCO, Aerial Photography



18a. KICCO townsite 1941



18b. KICCO 1953, most of the structures gone



18 c. KICCO townsite 1968, trees removed



18d. KICCO townsite 2004, with a denser tree canopy, and former marsh dominated by shrubby vegetation

Pool C and D

There are numerous archeological sites within Pool C and D. Site types include shell middens, burial middens, and ceremonial structures and mounds. Sites of more recent historical significance include the Ft. Bassinger and the Pearce-Lockett Estate and cemetery grounds.

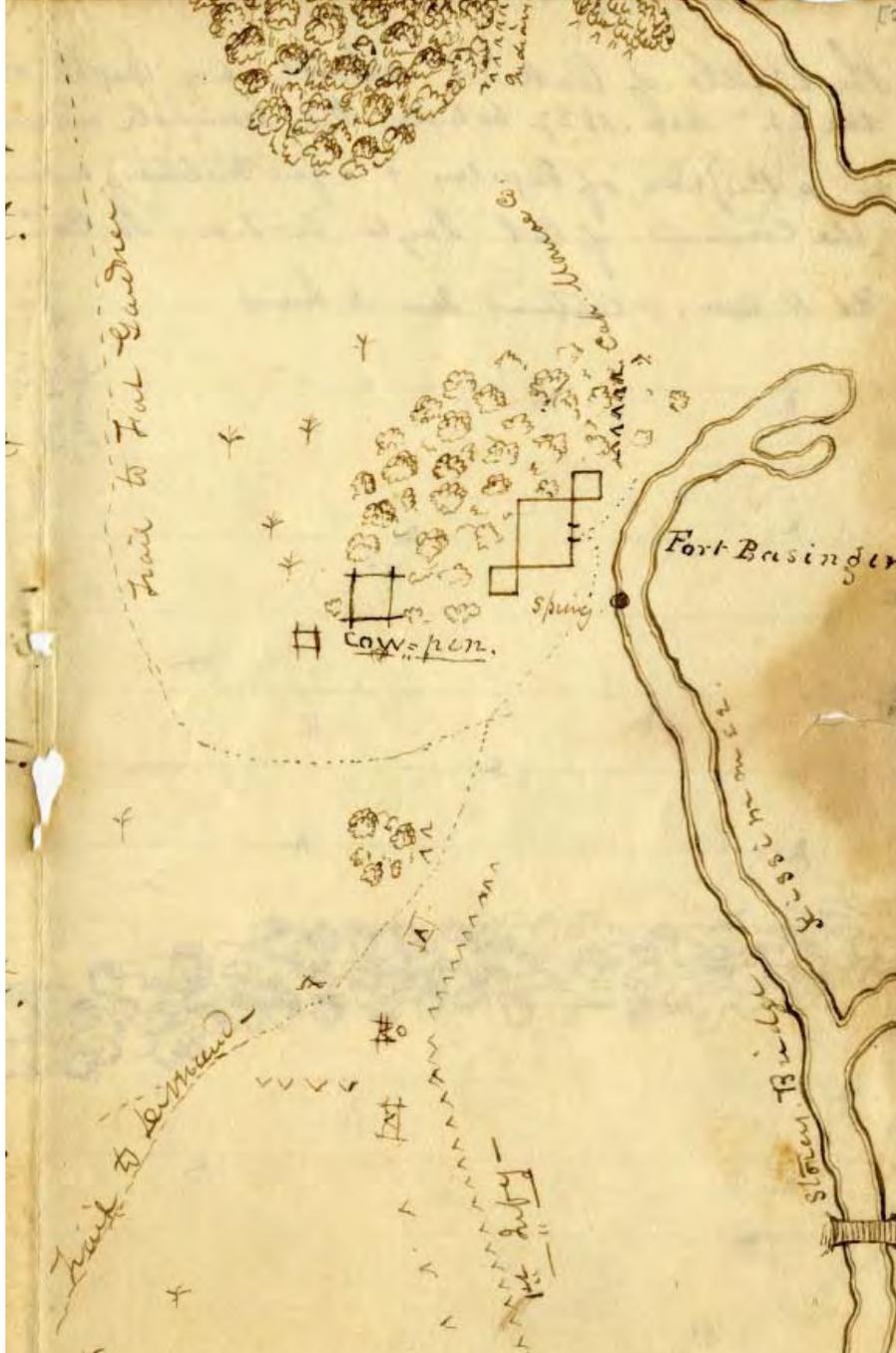
Ft. Bassinger was built by the U.S. Army in 1837 in the Second Seminole War as part of an effort to keep the Seminole Indians south of Lake Okeechobee by placing small frontier forts throughout the remainder of the Florida peninsula. The forts were spaced about every 20 miles and connected by a system of semi-improved trails (**Map 19**). These allowed frequent mounted patrols between the forts as a deterrent to the Seminoles.

In 1993 the District acquired the Pearce-Lockett Estate through a donation as part of the Kissimmee River Restoration Project. Since this time the District has provided maintenance to sustain the property in its current condition. There have been several attempts to find a management partner for the site including discussions with the State, Highlands County, the Florida Heartland Rural Economic Initiative, and the Center for Environmental Studies. The District and the Highlands County Parks Department cooperatively managed the site from 1997 until 2001. The County received grant funding from the State for recreational amenities. The Florida Park Service evaluated the property in 2002 and concluded that the site met or exceeded the qualifications for a State Park, but budget constraints prevented them from accepting title from the District. The District is currently seeking a long term partner to manage and provide continued public access to the property.

The Pearce-Lockett Estate is historically significant. The majority of the site is a State registered archaeological site; it was once the permanent home to a community in the Belle Glade II period around 1800 years ago. A homestead was established in 1875 by Capt. John Mizell Pearce, a veteran of the Civil War and the Third Seminole War. He married into the family of the famous Southern poet Sydney Lanier; he and his wife had 10 children. John Pearce operated a steam boat along the Kissimmee River and later a ferry. He was also a deputy sheriff and a cattleman. John Pearce, his wife, and several other family members were laid to rest on site in a family cemetery that remains in good condition. His son, William, was instrumental in establishing the Ft. Bassinger School (moved to the estate in 2004). Edna Pearce-Lockett taught at the Ft. Bassinger School, she would later take over the homestead and cattle operation and be the third woman elected to the Florida House of Representatives.

The District supports requests to conduct research on the archaeological and historic sites within the Management Areas and safeguards the integrity of the sites, primarily by prohibiting ground disturbing activities. Management activities planned for these areas are exotic plant control, vegetation

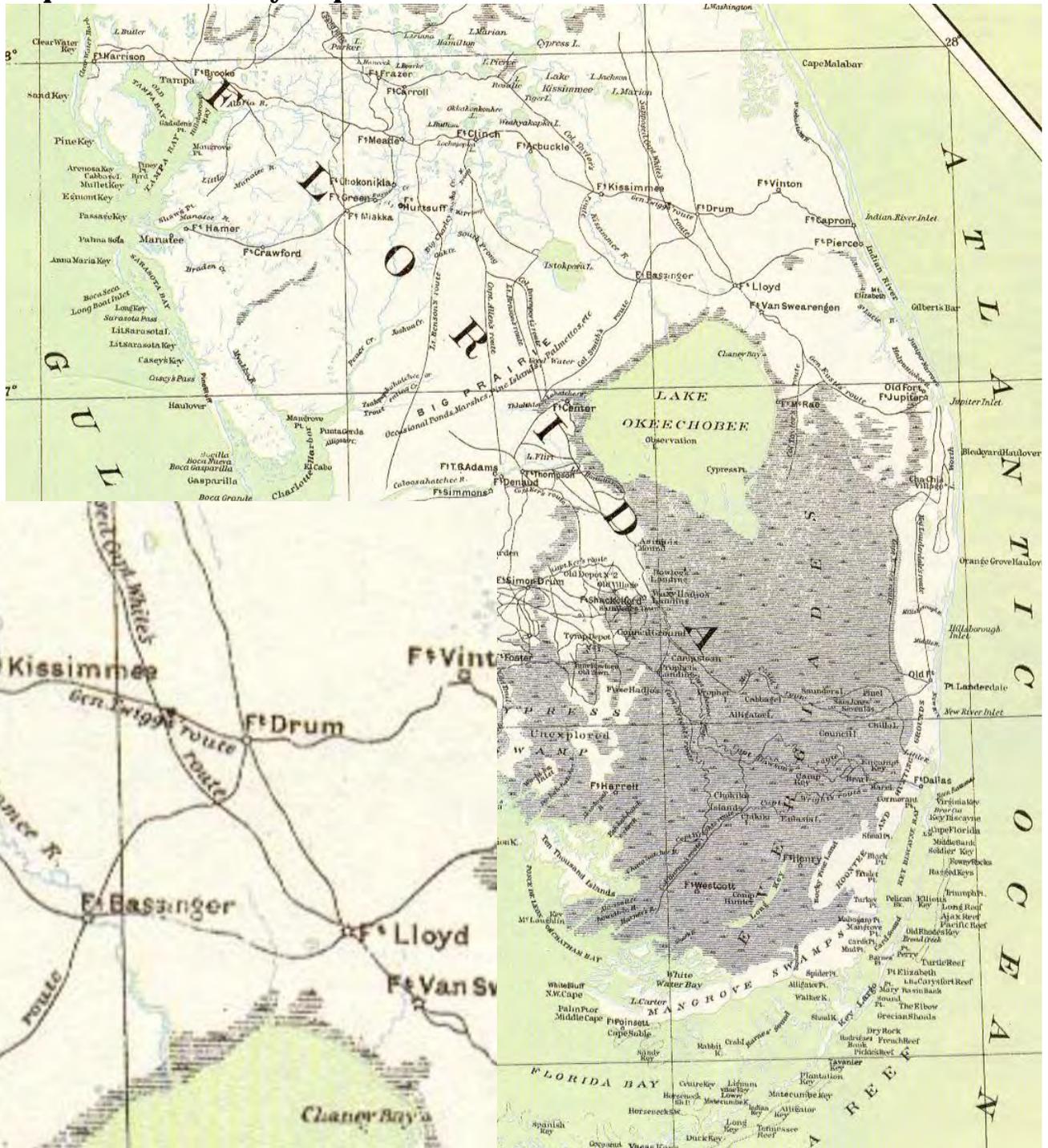
management, and prescribed burning. Staff from the Florida Division of Historic Resources may conduct additional investigations on those sites in the future.



A sketch of Fort Bassinger along the west side of the Kissimmee River from Capt. Backus's Diary, 1838.

Kissimmee River Management Areas General Management Plan 2014 through 2024
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Map 19: 1856 Military Map of the Interior of Florida



This reproduction of the 1856 Military Map of the Interior of Florida, showing the array of frontier forts and trails that were established in the Seminole Wars. Col. Taylor's route, as depicted on the map, that passes through Ft. Bassinger was where a large contingent of troops under the future President, Zachary Taylor, made their way to the shore of Lake Okechobee for one of the largest battles in the 2nd Seminole War

Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

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A sketch of buildings within Ft. Bassinger from the 1840s (above), and a drawing of a typical Florida frontier fort (below)



Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

5. Natural Resource Management

Policy 140-23 The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands.

Resource management includes all activities that manipulate, modify, and control natural features within the Management Areas. Conservation lands that were acquired by the District are managed and maintained in an environmentally acceptable manner and, to the extent practicable, restored and protected in their natural state and condition. Management responsibilities are defined by statute and are directed by best management practices. Goals and objectives for the Management Areas clarify resource management guidelines necessary to fulfill the District's land stewardship responsibilities. Land Stewardship resource management activities include cattle grazing, hydrologic restoration projects, mechanical vegetation management, prescribed burning, and exotic plant and animal control.

5.1 Restoration Projects

Policy 140-25(1) The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources.

Policy 140-25(1)(c) Where feasible, an attempt shall be made to restore a more natural hydroperiod on tracts where the drainage patterns have been altered.

Kissimmee River Restoration Project

The Federal 1992 Water Resources Development Act authorized the Kissimmee River Restoration project including the headwaters revitalization component of the restoration project, tied the headwaters benefit to the Kissimmee River Restoration project, and authorized a 50/50 cost sharing between the state and federal government for the total cost of the project. The ground breaking for construction of the restoration project was April of 1994 with the backfilling of 1000 feet of the C-38 canal in Pool B.

The restoration project is being implemented by the District's Kissimmee River Section in partnership with the U.S. Army corps of Engineers. The restoration project reestablishes historic inflows from Lake Kissimmee that will provide flow velocities and volumes similar to those that existed prior to channelization. It specifies continuous backfilling of 22 miles of the C-38 canal in Pools B, C, and D; removal of 2 water control structures and locks (S-65B and S-65C); recarving of approximately 9 miles of river channel; and acquisition of 85,000 acres of land. It also includes backfilling of local farm ditches and degrading of local farm levees. The remaining water control structures will be operated to provide more natural hydrologic conditions. Pool A is being left unmodified to allow continued

flood relief for the Kissimmee Chain-of-Lakes, and to serve as a control to gauge the benefits in comparison to the extensive restoration in Pools B-D.

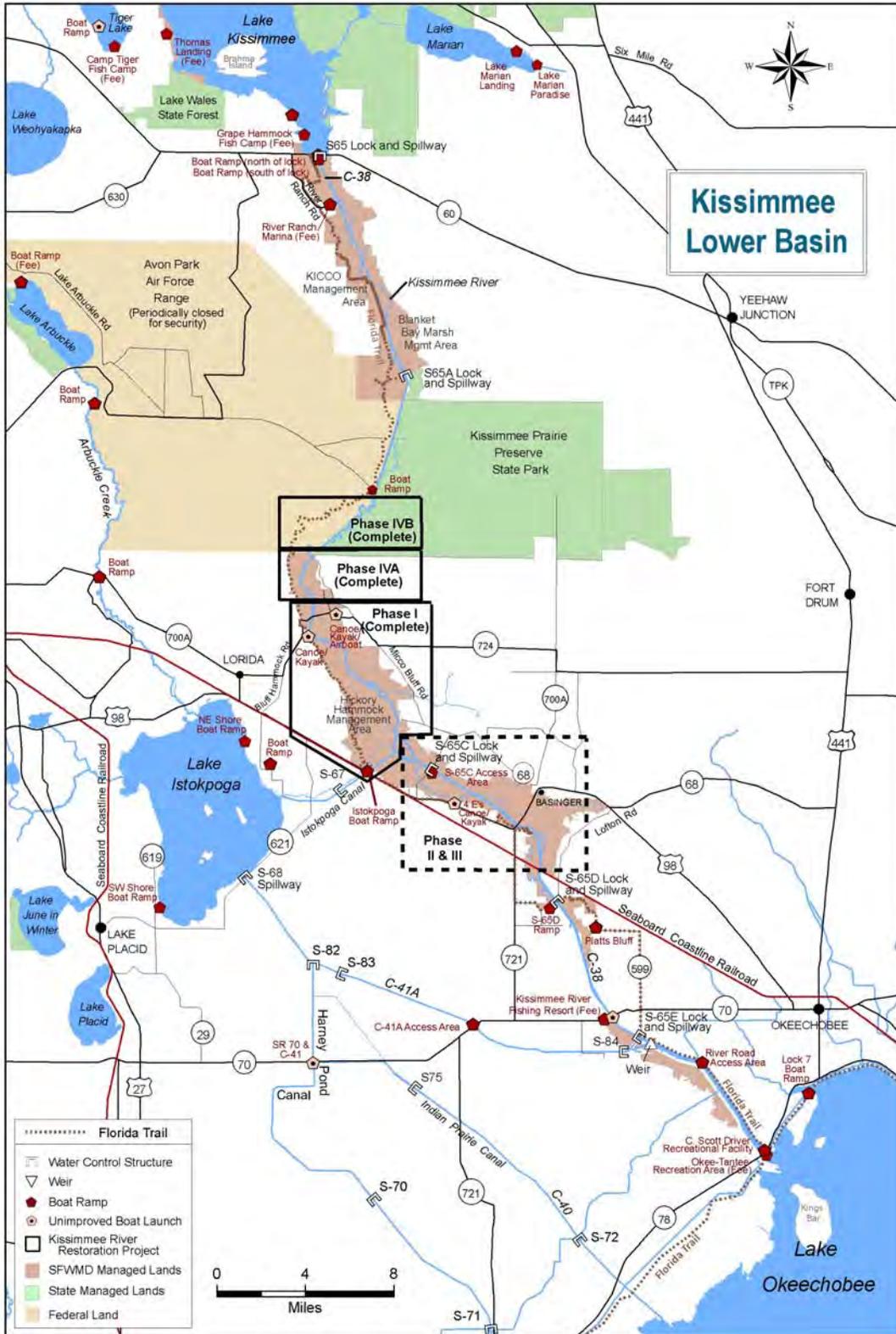
Construction of the Kissimmee River Restoration Plan was divided into four major phases, the first of which was initiated in 1999 (**Map 20**). The phases have been completed out-of-sequence. Phase I included removal of the S-65B structure, and backfilling of a small portion of lower Pool B and most of Pool C. Phase II/III has begun and will remove S-65C, and will backfill the remainder of Pool C and most of Pool D. Phase IV backfilled a section of Pool B north of the Phase I area. It is anticipated that the construction of the project will be completed within this plan period.

The first major phase of canal backfilling began in June 1999 and was completed in February 2001. In June 2000 the structure S-65B spillway, lock, and control houses were demolished. During this phase approximately 7 miles of the C-38 canal were back-filled using the spoil material (12 million cubic yards) originally dredged during the construction of the canal. The associated spoil piles were degraded to natural ground level. One and one-quarter miles of new river channel were dredged and 15 continuous miles of river were re-created. Already, environmental improvements have been observed. Sandbars and sandy bottom are signs of improvement in the river's hydrology. In formerly isolated sections of the river, oxbows are flowing again. Emergent and shoreline vegetation has reappeared and is thriving. Waterfowl and other wildlife are returning. Water quality is improving. The project is reestablishing the physical form of the river with its historical water levels and flows, while ensuring existing flood protection is maintained.

The three construction phases completed so far have backfilled 14 mi of canal, recarved 6 mi of river channel. These efforts reestablished flow to 24 mi of continuous river channel and allowed intermittent inundation of 7,710 ac of floodplain. The restoration plan will culminate with modification of the Kissimmee Basin water control structure operations including the implementation of a new stage regulation schedule for the Kissimmee Chain of Lakes.

Kissimmee River Management Areas General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

Map 20. The Kissimmee River Restoration Project



Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

Kissimmee River Restoration, Photos



The major construction work for the restoration is being completed by contractors for the U.S. Army corps of engineers, it involves re-establishing the historic river channels, removing water control structures, and backfilling the C-38 canal that has diverted the waters of the floodplain since the 1960s.



Demolition of a major control structure that had been used to regulate water levels in the artificial Pools (left); and the former location of the structure following floodplain restoration (right).

Kissimmee River Restoration, Photos



The drained floodplain, pre-restoration (left); and the post-restoration floodplain (right)



The natural floodplain, pre-channelization in 1955 (left); and the post-restoration floodplain (right)

Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

Starvation Slough

There are two dry prairie restoration sites at Starvation Slough. Both are on historically dry prairies that have been converted to cattle pasture. The northern site is approximately 60 acres. The restoration effort has included removing the sod with a commercial sod harvester, and then disking the site twice and applying herbicide to kill any remaining pasture grasses. Native seed was harvested elsewhere in Starvation Slough where the dry prairie was still intact, and seeded at the disked restoration site. To date there has been substantial recruitment of native species. Selective herbicide applications and mowing are employed to keep invasive exotic species from becoming established on the site.

The southern site has been a more passive restoration effort that included flattening a levee road, removing the sod by disking and herbicide, and allowing native species to recruit naturally. As with the northern unit, selective herbicide applications and mowing are employed to keep invasive exotic species from establishing. A wide variety of native plants associated with dry prairie communities have become established on this site as well.

5.1.1 Monitoring

Policy 140-25(3)(f)(2) Monitoring shall be conducted to identify landscape changes resulting from management activities.

Tracking environmental response to management and restoration activities provides valuable information on progress toward restoration objectives. Information obtained by monitoring specific sites assists land managers in making sound ecological choices for each unique parcel.

Using geographic information systems and global positioning technology, the District tracks the location of exotic plants throughout the Management Areas. This helps Land Stewardship monitor the effectiveness of the exotics control program and track the extent and severity of infestations.

The District has installed thirty five 360 degree photomonitoring points within the management areas. These photo points were utilized between 2007 and 2010 to observe and document the vegetative character of the property at that time. The photopoints have been established with permanent monuments that can be located with GPS coordinates and a metal detector, and are available for use in the future to compare site conditions with the 2007-2010 baseline condition.

The Kissimmee River Section has developed a monitoring program that is integrated with river restoration research objectives. The Kissimmee River Restoration evaluation program's database is designed to collect, manage, evaluate and disseminate information related to activities, observations, and measurements associated with restoration of the Kissimmee River and its

floodplain ecosystem. Program components are designed to track initial and long-term responses to the reconstruction of the ecosystem by evaluating a suite of indicators representing physical, chemical, biological, and functional components of the system. Components being evaluated include birds, fish, reptiles and amphibians, hydrogeomorphology, hydrology, invertebrates, vegetation, water quality and endangered species.

Kissimmee River Section Monitoring

Birds

- Evaluate avian populations in floodplain wetlands
- Evaluate avian use of remnant river channel habitats
- Determine habitat requirements and population size of nesting Florida mottled ducks
- Quantify use of floodplain wetlands by king rails, Virginia rails, sora, yellow rails, black rails and pied-billed grebes

Fish

- Determine species composition, density, biomass, and relative abundance of fish prior to river restoration.
- Determine species composition and relative abundance of fish subsequent to river restoration.
- Determine species composition and relative abundance of fish migrating between the river channel and floodplain habitats.
- Assess the importance of floodplain habitats to riverine fish.
- Evaluate the reproductive success of fish under channelized conditions.
- Establish baseline food web structure and major energy pathways within the channelized system.

Herptefauna

- Evaluate wetland amphibian and reptile community structure.
- Evaluate upland amphibian and reptile structure.
- Evaluate river channel turtle community structure.
- Evaluate reproductive phenology of amphibians.

Hydrogeomorphology

- Evaluate effects of reestablished flow on the geomorphology and substrate characteristics of the restored channel.

Hydrology

- Evaluate historic river channel geometry, velocities and discharges.

Invertebrates

- Evaluate habitat-specific community structure and functional attributes of river channel and floodplain aquatic invertebrate communities within the channelized river.
- Evaluate habitat-specific and system-wide production of river channel and floodplain aquatic invertebrate communities.
- Evaluate aquatic invertebrate drift within remnant river channels of the channelized river.

Vegetation

- Evaluate how aquatic vegetation is distributed within the remnant river channels.

Water Quality

- Evaluate dissolved oxygen concentrations in river channel.
- Evaluate turbidity and suspended solid concentrations in river channel.
- Evaluate phosphorous loads in river channel.

Endangered Species

- Evaluate use of the channelized floodplain by foraging wood storks.
- Evaluate wood stork reproductive success and nesting within the channelized system.
- Identify all active crested caracara territories, describe habitat characteristics, and evaluate reproductive success within the channelized river floodplain.
- Quantify use of the river by snail kites.

5.2 Vegetation Management

Policy 140-25(2)(d) Where practicable, an attempt shall be made to restore and maintain desirable vegetation to promote habitat diversity in areas where invasive exotic vegetation, grazing practices, or improved land uses have substantially altered the historic landscape.

Policy 140-25(3)(l) Mechanical equipment may be used in conjunction with prescribed burning and other management tools to control vegetation and restore habitat structure.

Vegetation management is a program component where the composition and/or structure of a vegetative community is physically altered by mechanical means to meet a management objective. The techniques used in vegetation management include mowing, disking, shredding, roller-chopping, timber thinning, and planting. These techniques are applied to one or more management objectives that may include:

- A step towards restoring a degraded vegetative community

- Improving an area's suitability as wildlife habitat
- Exotic species control or weed management
- Fuel management for prescribed burning purposes
- Clearing of vegetation for maintenance or project management purposes

Vegetation maintenance needs are identified annually by the regional land manager. Vegetation control and maintenance is executed by District field personnel or through contracts. Shredding of woody vegetation occurs as needed in pine and prairie communities to reduce fuel loads and open the understory which increases plant diversity and improves wildlife habitat. These areas are subsequently maintained with fire which is a more cost-effective and beneficial technique for managing vegetation in those types of plant communities.

5.2.1 Exotic/Invasive Plants

Policy 140-25(2)(c) Management practices will strive to identify existing infestations and implement appropriate control or eradication measures.

Policy 140-25(3)(b) Exotic plant control in all management areas shall strive to attain a level of success where periodic maintenance eliminates the infestation or reduces the coverage of exotic plants.

South Florida's subtropical climate provides an excellent growth environment for the rapid spread of exotic plants that can cause extensive alterations to natural ecosystems. Environmental changes caused by extensive hydroperiod alterations have contributed to the expansion of exotic plant species in natural areas. Exotic plant infestations can result in partial or total displacement of native plants, loss of wildlife habitat, and the degradation of public use areas depending on the severity of the infestation.

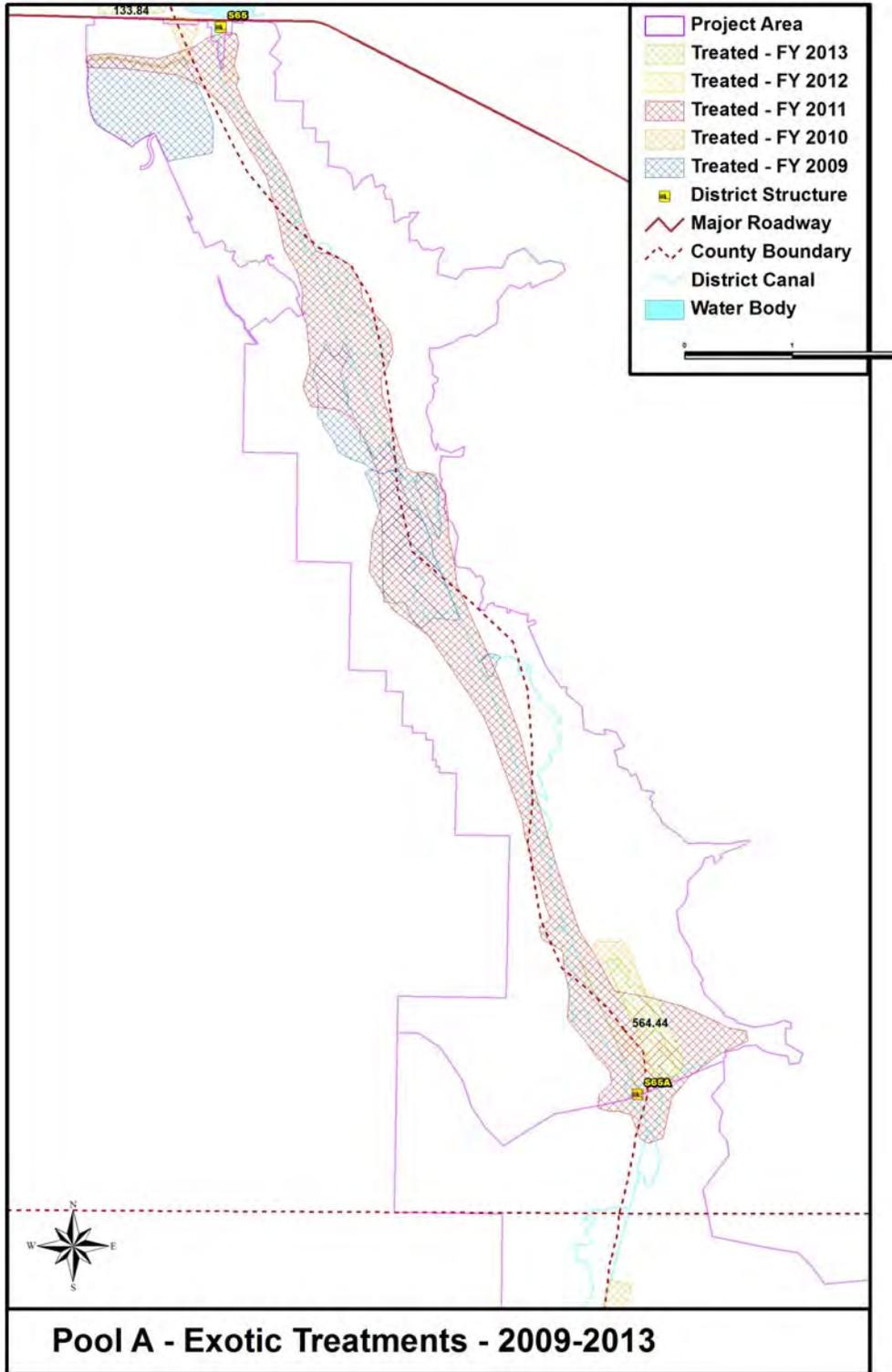
Land Stewardship targets Category I and II non-native plant species as identified on the Exotic Pest Plant Council's biennially updated list of *Florida's Most Invasive Species* (<http://www.fleppc.org/>). Category I species include non-native plants that invade and disrupt Florida native plant communities. Category II plants have the potential to invade and disrupt natural successional processes. Both Category I and II exotics are considered invasive and a threat to the function and ecological stability of Florida's natural communities.

The District has treated the following Category I plants within the Management Areas: Japanese climbing fern (*Lygodium japonicum*), Old World climbing fern (*Lygodium microphyllum*), cogon grass (*Imperata cylindrica*), Brazilian pepper (*Schinus terebinthifolius*), and tropical soda apple (*Solanum viarum*). Of particular concern is climbing fern. The District treats and surveys the climbing fern-infested areas several times a year to control established infestations and locate new ones.

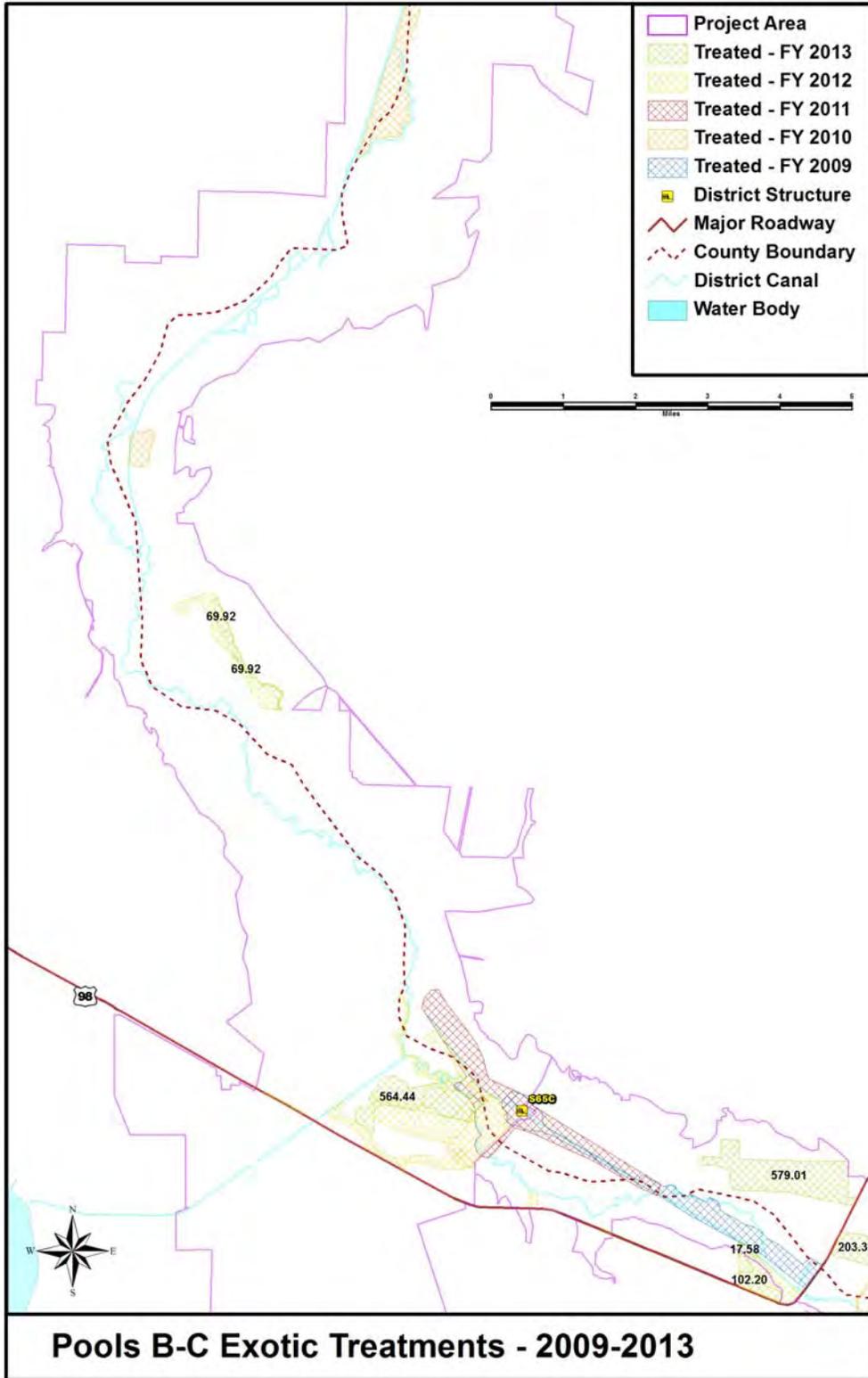
Invasive exotic plant control measures include a combination of herbicide application (aerial and ground), biological control, prescribed fire, mowing, and physical removal. When restoration projects are complete the District will also be able to use inundation as a means of exotic control. Selection of control measures is dependent upon species type, environmental factors, and natural communities impacted. Private vendors are contracted to conduct exotic plant control activities within the management areas. Application methods for chemical control include both aerial and ground application depending on site location and infestation level. In addition District staff and volunteers have released the tropical soda apple leaf beetle, a biological control agent that has brought significant improvements in the control of tropical soda apple.

District field technicians also provide supplemental support on small or sporadic infestations. Generally, treatments in the Management Areas are scheduled so that each unit is covered annually or bi-annually depending on available funding. Areas of treatment are scheduled based on surface water conditions, time since last treatment, severity of infestation, and consistency with other management operations and priorities. (**Maps 21 – 23**).

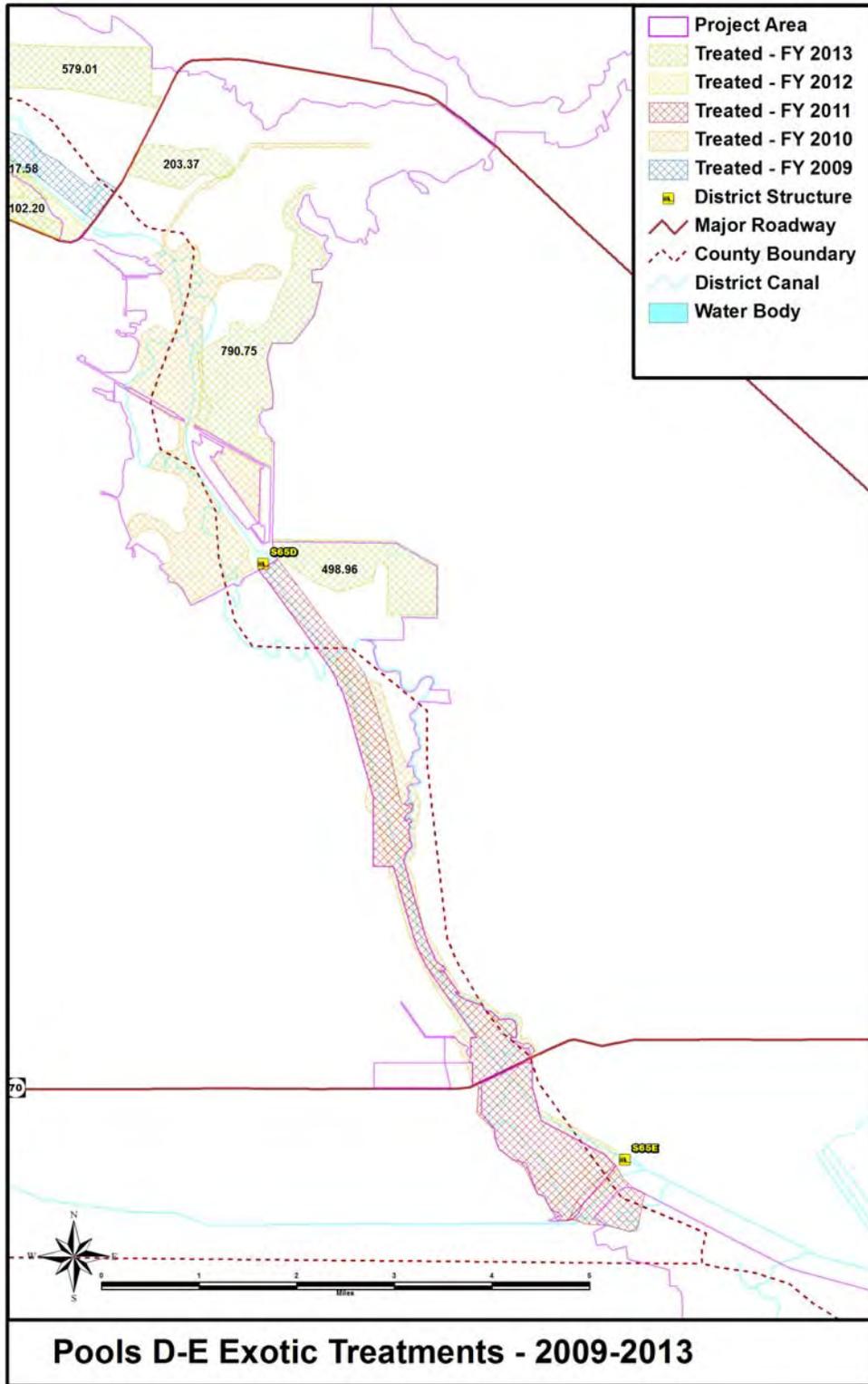
Map 21. Pool A Exotic Treatments 2009 - 2013



Map 22. Pools B - C Exotic Treatments 2009 - 2013



Map 23. Pools D - E Exotic Treatments 2009 - 2012



5.2.2 Rare, Threatened and Endangered Plant Species

Policy 140-25(2)(b) Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

Listed species are those plants and animals considered rare within a specific geographic area by the U.S. Fish and Wildlife Service, the Florida Fish and Wildlife Conservation Commission, Florida Natural Areas Inventory, or the Florida Department of Agriculture and Consumer Services. The plant list of the Management Areas (Appendix D) contain several listed species (**Table 3**).

Table 3. Plants Occuring on the Kissimmee River Management Areas that are listed by the Florida Department of Agriculture and Consumer Services as Threatened (T), Endangered (E), or Commercially Exploited (C).

| Common Name | Scientific Name | Status |
|--------------------|----------------------------------|--------|
| Catesby's Lily | <i>Lilium catesbaei</i> | T |
| Florida Jointweed | <i>Polygonella basiramia</i> | E |
| Giant Orchid | <i>Pteroglossaspis ecristata</i> | T |
| Cardinal Wild-pine | <i>Tillandsia fasciculata</i> | E |
| Giant Wild-pine | <i>Tillandsia utriculata</i> | E |

Land Stewardship establishes appropriate fire and hydrologic regimes, and controls invasive exotics in natural communities with the intent of perpetuating listed plant species. District Public Use Rules aid in the protection of native habitat and specifically prohibit destroying, defacing, or removing any natural feature or native plant on District lands. In this manner, listed plants are given lawful protection and environmental conditions suitable for their growth and reproduction. Information on listed wildlife species is continued in Section 5.4.3.

5.2.3 Forest Resources

Policy 140-25(3)(h) Sustainable use of forest resources shall be conducted where these activities adhere to a series of environmental criteria (see 1999 Forest Management Plan) that meet Land Stewardship Program goals. Timber contractors will be required to meet silvicultural Best Management Practices (BMP) developed for Florida forests.

Policy 140-25(5)(b)(3) Timber sales will be conducted to improve forest health or to support specific forest management goals.

District policy designates its properties as multiple-use resources, which include timber harvesting. However, such activity must be compatible with Land Stewardship goals and objectives and meet strict environmental criteria:

- Sites considered for high-density pine plantings are currently in an “improved” or disturbed state (i.e. bahia pasture, existing pine plantation)
- Sites to be harvested are scheduled for hydrologic restoration and existing timber will likely be lost as a result of flooding
- The area does not contain any significant resources (e.g. endangered species) that may be harmed by changes in land use
- Forest operations would not require major road construction or improvement for accessing and processing timber, particularly within or across wetlands or other sensitive plant communities
- The area contains timber that requires salvage following fire and/or insect or disease damage, and could be subject to a sanitation harvest with minimal environmental impact
- The area has special needs for endangered species (e.g., red-cockaded woodpecker) management that requires timber stand improvement
- Harvest or planting would not negatively impact public use
- Timber harvests would return forests to a more natural structure and improved forest health

A timber thinning project is being evaluated for the southernmost pine stand at KICCO for red-cockaded woodpecker habitat improvement.

Pine plantings have occurred on 66 acres at Hickory Hammock, the 9 acres at the 4Es portion of Cornwell Marsh, and 53 acres at Ft. Basinger. These pine areas will be thinned to a natural density of about 30-35 ft² basal area/acre. The Hickory Hammock pines will be thinned to a basal area of less than 30-35 ft²/acre to be compatible with the wet and dry prairie understory.

5.2.4 Range Resources

Policy 140-25(3)i Range management and grazing will be considered on improved or native ranges when the introduction of cattle will not conflict with other natural resource management and public use goals.

Livestock grazing has occurred over the last century within south and central Florida and continues to be an important land use today. The Kissimmee River Valley has been grazed for over four centuries since the early Spaniards stocked the Florida Peninsula with cattle. Cattle grazing is employed by the District and other land management agencies as a management tool, particularly for the reduction of fire fuel loads and maintenance of open habitat for the benefit of

native wildlife. The revenue producing lease program provides many benefits, such as:

- On-site management and security for District-owned lands at no cost to the District
- Minimizing District expenses by generating revenue from non-governmental sources to off-set District management, maintenance and resource protection costs
- Minimizing impacts to the local agricultural economy by keeping viable agricultural lands in active production for as long as possible
- Minimizing fiscal impacts of public land ownership to the local government by keeping lands on the tax roll

Grazing Lease Parameters

The District often exercises the option to lease grazing rights to the public when a property is acquired. Lease terms include a maximum stocking rate based on forage availability and the assignment of certain management responsibilities that may include, but are not limited to infrastructure maintenance and/or fence construction and repair. The District restricts activities that could be detrimental to the environmental integrity of the area and requires all lessees to implement best management practices as provided by the Florida Department of Agriculture and Consumer Services. Leased lands remain on the county property tax rolls with the tax payments paid by the lessee.

There are currently seven active grazing leases within the Kissimmee River Management Areas, reduced from twelve in the last plan update due to the continued progress of the Kissimmee River Restoration. The remaining leases lie outside of existing or planned restoration areas.

5.3 Fire

Policy 140-25(5)(c)(3) Prescribed fire will be a primary management tool on District lands and will be applied within fire-maintained communities at appropriate intervals.

The majority of natural communities on District lands require frequent fire to maintain their vegetative characteristics and biodiversity. Wildfires no longer occur with historical frequency or extent, and this has altered natural community structure and function. Prescribed fire attempts to mimic the benefits of natural wildfires that historically reduced fuel loads, recycled soil nutrients, and maintained natural communities by inhibiting hardwood encroachment and stimulating fire-adapted plant growth and reproduction. The District recognizes the benefits of fire and has integrated prescribed fire planning and application into its land management strategy.

5.3.1 Fire History

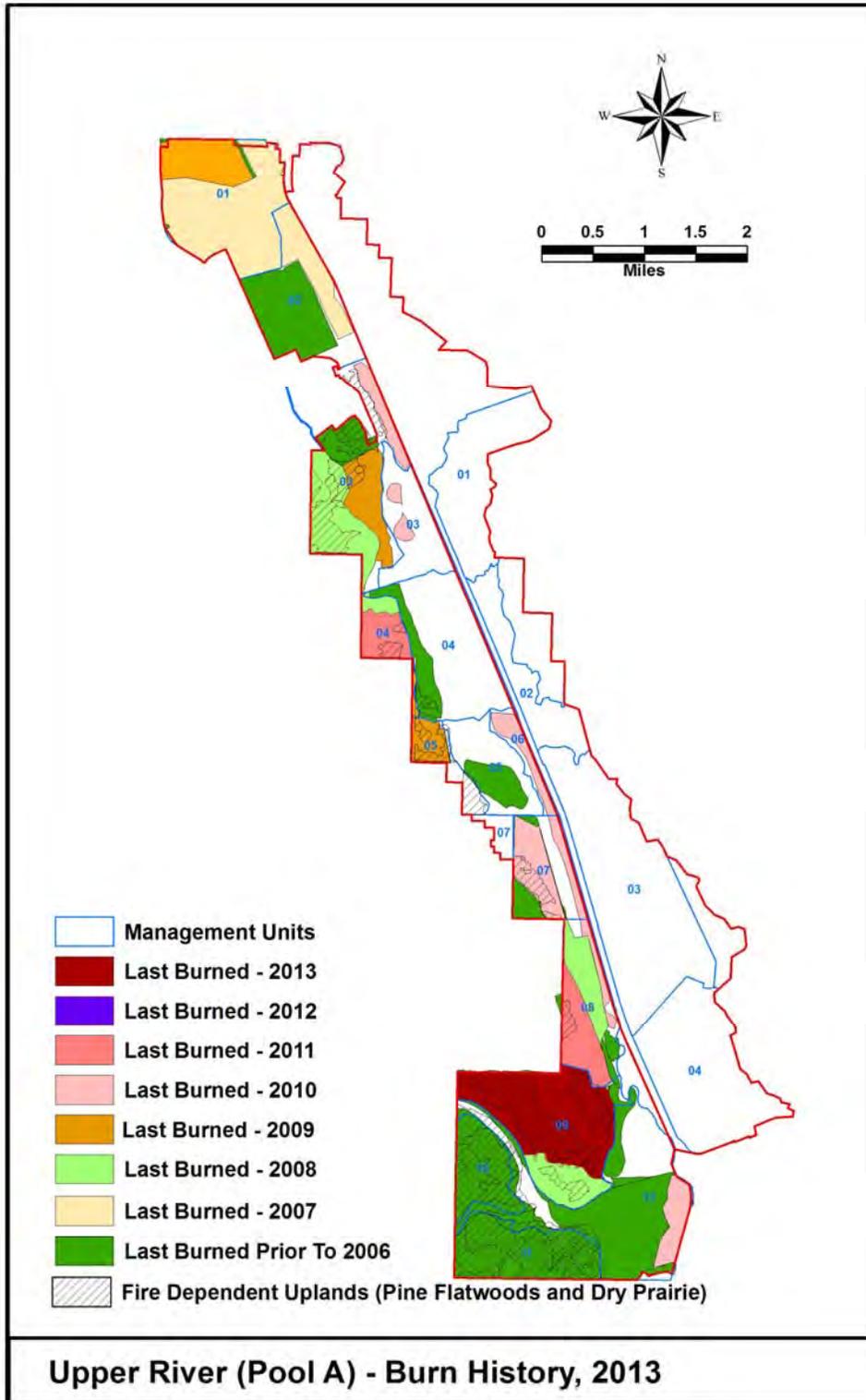
Pool A (Maps 24 a-b)

The District began its prescribed fire planning for the Management Areas in the early 1990s and, since then, has conducted prescribed fires regularly in the marshes, prairies, and flatwoods. The small areas of scrub are burned less frequently. The previous owner of KICCO burned the property at a frequency of about every other year. The District has continued prescribed burning on a rotation based on the need of the plant communities and the response of those communities to the last burn conducted. Since most of Blanket Bay marsh is improved pasture and serves as a control for the Kissimmee River Restoration Program, it has not been burned. There is an overgrown marsh in the south end of Blanket Bay where the District is planning on utilizing fire and shredding as a means to control the woody vegetation that has invaded the community. Fire data (prescribed and wild) is maintained in a Geographic Information System to produce cumulative burn maps of the property.

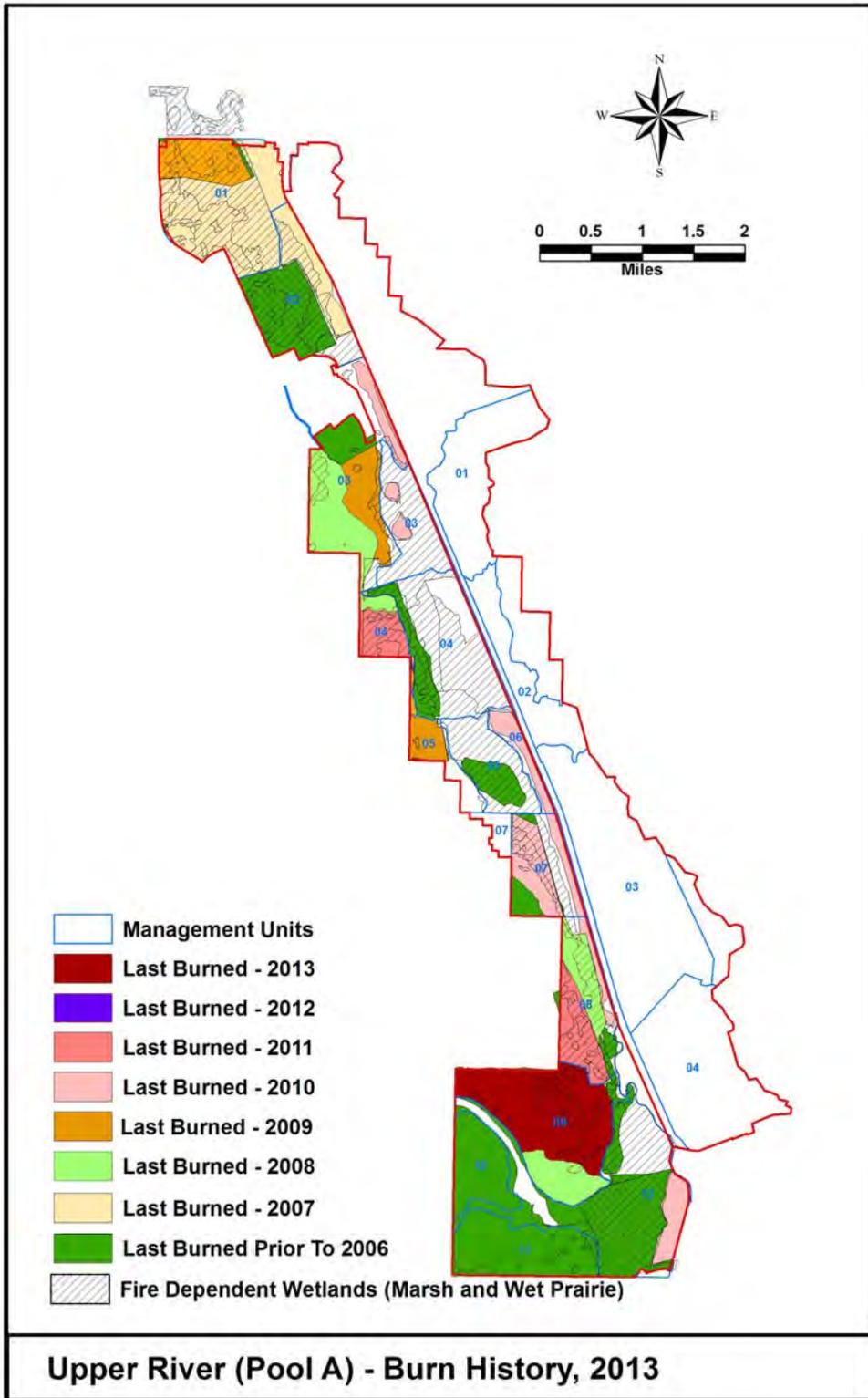
Pool C/D (Maps 24 c-f)

Documented fire history is not available for the southern Management Areas prior to District acquisition. However, pasture management practices in this region indicate native range areas were probably burned regularly to improve forage. Other areas on the properties may have experienced fire exclusion because of buildings, roads, ditches, or man-induced conditions. Many of the natural community types found on these parcels require varying frequencies of prescribed fire. District prescribed burning was first initiated in 1990 on Hickory Hammock. Oak Creek and Starvation Slough have experienced burn treatments periodically since 1995.

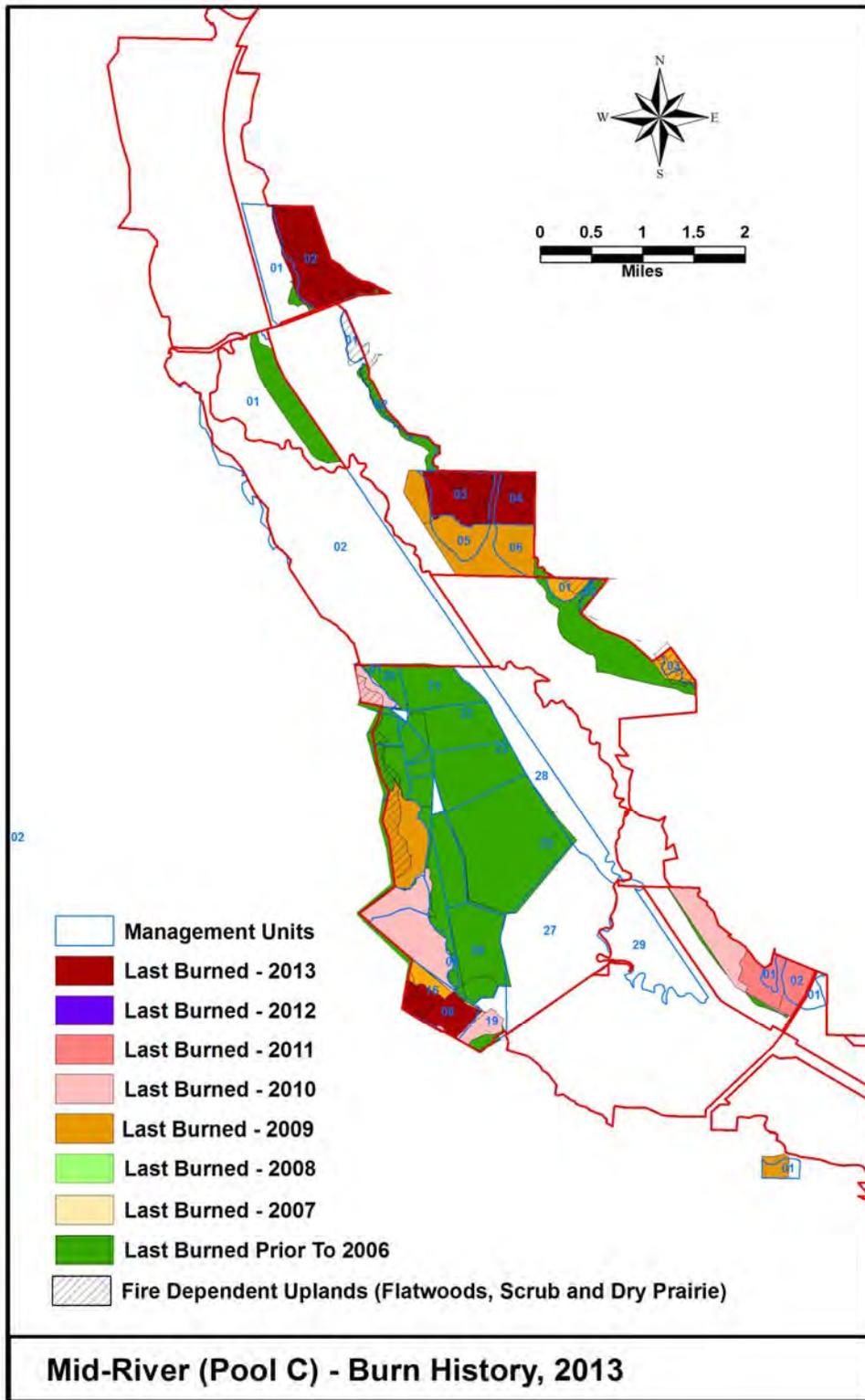
Map 24a. Fire History Map for Kissimmee River Pool A, Uplands



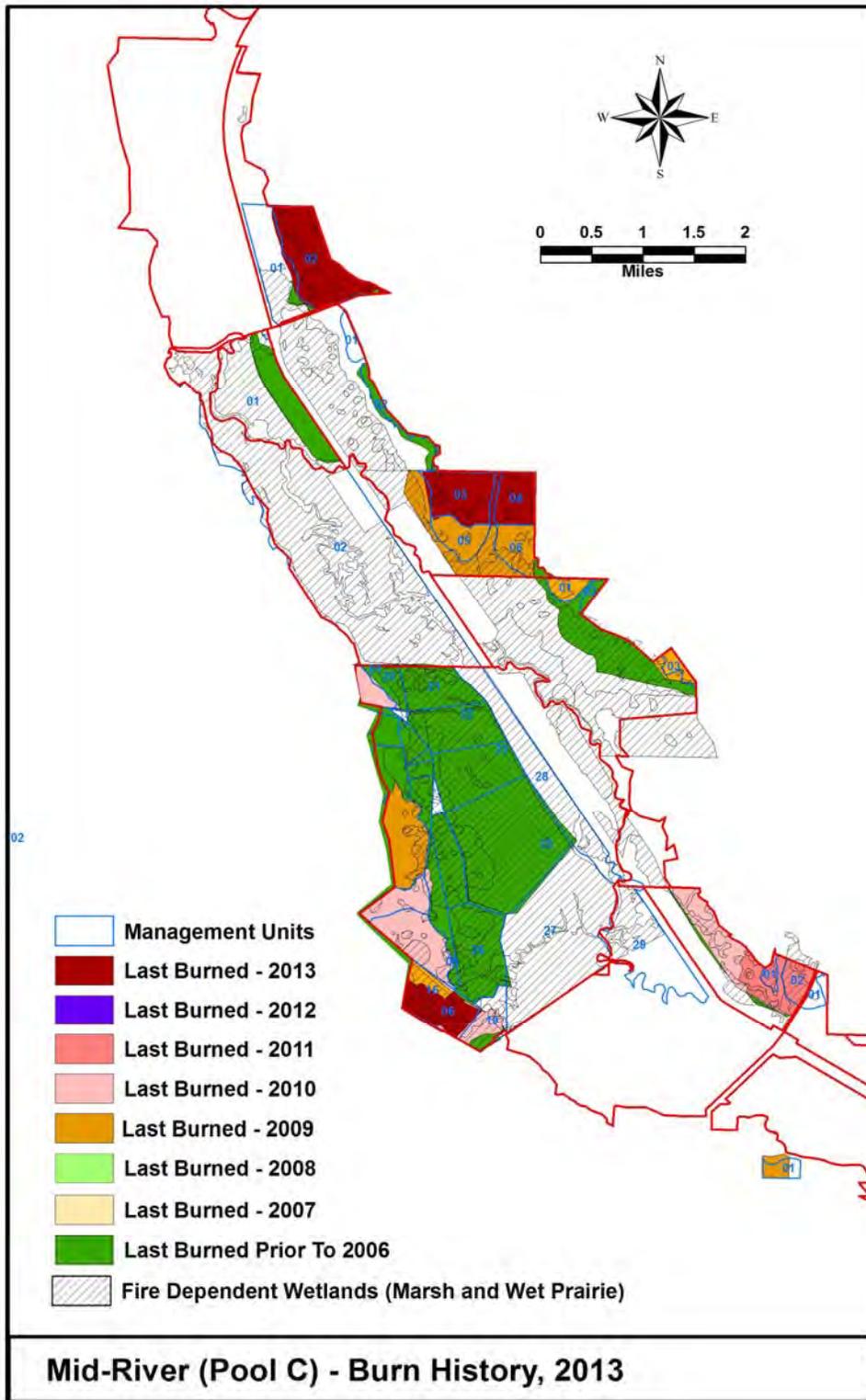
Map 24b. Fire History Map for Kissimmee River Pool A, Wetlands



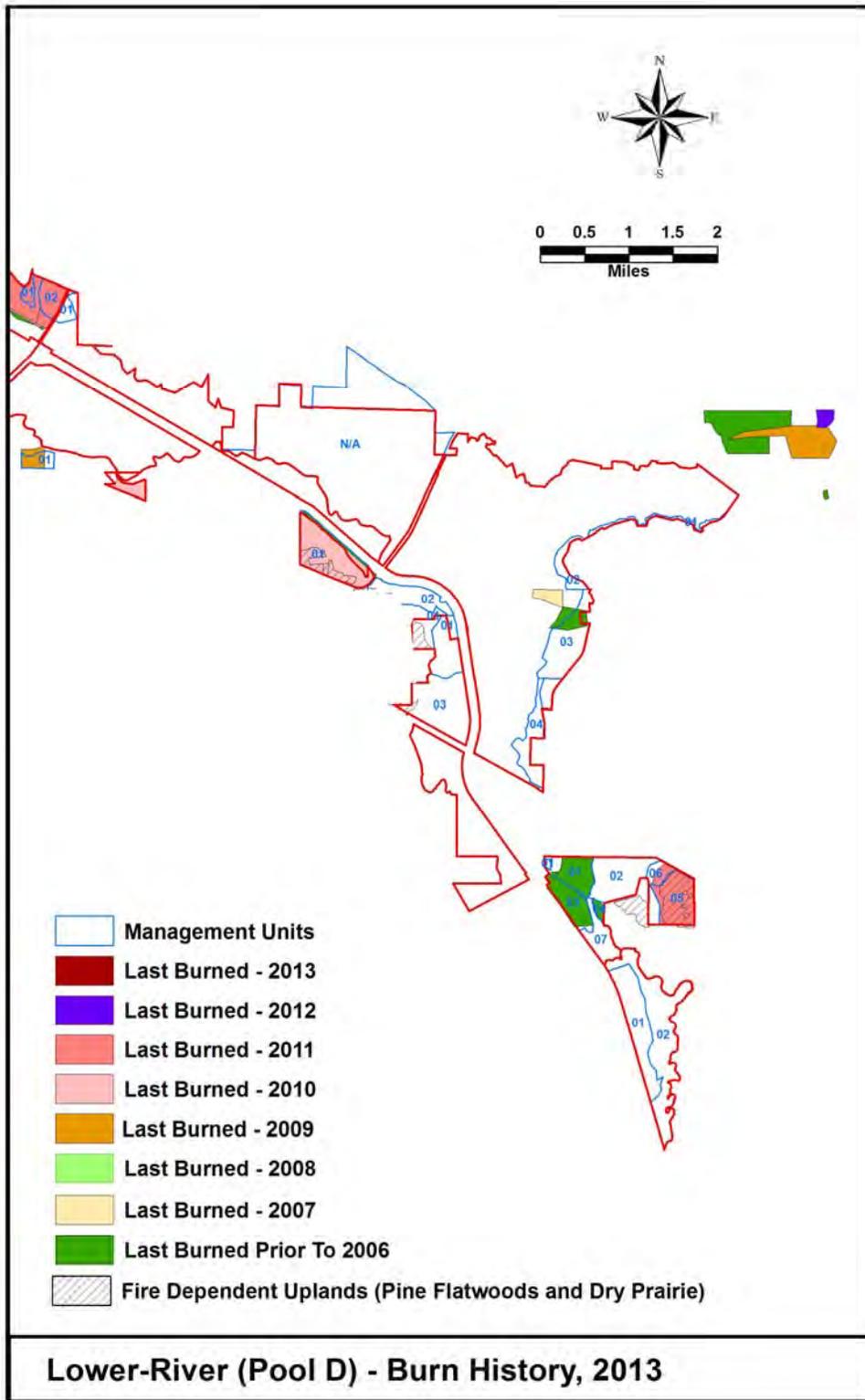
Map 24c. Fire History Map for Kissimmee River Pool C, Uplands



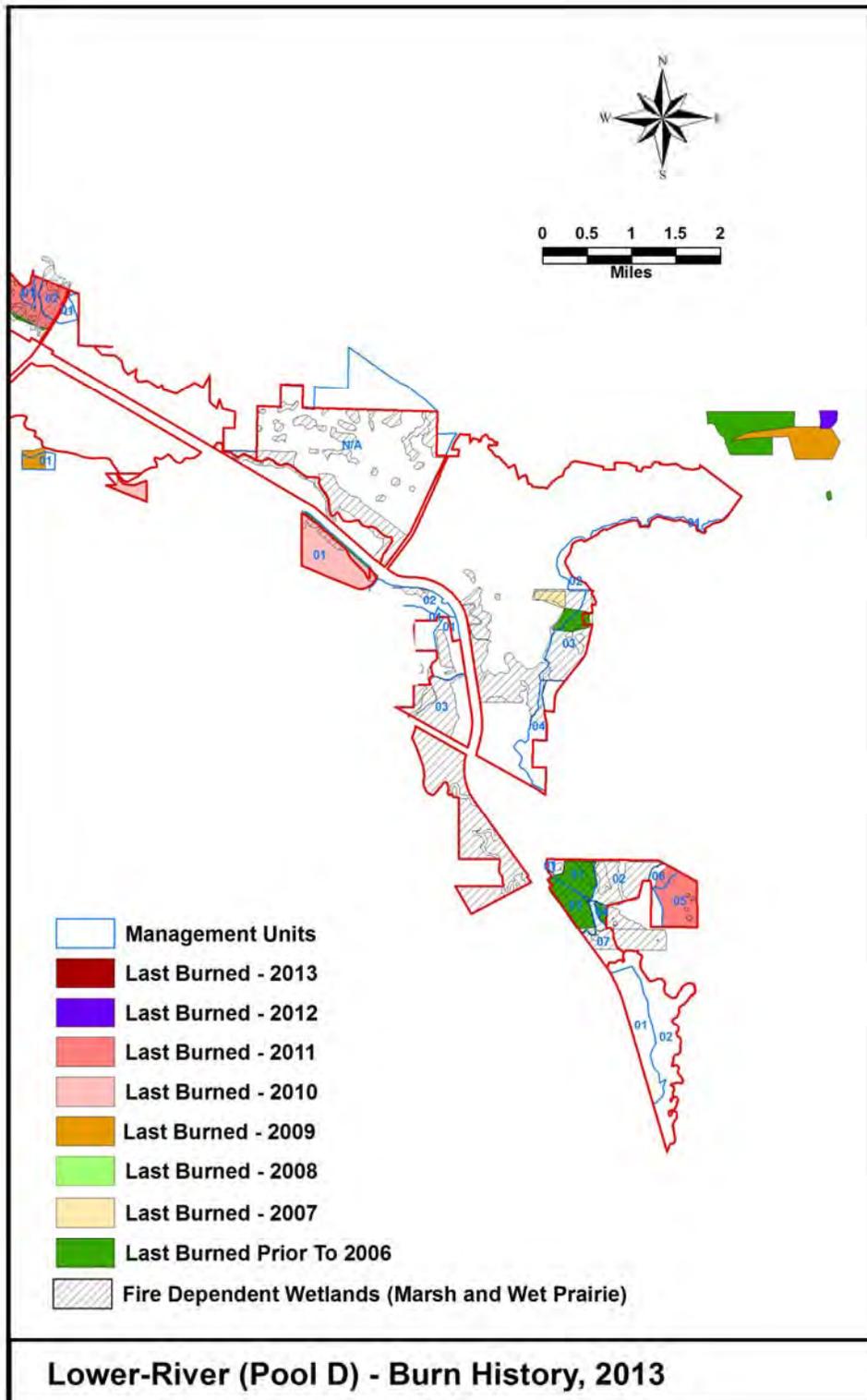
Map 24d. Fire History Map for Kissimmee River Pool C, Wetlands



Map 24e. Fire History Map for Kissimmee River Pool D, Uplands



Map 24f. Fire History Map for Kissimmee River Pool D, Wetlands



5.3.2 Prescribed Fire Planning

Burn units have been established within the Management Areas. Seasonal planning considers potential burn areas based on their location, natural community types, fire history, and fire management objectives and constraints. The Land Stewardship Section bases fire management plans on ecological research and professional experience. Fire frequency schedules for each natural community consider recommendations provided in *The Natural Communities of Florida* (Florida Natural Areas Inventory, 1990). To mimic historic fire conditions, Land Stewardship emphasizes growing season burns (April-September) where practical. Natural firebreaks are utilized where possible to promote historic fire patterns, avoid soil disturbance, and reduce hydrologic flow disruption created by fire lines. Listed species life requirements are elements of prescribed fire planning. Application of fire, with appropriately timed herbicide treatments, is used as a tool for the control of exotic and invasive plants.

Burns are executed using proven methods as defined by the Prescribed Burning Act of 1990, Chapter 590.026 Florida Statutes. This legislation and associated administrative rules outline accepted forestry burn practices and are administered through the Florida Forest Service. Land Stewardship has a three-person prescribed fire crew in the Okeechobee Service Center and utilizes other District staff and cooperating agency staff— Florida Forest Service, the Florida Park Service, and the Florida Fish and Wildlife Conservation Commission to conduct burns. All Land Stewardship staff have completed the state certified burn course to ensure safety and proper technique.

Prescribed fire is applied within the Management Areas at appropriate fire intervals for each natural community. The District concentrates on applying fire to each area of the property, in order to reduce accumulated fuel loads, improve habitat, and provide a safer basis for future burns of increased frequency and lower intensity. Planning will emphasize yearly burn acreage to attain a 3-5 year rotation for flatwoods and prairie communities.

Prescribed Fire and Carbon Sequestration

The District currently stores carbon on the lands it manages in vegetation and organic soils. Each year, the amount of carbon increases as young forests grow and marshes steadily fix carbon into peat. This is also known as carbon sequestration. It is important to manage the District's land resources in a manner to maximize the amount of carbon that is sequestered, while minimizing carbon dioxide and other greenhouse gas emissions. Prescribed fire is a tool that when used under the right conditions and with the right frequency can increase the rate at which a fire-dependent natural community can grow and store carbon. Following a burn, there is a subsequent spike in primary productivity caused by a release of nutrients and exposure of more surface area to sunlight, as well as post-burn increases of both above and below ground carbon stores.

Prescribed fire guidelines for maximizing carbon storage that the District considers when conducting prescribed burns include:

- Burning at 3 to 5 year intervals
- Conducting late winter burns
- Implementing a proper mop-up phase of the prescribed fire to extinguish smoldering stumps is important to reduce unnecessary carbon and nitrous oxide releases, flaming combustion releases much less carbon than smoldering combustion
- Avoiding muck fires and conditions that lead to muck fires as they release large quantities of carbon and nitrous oxide
- Keeping fuel density low to avoid the possibility of massive carbon releases in wildfire

5.3.3 Wildfire Suppression

Policy 140-25(3)(d) The Florida Forest Service will be notified of all wildfires on District lands. Land Stewardship will provide initial suppression when commensurate personnel and equipment are available.

Lightning-caused wildfires are a common occurrence throughout Florida, including the Kissimmee River Management Areas. It is District policy, and state law, that the Florida Forest Service is notified when a wildfire occurs on Land Stewardship-managed properties. Land Stewardship staff assigned to the area respond to and, if appropriate, begin suppression of area wildfires when detected. The Florida Forest Service is called immediately and a fire assessment is made.

5.4 WILDLIFE MANAGEMENT

A primary objective in the stewardship of the Management Areas is to maintain healthy fish and wildlife populations. Land Stewardship accomplishes this in several ways:

- Performing land management activities that maintain and/or improve native wildlife habitat
- Conducting specific management practices to benefit protected species
- Conducting wildlife inventories through a partnership with the Florida Fish and Wildlife Conservation Commission and prohibiting activities that have the potential to negatively impact listed species
- Following management guidelines for listed species protection as determined by the *Multi-species Recovery Plan for the Threatened and Endangered Species of South Florida, Volume 1*, (U.S. Fish and Wildlife Service, 1998)
- Reducing non-native pest species populations where appropriate
- Maintaining a master file of confirmed and potential wildlife species

- Cooperating with the Florida Fish and Wildlife Conservation Commission on wildlife management issues, including wildlife inventories and evaluating management actions.

Wildlife management in the Management Areas is directed toward production of natural species diversity consistent with the biological community types present. The Florida Fish and Wildlife Conservation Commission maintains a lead role in wildlife management in the Management Areas by managing public hunting activities.

5.4.1 Game Management

Policy 140-25(4)(b)(4) Florida Fish and Wildlife Conservation Commission regulations shall govern hunting in areas opened for such use.

The Kissimmee River Management Areas contain two Wildlife Management Areas and a Public Use Area established by the Florida Fish and Wildlife Conservation Commission (**Maps 25-27**). The Commission administers several hunting seasons in the fall, small game and hog hunts in late winter, and spring turkey hunts. Management activities directed towards game management include establishing bag limits for game species and regulating hunting pressure.

5.4.2 Exotic/Invasive Animal Species

Wildlife pest species are those non-native species that are harmful to native wildlife, that negatively impact native vegetation and wildlife or interfere with management objectives. The Land Stewardship's goal for wildlife pest management is to reduce populations to attain an acceptable level of impact to natural plant and animal communities. The District's land manager uses monitoring, visual observation, and consultation with the Florida Fish and Wildlife Conservation Commission to define an acceptable level of impact. When population control measures are warranted, land managers consult with the Commission to determine effective and appropriate control techniques. The effects of pest population control efforts are monitored by periodic site evaluations.

The feral hog is a pest species that occurs within the Management Areas. Disturbance caused by this species negatively impacts natural communities and interferes with land management operations. Although valued by some members of the public as a game animal, the feral hogs' high fecundity, adaptability, rooting behavior, omnivorous diet, and ability to quickly colonize areas raises environmental concerns. Their disruption of soil and vegetation alter natural communities and can be especially damaging in sensitive habitats that are slow to recover. Hog disturbance has occurred within most of the management area including wetland communities. Land management objectives are affected when rooting disturbance disrupts prescribed burns by preventing the spread of fire.

Areas of disturbed soil are also more susceptible to exotic plant invasion. Rooting can also damage hiking trails, have a detrimental impact on small animal populations, and ground-nesting birds, and can damage infrastructure.

Currently, feral hog populations have been declining in KICCO due to the installation of a 12 mile long hog fence on its western border. Control methods are decided in consultation with the Florida Fish and Wildlife Conservation Commission and include providing public hog hunts and utilizing no-cost hog control agents where necessary. Contracted hog-control agents are currently used on all management units on the river and other satellite properties.

5.4.3 Rare, Threatened and Endangered Animal Species

Policy 140-25(2)(b) Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

Several species listed as endangered, threatened, or of special concern by state and federal agencies occur within the Management Areas, including gopher tortoise (*Gopherus polyphemus*), wood stork (*Mycteria americana*), Sherman's fox squirrel (*Sciurus niger shermani*), Florida bonneted bat (*Eumops floridanus*), and Indigo snakes (*Drymarchon corais couperi*) (**Table 4**). Additionally, the Commission has classified most of the Management Areas as a Regional Biodiversity Hotspot. Hotspots represent areas which have high overlap for declining species of wildlife plus known occurrences of rare flora, fauna, and natural communities.

District land management activities including prescribed burning, hydrologic restoration, exotic vegetation eradication, understory control, and selective forest thinning improve natural environmental characteristics that benefit listed species as well as a variety of other indigenous wildlife. Staff from the Archbold Biological Station have a monitoring program in place for red cockaded woodpeckers and scrub jays at KICCO.

Table 4. Listed Animal Species: (T) Threatened, (E) Endangered, (SSC) Species of Special Concern

| Scientific Name | Common Name | Status | |
|----------------------------------|----------------------|--------|-------|
| | | Fed | State |
| <i>Aramus guarauna</i> | Limpkin | | SSC |
| <i>Athene curicularia</i> | Burrowing Owl | | SSC |
| <i>Caracara cheriway</i> | Crested caracara | T | |
| <i>Drymarchon corais couperi</i> | Eastern indigo snake | T | |
| <i>Egretta caerulea</i> | Little blue heron | | SSC |
| <i>Egretta thula</i> | Snowy egret | | SSC |
| <i>Egretta tricolor</i> | Tri-colored heron | | SSC |
| <i>Eudocimus albus</i> | White ibis | | SSC |

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| | | | |
|---------------------------------------|-------------------------------|---|-----|
| <i>Eumops floridanus</i> | Florida Bonneted Bat | E | |
| <i>Falco sparverius paulus</i> | Southeastern American kestrel | | T |
| <i>Felis concolor coryi</i> | Florida Panther | E | |
| <i>Gopherus polyphemus</i> | Gopher tortoise | | T |
| <i>Grus canadensis pratensis</i> | Florida sandhill crane | | T |
| <i>Mycteria americana</i> | Wood stork | E | |
| <i>Pituophis melanoleucus mugitus</i> | Florida pine snake | | SSC |
| <i>Sciurus niger shermani</i> | Sherman's fox squirrel | | SSC |
| <i>Trichechidae manatus</i> | Florida Manatee | E | |

6. Public Use

Policy 140-23 The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands.

Section 373.1391 (1)(a) Florida statute states that wherever practical, lands acquired by the District shall be open to the general public for recreational uses. The District encourages public use of management areas for appropriate natural resource-based activities. All District lands are available for public use, except in rare instances where there is no legal public access or where reservation/lease restrictions or construction activities prohibit public entry.

Public input into the management of the area is solicited at the quarterly Water Resource Advisory Committee Recreational Issues Workshops. Adjustments to public use opportunities are made on an ongoing basis through the Recreational Issues Workshops and through rulemaking through the 40E-7, F.A.C. public use rule. This plan addresses public use matters only to describe the scope of public use opportunities available or planned as of the date of the plan, it is not intended to set public use policies through the plan period.

The determination of compatible public uses is based on the following criteria:

- Consistency with the reason the lands were acquired
- Restrictions and/or prohibitions imposed by easements, leases, reservations, purchase agreements, and other legal mandates
- Infrastructure and support facility requirements, such as fences, gates, signage, entry design, stabilized off-road parking, trails, campsites, maintenance, and other operational and budgetary impacts
- Opportunities for persons with disabilities
- Limitations on use resulting from endangered species, other sensitive natural resources, archeological resources, or land management practices
- Public health, safety and welfare
- Protection of resources

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A wide variety of recreational activities are appropriate and encouraged in the Management Areas including boating, bicycling, canoeing, camping, equestrian use, fishing, hiking, and hunting (**Table 5**). In addition, new boat ramps have been constructed at the Istokpoga canal along Hwy 98, and at the S-65 D locks to provide access to the restored river. Campsites, accessible from the river, have been established throughout the management areas. The Florida National Scenic Trail winds its way through the management areas, and is currently being relocated from the west side to the east side of the river. Sections of general hiking trails on the west side will continue to be maintained by volunteers from local hiking clubs.

Table5. Recreational Opportunities

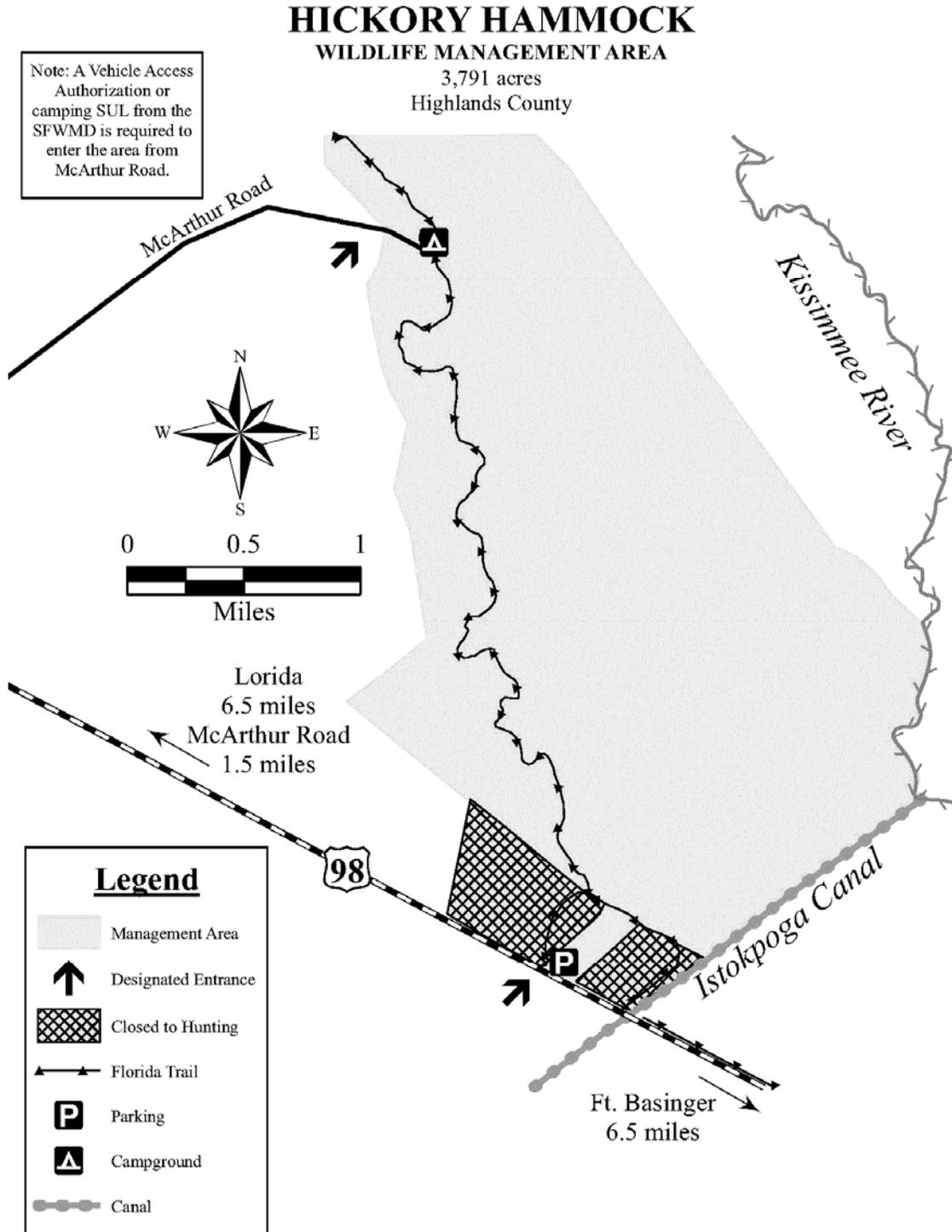
| Unit | Airboating | Bicycling | Canoeing | Camping | Education / Visitor Center | Equestrian | Fishing | Hiking / Nature Appreciation | Hunting | Picnic Tables |
|--|------------|-----------|----------|---------|----------------------------|------------|---------|------------------------------|---------|---------------|
| Kissimmee Management Region | | | | | | | | | | |
| KICCO Wildlife Management Area | | ☐ | ☐ | ☐ | | ☐ | ☐ | ☐ | ☐ | ☐ |
| Blanket Bay Marsh | ☐ | | ☐ | ☐ | | | ☐ | | ☐ | ☐ |
| Kissimmee Prairie Preserve State Park | | ☐ | | ☐ | ☐ | ☐ | ☐ | ☐ | | ☐ |
| Boney Marsh | ☐ | | ☐ | ☐ | | | ☐ | ☐ | ☐ | |
| Bluff Hammock | ☐ | | ☐ | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| Hickory Hammock Wildlife Management Area | ☐ | ☐ | ☐ | ☐ | | ☐ | ☐ | ☐ | ☐ | ☐ |
| No Name Slough | ☐ | ☐ | ☐ | | | ☐ | ☐ | ☐ | ☐ | |
| Starvation Slough | ☐ | ☐ | ☐ | ☐ | | ☐ | ☐ | ☐ | ☐ | ☐ |
| Oak Creek | ☐ | | ☐ | ☐ | | | ☐ | ☐ | ☐ | ☐ |
| Turkey Hammock West | ☐ | | ☐ | ☐ | | | ☐ | | ☐ | |
| Turkey Hammock East | | | | | | | ☐ | | ☐ | |
| Cornwell Marsh West | | | | ☐ | | | ☐ | ☐ | ☐ | |
| Cornwell Marsh East | | | | | | | ☐ | ☐ | ☐ | |
| Micco Landing | ☐ | ☐ | ☐ | ☐ | | ☐ | ☐ | ☐ | ☐ | |
| Seaboard Marsh North | ☐ | | ☐ | | | | ☐ | | ☐ | |
| Seaboard Marsh South | ☐ | | ☐ | | | | ☐ | | ☐ | |
| Yates Marsh | | ☐ | | ☐ | | | ☐ | ☐ | ☐ | ☐ |
| Telex Marsh | | | ☐ | | | | ☐ | ☐ | ☐ | |
| Paradise Run | | ☐ | | | | | ☐ | | ☐ | |

Map 25. KICCO Wildlife Management Area



Attachment: Kissimmee River Mgt Plan 2014 - 2024 (Resolution No. 2014 - 0103 : Dupuis and Kissimmee River Ten Year General Management

Map 27. Hickory Hammock Wildlife Management Area



6.1 Resource Protection

Policy 140-25(1)(d) Public use shall not result in detrimental impacts to water resources. When a public use activity produces detrimental effects on water resources, it shall be discontinued until an evaluation determines that such use is compatible.

Policy 140-25(3)(g) Resource protection shall be provided by professional law enforcement services through funded and unfunded contractual agreements to safeguard the public and protect natural and cultural resources on District-managed natural areas.

Policy 140-25(4)(b)(1) Public use regulations are set forth in 40E-7.511, Florida Administrative Code, to implement Section 373.1391(1)(b), Florida Statutes. Accordingly, the District shall publish and make available to the public a "Recreational Guide" for designated land management areas.

Regulations that govern activities within the Management Areas are in the District's 40E-7, F.A.C. Public Use Rules, which are available at all Service Center and at agency headquarters in West Palm Beach. Allowed activities include hiking, fishing, boating, canoeing, camping, hunting, geocaching, equestrian use, biking, and nature study. The Florida Fish and Wildlife Conservation Commission is responsible for enforcing laws, rules, and regulations applicable to the Management Areas, along with the local county sheriffs' offices. The Commission has an officer housed at KICCO who helps patrol Pool A, an officer housed at Hickory Hammock in Pool C, and two officers at Chandler Slough in Pool D. The officers reside in District-owned facilities through a contractual agreement with the District and provide a law enforcement presence on District lands at no cost to the agency.

Management of public activities on District lands requires a strong commitment to resource protection while simultaneously promoting public recreational uses. The District emphasizes the enforcement of pertinent rules and regulations to protect natural resources and enhance recreation opportunities. Law enforcement officers conduct regular patrols throughout the year, increasing their presence during hunting seasons and at other times when public use is high. Law enforcement surveillance protects natural and cultural resources, deters illegal activity, and safeguards the public. Patrols are conducted with 4-wheel drive vehicles, boats, all terrain vehicles, aircraft, and on foot. The Land Stewardship Section's law enforcement coordinator reviews biweekly reports and meets with officers to structure patrols based on resource needs.

Resource protection is also greatly enhanced by the establishment and maintenance of posted fence lines that delineate property boundaries. New fence construction and maintenance needs are addressed as necessary.

6.2 Environmental Education

Educational programs are developed and implemented on select management areas by organizations interested in promoting increased visitor knowledge and appreciation of natural areas and cultural resources. A central theme to these programs is the vital role of water management in maintaining resource viability and productivity. There are several interpretive kiosks throughout the Management Areas including four at KICCO, and one at the boat ramp near the S-65 water control structure. There are fifteen kiosks (9 District and 6 Commission) in Pools C and D. The District encourages educational partnerships through memorandums of understanding, leases, and contract agreements.

7. Administration

Administration of District land management is directed through the Land Stewardship Section. Policy decisions, planning and budgeting, procurement of personnel and equipment, contract administration, and issues of program development are administrative tasks coordinated through the Section. Input is provided from the public and regional land managers located at District Service Centers, Field Offices, or Field Stations over the 16-county area. Regional land managers handle regular administrative duties from their field locations to assure quick response to local concerns and management issues. Administrative activities for the Management Area are handled through the DuPuis field office.

7.1 Planning and Budgeting

Planning is a major function of the Land Stewardship mission and is critical to maintain proper program focus, direction, and coordination with other agencies. Planning is accomplished by section planning staff in coordination with land management staff. Section-level planning produces the Land Stewardship Activity Report for the Florida Forever Workplan, and coordinates land acquisition planning with other District and outside agency personnel.

Policy 140-25(6)(b) General Management Plan: Provides a description of recommended management and is required for each Land Stewardship Management Area. The GMP follows a designated format and is updated every ten years.

General Management Plans are developed that detail strategies to guide management activities on individual project areas. These plans define goals and objectives, identify major management issues, and describe management activities. Each plan is subject to a draft revision period where public comment and professional review is requested prior to plan approval. Each plan is revised on a ten-year cycle by planning team and land management staff.

Policy 140-25(5) The District will secure dedicated funding sources, personnel and other resources to support program goals and objectives. Project funding needs and sources for cooperative management agreements with government and non-government entities will be identified during acquisition. A cooperative management agreement will designate a lead manager and identify whether District funding is required.

The principal sources of funding for land management operations include revenue from commercial and agricultural leases, revenue generated from mitigation banks and interest earned on offsite mitigation funds, and ad valorem tax revenue. Historically, the Water Management Lands Trust Fund, administered by the Florida Department of Environmental Protection, had been the primary source of land management funding. Additional funding and support has been obtained from grants, the harvest of renewable resources, in-kind services from cooperating management partners, and no-cost services from user groups and volunteers.

Budget planning begins in November during the work planning process for the following fiscal year (October-September). Overall funding availability generally determines management activities. Site-specific priorities are generated and submitted by the regional land managers. Budget distribution among the District's five land management regions is based on a programmatic prioritization of management needs.

The continued operation and maintenance of the Kissimmee River Management Areas includes costs to cover staffing, ongoing operational and land management expenses, and capital refurbishment/replacement of aging infrastructure. Capital infrastructure needs are determined by its condition and the anticipated continued serviceability over the next fiscal year. Priorities for capital refurbishment/replacement are made on a District-wide basis. It is anticipated that several infrastructure features will require refurbishment/replacement during this plan period, these features include: the boardwalk and bridge at Boney Marsh, resurfacing asphalt at the Istokpoga Canal Recreation Area, the refurbishment of several trailheads, and other minor features such as septic systems and large culverts.

The operational and land management expenses for FY 2014 are included in **Table 6**, below. Contracted Land Management Services include a contract with the Department of Corrections (inmate labor for needs such as trailhead maintenance, mowing of recreation areas, and fence repairs). Operational Expenses include supplies, septic service, business travel, and safety equipment. Public Use costs are generally the maintenance costs of public use facilities. Site Security represents costs associated with contracted law enforcement services which currently are not budgeted for on the Kissimmee River Management Areas.

Table 6. Operational and Land Management Expenses for Fiscal Year 2014.

| Kissimmee River | | FY2014 Budget |
|---|--|------------------|
| Contracted Land Mgt. Svcs | | \$58,000 |
| Utilities and Operational Expenses | | \$38,424 |
| Equipment and Infrastructure Maintenance | | \$55,500 |
| Exotic Species Control | | \$130,000 |
| Vegetation Management | | \$53,600 |
| Public Use | | \$45,000 |
| Site Security | | \$0 |
| Total | | \$380,524 |

7.2 Infrastructure

Policy 140-25(3)(k) Infrastructure support shall be developed and maintained to provide safe access for responsible management and public use on District lands. Such infrastructure may include access points, roads, trails, signs, utilities, and minimal public facilities.

Current infrastructure which requires regular maintenance includes recreation access points and trailheads, perimeter posting and fencing, firelines, hiking trails and roads, kiosks, camp sites, campground host sites, law enforcement officer's housing, boat ramps, and other structures.

7.3 Personnel and Equipment

The District is separated into five geographic regions, each staffed with professional land managers and technicians who are supervised by a Section Leader. The Land Stewardship Section Administrator, recreation staff, and planning staff are headquartered at the main West Palm Beach office.

Stewardship of the management areas is the primary responsibility of the District's Kissimmee River/Okeechobee regional land management staff. Dedicated staffing for the Kissimmee River Management Areas consist of one Senior Land Manager, one Scientist 3, and one planner/scheduler that performs field functions. Additional management input and support comes from District planning and Field Station personnel, as well as the Kissimmee River Section. Staff has access to tools, supplies, four-wheel drive vehicles, fire suppression trucks, all terrain vehicles, swamp buggies, bull dozers, tractors, and other heavy equipment.

7.4 Volunteers and Alternative Work Force

Policy 140-25(5)(d)(1) Volunteers, interns and alternative work forces will be used when possible to supplement existing staff and services.

Section 373.1391(3) F.S. encourages the District to use volunteers for land stewardship and other services. The District recognizes the merits of volunteerism and welcomes participation in activities appropriate for public involvement. In Fiscal Year 2013, District lands benefited from 10,000 volunteer hours, or \$217,900 worth of volunteer services (using a \$21.79/hour national average for the value of volunteer service). The Florida Trail Association regularly provides volunteer service to maintain the portion of the Florida National Scenic Trail that passes through the Management Areas. Land Stewardship also utilizes volunteer campground hosts at the S-65C campground, the Istokpoga Canal Boat Ramp Area, the Hickory Hammock equestrian campground, and at KICCO. Other volunteer services have been provided by the Interagency Prescribed Fire Training Council, Boy Scouts, the Florida Sportsmens' Conservation Association, and several other individual volunteers. All volunteer activities help accomplish management objectives, promote citizen involvement, and allow area staff to focus on other tasks.

7.5 Contractual Management

Policy 140-25(5)(a). The private sector may be solicited to furnish certain management-related facilities and services through the execution of leases and agreements. These leases/agreements will assure mutual benefits to both the District and private parties and be consistent with the program management objectives.

Effective operation and management of District properties requires the services and cooperation of private organizations, other governmental agencies, and volunteers. Contractual relationships are formalized through management agreements signed by both the District and contracting entity with the document defining the responsibilities of each party.

The District has established and maintains three contractual management agreements to assist with management:

Agreement #1
 4600000961

This is a contractual multi-site agreement that authorizes the Florida Fish and Wildlife Conservation Commission to perform land management and public recreation services on District-owned properties.

Agreement #5

4600002826

An agreement with the Florida Department of Corrections to provide inmate labor for land management and infrastructure maintenance.

Agreement #1
 C89-0065

A Memorandum of Understanding with the Florida Trail Association in which they agree to maintain the segment of the Florida National Scenic Trail that passes through the Kissimmee River Valley.

Agreement #2
 C-8318

A lease (1998-2045) for the Florida Park Service to manage District property in pool B as the Kissimmee Prairie Preserve State Park.

7.6 Management Review

Policy 140-22(j) Section 373.591, Florida Statutes, mandates the District to solicit input on current management programs through professional peer reviews.

A land management review team is identified for each project area with a General Management Plan. These ad hoc teams are comprised of state, county, and private entities that periodically review management activities to assure they are consistent with acquisition intent and program objectives. Management assessments are conducted in light of the goals and objectives defined in the area's general management plan and are scored on a scale of 1 to 5 with a 1 meaning the management is insufficient and a 5 meaning the management is extremely effective. If the review team determines that management is insufficient in any area, attaining an average score of less than 3.0, then the District is to provide a written explanation to the review team along with proposed corrective actions.

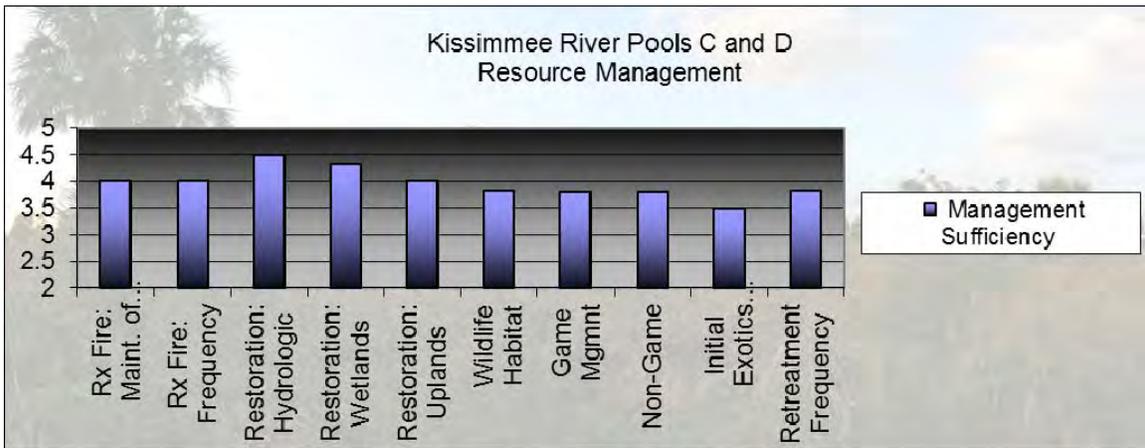
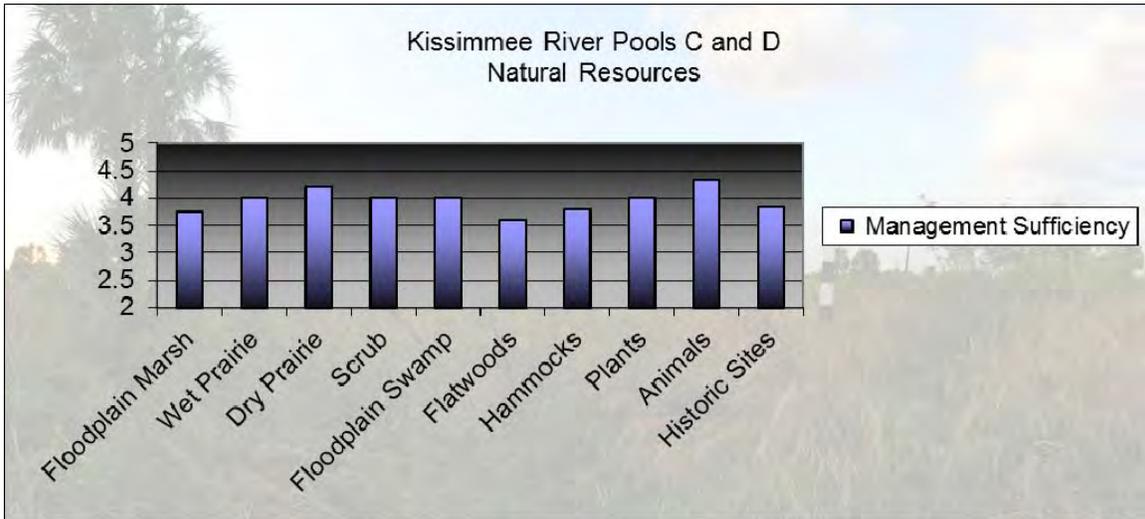
A management review of the Kissimmee River Management Areas was conducted in November, 2013. The review team provided comments on the condition of the land and the management of the site.

Positive comments were received on the quality and quantity of land management and restoration work being accomplished by a small land management team. Positive comments were also directed at the availability of the many public use opportunities that are provided free-of-charge, and at the improvement in the signage promoting these types of uses.

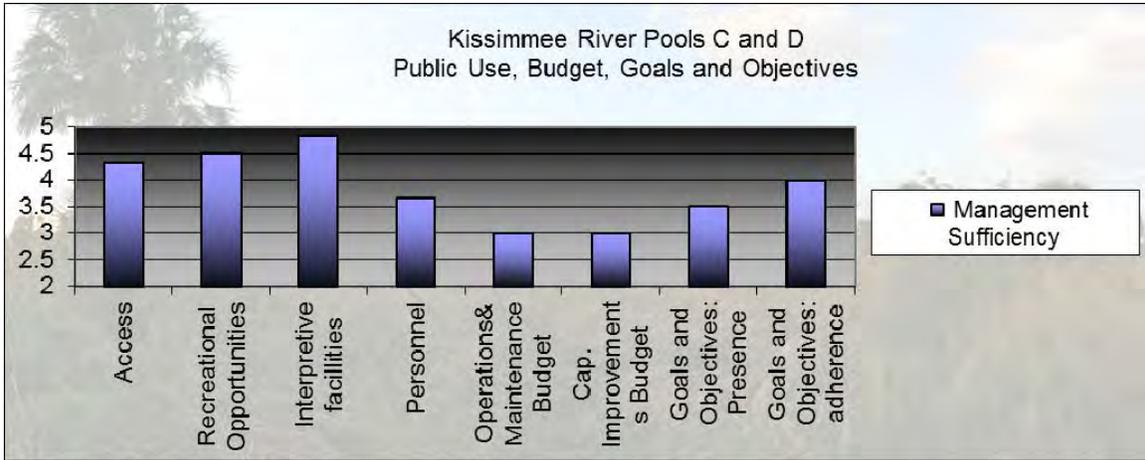
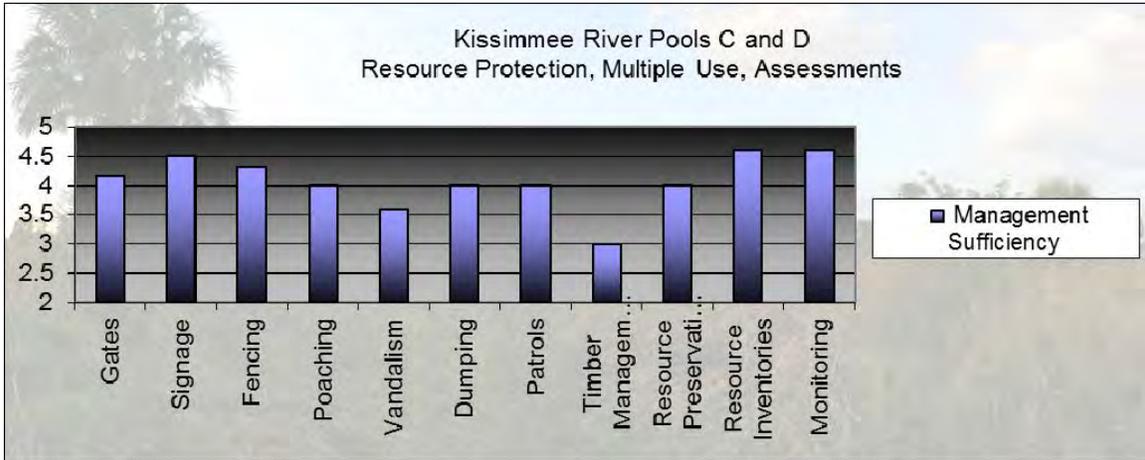
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The review team expressed concern over the extent of invasive exotic species such as paragrass and caesarweed. The team understood that a targeting of these species should not come at the expense of keeping old world climbing fern (*lygodium*) at bay, but were concerned about the presence and the impact that these species were having in the hammocks (caesarweed) and floodplain marshes (paragrass).

The team also rated the management sufficiency of the land on a scale from 1 to 5 on criteria such as: the natural resources, resource management activities, public use, budget, goals and objectives, resource protection, multiple use, and biological assessments and monitoring. The average scores by category are identified on the graphs below and indicate the review team felt the Kissimmee River Management Areas were being properly managed:



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The average score for the 2013 for the condition of the Natural Resources was 4.0; Resource Management was 4.0; Resource Protection, Multiple Use, and Assessments was 4.1; and Public Use, Budget and Goals and Objectives was 3.8. The relatively low scores received in the categories of Personnel, Operations & Maintenance Budget, and Capital Improvements Budget reflect the review team’s recognition of the District’s current budgetary challenges. There was no explanation provided by the review team members as to why timber management received a relatively lower score.

Appendix A

Land Stewardship Goals and Policies

ARTICLE II. LAND STEWARDSHIP

Sec. 140-21. Scope.

This policy shall apply to all lands managed by the Land Stewardship Program, including property acquired with Save Our Rivers, Preservation 2000 or mitigation funding. Nothing in this policy shall negate any statute, administrative rule, or other policy requirement. This policy may be reviewed and approved by the District Governing Board at five-year intervals or earlier and updated as required. Public comment may be solicited as part of the review process.

(R.M. No. 139)

Sec. 140-22. Purpose.

(a) This policy establishes a commitment to the responsible management of District lands in a manner consistent with legislative directives and the District's mission.

(b) In 1981, the Florida Legislature established the "Save Our Rivers" program (SOR) for the five water management Districts to acquire water resource lands. This legislation (Section 373.59, Florida Statutes) produced the Water Management Lands Trust Fund, empowering the water management Districts to acquire lands needed to protect, manage, and conserve the state's water resources. Preservation 2000 (P2000), enacted by the Legislature in 1990, also added land acquisition funds to the Save Our Rivers program. The 1999 Florida Forever Act consolidated the legislative directives of SOR/P2000 and expanded the funding to take over when P2000 terminates. The 1999 legislation authorized funds to be appropriated for acquisition, management, maintenance and capital improvements, including perimeter fencing, signs, control of invasive exotic species, controlled burning, habitat inventory and restoration, law enforcement, access roads and trails, and minimum public accommodations.

(c) Land acquired by the District's Save Our Rivers program and managed by the Land Stewardship program must satisfy several requirements set forth in Sections 373.139 and 373.1391, Florida Statutes. Section 373.139, Florida Statutes, declares it necessary for the public health and welfare that water and water-related resources be conserved and protected. The acquisition of real property for this objective shall constitute a public purpose for which public funds may be budgeted.

(d) Section 373.1391(1)(a), Florida Statutes, states that lands titled to the water management districts shall be managed and maintained to the extent practicable to ensure a balance between public access, general public recreational purposes, and restoration and protection of their natural state and condition.

(e) Section 373.1391(1)(b), Florida Statutes, states, in part, that "Whenever practicable, such lands shall be open to the general public for recreational uses. General public recreational uses shall include, but not be limited to, fishing,

hunting, horseback riding, swimming, camping, hiking, canoeing, boating, diving, birding, sailing, jogging, and other related outdoor activities to the maximum extent possible considering the environmental sensitivity and suitability of those lands."

(f) Section 373.1391(1)(d), Florida Statutes, states that the District shall first consider using soil and water conservation Districts to administer agricultural leases.

(g) Section 373.1391(3), Florida Statutes, encourages each District to use volunteers to provide land management and other services.

(h) Section 373.1391(4), Florida Statutes, encourages each District to enter into cooperative land management agreements with state agencies or local governments to provide the coordinated and cost-effective management of lands.

(i) Section 373.1391(5), Florida Statutes, authorizes water resource and supply projects, stormwater management projects, linear facilities, and sustainable agriculture and forestry where it is compatible with the natural resource values and the public interest and is consistent with the project management plan, the proposed use is appropriately located on the property and other lands have been considered, and the titleholder of the property has been properly compensated.

(j) Section 373.591, Florida Statutes, mandates the District to solicit input on current management programs through professional peer reviews.

(R.M. No. 139)

Sec. 140-23. Statements of Policy.

The Land Stewardship Program mission is to provide natural resource protection and management while allowing compatible multiple uses on designated public lands. The mission statement, together with requirements set forth in the Florida Statutes, provide three primary goals for the District Land Stewardship Program, each of which is linked to sections in this Land Stewardship Policy document:

- (1) Conservation and protection of water resources (section 140-25(1)).
- (2) Protection and/or restoration of land to its natural state and condition:
 - a. Restoration and Protection of Natural Communities (section 140-25(2)); and
 - b. Resource Operations and Maintenance (section 140-25(3)).
- (3) Provide public use (section 140-25(4)).

(R.M. No. 139)

Sec. 140-24. Definitions.

For the purpose of this article, the following words and terms shall have the meanings respectively ascribed:

Archaeological/Historic Resources means any prehistoric or historic district site, building, object, or property of historic, architectural, or archaeological value relating to the history, government, and culture of a historic or pre-historic people.

Best Management Practice (BMP) means the best available technology or process that is practical and achieves the desired goal or objective.

Capital Improvement means activities relating to the restoration, public access, recreational uses and necessary services for land and water areas, including the

initial removal of invasive plants, and the construction, improvement, enlargement or extension of facilities' signs, fire lines, access roads, and trails. Such activities shall be identified prior to the acquisition of a parcel or the approval of a project.

Cooperating Agencies means two or more agencies working together to operate a specific management area.

Cooperative Management Agreement means an agreement between two or more agencies outlining the respective duties and responsibilities of each agency in the management of a specific tract of land.

Critical Habitat means areas designated for the survival and recovery of state/federally listed rare, threatened, endangered or other sensitive species.

Desirable Vegetation means native plant species that are appropriate for a specific community type and provide benefits to wildlife in the form of food, cover and nesting.

Habitat Diversity means richness and variety of native plant communities within a particular area of the landscape.

Hydroperiod means flooding duration, depth, and timing that influences species composition, ecosystem structure and function.

Interim Land Management means management of non-natural areas that provides revenue without impacting long-term water-development projects.

Invasive/Exotic Vegetation means certain plants that displace native species and adversely affect wildlife habitat, water quality, recreation, and biological diversity.

Lead Manager means the prime managing entity designated for a given tract of land; generally provides the on-site staff.

Management Area means a single tract or combination of tracts under one management program.

Mitigation means, for purposes of this policy, the actual acquisition, restoration, creation, or enhancement of wetlands to compensate for permitted wetland impacts.

Mitigation Banking means wetland acquisition, restoration, creation or enhancement undertaken expressly to provide compensation in advance of wetland losses from development activities.

Multiple-Use means the management of renewable resources for a variety of purposes such as recreation, range, timber, wildlife habitat, and water resource development.

Prescribed Fire means burning of vegetative fuels using controlled application of fire within specified environmental conditions.

Primary Resource Lands means lands having high water resource, fish, wildlife, and recreational values requiring acquisition or protection.

Regional Mitigation Area means, for purposes of this policy, permitted wetland impacts offset through payment for the acquisition, restoration and perpetual management of a Save Our Rivers identified and duly noticed project.

Responsible Management means level of management described in the General Management Plan.

Sustainable Use means to provide continued use of a natural resource without degradation or loss of that resource.

Water Resource Buffer means that portion of a Preservation 2000 or Save Our Rivers project necessary to protect the aquatic environment.

Wildlife Corridor means a connection between natural areas that allows the safe movement of wildlife.

(R.M. No. 139)

Cross references: Definitions and rules of construction, § 100-2.

Sec. 140-25. Responsibilities.

The Land Stewardship Program is responsible for:

(1) Water Resource Protection. The basis for the Land Stewardship Program is the protection and management of natural hydrologic resources. The following policies guide implementation of this objective:

a. Acquired lands shall be managed to provide water resource-related benefits.

b. Land uses or activities that significantly or permanently alter or degrade the quality, quantity and/or natural movement of ground or surface water are not allowed unless they are a part of a regional water management system.

c. Where feasible, an attempt shall be made to restore a more natural hydroperiod on tracts where the drainage patterns have been altered.

d. Public use shall not result in detrimental impacts to water resources. When a public use activity produces detrimental effects on water resources, it shall be discontinued until an evaluation determines that such use is compatible.

e. Water resource lands designated as necessary to implement the Central and Southern Florida "Restudy" Project shall, upon acquisition, become the responsibility of the (Interim) Land Management Program, and follow the guidelines set forth under Section 373.1391(5), Florida Statutes.

(2) Restoration and Protection of Natural Communities:

a. The Land Stewardship Program will encourage the acquisition of large or regionally significant areas that protect important natural resources and provide wildlife corridors.

b. Particular emphasis shall be placed on the identification, protection and management of rare, threatened and endangered species.

c. The planting of invasive exotic plant species shall be prohibited in all management areas. Management practices will strive to identify existing infestations and implement appropriate control or eradication measures.

d. Where practicable, an attempt shall be made to restore and maintain desirable vegetation to promote habitat diversity in areas where invasive exotic vegetation, grazing practices, or improved land uses have substantially altered the historic landscape.

(3) Resource Operations and Maintenance:

a. Lands acquired for natural and/or hydrologic resource benefits shall be managed to conserve and protect those resources.

b. Exotic plant control in all management areas shall strive to attain a level of success where periodic maintenance eliminates the infestation or reduces the coverage of exotic plants.

c. Prescribed fire will be a primary management tool on District lands and will be applied within fire-maintained communities at appropriate intervals.

d. The Division of Forestry will be notified of all wildfires on District lands. Land Stewardship will provide initial suppression when commensurate personnel and equipment are available.

e. Inventories of natural and historic resources shall be performed to provide information for effective land management planning, natural community maintenance and ecological restoration.

f. Evaluation and monitoring of management activities shall be conducted to improve program effectiveness and efficiency.

1. Research shall evaluate the environmental response of certain management activities to assist staff in making appropriate management decisions.

2. Monitoring shall be conducted to identify landscape changes resulting from management activities.

3. Legislative-mandated management reviews will provide input from professional peers.

g. Resource protection shall be provided by professional law enforcement services through funded and unfunded contractual agreements to safeguard the public and protect natural and cultural resources on District-managed natural areas.

h. Sustainable use of forest resources shall be conducted where these activities adhere to a series of environmental criteria (see 1999 Forest Management Plan) that meet Land Stewardship Program goals. Timber contractors will be required to meet silvicultural Best Management Practices (BMP) developed for Florida forests.

i. Range management (grazing) will be considered on improved or native ranges when the introduction of cattle will not conflict with other natural resource management and public use goals.

j. Archaeological and historic resources are protected by site identification and inter-agency coordination with the Florida Division of Historical Resources. Land stewardship planning shall include an analysis of archeological data accompanied by appropriate public education opportunities.

k. Infrastructure support shall be developed and maintained to provide safe access for responsible management and public use on District lands. Such infrastructure may include access points, roads, trails, signs, utilities, and minimal public facilities.

l. Mechanical equipment may be used in conjunction with prescribed burning and other management tools to control vegetation and restore habitat structure.

m. Agricultural developments previously existing on acquired natural areas may be maintained if management of these developments is consistent with other land stewardship goals.

(4) Public Use and Environmental Education:

a. Public use of management areas that is consistent with other management goals shall be encouraged. Public use that may have detrimental impacts on sensitive environmental resources shall be restricted until an evaluation determines such use is compatible. A public use compatibility assessment will be included in the General Management Plan completed for each management area and will be based on the following criteria:

1. Consistency with the reason the lands were acquired.
2. Restrictions and/or prohibitions imposed by easements, leases, reservations, adjacent land ownership, conditions of the purchase agreement, and any other agreements concerning the property.
3. Infrastructure and support facility requirements, such as fences, gates, signage, entry design, stabilized off-road parking, trails, campsites, maintenance, and other operational and budgetary impacts.
4. Opportunities for persons with disabilities.
5. Limitations resulting from endangered species, other sensitive natural resources, archaeological resources, or land management practices.
6. Public health, safety and welfare.
7. Environmental education program opportunities.

b. Public Use Regulation:

1. Public use regulations are set forth in 40E-7.511, Florida Administrative Code, to implement Section 373.1391(1)(b), Florida Statutes. Accordingly, the District shall publish and make available to the public a "Public Use Guide" for designated land management areas. The Public Use Guide will be adopted by the Governing Board at a public meeting advertised in accordance with Chapter 120, Florida Statutes.

2. Rules and regulations governing the public use of each management area shall be enforced by agencies with appropriate law enforcement jurisdiction.

3. Pursuant to Section 373.609, Florida Statutes, the District shall seek the cooperation of every state and county attorney, sheriff, police officer, and appropriate city and county official in the enforcement of the provisions set forth according to 40E-7.511, Florida Administrative Code.

4. Florida Fish and Wildlife Conservation Commission regulations shall govern hunting in areas opened for such use.

(5) Implementation Strategies. The District will secure dedicated funding sources, personnel and other resources to support program goals and objectives. Project funding needs and sources for cooperative management agreements with government and non-government entities will be identified during acquisition. A cooperative management agreement will designate a lead Manager and identify whether District funding is required.

a. The private sector may be solicited to furnish certain management-related facilities and services through the execution of leases and agreements. These leases/agreements will assure mutual benefits to both the District and private parties and be consistent with the program management objectives.

- b. Mitigation:
1. Mitigation Banking: Mitigation banking provides an opportunity to accomplish large-scale restoration that may otherwise go unfunded. Pursuant to Section 373.4135, Florida Statutes, the District is encouraged to develop mitigation banks. Land managers will evaluate opportunities in their regions to implement mitigation banks that are consistent with the guidelines established in the Joint State and Federal Mitigation Bank Review Team Process for Florida.
 2. Regional Mitigation Areas: The acquisition, restoration and management of District lands as mitigation shall be consistent with Chapter 2000-133, amending Sections 373.414 and 373.4135, Florida Statutes. This includes the establishment of Memorandums of Agreement (MOA) that include restoration plans, success criteria, and monitoring requirements. The MOAs will be used to implement mitigation using full-cost accounting, public noticing, and approval by the Governing Board for use as a mitigation area. The mitigation shall meet restoration objectives as provided in the General Management Plan.
- c. Revenue Generation:
1. Private concessions and/or agreements with non-profit organizations will be considered to implement needed services through concession contracts.
 2. Entrance and user fees, permits, licenses and/or advance reservations may be required where considered necessary by the managing agency.
 3. Timber sales will be conducted to improve forest health or to support specific forest management goals.
 4. Grazing leases will be encouraged on selected rangeland to generate revenue or to provide services that offset program management costs.
- d. Volunteers and Interns:
1. Volunteers, interns and alternative work forces will be used when possible to supplement existing staff and services.
 2. Any volunteer services must meet the standards and procedures prescribed by the District (Risk Management Manual, Volume 1).
- (6) Program Components:**
- a. Management Assessment: A brief summary of the management issues completed when the site is identified for acquisition.
 - b. General Management Plan (GMP): Provides a description of recommended management and is required for each Land Stewardship Management Area. The GMP follows a designated format and is updated every five years.
 - c. Activity Plan (AP): Provides a detailed implementation strategy for specific activities such as prescribed burning, exotic removal and restoration. The plan shall be developed by the lead Manager in consultation with the cooperating agencies for each major tract of land (or group of tracts) to be operated as a single

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management unit. The AP may be included in the GMP and is updated when necessary.

d. **Annual Work Plan (AWP):** Summarizes activities corresponding with annual budget development and is prepared by the Operations Section of the Land Stewardship Program.

e. **Reporting:** Summaries of management activities for each management area will be reported quarterly within the District and annually as part of the Florida Forever Work Plan.

(R.M. No. 139)

Secs. 140-26--140-40. Reserved.

Appendix B. Soil Descriptions

Flatwood Soils

Flatwood soils are poorly drained non-hydric, upland soils with sandy marine sediments throughout the profile. The seasonal high water table can range from six to 18 inches below the soil surface for three to six months annually. This soil type is dominant on the Management Areas uplands and uplands throughout the basin.

Flat Soils

Flat (previously referred to as slough) soils are poorly drained hydric soils with sandy marine sediments throughout the profile. Flats are located between the flatwoods and topographic depressions and are generally regarded as transition areas, e.g. a wet prairie or a slough. Generally, the seasonal high water table begins in June and ends from September or thereafter with inundation periods dependent upon seasonal rainfall or large storm events. Within the Management Areas the tributary sloughs and many of the depression marsh communities are buffered by soils of this this classification.

Knolls

Knoll soils are non-hydric, upland soils with sandy marine sediments throughout the profile. These soils typically have no unique diagnostic horizons within the soil profile and are well to somewhat poorly drained. The seasonal high water table can range from one and a half to six feet below the soil surface for four to seven months annually. One ecological community that is typical to the knolls landscape is sand pine scrub. Natural vegetation may typically be even-aged sand pine trees with a dense under-story of oaks, saw palmetto, and other shrubs. Ground cover under the trees and shrubs is scattered. Large areas of light colored sand are often noticeable.

Sand Depression Soils

Sand depression soils are very poorly drained hydric soils that typically have sandy marine sediments throughout the profile. Often, these areas are depressions adjacent to flatwoods. The seasonal high water table can range from one foot below to two feet above the soil surface for seven to 10 months annually. Wetland communities dominate this landscape position. Within the Management Areas, most of the outer floodplain represent this soil class.

Muck Depression Soils

Muck depression soils are very poorly drained hydric soils that have an organic surface layer underlain by sandy marine sediments. These areas are often depressions adjacent to Flatwood soil-types. The seasonal high water table can range from six inches below to two feet above the soil surface for seven to eleven months annually. Wetland communities dominate this soil type. Examples within the Management Areas include the inner river floodplain .

Urban or Made Lands

Urban or made land areas have soils that have been altered, excavated, or disturbed and no longer possess their natural morphological features. These soils do not function as they did in their original state, and little information on this subject is available. The seasonal high water table varies by site and is usually controlled to inhibit flooding of developed areas. No ecological communities are representative of this landscape position. The spoil berms fall into this classification.

Water Areas

This classification represents areas that are permanently inundated, with depths usually two feet or more. No soil series or ecological community is associated with this classification. In the Management Areas, the channelized Kissimmee River and the oxbows and main channel of the old river best represent this category.

Appendix C. FNAI Natural Communities

Xeric Hammock

Xeric hammock is characterized as either a scrubby, dense, low canopy forest with little understory other than palmetto, or a multi-storied forest of tall trees with an open or closed canopy (Florida Natural Areas Inventory, 1990). Soils are deep, sandy and well drained, conditions expected of topography created by old dune systems. Typical canopy species in the Kissimmee River basin are live oak (*Quercus virginiana*), sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*) and Chapman oak (*Quercus chapmanii*). The understory is generally sparse due to dry soil conditions and overstory shading. Understory species include saw palmetto (*Serenoa repens*), bracken fern (*Pteridium aquilinum*), myrsine (*Rapanea punctata*), silk bay (*Persea borbonia* var. *humilis*), highbush blueberry (*Vaccinium corymbosum*) and Carolina jessamine (*Gelsemium sempervirens*). Wild pine (*Tillandsia balbisina*), and laurel greenbriar (*Smilax* sp.) are common arboreal species.

Xeric hammock is the climax successional stage of scrub or sandhill. Isolated remnant hammocks are the result of maturing scrub, protected from fire. Once established, xeric hammock resists burning by a lack of contiguous understory fuel and a duff layer of relatively incombustible oak leaves. When fire does occur within this community, it removes canopy, understory and ground cover biomass, reverting the area back to scrub. In the Land Stewardship Program management units, xeric hammock is commonly associated with scrub and prairie hammock, with similar species composition.

Xeric hammock is scarce, however, there is one classic example of this rare community located in the KICCO Management Area. Special care will be taken to avoid soil disturbance and protect this area from fire during prescribed fire applications to surrounding natural communities. Xeric hammock has a Florida Natural Areas Inventory state ranking of “S3”, rare or uncommon in state. Due to its rarity, areas of xeric hammock will be identified and managed to ensure perpetuation of existing locations.

Scrub

Scrub occurs in many forms, but is often characterized as a closed to open canopy forest of sand pines with dense clumps or vast thickets of scrub oaks and other shrubs dominating the under-story (Florida Natural Areas Inventory, 1990). The later is the structural form for much of the scrub within the Management Areas. Typical plants include sand live oak, myrtle oak, Chapman’s oak, scrub oak, saw palmetto, rosemary (*Ceratiola ericoides*), rusty lyonia (*Lyonia ferruginea*), stagger bush (*Lyonia lucida*), runner oak (*Quercus pumila*), and wiregrass.

Highest elevations in the basin support this community. All scrub locations have sandy, well-drained, loose and non-organic soils. In the Kissimmee River

Management Areas, scrub is often associated with scrubby flatwoods, dry prairie, and in a few locations, xeric hammock.

Scrub is a fire dependent community. Fuel buildup is a lengthy process, as vegetation grows relatively slowly due to severe environmental conditions. With sufficient fuel, fire will burn with speed and intensity, returning nutrients to the soil and opening the canopy for light to reach ground layer species. Burns naturally occur once every 20 to 80 years. In an effort to maintain scrub sites, management practices include prescribed fire applied on a natural cycle for shrubby, oak-dominated scrub.

Scrub is being lost at an astounding rate throughout the state, as high elevations and fast drainage make this community highly desirable for development. This association occurs almost exclusively in Florida. State ranking of scrub is “S2”, imperiled in the state because of its rarity and vulnerability (Florida Natural Areas Inventory, 1990).

Prairie Hammock

Prairie hammock is characterized as a clump of tall cabbage palms and live oaks in the midst of prairie or marsh communities (Florida Natural Areas Inventory, 1990). Prairie hammocks establish on elevated soils surrounded by lower topography. These islands are generally flooded only for a short duration during the highest water levels. Naturally occurring fires are rare in these hammocks, due mainly to a lack of under-story fuel.

Canopy species in the floodplain are live oak and cabbage palm, with occasional laurel oak in lower elevations. An abundance of epiphytes, including listed species, are found in mature canopy trees. As in most prairie hammocks, those found here have a sparse under-story due to over-story shading, but cover is also reduced by cattle grazing and trampling of shrub and ground layer vegetation. Many species common to undisturbed hammocks are sparse or lacking, replaced by disturbance species such as broomweed (*Sida sp.*), tropical soda apple (*Solanum viarum*), and caesarweed (*Urena lobata*). Typical under-story plants of pristine prairie hammocks include wax myrtle, water oak, stoppers (*Eugenia sp.*), marlberry (*Ardisia escallonioides*), beautyberry (*Callicarpa americana*), and saw palmetto.

Florida Natural Areas Inventory ranks prairie hammocks as “G4” and “S4” both statewide and globally secure, although it may be quite rare in parts of its range, especially at the periphery. Land Stewardship management strives to minimize soil disturbance, restrict fire where appropriate and eradicate non-native invasive species within hammock areas.

Mesic Flatwoods

Mesic flatwoods are characterized as an open canopy forest of sparse pine trees with little or no under-story but a dense ground cover of herbs and shrubs. Two

common vegetation associations are longleaf pine/wiregrass/runner oak and slash pine/gallberry/saw palmetto. In the MA, slash pine dominates the over-story and gallberry (*Ilex glabra*), saw palmetto and fetterbush occur in the understory. Other typical plants include St. Johns-wort (*Hypericum sp.*), dwarf huckleberry (*Gaylussacia dumosa*), staggerbush, blueberry (*Vaccinium sp.*), gopher apple (*Lycania michauxi*), tar flower, bog buttons (*Lachnocalon sp.*), blackroot (*Pterocaulon pycnostachyum*), and yellow-eyed grass (*Xyris sp.*).

This community occurs on similar soils as dry prairies and wet flatwoods, with minor changes in topography determining community type. Acidic sands overlay hardpan that reduces water exchange between the soil surface and subsurface. Thus rainy seasons produces surface flooding, and dry seasons extreme drought, influencing vegetation species composition. Plants of this community have adapted to long intervals of inundation and desiccation, and acclimated to periodic fire.

Natural fires occur every one to eight years. Frequency of fire determines community type between dry prairie and mesic flatwoods, with longer fire intervals favoring mesic flatwoods.

Wet Flatwoods

Wet flatwoods are characterized as relatively open-canopy forests of scattered pine trees or cabbage palms with either a thick shrubby under-story and very sparse ground cover, or a sparse under-story and a dense ground cover of hydrophytic herbs and shrubs, with variations between these extremes (Florida Natural Areas Inventory, 1990). Other plants associated with this habitat type in the MA include wax myrtle, saw palmetto, beakrush (*Rhynchospora sp.*), St. John's-wort (*Hypericum sp.*), and blue maidencane (*Amphicarpum muhlenburgianum*).

Wet flatwoods develop on poorly drained acidic, low nutrient sands underlain by hardpan. Surface water appears a minimum of one month per year. Natural fire frequency is considered to be three to 10 years. Frequent fire postpones hardwood succession and thins canopy trees, while promoting under-story growth and fire-adapted species.

State ranking is "S4", apparently secure in the state, although it may be rare in some parts of its state range. Global ranking requires further research. Most wet flatwoods are extremely vulnerable to hydrologic manipulation and exotic invasion.

Wet Prairie

Wet prairie is characterized as a treeless plain with a sparse to dense ground cover of grasses, sedges, rushes, and herbs; including wiregrass, toothache grass (*Ctenium aromaticum*), maidencane (*Panicum hemotomon*), spikerush (*Eleocharis sp.*), and beakrush (*Rhynchospora sp.*). Other typical plants include

hatpins (*Lachnocaulon sp.*), marsh pinks (*Rhexia sp.*), crownbeard (*Verbesina chapmanii*), sundews (*Drosera sp.*), tickseed (*Bidens sp.*), wax myrtle, St. John's-wort (*Hypericum sp.*), and Panicums (Florida Natural Areas Inventory, 1990).

Wet prairies occur on low, flat, poorly drained terrain and are inundated from 50 to 100 days per year. Wet prairie species have adapted to long periods of drought conditions due to rainfall seasonality. Soils typically are sands with a major organic component. Fire plays an integral role in wet prairie ecology, and with sufficient fuel build-up, burns every two to four years. If deprived of fire, these grass-dominated flatlands succumb to shrub encroachment, and are especially vulnerable to wax myrtle infestations.

Wet prairie has a state ranking of "S4", apparently secure in the state, although it may be rare in some parts of its state range. Global ranking requires further research.

Floodplain Swamp

Floodplain swamp occurs on flooded soils along river channels and in low spots and oxbows within river floodplains. Dominant trees are usually buttressed hydrophytic species such as cypress and tupelo. Floodplain swamps in the MA grade into baygalls, and often contain many of the same species, with only species dominance varying. Soils and hydroperiods determine species composition and community structure. Baygalls are generally characterized as densely forested, peat-filled seepage depressions, frequently located at the edges of the floodplain where high water tables maintain soil moisture. The MA swamps are dominated by a mixture of swamp bay (*Persea palustris*) and loblolly bay (*Gordonia lasianthus*), with scattered red maple (*Acer rubrum*), cypress (*Taxodium distichum*), laurel oak, and cabbage palm. Typical under-story species include lizard's tail (*Saururus cernuus*), gallberry, wax myrtle laurel greenbrier (*Smilax laurifolia*), poison ivy (*Toxicodendron radicans*), chain fern (*Woodwardia virginiana*) and wild grape (*Vitis sp.*).

River swamps are characterized by surface flow early in the growing season and have both a short hydroperiod and a perceptible flow rate for at least part of each year. (Myers and Ewel, 1990). Naturally occurring fires are infrequent in floodplain swamps, due to the lack of dense understory fuels and slow peat accumulation. During periods of drought, fuel may dry out sufficiently to carry fire in backwater areas. Severe fire can destroy the peat layer and transform the baygall swamp into another community such as wet flatwoods or cypress swamp, depending on the depth of peat removal. To prevent peat fires in floodplain swamps, prescribed fire is applied to surrounding communities when soils within the floodplain are saturated.

Floodplain swamps are ranked statewide as "G4", apparently secure statewide, though it may be quite rare in parts of its range, especially at the periphery. Global ranking requires further research.

Floodplain Marsh

Floodplain marsh are wetlands of herbaceous vegetation and low shrubs that occur in river floodplains (*Florida Natural Areas Inventory, 1990*). Typical emergent vegetation includes maidencane, buttonbush, sand cordgrass (*Spartina bakeri*), dotted smartweed (*Polygonum punctatum*), arrowheads (*Sagittaria sp.*), pickerelweed (*Pontedaria cordata*), spikerush, bulrush (*Scirpus sp.*), tickseed (*Coreopsis sp.*), and water primrose (*Ludwigia sp.*).

Floodplain marshes depend on periodic fire to reduce shrub dominance, and maintain species diversity and herbaceous openings. Natural fires have historically occurred every one to five years, depending on the density of fuel available (*Florida Natural Areas Inventory, 1990*). Summer lightning-initiated burns consumed above-water vegetation but preserved the floodplain's thick peat accumulation. Long-term fire exclusion favors floodplain marsh succession to a bog.

Floodplain marsh has a state ranking of "S2", imperiled because of rarity, or little remaining area, or because of some factors making it very vulnerable to extinction throughout its range. Further research is required to determine global ranking. The principle cause of ecological degradation of Florida's marshes has been dewatering (Myers and Ewel, 1990).

Floodplain Forest

Floodplain forests are hardwood forests that occur on drier soils at slightly higher elevations within floodplains, such as on levees, ridges and terraces, and are usually flooded for a portion of the growing season. The dominant trees in south Florida include oaks and cypress. The floodplain forests include red maple, laurel oak, bald cypress, cabbage palm, red maple, strangler fig (*Ficus aurea*), red, sweet bay (*Magnolia virginiana*), wax myrtle, myrsine (*Rapanea punctata*), buttonbush, poison ivy, leather fern (*Acrostichum danaeifolium*), sawgrass, royal fern (*Osmunda regalis*) and lizard's tail (*Saururus cernuus*).

Hydroperiod is the most important factor influencing floodplain forests, which are inundated by floodwaters nearly every year up to 60% of the growing season. The organic material accumulating on the forest floor is redistributed in the floodplain during floods. Floodplain forests usually do not have standing water in the dry season. Floodplain forests are often associated with, and grade into, floodplain swamp or baygall. Species composition is frequently similar to that of hydric hammock communities.

Natural fires are infrequent in floodplain forests due to the lack of dense understory fuels and slow peat accumulation. During periods of drought, floodplain fuels may dry sufficiently to carry fire. Normally, light surface fires burn into the younger fringe from neighboring communities, but seldom reach

the largest trees in the deepest portion of the forest. The Land Stewardship Program regulates fire schedules to insure floodplain forests burn at natural frequencies and during periods of adequate ground moisture.

Maintenance of natural hydrologic regimes is critical to floodplain forest health. Species composition and the functional relationships throughout a river system are negatively impacted by hydrological alterations such as artificial impoundments, river diversion projects, pesticide use, forest clear cutting or intensive agriculture (Florida Natural Areas Inventory, 1990).

Floodplain forests have a state ranking of “S3”, rare or uncommon in the state. Further research is required for a definitive global classification.

Depression Marsh

Depression marsh, also known as a flatwoods pond, is characterized as a shallow, usually rounded depression in sand substrate with herbaceous vegetation often occurring in concentric bands (Florida Natural Areas Inventory, 1990). Typical plants include St. John’s-wort, spikerush (*Eleocharis sp.*), yellow-eyed grass, chain fern, primrose willow (*Ludwigia peruviana*), maidencane (*Panicum hemitomon*), wax myrtle, buttonbush, pickerelweed, arrowhead, and bladderwort.

Where marshes occur, one of three geological conditions is present: surficial deposits are impermeable, the water table emerges through the permeable substrate, or the marsh is hydrologically connected to a river (Kushlan, 1991). Depression marshes are typically small in size and hydrologically isolated from other surface water bodies. Water is received by runoff, seepage or direct rainfall. Hydroperiods range widely from as few as 50 days or less to more than 200 days per year ((Florida Natural Areas Inventory, 1990). Bottom soils are generally acidic peat, resulting from accumulation of decayed plant material. This community frequently grades into wet or mesic flatwoods.

Natural fire occurs in depression marshes every one to five years, depending on a combination of weather conditions and fuel build-up. Fire preserves the open canopy by limiting invasion of woody vegetation, promoting herbaceous growth, and slowing succession by deepening the marsh with an occasional peat fire. The Land Steewardship Program coordinates fire schedules to insure depression marshes burn at natural frequencies and during periods of adequate ground moisture.

Depression marshes provide critical breeding and foraging habitat for a wide assemblage of amphibians and reptiles not found in larger, more permanent systems. Cyclic surface water availability promotes foraging by numerous listed wading bird species such as the wood stork, white ibis, snowy egret, and sandhill crane.

Depression marsh is ranked statewide as “S”, either very rare throughout its range; or found locally, even abundantly at some of its locations in a restricted range; or because of other factors making it vulnerable to extinction throughout its range. Global ranking indicates it is apparently secure, though it may be quite rare in parts of its range, especially at the periphery. Further research is required for a definitive global classification.

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Appendix D. Species List

Plant Species

| Species | Common Name | Type |
|------------------------------------|--|------------|
| <i>Acalypha gracilens</i> | slender 3-seed mercury | Native |
| <i>Acer rubrum</i> | red maple | Native |
| <i>Acrostichum sp.</i> | leather fern | N/A |
| <i>Alternanthera philoxeroides</i> | alligatorweed | Non-Native |
| <i>Amaranthus australis</i> | southern amaranth | Native |
| <i>Amaranthus sp.</i> | amaranth | Native |
| <i>Amaranthus spinosus</i> | spiny amaranth | Non-Native |
| <i>Ambrosia artemisiifolia</i> | ragweed; common ragweed | Native |
| <i>Ambrosia trifida</i> | giant ragweed | Native |
| <i>Ampelopsis arborea</i> | pepper-vine | Native |
| <i>Amphicarpum muhlenbergianum</i> | blue maidencane | Native |
| <i>Andropogon glomeratus</i> | bushy broom grass; busy bluestem | Native |
| <i>Andropogon gyrans</i> | | N/A |
| <i>Andropogon virginicus</i> | chalky bluestem; broomsedge bluestem | Native |
| <i>Aristida beyrichiana</i> | wiregrass | N/A |
| <i>Aristida patula</i> | tall threeawn | N/A |
| <i>Annona glabra</i> | pond apple | N/A |
| <i>Asclepias incarnata</i> | swamp milkweed | Native |
| <i>Asclepias lanceolata</i> | lanceolata milkweed | N/A |
| <i>Aster carolinianus</i> | climbing aster | Native |
| <i>Aster dumosus</i> | See Symphyotrichum dumosum | N/A |
| <i>Aster elliotti (synonym)</i> | Elliott's aster | Native |
| ASTERACEAE | sunflowers | N/A |
| <i>Axonopus affinis (SYN)</i> | southern carpet grass | Native |
| <i>Axonopus compressus</i> | broadleaf carpetgrass, flat joint carpetgrass; broadleaf carpetgrass | Native |
| <i>Axonopus fissifolius</i> | common carpetgrass | Native |

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| | | |
|----------------------------------|--|--------|
| <i>Axonopus furcatus</i> | big carpet grass | Native |
| <i>Axonopus sp.</i> | carpet grass | Native |
| <i>Azolla caroliniana</i> | Carolina mosquito fern | Native |
| <i>Baccharis halimifolia</i> | salt bush, groundsel tree; sea myrtle | Native |
| <i>Bacopa caroliniana</i> | lemon bacopa; blue waterhyssop | Native |
| <i>Bacopa monnieri</i> | smooth water hyssop; herb-of-grace | Native |
| <i>Bacopa sp.</i> | water hyssop | Native |
| <i>Bidens alba</i> | beggarticks | Native |
| <i>Bidens bipinnata</i> | Spanish needles | N/A |
| <i>Bidens mitis</i> | marsh beggartick; smallfruit beggarticks | Native |
| <i>Blechnum serrulatum</i> | swamp fern; toothed midsorus fern | Native |
| <i>Boehmeria cylindrica</i> | smallspike false nettle; bog hemp | Native |
| <i>Boltonia diffusa</i> | smallhead boltonia; doll's daisy | Native |
| <i>Callicarpa americana</i> | American beautyberry | Native |
| <i>Calystegia sepium</i> | hedge false bindweed | Native |
| <i>Canna flaccida</i> | golden canna; bandanna- of-the-Everglades | Native |
| <i>Cardiospermum microcarpum</i> | heartseed | Native |
| <i>Carex alata</i> | broadwing sedge | Native |
| <i>Carex glaucescens</i> | clustered sedge | Native |
| <i>Carex longii</i> | Long's sedge | Native |
| <i>Carex sp.</i> | sedges | Native |
| <i>Carex verrucosa</i> | warty sedge | Native |
| <i>Carex vexans</i> | Florida hammock sedge | Native |
| <i>Carya aquatica.</i> | water hickory | Native |
| <i>Cassia nictans</i> | cassia | Native |
| <i>Cassia obtusifolia</i> | sicklepod | N/A |
| <i>Cenchrus echinatus</i> | southern sandspur | N/A |
| <i>Cenchrus incertus</i> | field sandbur | Native |
| <i>Cenchrus spinifex</i> | field sandbur | Native |

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| | | |
|-----------------------------------|---|--|
| <i>Centella asiatica</i> | Asian coinleaf, spadeleaf | Native |
| <i>Cephalanthus occidentalis</i> | buttonbush | Native |
| <i>Ceratophyllum demersum</i> | coontail | Native |
| <i>Ceratophyllum demersum</i> | coontail | Native |
| <i>Ceratopteris thalictroides</i> | watersprite | Native |
| <i>Chamaecrista nictitans</i> | sensitive pea | Native |
| <i>Chara sp.</i> | chara; muskgrass | Native |
| <i>Chenopodium ambrosioides</i> | Mexican tea | Non-Native |
| <i>Chloris neglecta</i> | fingergrass | Non-Native |
| <i>Cirsium horridulum</i> | yellow thistle; purple thistle | Native |
| <i>Cirsium sp.</i> | thistle | N/A |
| <i>Citrus sp.</i> | citrus | Non-Native |
| <i>Cladium jamaicense</i> | sawgrass; Jamaica swamp sawgrass | Native |
| <i>Coelorachis rugosa</i> | wrinkled jointtailgrass | Native |
| <i>Colocasia esculanta</i> | wild taro | Non-Native |
| <i>Commelina diffusa</i> | spreading or common dayflower | Native |
| <i>Commelina diffusa</i> | common dayflower | Native |
| <i>Commelina gigas</i> | climbing dayflower | Native/Endemic |
| <i>Conoclinium coelestinum</i> | mist flower | Native |
| <i>Coreopsis leavenworthii</i> | Leavenworth's tickseed | Native/Endemic |
| <i>Cornus foemina</i> | swamp dogwood; stiff dogwood | Native |
| <i>Crotalaria pallida</i> | smooth rattlebox | N/A |
| <i>Ctenium aromaticum</i> | toothache grass | N/A |
| <i>Cuphea carthagenensis</i> | Columbian waxweed | Non-Native; ornamental restricted in some areas |
| <i>Cynodon dactylon</i> | Bermudagrass | Non-Native |
| <i>Cyperaceae sp.</i> | sedges | N/A |
| <i>Cyperus articulatus</i> | jointed flatsedge | Native |
| <i>Cyperus compressus</i> | poorland flat sedge | Native |
| <i>Cyperus croceus</i> | Baldwin's flatsedge | Native |
| <i>Cyperus distinctus</i> | marshland flatsedge; swamp flatsedge | Native |
| <i>Cyperus esculentus</i> | yellow netgrass | Non-Native |

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| | | |
|-----------------------------------|--|------------|
| <i>Cyperus erythrorhizos</i> | redroot flatsedge | Native |
| <i>Cyperus flavescens</i> | yellow flatsedge | N/A |
| <i>Cyperus haspan</i> | sharp edge sedge; haspan flatsedge | Native |
| <i>Cyperus lanceolatus</i> | epiphytic flatsedge | Non-Native |
| <i>Cyperus odoratus</i> | fragrant flatsedge | Native |
| <i>Cyperus polystachyos</i> | manyspike flatsedge | Native |
| <i>Cyperus retrorsus</i> | retorse flat sedge; pinebarren flatsedge | Native |
| <i>Cyperus sp.</i> | flat sedges | N/A |
| <i>Cyperus strigosus</i> | strawcolored flatsedge | Native |
| <i>Cyperus surinamensis</i> | tropical flatsedge | Native |
| <i>Cyperus virens</i> | green flatsedge | Native |
| <i>Decodon verticillatus</i> | willow herb; swamp loosestrife | Native |
| <i>Desmodium incanum</i> | zarzabacoa comun | Native |
| <i>Desmodium sp.</i> | tick trefoil | N/A |
| <i>Desmodium triflorum</i> | threeflower ticktrefoil | Non-Native |
| <i>Dichanthelium erectifolium</i> | erectleaf witchgrass | Native |
| <i>Dichondra caroliniensis</i> | Carolina ponysfoot | Native |
| <i>Dichromena colorata</i> | white-tops | Native |
| <i>Dichromena latifolia</i> | white-bracted sedge | Native |
| <i>Digitaria ciliaris</i> | southern crabgrass | Native |
| <i>Digitaria longiflora</i> | Indian crabgrass | Non-Native |
| <i>Digitaria pentzii</i> | pangolagrass | Non-Native |
| <i>Digitaria serotina</i> | dwarf crabgrass; blanket crabgrass | Native |
| <i>Digitaria sp.</i> | crabgrass | N/A |
| <i>Diodia virginiana</i> | Virginia buttonweed | Native |
| <i>Diospyros virginiana</i> | persimmon; common persimmon | Native |
| <i>Drosera Sp.</i> | sundew | Native |
| <i>Drymaria cordata</i> | drymary | Non-Native |
| <i>Echinochloa crusgalli</i> | barnyard grass | Non-Native |
| <i>Echinochloa walteri</i> | Walter's millet; coast cockspur | Native |

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| | | |
|---------------------------------|---|---------------|
| <i>Eclipta prostrata</i> | Yerba de Tajo, eclipta; false daisy | N/A |
| <i>Eichhornia crassipes</i> | water hyacinth; common water-hyacinth | Non-Native |
| <i>Eleocharis cellulosa</i> | <i>club-rush; gulf coast spikerush</i> | <i>Native</i> |
| <i>Eleocharis flavescens</i> | <i>pale spikerush; yellow spikerush</i> | <i>Native</i> |
| <i>Eleocharis interstincta</i> | <i>jointed spikerush; knotted spikerush</i> | <i>Native</i> |
| <i>Eleocharis olivacea</i> | <i>brightgreen spikerush</i> | <i>Native</i> |
| <i>Eleocharis sp.</i> | <i>spikerush</i> | <i>Native</i> |
| <i>Eleocharis vivipara</i> | sprouting spikerush; viviparous spikerush | Native |
| <i>Eleocharis vivipara</i> | sprouting spikerush; viviparous spikerush | Native |
| <i>Elephantopus elatus</i> | tall elephant's foot | Native |
| <i>Eleusine indica</i> | Indian goosegrass | Non-Native |
| <i>Eragrostis atrovirens</i> | thalia lovegrass | Non-Native |
| <i>Eragrostis bahiensis</i> | bahia lovegrass | Non-Native |
| <i>Eragrostis elliotti</i> | Elliot's lovegrass | Native |
| <i>Eragrostis lugens</i> | morning lovegrass | Non-Native |
| <i>Eragrostis spectabilis</i> | purple lovegrass | Native |
| <i>Erechtites hieraciifolia</i> | American burn | Native |
| <i>Eremochloa ophiuroides</i> | centipedegrass | Non-Native |
| <i>Erigeron quercifolius</i> | oakleaf fleabane | Native |
| <i>Eryngium baldwinii</i> | Baldwin's eryngo | N/A |
| <i>Eucalyptus grandis</i> | grand eucalyptus | Non-Native |
| <i>Eupatorium capillifolium</i> | small dogfennel; dogfennel | Native |
| <i>Eupatorium coelestinum</i> | thoroughwort | Native |
| <i>Eupatorium serotinum</i> | lateflowering thoroughwort | Native |
| <i>Euthamia caroliniana</i> | fragrant goldenrod; slender goldenrod | Native |
| <i>Ficus arena</i> | strangler fig | Native |
| <i>Fimbristylis autumnalis</i> | slender fimbry | Native |
| <i>Fimbristylis caroliniana</i> | Carolina fimbry | Native |
| <i>Fimbristylis dichotoma</i> | tall fimbry; forked fimbry | Native |
| <i>Fimbristylis schoenoides</i> | ditch fimbry | Native |

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| <i>Fraxinus caroliniana</i> | pop ash; Carolina ash; water ash | Native |
| <i>Fuirena pumila</i> | dwarf umbrella-grass; dwarf umbrellasedge | Native |
| <i>Fuirena scirpoidea</i> | southern umbrellasedge | Native |
| <i>Galium tinctorium</i> | stiff marsh bedstraw | Native |
| <i>Galium uniflorum</i> | one-flower bedstraw | N/A |
| <i>Gelsemium sempervirens</i> | carolina jessimine | Native |
| <i>Geranium carolinianum</i> | carolina cranesbill | Native |
| <i>Habenaria repens</i> | water-spider orchid; false reinorchid | Native |
| <i>Hedyotis uniflora</i> | clustered bluet | Native |
| <i>Hedyotis uniflor</i> | clustered mille graine | Native |
| <i>Helianthus agrestis</i> | southeastern sunflower | Native |
| <i>Hemarthria altissima</i> | limpoglass | Non-Native |
| <i>Hibiscus grandiflorus</i> | swamp rosemallow | Native |
| <i>Hydrilla verticillata</i> | hydrilla; waterhyme | Non-Native |
| <i>Hydrilla verticillata</i> | hydrilla; waterhyme | Non-Native |
| <i>Hydrochloa caroliniensis</i> (<i>Luziola fluitans</i>) | common watergrass | N/A. |
| <i>Hydrocotyle ranunculoides</i> | floating penny wort; floating marsh pennywort | Native |
| <i>Hydrocotyle umbellata</i> | manyflower marsh pennywort | Native |
| <i>Hymenachne amplexicaulis</i> | West Indian marsh grass; trompetilla | Non-Native |
| <i>Hypericum cistifolium</i> | roundpod St. Johns wort | Native |
| <i>Hypericum fasciculatum</i> | sandweed; peelbark St. John's-Wort | Native |
| <i>Hypericum hypercoides</i> | St. andrew's cross | Native |
| <i>Hypericum mutilum</i> | slender St. John's-Wort | Native |
| <i>Hypericum sp.</i> | St. John's-Wort | N/A |
| <i>Hypericum tetrapetalum</i> | fourpetal St. John's-Wort | Native |

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| | | |
|---------------------------------|--|------------|
| <i>Hyptis alata</i> | clustered bushmint; musky mint | Native |
| <i>Ilex cassine</i> | dahoon holly; dahoon | Native |
| <i>Ilex glabra</i> | inkberry; inkberry | N/A |
| <i>Imperata cylindrica</i> | cogongrass | Non-Native |
| <i>Ipomea alba</i> | white morning glory | Native |
| <i>Ipomea sagittata</i> | saltmarsh morning glory | Native |
| <i>Ipomea sp.</i> | morning glory | Native |
| <i>Iris virginica</i> | blue flag; Virginia iris | Native |
| <i>Iva microcephala</i> | Piedmont marshelder | Native |
| JUNCACEAE | rush | N/A |
| <i>Juncus effusus</i> | soft rush | Native |
| <i>Juncus marginatus</i> | shore rush | Native |
| <i>Juncus megacephalus</i> | Bighead 'rush | N/A |
| <i>Justicia angusta</i> | pineland waterwillow | N/A |
| <i>Kosteletzkya virginica</i> | virginia seashore mallow; virginia saltmarsh mallow | Native |
| <i>Kyllinga brevifolia</i> | short leaf flatsedge | Non-Native |
| <i>Kyllinga odorata</i> | fragrant flatsedge | Native |
| <i>Kyllinga pumila</i> | low spikesedge | Native |
| <i>Lachnanthes caroliniana</i> | redroot | Native |
| <i>Lachnocalon anceps</i> | whitehead bogbutton | Native |
| <i>Lachnocalon beyrichianum</i> | Southern bogbutton | Native |
| <i>Lantana camara</i> | lantana; shrub verbena | Non-Native |
| <i>Leersia hexandra</i> | southern cutgrass | Native |
| <i>Lemna sp.</i> | duckweed | Native |
| <i>Lepidium virginicum</i> | poor man's peppergrass; virginia pepperweed | Native |
| <i>Liatris sp.</i> | blazing star | Native |
| <i>Limnobium spongia</i> | frog's-bit; American spongeplant | Native |
| <i>Lindernia anagallidea</i> | . | N/A |

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| | | |
|---------------------------------|---|------------|
| <i>Lindernia grandiflora</i> | savanna false pimpernel | Native |
| <i>Liquidambar styraciflua</i> | sweet gum, red gum | N/A |
| <i>Ludwigia decurrens</i> | primrosewillow; wingleaf primrosewillow | Native |
| <i>Ludwigia leptocarpa</i> | anglestem primrosewillow | Native |
| <i>Ludwigia maritima</i> | seaside primrosewillow | Native |
| <i>Ludwigia octovalis</i> | Mexican primrosewillow | Native |
| <i>Ludwigia peruviana</i> | Peruvian primrosewillow | Non-Native |
| <i>Ludwigia repens</i> | red ludwigia; creeping primrosewillow | Native |
| <i>Ludwigia sp.</i> | water primrose; seedbox | Native |
| <i>Ludwigia suffruticosa</i> | shrubby seedbox | Native |
| <i>Luziola fluitans</i> | watergrass; southern watergrass | Native |
| <i>Lygodium japonicum</i> | Japanese climbing-fern | Non-Native |
| <i>Lyonia ferruginea</i> | rusty lyonia | N/A |
| <i>Lyonia fruticosa</i> | staggerbush | N/A |
| <i>Lyonia lucida</i> | stagger bush | N/A |
| <i>Lygodium microphyllum</i> | Old World climbing fern; small-leaf climbing fern | Non-Native |
| <i>Lythrum alatum</i> | winged loosestrife | Native |
| <i>Macroptilium lathyroides</i> | wild bushbean | Non-Native |
| <i>Magnolia virginiana</i> | sweetbay; sweetbay magnolia | Native |
| <i>Melothria pendula</i> | creeping cucumber | Native |
| <i>Micranthemum umbrosum</i> | baby tears; shade mudflower | Native |
| <i>Mikania scandens</i> | climbing hempweed; climbing hempvine | Native |
| <i>Mitreola petiolata</i> | stalked miterwort; lax hornpod | Native |

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|-------------------------------------|--|------------|
| <i>Momordica charantia</i> | wild balsam apple; balsampear | Non-Native |
| <i>Myrica cerifera</i> | wax myrtle; southern bayberry | Native |
| <i>Myriophyllum aquaticum</i> | parrot feather; watermilfoil | Non-Native |
| <i>Myriophyllum aquaticum</i> | parrot feather watermilfoil | Non-Native |
| <i>Najas guadalupensis</i> | southern naiad; southern waterynymph | Native |
| <i>Najas guadalupensis</i> | southern waterynymph | Native |
| <i>Nuphar advenum</i> | spatterdock | Native |
| <i>Nuphar lutea</i> | spatterdock | Native |
| <i>Nymphaea mexicana</i> | yellow waterlilly | Native |
| <i>Nymphaea odorata</i> | white waterlilly | Native |
| <i>Nyssa sylvatica var. biflora</i> | swamp tupela | Native |
| <i>Osmunda cinnamomea</i> | cinnamon fern | Native |
| <i>Osmunda regalis</i> | royal fern | Native |
| <i>Osmunda sp.</i> | . | Native |
| <i>Oxalis corniculata</i> | creeping woodsorrel; common yellow woodsorrel | Native |
| <i>Oxalis florida</i> | wood sorrel | Native |
| <i>Panicum anceps</i> | beaked panic grass | Native |
| <i>Panicum angustifolium</i> | needleleaf witchgrass | Native |
| <i>Panicum dichotomum</i> | cypress witchgrass | Native |
| <i>Panicum erectifolium</i> | witchgrass | Native |
| <i>Panicum hemitomom</i> | maidencane | Native |
| <i>Panicum hians</i> | gaping panic grass | Native |
| <i>Panicum paludivagum</i> | Egyptian paspalidum | Non-Native |
| <i>Panicum repens</i> | torpedograss | Non-Native |
| <i>Panicum rigidulum</i> | redtop panicum | Native |
| <i>Panicum sp.</i> | panic grass | N/A |
| <i>Panicum sphaerocarpon</i> | roundseed witchgrass | N/A |
| <i>Panicum verrucosum</i> | warty panic grass | Native |
| <i>Parthenocissus quinquefolia</i> | Virginia creeper; woodbine | Native |
| <i>Paspalidium geminatum</i> | Egyptian paspalidium; Kissimmee grass | Native |
| <i>Paspalum acuminatum</i> | brook crowngrass | Non-Native |

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|-------------------------------|---|-------------|
| <i>Paspalum conjugatum</i> | sour paspalum; hilograss | Native |
| <i>Paspalum dilatatum</i> | dallisgrass | Non-Native |
| <i>Paspalum dissectum</i> | mudbank paspalum; mudbank crowngrass | Native |
| <i>Paspalum distichum</i> | joint paspalum; knotgrass | Native |
| <i>Paspalum floridanum</i> | Florida paspalum | Native |
| <i>Paspalum laeve</i> | field paspalum | Native |
| <i>Paspalum notatum</i> | bahiagrass | Native |
| <i>Paspalum publiflorum</i> | hairy paspalum | Native |
| <i>Paspalum repens</i> | water paspalum | Native |
| <i>Paspalum setaceum</i> | thin paspalum | Native |
| <i>Paspalum sp.</i> | . | Native |
| <i>Paspalum urvillei</i> | Vasey grass | Non-Native |
| <i>Passiflora sp.</i> | passionflower | Native |
| <i>Peltandra sagittifolia</i> | spoonflower; white arrow arum | Native |
| <i>Peltandra virginica</i> | green arrow arum | Native |
| <i>Periphyton</i> | periphyton | N/A |
| <i>Persea borbonia</i> | red bay | Native |
| <i>Perea borbonia humilis</i> | silk bay | N/A |
| <i>Persea palustris</i> | swamp bay | Native |
| <i>Phragmites australis</i> | common reed | Native |
| <i>Phyla nodiflora</i> | common frog fruit; capeweed; turkey tangle fogfruit | Native |
| <i>Physalis pubescens</i> | husk tomato | Native |
| <i>Phytolacca americana</i> | common pokeweed; American pokeweed | Native |
| <i>Pinus ellioti</i> | slash pine | Native |
| <i>Pistia stratiotes</i> | water lettuce | Non-Native? |
| <i>Pluchea foetida</i> | stinking camphorweed | Native |
| <i>Pluchea odorata</i> | sweetscent | Native |
| <i>Pluchea rosea</i> | stinkweed; rosy camphorweed | Native |
| <i>Pluchea sp.</i> | camphorweed | N/A |
| POACEAE | Grasses | N/A |
| <i>Polygonum densiflorum</i> | denseflower smartweed; denseflower knotweed | Native |

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| | | |
|------------------------------------|---|------------|
| <i>Polygonum hirsutum</i> | hairy smartweed | Native |
| <i>Polygonum hydropiperoides</i> | swamp smartweed; mild waterpepper | Native |
| <i>Polygonum punctatum</i> | dotted smartweed | Native |
| <i>Polygonum sp.</i> | knotweed, smartweed | Native |
| <i>Polypodium polypidioides</i> | resurrection fern | Native |
| <i>Polypremum procumbens</i> | juniperleaf; rustweed | Native |
| <i>Pontederia cordata</i> | pickerelweed | Native |
| <i>Pontederia lanceolata</i> | pickerelweed | N/A |
| <i>Proserpinaca palustris</i> | marsh mermaidweed | Native |
| <i>Proserpinaca palustris</i> | marsh mermaidweed | Native |
| <i>Psidium guajava</i> | common guava | Non-Native |
| <i>Psilocarya nitens</i> | short-beak baldrush | N/A. |
| <i>Ptilimnium capillaceum</i> | mock bishopsweed; herbwilliam | Native |
| <i>Quercus chapmanii</i> | chapman oak | Native |
| <i>Quercus germinata</i> | sand live oak | Native |
| <i>Quercus laurifolia</i> | laurel oak; diamond oak | Native |
| <i>Quercus myrtifolia</i> | myrtle oak | Native |
| <i>Quercus nigra</i> | water oak | Native |
| <i>Quercus sp.</i> | oak | N/A |
| <i>Quercus virginiana</i> | live oak | Native |
| <i>Rapanea punctata</i> | myrsine | Native |
| <i>Rhexia mariana</i> | pale meadowbeauty; Maryland meadowbeauty | Native |
| <i>Rhexia nashii</i> | maid marian | Native |
| <i>Rhus copallinum</i> | winged sumac | Native |
| <i>Rhynchelytrum repens</i> | natalgrass; rose natalgrass | N/A |
| <i>Rhynchospora cephalantha</i> | clustered beakrush; bunched beaksedge | Native |
| <i>Rhynchospora chalarocephala</i> | loose head beakrush | Native |
| <i>Rhynchospora colorata</i> | star-rush | Native |
| <i>Rhynchospora decurrens</i> | swampforest beaksedge | Native |
| <i>Rhynchospora divergens</i> | spreading beaksedge | Native |

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| | | |
|----------------------------------|--|------------|
| <i>Rhynchospora fascicularis</i> | fasciculate beak ush | Native |
| <i>Rhynchospora eximia</i> | Florida breaksedge | Native |
| <i>Rhynchospora globularis</i> | Globe beakrush | Native |
| <i>Rhynchospora grayi</i> | Gray's beakrush | Native |
| <i>Rhynchospora inundata</i> | inundated beakrush; narrowfruit horned beaksedge | Native |
| <i>Rhynchospora microcarpa</i> | southern beakrush; souther beaksedge | Native |
| <i>Rhynchospora microcephala</i> | capitate beakrush; bunched beaksedge | Native |
| <i>Rhynchospora nitens</i> | baldrush; shortbeak beaksedge | Native |
| <i>Rhynchospora odorata</i> | fragrant beakrush; fragrant beaksedge | N/A |
| <i>Rhynchospora scirpoides</i> | longbeak beaksedge | Native |
| <i>Rhynchospora tracyi</i> | Tracy's beakrush | Native |
| <i>Ricciocarpus natans</i> | liverwort; Purple-fringed riccia | N/A |
| <i>Richardia scabra</i> | rough Mexican clover | Non-Native |
| <i>Rubus cuneifolius</i> | sand blackberry | Native |
| <i>Ruella sp.</i> | ruella | Native |
| <i>Sabal palmetto</i> | cabbage palm | Native |
| <i>Sabatia bartramii</i> | Bartram's rosegentian | Native |
| <i>Saccharum giganteum</i> | sugarcane plumegrass | N/A |
| <i>Sacciolepis indica</i> | glenwood grass; Indian cupscale | Non-Native |
| <i>Sacciolepis striata</i> | American cupscale | Native |
| <i>Sagittaria lancifolia</i> | duck potato; bulltongue arrowhead | Native |
| <i>Sagittaria latifolia</i> | broadleaf arrowhead; common arrowhead; duck potato | Native |

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| | | |
|---------------------------------|--|------------|
| <i>Salix caroliniana</i> | coastalplain willow; Carolina willow | Native |
| <i>Salvinia minima</i> | water fern; water spangles | Non-Native |
| <i>Sambucus canadensis</i> | elderberry | Native |
| <i>Sambucus simpsonii</i> | . | N/A |
| <i>Sarcostemma clausum</i> | white twinevine | Native |
| <i>Saururus cernuus</i> | lizard's-tail | Native |
| <i>Schinus terebinthifolius</i> | Brazilian pepper | Non-Native |
| <i>Scirpus californicus</i> | southern bulrush; giant bulrush; California bulrush | Native |
| <i>Scirpus cubensis</i> | Cuban bulrush; burhead sedge | Non-Native |
| <i>Scirpus tabernaemontani</i> | softstem bulrush | Native |
| <i>Scleria reticularis</i> | netted nutrush | Native |
| <i>Scoparia dulcis</i> | licoriceweed; sweetbroom | Native |
| <i>Senecio vulgaris</i> | common groundsel | N/A |
| <i>Senna obtusifolia</i> | coffeeweed, sicklepod | Native |
| <i>Senna occidentalis</i> | septicweed; coffee senna | Non-Native |
| <i>Senna sp.</i> | . | N/A |
| <i>Serenoa repens</i> | saw palmetto | Native |
| <i>Sesbania exaltata</i> | . | N/A |
| <i>Sesbania herbacea</i> | danglepod | Native |
| <i>Sesbania punicea</i> | Spanish gold; rattlebox | Non-Native |
| <i>Sesbania sp.</i> | . | N/A |
| <i>Sesbania vesicaria</i> | bagpod rattle bush; bladderpod | Native |
| <i>Setaria magna</i> | giant foxtail; giant bristlegrass | Native |
| <i>Setaria parviflora</i> | yellow bristlegrass; knotroot foxtail | Native |
| <i>Setaria geniculata</i> | bristlegrass | Native |
| <i>Sida acuta</i> | sida; common wireweed; common fanpetals | Native |
| <i>Sida cordifolia</i> | lima | Non-Native |

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| | | |
|-----------------------------------|--|------------|
| <i>Sida rhombifolia</i> | arrow leaf sida; Cuban jute; Indian hemp | Native |
| <i>Sida sp.</i> | fanpetals | N/A |
| <i>Sida elliotii</i> | Elliott's fanpetals | Native |
| <i>Sisyrinchium angustifolium</i> | blue-eyed grass; narrowleaf blue-eyed grass | Native |
| <i>Smilax auriculata</i> | wild bamboo | Native |
| <i>Smilax bona-nox</i> | saw greenbrier | N/A |
| <i>Smilax laurifolia</i> | laurel greenbrier; bamboo vine | Native |
| <i>Smilax rotundifolia</i> | common greenbrier; bullbrier; roundleaf greenbrier | Native |
| <i>Smilax sp.</i> | greenbrier | N/A |
| <i>Solanum americanum</i> | American black nightshade | Native |
| <i>Solanum capsicoides</i> | soda apple, cockroach-berry | N/A |
| <i>Solanum sp.</i> | soda apple | N/A |
| <i>Solanum viarum</i> | tropical soda apple | Non-Native |
| <i>Solidago fistulosa</i> | pinebarren goldenrod | Native |
| <i>Solidago tortifolia</i> | twistedleaf goldenrod | Native |
| <i>Sorghastrum secundum</i> | lopsided indiagrass | Native |
| <i>Spartina bakeri</i> | Baker's cord grass; sand cordgrass | Native |
| <i>Spartina sp.</i> | cord grasses | Native |
| <i>Sphagnum sp.</i> | sphagnum moss | N/A |
| <i>Sphenoclea zeylanica</i> | chickenspike | Non-Native |
| <i>Sphenoclea zeylanica</i> | chickenspike | Non-Native |
| <i>Sporobolus indicus</i> | smut grass | Non-Native |
| <i>Stillingia aquatica</i> | corkwood | Native |
| <i>Suriana maritima</i> | bay cedar | Native |
| <i>Symphotrichum dumosum</i> | Rice-button aster | Native |
| <i>Taxodium distichum</i> | bald-cypress | Native |
| <i>Teucrium canadense</i> | American germander; woodsage; Canadian germander | Native |

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| | | |
|--------------------------------|---|------------|
| <i>Thalia geniculata</i> | fireflag; alligatorflag | Native |
| <i>Thelypteris dentata</i> | downy maiden fern; downy shield fern | Native |
| <i>Thelypteris interrupta</i> | willdenows maiden fern; Willdenow's fern; downy maiden fern | Native |
| <i>Thelypteris kunthii</i> | widespread maiden fern; souther maiden fern | Native |
| <i>Thelypteris palustris</i> | marsh fern | Native |
| <i>Thelypteris sp.</i> | maidenferns | N/A |
| <i>Tillandsia sp.</i> | airplant | N/A |
| <i>Toxicodendron radicans</i> | poison ivy | Native |
| <i>Triadenum virginicum</i> | marsh St. John's wort | Native |
| <i>Trifolium repens</i> | white clover | Non-Native |
| <i>Typha domingensis</i> | southern cattail | Native |
| <i>Typha latifolia</i> | broad leaf cattail | Native |
| <i>Urena lobata</i> | Caesarweed | Non-Native |
| <i>Urochloa mutica</i> | paragrass | Non-Native |
| <i>Urochloa subquadriflora</i> | tropical signalgrass | Non-Native |
| <i>Urtica chamaedryoides</i> | heartleaf nettle | Native |
| <i>Utricularia sp.</i> | bladderwort | Native |
| <i>Utricularia sp.</i> | bladderwort | Native |
| <i>Vaccinium corybossum</i> | highbrush blueberry | Native |
| <i>Vaccinium myrsinites</i> | shiny blueberry | Native |
| <i>Vallisneria americana</i> | tapegrass | Native |
| <i>Verbena scabra</i> | sandpaper vervain; harsh vervain | Native |
| <i>Vicia acutifolia</i> | fourleaf vetch | Native |
| <i>Vigna luteola</i> | cowpea; hairy pod cowpea | Native |
| <i>Vigna speciosa</i> | wandering cowpea | Non-Native |
| <i>Viola lanceolata</i> | bog white violet | Native |
| <i>Vitis rotundifolia</i> | muscadine grape | Native |
| <i>Vitis munsoniana</i> | wild grape | Native |
| <i>Wolffiella gladiata</i> | sword bogmat; Florida mudmidget | Native |
| <i>Woodwardia areolata</i> | netted chain fern | Native |
| <i>Woodwardia sp.</i> | chainfern | Native |

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| | | |
|-----------------------------|-------------------------------|--------|
| <i>Woodwardia virginica</i> | Virginia chainfern | Native |
| <i>Xyris ellioti</i> | Elliott's yellow-eyed grass | Native |
| <i>Xyris fimbriata</i> | fringed yellow-eyed grass | Native |
| <i>Xyris jupicae</i> | Richard's yellow-eyed grasses | Native |

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Bird Species

| | | PRESENCE | STATUS | |
|----------------------------|---------------------------|--|---------|-------|
| | | E | Federal | State |
| | | E=Endangered T=Threatened S=Species of Special Concern N=Non-native ◆ = Potential ☉ = Confirmed | | |
| Common Name | Scientific Name | | | |
| Acadian Flycatcher | Empidonax virescens | ◆ | | |
| American Bittern | Botaurus lentiginosus | ☉ | | |
| American Crow | Corvus brachyrhynchos | ☉ | | |
| American Goldfinch | Carduelis tristis | ◆ | | |
| American Kestrel | Falco sparverius | ☉ | | |
| American Redstart | Setophaga ruticilla | ☉ | | |
| American Robin | Turdus migratorius | ☉ | | |
| American Wigeon | Anas Americana | ◆ | | |
| American Woodcock | Scolopax minor | ☉ | | |
| Anhinga | Anhinga Anhinga | ☉ | | |
| Bachman's Sparrow | Aimophila aestivalis | ◆ | | |
| Bald Eagle | Haliaeetus leucocephalus | ☉ | | |
| Bank Swallow | Riparia riparia | ◆ | | |
| Barn Owl | Tyto alba | ☉ | | |
| Barn Swallow | Hirundo rustica | ☉ | | |
| Barred Owl | Strix varia | ☉ | | |
| Belted Kingfisher | Ceryle alcyon | ☉ | | |
| Black-and-white Warbler | Mniotilta varia | ◆ | | |
| Black-billed Cuckoo | Coccyzus erythrophthalmus | ◆ | | |
| Brown Pelican | Pelecanus occidentalis | ◆ | | |
| Black-whiskered Vireo | Vireo altiloquus | ◆ | | |
| Black Duck | Anas rubripes | ◆ | | |
| Black Rail | Laterallus jamaicensis | ◆ | | |
| Black Vulture | Coragyps atratus | ☉ | | |
| Blackpoll Warbler | Dendroica striata | ◆ | | |
| Blk-crowned Night-heron | Nycticorax nycticorax | ☉ | | |
| Blk-throated Blue Warbler | Dendroica caerulescens | ☉ | | |
| Blk-throated Green Warbler | Dendroica virens | ◆ | | |
| Blue Jay | Cyanocitta cristata | ☉ | | |
| Blue-gray Gnatcatcher | Poliophtila caerulea | ☉ | | |

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| | | | | |
|-------------------------|----------------------------------|---|---|---|
| American Anhinga | Anhinga anhinga | ☉ | | |
| Blue Grosbeak | Guiraca caerulea | ◆ | | |
| Boat-tailed Grackle | Quiscalus major | ☉ | | |
| Bobolink | Dolichonyx oryzivorus | ☉ | | |
| Bobwhite Quail | Colinus virginianus | ☉ | | |
| Brewer's Blackbird | Euphagus cyanocephalus | ☉ | | |
| Brown-headed Cowbird | Molothrus ater | ☉ | N | N |
| Brown Pelican | Pelecanus occidentalis | ◆ | | |
| Brown Thrasher | Toxostoma rufum | ☉ | | |
| Burrowing Owl | Athene curicularia | ☉ | | S |
| Canvasback | Aythya valisineria | ◆ | | |
| Carolina Wren | Thryothorus ludovicianus | ☉ | | |
| Cattle Egret | Bubulcus ibis | ☉ | N | N |
| Cliff Swallow | Petrochelidon pyrrhonota | ◆ | | |
| Common Flicker | Colaptes auratus | ◆ | | |
| Common Grackle | Quiscalus quiscula | ☉ | | |
| Common Ground Dove | Columbina passerina | ☉ | | |
| Common Loon | Gavia immer | ◆ | | |
| Common Snipe | Gallinago gallinago | ☉ | | |
| Common Yellowthroat | Geothlypis trichas | ☉ | | |
| Common Tern | Sterna hirundo | ◆ | | |
| Connecticut Warbler | Oporonis agilis | ◆ | | |
| Cooper's Hawk | Accipiter cooperii | ◆ | | |
| Crested caracara | Caracara cheriway | ☉ | | |
| Downy Woodpecker | Picoides pubescens | ☉ | | |
| Eastern Screech-owl | Megascops asio | ☉ | | |
| Eastern Wood-pewee | Contopus virens | ☉ | | |
| European Starling | Sturnus vulgaris | ☉ | N | N |
| Everglades Snail Kite | Rostrhamus sociabilis | ◆ | E | |
| Fish Crow | Corvus ossifragus | ◆ | | |
| Glossy Ibis | Plegadis falcinellus | ◆ | | |
| Grasshopper Sparrow, FL | Ammodramus savannarum floridanus | ◆ | E | |
| Gray Catbird | Dumetella carolinensis | ☉ | | |
| Great Egret | Ardea alba | ☉ | | |
| Great Horned Owl | Bubo virginianus | ☉ | | |
| Great White Heron | Ardrea herodias | ◆ | | |
| Greater Yellowlegs | Tringa melamoleuca | ◆ | | |
| Green-winged Teal | Anas crecca | ☉ | | |
| Green Backed Heron | Butorides virescens | ☉ | | |
| Hairy Woodpecker | Picoides villosus | ◆ | | |
| Henslow's Sparrow | Ammodramus henslowii | ◆ | | |
| Hooded Warbler | Wilsonia citrina | ◆ | | |
| House Sparrow | Passer domesticus | ☉ | N | N |
| House Wren | Troglodytes aedon | ◆ | | |

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| | | | | |
|---------------------------|-------------------------------|---|---|---|
| Indigo Bunting | Passerina cyanea | 9 | | |
| Kentucky Warbler | Oporonis formosus | ◆ | | |
| Killdeer | Charadrius vociferus | 9 | | |
| King Rail | Rallus elegans | ◆ | | |
| Le Conte's Sparrow | Ammodramus leconteii | ◆ | | |
| Least Bittern | Ixobrychus exilis | 9 | | |
| Loggerhead Shrike | Lanius judovicianus | 9 | | |
| Marsh Wren | Cistothorus palustris | 9 | | |
| Merlin | Falco columbarius | 9 | | |
| Mottled Duck | <i>Pelecanus occidentalis</i> | 9 | | |
| Mourning Dove | Zenaida macroura | 9 | | |
| N. Rough-winged Swallow | Stelgidopteryx serripennis | ◆ | | |
| Northern Bobwhite Quail | Colinus virginianus | 9 | | |
| Northern Cardinal | Cardinalis cardinalis | 9 | | |
| Northern Harrier | Circus cyaneus | ◆ | | |
| Northern Mockingbird | Mimus polyglottos | 9 | | |
| Northern Oriole | Icterus galbula | ◆ | | |
| Northern Parula Warbler | Parula americana | ◆ | | |
| Northern Pintail | Anas acuta | ◆ | | |
| Painted Bunting | Passerina ciris | 9 | | |
| Palm Warbler | Dendroica plamarum | 9 | | |
| Peregrine Falcon | Falco peregrinus | 9 | | |
| Red-breasted Merganser | Mergus serrator | ◆ | | |
| Pileated Woodpecker | Dryocopus pileatus | 9 | | |
| Pine Warbler | Dendroica pinus | 9 | | |
| Prairie Warbler | Dendroica discolor | 9 | | |
| Prothonotary Warbler | Protonotaria citrea | ◆ | | |
| Purple Martin | Progne subis | ◆ | | |
| Redwing Blackbird | Agelaius phoeniceus | 9 | | |
| Ruby-throated Hummingbird | Archilochus colubris | ◆ | | |
| Rufous-sided Towhee | Pipilo erythrophthalmus | ◆ | | |
| Sandhill Crane | Grus canadensis | 9 | | S |
| Scissor-tailed Flycatcher | Tyrannus forficatus | ◆ | | |
| Scrub Jay | Aphelocoma coerulescens | ◆ | T | |
| S.E American Kestrel | Falco sparverius paulus | 9 | | T |
| Sedge Wren | Cistothorus platensis | ◆ | | |
| White-tailed Kite | Elanus caeruleus | 9 | | |
| Sharp-tailed Sparrow | Ammodramus caudacutus | ◆ | | |
| Short-eared Owl | Asio flammeus | ◆ | | |
| Short-tailed Hawk | Buteo brachyurus | 9 | | |
| Smooth-billed Ani | Crotophaga ani | ◆ | | |
| Swallow-tailed Kite | Elanoides forficatus | 9 | | |
| Snowy Egret | Egretta thula | 9 | | S |

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| | | | | |
|--------------------------|------------------------|---|---|---|
| Solitary Sandpiper | Tringa solitaria | ◆ | | |
| Solitary Vireo | Vireo solitarius | ◆ | | |
| Song Sparrow | Melospiza melodia | ◆ | | |
| Tree Swallow | Tachycineta bicolor | ☉ | | |
| Tricolored Heron | Egretta tricolor | ☉ | | S |
| Turkey Vulture | Cathartes aura | ☉ | | |
| Virginia Rail | Rallus limicola | ◆ | | |
| Water Pipit | Anthus spinoletta | ◆ | | |
| White-eyed Vireo | Vireo griseus | ☉ | | |
| White-throated Sparrow | Zonotrichia albicollis | ◆ | | |
| White-winged Dove | Zenaida asiatica | ◆ | | |
| White Ibis | Eodcimus albus | ☉ | | S |
| White Pelican | Accipiter striatus | ◆ | | |
| Whip-poor-will | Caprimulgus vociferus | ☉ | | |
| Woodstork | Mycteria americana | ☉ | E | |
| Yel-crowned Night-heron | Nyctanassa violacea | ☉ | | |
| Yellow-bellied Sapsucker | Sphyrapicus varius | ◆ | | |
| Yellow-billed Cuckoo | Coccyzus americanus | ☉ | | |
| Yellow-rumped Warbler | Dendroica coronata | ☉ | | |
| Yellow-throated Vireo | Vireo flavifrons | ◆ | | |
| Yellow-throated Warbler | Dendroica dominica | ☉ | | |

Mammal Species

Data Source: Commission and Land Stewardship Resource Evaluation Program

| | | PRESENCE | STATUS | |
|---|-------------------------|----------|---------|-------|
| | | | Federal | State |
| E=Endangered T=Threatened S=Species of Special concern N=Non-native | | | | |
| ◆ = Potential | | | | |
| ☉ = Confirmed | | | | |
| Common Name | Scientific | | | |
| Armadillo | Dasyus novemcinctus | ☉ | N | N |
| Big Brown Bat | Eptesicus fuscus fuscus | ☉ | | |
| Big Cypress Fox Squirrel | Sciurus niger avicennia | ◆ | | T |
| Bobcat | Lynx rufus | ☉ | | |
| Brazilian Free-tailed Bat | Tadarida b. cynocephala | ◆ | | |
| Cotton Mouse | Peromyscus gossypinus | ☉ | | |
| Coyote | Canis latrans | ◆ | | |
| Eastern Cottontail | Sylvilagus floridanus | ☉ | | |
| Eastern Gray Squirrel | Sciurus carolinensis | ☉ | | |

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| | | | | |
|----------------------------|-------------------------------|---|---|---|
| Eastern Mole | Scalopus aquaticus | ☉ | | |
| Eastern Pipistrel | Pipistrellus subflavus | ◆ | | |
| Eastern Woodrat | Neotoma floridana | ☉ | | |
| Evening Bat | Nycticeius humeralis | ◆ | | |
| Feral Hog | Sus scrofa | ☉ | N | N |
| Florida Black Bear | Ursus americanus floridanus | ◆ | | |
| Florida Bonneted bat | Eumops floridanus | ☉ | E | |
| Florida Manatee | Trichechidae manatus | ☉ | E | |
| Florida Mastiff Bat | Eumops glaucinus floridanus | ◆ | | T |
| Florida Mouse | Podomys floridanus | ◆ | | S |
| Florida Panther | Felis concolor caryi | ☉ | E | |
| Florida Water Rat | Neofiber alleni | ☉ | | |
| Florida Weasel | Mustela frenata peninsulae | ◆ | | |
| Gray Fox | Urocyon cinereoargenteus | ☉ | | |
| Hispid Cotton Rat | Sigmodon hisipus | ☉ | | |
| Hoary Bat | Lasiurus cinereus | ◆ | | |
| Leaset Shrew | Cryptotis parva | ☉ | | |
| Long-tailed Weasel | Mustela frenata | ◆ | | |
| Marsh Rabbit | Sylvilagus palustris | ☉ | | |
| Northern Yellow Bat | Lasiurus i. floridanus | ◆ | | |
| Opposum | Didelphis marsupialis | ☉ | | |
| Raccoon | Procyon lotor | ☉ | | |
| Red Fox | Vulpes fulva | ◆ | | |
| Rice Rat | Oryzomys palustris | ☉ | | |
| River Otter | Lutra canadensis | ☉ | | |
| Seminole Bat | Lasiurus seminolus | ◆ | | |
| Sherman's Fox Squirrel | Sciurus niger shermani | ☉ | | S |
| Shermans Shorttailed Shrew | Blarina carolinensis shermani | ◆ | | S |
| Short-tailed Shrew | Blarina c. carolinensis | ☉ | | |
| Southeastern Big-eared Bat | Plecotus rafinesquii | ◆ | | |
| Southeastern Brown Bat | Myotis austroriparius | ◆ | | |
| Southeastern Pocket Gopher | Geomys pinetis | ◆ | | |
| Southern Florida Mink | Mustela vison evergladensis | ◆ | | T |
| Southern Flying Squirrel | Glaucomys volans | ◆ | | |
| Spotted Skunk | Spilogale putorius | ☉ | | |
| Striped Skunk | Mephitis mephitis | ☉ | | |
| Whitetail Deer | Odocoileus virginianus | ☉ | | |

Reptile and Amphibian Species

| | PRESENCE | STATUS |
|--|----------|--------|
|--|----------|--------|

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| | | E=Endangered T=Threatened S=Species of Special concern N=Non-native | | |
|-------------------------|--|---|-------|---|
| | | ◆ = Potential ☉ = Confirmed | | |
| Common Name | Scientific Name | Federal | State | |
| SNAKES | | | | |
| Brown Watersnake | <i>Nerodia taxipilota</i> | ◆ | | |
| Common Kingsnake | <i>Lampropeltis getulus</i> | ☉ | | |
| Corn/Red Rat | <i>Elaphe guttata guttata</i> | ☉ | | |
| Dusty Pygmy | <i>Sistrurus miliarius barbouri</i> | ◆ | | |
| Eastern Coachwhip | <i>Masticophis flagellum flagellum</i> | ◆ | | |
| Eastern Coral | <i>Micrurus fulvius fulvius</i> | ◆ | | |
| Eastern Diamondback | <i>Crotalus adamanteus</i> | ☉ | | |
| Eastern Hognose | <i>Heterodon platyrhinos</i> | ◆ | | |
| Eastern Indigo | <i>Drymarchon corais couperi</i> | ☉ | T | |
| Eastern Mud | <i>Farancia abacura abacura</i> | ◆ | | |
| Everglades Racer | <i>Coluber constrictor paluticola</i> | ◆ | | |
| Everglades Rat | <i>Elaphe obsoleta rossalleni</i> | ◆ | | |
| Fl. Green Watersnake | <i>Nerodia cyclopion floridana</i> | ◆ | | |
| Florida Brown Snake | <i>Storeria dekayi victa</i> | ◆ | | |
| Florida Cottonmouth | <i>Agkistrodon piscivorus conanti</i> | ☉ | | |
| Florida Pine Snake | <i>Pituophis melanoleucus mugitus</i> | ☉ | | S |
| Florida Scarlet | <i>Cemophora coccinea coccinea</i> | ◆ | | |
| Florida Watersnake | <i>Nerodia fasciata pictiventris</i> | ◆ | | |
| Glossy Crayfish | <i>Regina rigida rigida</i> | ◆ | | |
| Mole Kingsnake | <i>Lampropeltis calligaster rhombomaculata</i> | ◆ | | |
| Peninsula Ribbon | <i>Thamnophis sauritus sackeni</i> | ☉ | | |
| Peninsula Crowned Snake | <i>Tantilla relicta relicta</i> | ◆ | | |
| Pinewoods | <i>Rhadinaea flavilata</i> | ◆ | | |
| Rough Green | <i>Opheodrys aestivus</i> | ◆ | | |
| Scarlet Kingsnake | <i>Lampropeltis triangulum elapsoides</i> | ◆ | | |
| Short-tailed Snake | <i>Stilosoma extenuatum</i> | ◆ | | |
| So Florida Rainbow | <i>Farancia erythrogramma seminola</i> | ◆ | | |
| Southern Black Racer | <i>Coluber constrictor priapus</i> | ☉ | | |
| Yellow Rat/Chicken | <i>Elaphe obsoleta quadrivittata</i> | ☉ | | |
| AMPHIBIANS | | | | |
| Barking Treefrog | <i>Hyla gratiosa</i> | ◆ | | |
| Bluetailed Mole Skink | <i>Eumeces egregius lividus</i> | ◆ | T | |
| Broadheaded Skink | <i>Eumeces laticeps</i> | ◆ | | |
| Brown Anole | <i>Anolis sagrei sagrei</i> | ☉ | N | N |
| Bullfrog | <i>Rana catesbeiana</i> | ◆ | | |
| Central Newt | <i>Notophthalmas viridescens louisianensis</i> | ◆ | | |

Kissimmee River Management Areas General Management Plan 2014 through 2024
South Florida Water Management District, Land Stewardship Section

| | | | | |
|-------------------------------|--|---|----|---|
| Cuban Treefrog | <i>Osteopilus septentrionalis</i> | ☉ | N | N |
| Dwarf Salamander | <i>Eurycea quadridigitata</i> | ◆ | | |
| Eastern Glass Lizard | <i>Ophisaurus ventralis</i> | ◆ | | |
| Eastern Lesser Siren | <i>Siren intermedia intermedia</i> | ◆ | | |
| Eastern Narrowmouthed Toad | <i>Gastrophryne carolinensis carolinensis</i> | ☉ | | |
| Eastern Spadefoot | <i>Scaphiopus holbrooki</i> | ◆ | | |
| Everglades Dwarf Siren | <i>Pseudobranchius striatus belli</i> | ◆ | | |
| Florida Chorus Frog | <i>Pseudacris nigrita verrucosa</i> | ☉ | | |
| Florida Cricket Frog | <i>Acris gryllus dorsalis</i> | ☉ | | |
| Florida Gopher Frog | <i>Rana areolata aesopus</i> | ◆ | | S |
| Green Anole | <i>Anolis carolinensis</i> | ◆ | | |
| Green Treefrog | <i>Hyla cinerea</i> | ☉ | | |
| Ground Skink | <i>Scincella lateralis</i> | ◆ | | |
| Little Grass Frog | <i>Limaoedus ocularis</i> | ◆ | | |
| Narrow-striped Dwarf Siren | <i>Pseudobranchius striatus axanthus</i> | ◆ | | |
| Oak Toad | <i>Bufo quercicus</i> | ☉ | | |
| Southeastern Five-lined Skink | <i>Eumeces inexpectatus</i> | ☉ | | |
| Southern Fence Lizard | <i>Sceloporus undulatus undulatus</i> | ◆ | | |
| Southern Leopard Frog | <i>Rana sphenoccephala</i> | ☉ | | |
| Southern Toad | <i>Bufo terrestris</i> | ◆ | | |
| Squirrel Treefrog | <i>Hyla squirella</i> | ◆ | | |
| Striped Newt | <i>Notophthalmas perstriatus</i> | ◆ | | |
| Two-toed Amphiuma Congo Eel | <i>Amphiuma means</i> | ◆ | | |
| TURTLES | | | | |
| Common Musk | <i>Sternotherus odoratus</i> | ◆ | | |
| Florida Box | <i>Terrapene carolina bauri</i> | ☉ | | |
| Florida Chicken | <i>Deirochelys reticularia chrysea</i> | ◆ | | |
| Florida Mud | <i>Kinosternon subrubrum steindachneri</i> | ◆ | | |
| Florida Redbelly | <i>Pseudemys nelsoni</i> | ☉ | | |
| Florida Snapping | <i>Chelydra serpentina osceola</i> | ☉ | | |
| Florida Softshell | <i>Apalone ferox</i> | ☉ | | |
| Gopher Tortoise | <i>Gopherus polyphemus</i> | ☉ | | T |
| Peninsula Cooter | <i>Pseudemys floridana peninsularis</i> | ◆ | | |
| Striped Mud | <i>Kinosternon baurii</i> | ☉ | | |
| CROCODYLIA | | | | |
| American Alligator | <i>Alligator mississippiensis</i> (*Threatened because of similarity in appearance) | ☉ | T* | |

MEMORANDUM

TO: Governing Board Members

FROM: Doug Bergstrom, Director, Administrative Services Division

DATE: January 09, 2014

SUBJECT: Security Guard Services Contract

Summary

This request is to enter into a three-year contract with two (2) optional one-year renewals with G4S Secure Solutions USA, Inc. (G4S) for Security Guard Services in an amount not to exceed \$559,478.52. The present security guard contract expires February 4, 2014. G4S will provide professional security guard services to maintain a safe and effective working environment for employees located at HQ. Services include 24-hour monitoring of security systems, daily visitor control, ID badge and access control assistance, crowd control, and site security. Security guard services have been traditionally outsourced by the District. Since it is not a core function staff recommends continuing to outsource the service.

Staff Recommendation

Staff recommends approval of this item.

Additional Background

The District did not directly solicit this contract. In accordance with State and District procurement policies, the District will piggyback this contract off a competitively bid security contract that was solicited by Orange County and became effective October 1, 2013.

Core Mission and Strategic Priorities

This item impacts all resource areas of the District. In this era of increased security threats the provision of professional security services are a critical component to the District's overall operations. The General Services Section in the Administrative Services Division will be responsible for implementing this contract.

Funding Source

The amount of the services for the three (3) year period is \$559,478.52 for which \$199,000.00 in ad valorem funds are budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY18 budgets.

Staff Contact and/or Presenter

Staff Contact: Bill Hancsak, Senior Security Specialist, ext.6167
Presenter: Doug Bergstrom, ext. 6214

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0104

A Resolution of the Governing Board of the South Florida Water Management District to authorize entering into a three-year contract with two (2) one-year renewal options with G4S Secure Solutions USA, Inc., for Security Guard Services in an amount not to exceed \$559,478.52 for which \$199,000 in ad valorem funds are budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15 - FY18 budgets; providing an effective date. (Contract Number 4600002990)

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate and in the public interest to authorize entering into a three (3) year contract with two (2) one-year renewals with G4S Secure Solutions USA Inc., for Security Guard Services in an amount not to exceed \$559,478.52 for which \$199,000 in ad valorem funds are budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY18 budgets; providing an effective date (Contract Number 4600002990)

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes the execution of Contract Number 4600002990 with G4S Secure Solutions USA, Inc.

Section 2. This resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

By:

Chairman

Attest:

District Clerk/Secretary

Legal form approved:

By:

Office of Counsel

Print name:

M E M O R A N D U M

TO: Governing Board Members
FROM: Doug Bergstrom, Director, Administrative Services Division
DATE: January 09, 2014
SUBJECT: CERP Water Quality Studies

Additional Background

This agenda item will secure reimbursement for Implementation of CERP Water Quality Studies consistent with the laws and regulations governing the use of the Save Our Everglades Trust Fund, as described above

Core Mission and Strategic Priorities

Funds received from the state's Save Our Everglades Trust Fund will support Water Resource projects for the Restoration program area.

Funding Source

The funding source is the Florida Department of Environmental Protection, Save Our Everglades Trust Fund.

Staff Contact and/or Presenter

Staff Contact: Michelle Quigley, Section Administrator, ext.6382
Presenter: Doug Bergstrom, ext. 6214

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0105

A Resolution of the Governing Board of the South Florida Water Management District, authorizing the Executive Director or designee to submit reimbursement requests to the Florida Department of Environmental Protection for implementation of Comprehensive Everglades Restoration Plan Water Quality Studies using Save our Everglades Trust Funds; providing an effective date.

WHEREAS, the Governing Board of the South Florida Water Management District (hereinafter, the "District") approved Resolution 2012-302, March 15, 2012, authorizing the District to enter into a cooperative agreement with the Florida Department of Environmental Protection (hereinafter, the "Department") for implementation of Comprehensive Everglades Restoration Plan (CERP) Water Quality Studies using Save Our Everglades Trust Funds; and

WHEREAS, on April 26, 2012, the District and the Department executed the Cooperative Agreement (SFWMD Contract No. 4600002608) for CERP Water Quality Studies using Save Our Everglades Trust Funds is attached and labeled "Attachment 1", and

WHEREAS, the CERP Water Quality Studies Annual Work Plan for Fiscal Year 2012 and Fiscal Year 2013 identifying the initial water quality studies to be implemented by the District is attached and labeled "Attachment 2", and

WHEREAS, the District approved Resolution 2012-1204, December 13, 2012, authorizing the District to seek reimbursement for expenditures supporting the CERP Water Quality Studies Annual Work Plan for Fiscal Year 2012 and Fiscal Year 2013, and

WHEREAS, the CERP Water Quality Studies Annual Work Plan for Fiscal Year 2014 identifying the water quality studies to be implemented by the District is attached and labeled "Attachment 3", and

WHEREAS, consistent with the applicable appropriations language and in accordance with the procedures set forth in Exhibit "A" of "Attachment 1", the executed cooperative agreement, the Department shall disburse to the District Save Our Everglades Trust Fund monies.

NOW THEREFORE, BE IT RESOLVED by the Governing Board of the South Florida Water Management District that:

Section 1. The Executive Director of the South Florida Water Management District or designee is hereby authorized to request reimbursement of funds based on actual expenditures incurred through implementation of Comprehensive Everglades Restoration

Plan Water Quality Studies.

Section 2. The reimbursement request to the Department will be in invoice format for the actual expenditures incurred by the South Florida Water Management District as described in Exhibit "A" of "Attachment 1", the Disbursement Procedure for CERP Water Quality Studies.

Section 3. This resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

By:

Chairman

Attest:

Legal form approved:

By:

District Clerk/Secretary

Office of Counsel

Print name:

Comprehensive Everglades Restoration Plan Water Quality Studies

Annual Work Plan Fiscal Years 2013-2014

COOPERATIVE AGREEMENT

between

South Florida Water Management District

and

Florida Department of Environmental Protection



Prepared by the

**Water Quality Bureau
Water Resources Division
South Florida Water Management District**

December 9, 2013

Section 1 Background

The Florida Department of Environmental Protection (FDEP) is authorized by the Florida legislature to implement water quality studies associated with the Comprehensive Everglades Restoration Plan (CERP) designed to analyze and evaluate water quality issues as envisioned in §373.1501(4)(b), Florida Statutes (F.S.), or the Comprehensive Integrated Water Quality Feasibility Study (CIWQFS) described in the Central and Southern Florida Project Comprehensive Review Study (Restudy) in the development of a CERP project component. Additional information on the scope of the CIWQFS is further outlined in the Draft Project Management Plan, Comprehensive Integrated Water Quality Feasibility Study (USACE and FDEP, 2003).

In addition to FDEP statutory authorizations related to CERP, the South Florida Water Management District (SFWMD or District) is authorized by §373.1501(4)(b), F.S., acting as local sponsor of CERP projects for those project features within the SFWMD and subject to the oversight of FDEP, to continue data gathering, analysis, and research of project components, and further refinements of the restudy as a guide and framework for identifying other project components.

The Florida legislature created the Save Our Everglades Trust Fund (SOETF), codified in §373.472, F.S., within the FDEP to support restoration and conservation of natural systems, including the implementation of CERP. The FDEP has authorization through §373.470, F.S., to distribute SOETF funds to the SFWMD in accordance with a legislative appropriation and §373.026, F.S. The FDEP is also authorized in §373.046, F.S., to enter into interagency agreements with the SFWMD to assist the FDEP with carrying out its statutory responsibilities.

The above statutory authorizations granted to each agency provide a framework in which studies of water quality issues associated with Everglades restoration can be formulated, approved, funded, and appropriately resourced among staff from both agencies. The FDEP has executed the CERP Water Quality Studies interagency agreement, effective October 1, 2011, with the SFWMD to establish a general procedure for disbursing SOETF monies for SFWMD implementation, at the request of FDEP, of water quality studies related to CERP execution.

Section 2 Annual Work Plan Update

Per the interagency agreement, the SFWMD shall prepare and submit an Annual Work Plan to the FDEP for approval, which outlines the studies, their duration, proposed budget for each fiscal year to implement the studies, and assurance that the studies are being conducted in accordance with §373.1501(4)(b), F.S. The FDEP shall provide confirmation of agreement with the SFWMD's proposal through approval of the annual work plan in accordance with Section 2(a), Exhibit "A" of the CERP Water Quality Studies interagency agreement.

In response to water resource needs, legislative directives, and funding opportunities, the initial Annual Work Plan [Fiscal Years (FY) 2012–2013] was developed by the SFWMD to carry out science studies related to agrochemicals and toxicants of concern to guide decision making in CERP activities (SFWMD, 2012). This Annual Work Plan (FY2013–FY2014) serves as an update to the proposed scope of work, budget, and duration outlined in the previous plan.

1. Water Quality Studies Outline

Residual agricultural chemicals (agrochemicals) are those chemicals found in formerly cultivated soils that were applied with the intended purpose to enhance agricultural production. Often, CERP restoration projects situated on former agricultural lands require some level of remediation to occur prior to construction to address agrochemicals. Copper is one such agrochemical that is of concern. Other agrochemicals of concern frequently encountered on CERP project lands include dichlorodiphenyltrichloroethane (DDT), chlordane, toxaphene, endosulfan, and selenium. Recommendations for cleanup and remediation on CERP project lands are made when conditions are encountered that may be hazardous to ecological resources when projects become operational (USACE and SFWMD, 2004; USACE and SFWMD, 2010). Copper does not break down or dissipate in the environment and can accumulate in aquatic organisms such as the Florida apple snail (*Pomacea paludosa*). Because the apple snail is the primary food item of the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeous*) and important in the diet of other birds, copper presents a potential ecological risk that must be considered in CERP projects.

In addition to agrochemicals, there are other environmental toxicants, such as mercury, that can be present in the aquatic environment at levels that are harmful to birds and other wildlife (USACE and SFWMD, 2010). The current understanding among scientists is that mercury is introduced into the aquatic environment largely through atmospheric deposition and various biogeochemical processes linked to sulfate-reducing bacteria can occur to transform (methylate) mercury into a more toxic and bioaccumulative form (methylmercury) that is harmful to birds and wildlife. However, it is not well understood what impact CERP restoration projects may have on the mercury cycle and associated biogeochemical processes overall for the Everglades.

For both copper and mercury, there are large uncertainties regarding the associated rates of bioaccumulation and mechanisms that lead to high levels of copper and mercury in apple snails and fish, respectively. This Annual Work Plan update continues to focus on two studies specifically designed to obtain a better understanding of the rates of bioaccumulation of copper in apple snails and mercury methylation using field investigations and control experiments that will assist in decision making for CERP-related project components.

Each study has its unique objectives and methods for the investigations. A brief description of both studies follows, along with assurance that the study is being conducted in accordance with §373.1501(4)(b), F.S. A more detailed description of each of the studies through FY2014 is provided in **Attachment A**, respectively. It is anticipated that additional details associated with the mercury study proposed for FY2015 will be covered in the next Annual Work Plan update for FDEP approval as warranted (**Table 1**).

Study 1: Test Cell Mesocosm Copper in Snails Study

Copper from former agricultural soils that have been flooded can accumulate in apple snails, which can expose snail kites when they feed in reclaimed areas (USACE, 2011). Recent results of a U.S. Fish and Wildlife Service (USFWS) funded study from Florida International University (FIU) showed bioaccumulation rates (copper uptake in snails) much higher than expected and higher than modeled for the derivation of the current 85 milligrams per kilogram (mg/kg) benchmark used to determine if soil remediation is necessary on a CERP project land. The copper in apple snails study will be conducted using test cell mesocosms under a range of sediment copper concentrations. The objective of the study is to determine if a revised (lower < 85 mg/kg) remediation benchmark is needed or remain with the current benchmark.

Justification/Assurance: This study is being accomplished to identify if a revised remediation level for copper is necessary on CERP project lands prior to construction. The following CERP documents give rise to this study and, therefore, the study is being conducted in accordance with §373.1501(4)(b), F.S.:

- CERP Guidance Memorandum 023.01: Water Quality Considerations for the Project Implementation Report Phase (USACE and SFWMD, 2004);
- Scientific and Technical Knowledge Gained in Everglades Restoration (1999–2009) (RECOVER, 2011); and
- Memorandum for Deputy Commanding General for Civil and Emergency Operations: Comprehensive Everglades Restoration Plan (CERP) – Residual Agricultural Chemicals (DAC, 2011).

Study 2: Evaluation of Factors Influencing Mercury Methylation in South Florida Marshes

Mercury, which is largely deposited to Everglades marshes from the atmosphere, can become biologically available to fish and other wildlife through microbial methylation. Mercury levels in largemouth bass in the Everglades Water Conservation Areas (WCAs) and the Shark River Slough region of Everglades National Park (ENP) during the past two decades greatly exceed federal wildlife protection and human health criteria for fish consumption. Wet deposition of mercury from the atmosphere into shallow Everglades wetlands with organic-rich soils and high sulfate loads may be the causes for high mercury levels in fish. The mercury methylation study will be conducted via literature review, mesocosms and field investigations, and modeling.

Justification/Assurance: This study is being accomplished to better understand factors involved in transforming inorganic mercury into the more toxic bioaccumulative form (methylmercury), including biogeochemical relationships, current hydrologic patterns in the Everglades, and changes to future hydrology envisioned by CERP. The following CERP documents give rise to this study and, therefore, the study is being conducted in accordance with §373.1501(4)(b), F.S.:

- CERP Guidance Memorandum 042.01: Toxic Substances Screening Process - Mercury and Pesticides (USACE and SFWMD, 2010); and
- CERP Project Management Plan: Draft Comprehensive Integrated Water Quality Feasibility Study (USACE and FDEP, 2003).

2. Duration and Budget of Proposed Studies

The proposed budget and duration of the two studies covered under this FY2013–FY2014 Annual Work Plan are shown in **Table 1**. The study costs are for external contracts and do not include internal SFWMD labor, which is not reimbursable under the interagency agreement. The interagency agreement allows for other internal costs, such as laboratory supplies and equipment, to be reimbursable if the costs were approved in advance by the FDEP. The SFWMD is contributing laboratory supplies and equipment to cover analysis costs for the copper study but is not seeking reimbursement from SOETF funds.

As outlined in the initial Annual Work Plan, Study 1 was originally projected to span two years covering FY2012–FY2013. Participation and recommendations by the Interagency Copper Science Review Panel in the mesocosm study design and implementation, however, has resulted in an extension of this study into FY2014. In this Annual Work Plan update, the SFWMD is seeking FDEP approval to extend a portion of the FY2013 work and associated budget into FY2014 (**Table 1**).

Study 2 spans four years, with FY2012 as the initial year and FY2013–FY2015 covering the three-year work plan. For this study, a portion of the planned contractual work at the end of FY2013 resulted in an extension of the final report deliverable into early FY2014. In this Annual Work Plan update, approval by the FDEP is sought for FY2014 for both continuing and newly proposed work and the associated budget. It is anticipated that a separate request of the proposed FY2015 budget and related work for the mercury study (**Table 1**) will be made in the next Annual Work Plan update for FDEP approval, as warranted.

Table 1. Proposed studies, duration, and budget for CERP Water Quality Studies (FY2013-FY2015).

| Study No. | Project Description | Project Component | FY2013 | FY2014 | FY2015 |
|--------------|--|-----------------------------|---------------------|----------------------|--------------------|
| | | | External Contract | External Contract | External Contract |
| 1 | Copper in Snails Study ¹ | External Entity Partnership | \$88,637.77 | \$86,530.16 | \$ - |
| 2 | Mercury Methylation Study ² | External Entity Partnership | \$66,500.00 | \$83,500.00 | \$75,000.00 |
| Total | | | \$155,137.77 | \$ 170,030.16 | \$75,000.00 |

¹ For Study 1, a portion of unspent FY2013 funding (\$86,530.16) is carried over into FY2014, but the FY2013–FY2014 total (\$175,167.93) reflects the same amount as the overall approved budget in the FY2012–FY2013 Annual Work Plan. This Work Plan modification is due to (1) extending the static hold period in the study (as requested by the U.S. Fish and Wildlife Service), and (2) delay in snail delivery as a result of lower growth rate of juvenile snails from the Harbor Branch Oceanographic Institute.

² For Study 2, a portion of unspent FY2013 funding (\$8,500) is carried over into FY2014, but the FY2013–FY2014 total (\$150,000) reflects the same amount as the overall approved budget in the FY2012–FY2013 Annual Work Plan. This Work Plan modification is due to a month delay (from September to October 2013) in completing the final report deliverable by DB Environmental, Inc. under contract.

Section 3 SOETF Reimbursement Procedures

In accordance with Section 3(d)(2), Exhibit “A” of the CERP Water Quality Studies interagency agreement (effective October 1, 2011), the reimbursement of SOETF funds to the SFWMD for conducting water quality studies approved in this Annual Work Plan requires the FDEP to have provided review and approval of a Statement of Work (SOW), if applicable, in situations where the SFWMD has entered into a partnership agreement with an external private or public entity as provisioned in Section 1(c), Exhibit “A” of the agreement. For the two studies, the project-specific details and descriptions are presented in Attachment A of this document, which provides an update on the preliminary information in the FY2012–FY2013 Annual Work Plan, Attachment A.

Section 4 References

- Corrales, J., G.M. Naja, C. Dziuba, R.G. Rivero and W. Orem. 2011. Sulfate threshold target to control methylmercury levels in wetland ecosystems. *Science of the Total Environment*, 409:2156-2162. Available at <http://www.ncbi.nlm.nih.gov/pubmed/21439608>.
- DAC. 2011. Memorandum for Deputy Commanding General for Civil and Emergency Operations: Comprehensive Everglades Restoration Plan (CERP) – Residual Agricultural Chemicals. Final Memorandum, September 14, 2011, Department of the Army, Civil Works, Washington D.C.
- Gilmour, C., E. Roden and R. Harris. 2008. Appendix 3B-3: Approaches to Modeling Sulfate Reduction and Methylmercury Production in the Everglades. In: *2008 South Florida Environmental Report – Volume I*, South Florida Water Management District, West Palm Beach, FL. Available at <http://www.sfwmd.gov/sfer>.
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- RECOVER. 2011. Scientific and Technical Knowledge Gained in Everglades Restoration (1999–2009). Restoration Coordination and Verification, U.S. Army Corps of Engineers, Jacksonville, FL, and South Florida Water Management District, West Palm Beach, FL. August 2011. Available at: http://www.evergladesplan.org/shared-definition/sd_2010.aspx.
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- USACE and FDEP. 2003. Draft Project Management Plan: Comprehensive Integrated Water Quality Feasibility Study. August 2003. U.S. Army Corps of Engineers, Jacksonville, FL, and Florida Department of Environmental Protection, Tallahassee, FL. Available at http://www.evergladesplan.org/pm/pmp/pmp_docs/pmp_study_ciwqfs/082503_ciwqfs_pmp_main_body.pdf.
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- USACE and SFWMD. 2010. CERP Guidance Memorandum 042.01: Toxic Substances Screening Process - Mercury and Pesticides. July 2010. U.S. Army Corps of Engineers, Jacksonville, FL, and South Florida Water Management District, West Palm Beach, FL. Available at http://www.cerpzone.org/documents/cgm/111510_CGM_042-01_QAOT_20100721_Final_Signed.pdf.

ATTACHMENT A: STUDY DETAILS

Study 1: *Test Cell Mesocosm Copper in Snails Study*

Background and Objectives

Risks from agriculturally applied residual copper have become an issue at some prospective Everglades Restoration Water Resource Projects (WRPs) because apple snails, the primary food source of snail kites, can accumulate copper from soils that have been flooded, exposing snail kites feeding in reclaimed areas. To date, the USFWS, the authority that administers the federal Endangered Species Act for CERP projects, and the SFWMD have been using a soil screening level of 85 mg/kg for copper as an action level for conducting corrective actions in CERP project soils. Results of the previously mentioned USFWS-funded study from FIU show bioaccumulation rates in snails much higher than expected and higher than modeled in the derivation of the 85 mg/kg benchmark. The use of these new bioaccumulation results to revise the action level would likely result in a substantially lower cleanup target level concentration and significantly increased corrective action costs on former citrus properties.

The FIU studies represent the most comprehensive bioaccumulation data available for assessing uptake of copper by apple snails derived in a laboratory setting. However, the laboratory setting differs from actual WRPs in that they were essentially closed systems; no water was allowed to flow out of the testing tanks and, after initial filling, natural rain events were the only source of added water. Therefore, the conditions in the FIU experiments may represent possible exposure conditions during dry-down conditions in constructed Everglades Stormwater Treatment Areas (STAs).

However, most STAs and reservoirs will have water exchange much of the time. The outflow and inflow of water in the system results in nearly constant exchange of water in the aquatic habitats at varying rates, even during dry periods when water is still lost to infiltration. Data from other laboratory studies by FIU and the SFWMD suggest that flow substantially alters the copper concentrations in water overlying contaminated sediments and likely reduces the copper bioaccumulation potential in snails.

The uncertainties associated with the FIU studies could have a large effect on copper bioaccumulation and significantly impact corrective action costs which could impact WRP feasibility. As a result, additional studies to further characterize bioaccumulation are cost effective and will be used in conjunction with studies related to the bioavailability of copper in apple snails currently being completed by the USFWS to complete a comprehensive ecological risk assessment with the goal of supporting the 85 mg/kg benchmark or deriving a more appropriate benchmark using the best available data. The project is intended to address three main objectives:

1. Evaluate the importance of water exchange and natural food source on copper bioaccumulation potential in apple snails;
2. Assess the protectiveness of the 85 mg/kg copper benchmark for snail kites based on copper bioaccumulation under more natural conditions; and
3. Measure bioaccumulation of copper into apple snails over a range of sediment copper concentrations in soils from different former citrus groves.

Study Scope and Deliverables

The project work for the Test Cell Mesocosm Copper in Snails Study shall be executed by Environmental Consulting & Technology, Inc. (ECT) under multiyear contract to the SFWMD. The study area is located west of Stormwater Treatment Area 1 West (STA-1W) and adjacent to the Arthur R. Marshall Loxahatchee National Wildlife Refuge, south of State Road 80.

Task 1: Planning and Work Plan

A detailed work plan for the overall study shall be prepared including the (1) experimental rationale, design, and approach; (2) test cell system design and management plan, and identification of specific location for the test cell construction; (3) detailed sampling plan including sample types, sample number, sampling collection and handling procedures, and analysis methods; and (4) data evaluation and quality assurance plan. This task shall also include reconnaissance sampling and historical data review intended to identify the citrus property soils of appropriate quality and copper concentrations that are intended for use in the mesocosms. Analysis shall include identifying areas and volumes of materials that meet project requirements.

[Note: In Study 1, the initial task of the contract work order developed a detailed work plan for SFWMD review. The proposed work plan was also distributed to the Copper Interagency Working Group—with representatives from the Florida Department of Environmental Protection (FDEP), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), U.S. Geological Survey (USGS), and Florida Department of Agriculture and Consumer Services (FDACS)—for review and comment. Comments and subsequent revisions to the work plan resulted in an unplanned extension of construction initiation. A significant work plan comment from the USFWS (related to mesocosm water quality conditions required prior to initiation of sediment aging under flow conditions) resulted in an additional extension of the start of the snail exposure monitoring period. While these events extended the overall study duration into FY2014, there was no impact to the associated total budget (see **Table 1**).]

Task 2: Mesocosm Construction and Sampling

The STA-1W test cell shall be constructed according to the final design. The work shall include acquiring the necessary building materials and equipment for handling and distribution water from the STA water supply. It shall also include securing authorizations required to construct the mesocosms and preparing the test cell by removing all vegetation and any contaminated soil remaining above the test cell liner. Soils selected for use in the mesocosms shall be transported to the test cell area and sampled according to the work plan prior to placement in the mesocosms.

Once construction is completed, tests shall be initiated as described in the study work plan. Implementation shall require ongoing monitoring and management of the mesocosms, periodic sampling, and documentation. Once soils have been placed into the mesocosms, water shall be introduced into each cell per the study work plan. The mesocosm shall remain unpopulated with snails for a period of no less than 120 days (at least 60 days static hold and 60 days flow aging) to allow for growth of periphyton and vascular plants prior to introducing apple snails into the mesocosms. Before introducing the snails, vegetation and biota in the chambers shall be characterized to document presence/absence and the relative similarity between chambers. This period also allows the process of conversion of soils to sediments in the mesocosm. Following this initial startup period, approximately 75 to 100 juvenile snails shall be introduced into each mesocosm. Snails shall remain in the mesocosm for a period of 180 to 300 days. During the

exposure period, samples of surface water, periphyton, snails, vascular plants, and sediments shall be collected at regular intervals.

As outlined in the study work plan, samples shall be collected and submitted to the District's testing laboratory for analysis. Water, sediment, periphyton, vascular plant, and snail sampling shall be conducted on a periodic basis. Copper is the primary target for analysis, but water quality sampling and characterization to ensure consistent plant and periphyton growth shall also be conducted. Laboratory analysis shall be carried out according to requirements specified in the study work plan and District quality assurance and quality control requirements. Data shall be received from the labs in electronic database format appropriate for the Florida Automated Data Processing Tool program.

Task 3: Data Analysis and Report Preparation

Study data shall be compiled for analysis and reporting. The report shall include all data collected and describe data quality, overall study implementation, and deviations, if any, from the study work plan. It shall also include an analysis of the data relative to the study objectives and summarize use of the data in managing potential risk to snail kites. The draft report shall be submitted to the SFWMD as well as the Copper Interagency Working Group for review and comment, with the final version of the report incorporating revisions as appropriate.

Study 2: Evaluation of Factors Influencing Mercury Methylation Biotic Accumulation in South Florida Marshes

Background and Objectives

The biogeochemistry of mercury (Hg) methylation in the Everglades environment is multifarious. It is believed that the primary source of methylmercury (MeHg) in South Florida wetlands is in situ methylation of inorganic Hg by sulfate-reducing bacteria. Because this process is biologically mediated, a suite of interactive environmental conditions and biogeochemical processes are highly influential on Hg methylation. Hg methylation is significantly affected by pH, the redox condition, and concentrations of mercury, sulfate, sulfide, and dissolved organic carbon in surface and porewater. Hg availability is influenced by the supply sources and removal mechanisms which include chemical precipitation and plant uptake and translocation. Other biogeochemical factors are important as well, such as the composition of the methylating microbial community and the availability of suitable electron donors. On the other hand, Hg accumulation in biota is controlled by a different set of biological factors such as fish trophic position, diet availability and fish physiology. Focused field and laboratory investigations are needed to better quantify the relationships between sulfate concentrations/loadings, dissolved organic carbon (DOC) quantity and quality, electron donors, and Hg methylation, the role of macrophytes in mercury transformation and translocation, and trophic accumulation in the various Everglades environments.

Study Scope and Deliverables

The project work for the mercury methylation and accumulation study shall be executed by Everglades Agricultural Area Environmental Protection District (EAA-EPD) and its subcontractor, DB Environmental Inc., under contract to the SFWMD. The field study area is located in the Everglades Protection Area (EPA), which includes the Arthur R. Marshall

Loxahatchee National Wildlife Refuge (Refuge), Water Conservation Areas (WCAs) 2 and 3, and Everglades National Park (ENP).

The tasks described below are described in the Year Two Scope of Work *Evaluation of Factors Influencing Methyl Mercury Accumulation in South Florida Marshes*, prepared by DB Environmental, Inc. under Agreement #4600002664. The Year Two research effort shall involve a continuation of laboratory soil-water slurry incubations to establish whether low levels of sulfate amendments, with and without inorganic Hg additions, elicit a MeHg accumulation response. The focus will be on waters/soils collected from the ENP. Drydown-reflood effects shall also be evaluated with soils and waters from the ENP, as this is a region that currently exhibits very high total mercury (THg) burdens in fish tissues. Field investigations shall be performed to characterize spatial and temporal variability in dissolved organic matter (DOM) in South Florida marshes, fish (*Gambusia*) and macrophyte tissue Hg levels in previously defined “hot spot” locations. Details of the proposed research tasks are provided below.

Task 1. Minimum sulfate levels required to support/enhance mercury methylation

The minimum sulfate concentration responsible for enhanced methylation throughout the Everglades has been variously reported to be in the range of 1-20 milligrams per liter (mg/L). Typically, the minimum sulfate (SO₄) concentration associated with enhanced MeHg concentrations has been lower (2-4 mg/L) in minimally sulfate-impacted waters in the ENP. This task shall evaluate if non-abatable sources of sulfate (rainfall, groundwater, internal recycling of reduced sulfur species) in the Everglades are adequate to support environmentally detrimental levels of methylation.

Surface waters and soils shall be collected from pre-selected “low sulfate” sites such as the ENP. At the field collection site, multiple soil cores and bulk quantities of surface waters shall be collected for transport to the laboratory. At the time of collection, measurement of key parameters, such as oxidation reduction potential, shall be performed on soils and surface waters. The soil cores shall be incubated in laboratory under various concentrations of sulfate and inorganic Hg. Water samples shall be periodically taken from each incubation to monitor the responses of MeHg production to experimental manipulation of sulfate and mercury concentrations at the overlying water.

Task 2. Effects of drydown/reflood cycles on methylmercury

Drydown and reflooding may enhance the accumulation of MeHg in the soil or water column, due to release of mercury, sulfate, DOC, or other nutrients to the water column. Release of sulfate from soils to overlying water following drydown-reflooding has been associated with increased production of MeHg, but the role of DOC and other soil-water constituents (e.g., bioavailable Hg) has not been well defined.

Intact soil cores shall be collected at two sites within the EPA. The tentative sites selected are P-36 and P-33 in Shark River Slough. Multiple soil cores shall be collected from each site. In the laboratory, cores shall be subjected to drydown (probably for 3 to 4 weeks) and the dried cores shall be rehydrated with surface waters from the respective sites. Water chemical constituents shall be measured at pre-determined time space to evaluate drydown-reflooding effects on mercury methylation.

Task 3. Characterization of *Gambusia* diet composition at mercury “hot spot” sites

MeHg concentrations have been found to increase along the Everglades food chain. However, bioaccumulation of MeHg, particularly in mosquitofish (*Gambusia holbrooki*), is poorly correlated to water column MeHg concentrations across the greater Everglades, and may be mediated in part by periphyton MeHg concentrations and food web structure.

Gambusia samples shall be collected from the four sites monitored for the SFWMD hot spot study on wet and dry season. Fish shall be analyzed for tissue THg concentration and gut contents. Fish prey (gut contents) shall be identified to the lowest possible taxon. At each of the fish sampling sites, water samples shall be collected for analysis of filtered THg and MeHg, soil samples for THg and MeHg analysis, and periphyton (if present) for MeHg analysis.

Task 4. Initial investigation of emergent macrophyte effects on mercury methylation, interception and emissions

Year One findings demonstrate that availability of inorganic Hg is a crucial factor in promoting methylation. An alternative factor (to sulfate/sulfide) that may control bioavailability of Hg is the type, and density, of emergent macrophytes. Recent studies have demonstrated that the macrophyte communities can have a profound effect on cycling of both Hg and MeHg. Factors such as macrophyte type and standing crop potentially can exert a strong influence on Hg availability, as well as the production and transport of MeHg.

On two dates, coinciding with the fish sampling effort in Task 3, samples of the porewaters, surface waters, soils, belowground vegetation, and aboveground vegetation of separate open water and cattail-dominated areas near WCA-2A site F1 shall be taken. These two sampling locations will be in close proximity in order to minimize differences in surface water chemistry (e.g., loading of nutrients, DOC, and sulfate). On those same two dates, again coincident with the fish sampling efforts in Task 3, comparable sampling near WCA-2A site U3, in both a sawgrass stand and in an open water (slough) area shall be taken for the analyses of MeHg, THg, and other associated variables listed in the work plan.

Task 5. Spatial characterization and dynamics of dissolved organic matter

Results from the Year One study did not detect significant response of MeHg increases to the concentrated WCA-3A and WCA-2A surface water DOM amendments, which was unexpected as DOM has been shown to be an important variable in promoting MeHg production in the Everglades (Aiken et al., 2011). DOM, however, is not immutable; the quantity and quality of DOM changes in both time and space. For example, there is a generally recognizable north-south gradient in DOM in the Everglades.. The temporal and spatial changes in the DOM could be a critical determinant in controlling factors such as Hg bioavailability, and rates of MeHg accumulation.

Water samples shall be taken at key locations in the ENP, WCA-2A, WCA-3A, and outflows of selected Everglades Stormwater Treatment Areas (e.g., STA-3-4) to assess varying DOM concentrations and characteristics. Surface water samples shall be taken to determine THg and MeHg concentration at the above sites to assess the relationship between DOM quality and quantity and mercury methylation.

MEMORANDUM

TO: Governing Board Members

FROM: Terrie Bates, Director, Water Resources Division

DATE: January 09, 2014

SUBJECT: Ecological Monitoring of Water and Habitat Quality Associated with the C-111 Spreader Canal Project

Summary

This contract is designed to monitor the re-distribution of freshwater flow by the C-111 Spreader Canal Western Features (C-111 SC WF) Project and assess the resulting salinity and nutrient changes on habitat condition. It will track improvements in hydrology, salinity encroachment and vegetation as well as detect potential changes in water quality in affected coastal wetlands and in waters of Florida Bay. The project location is in the C-111 Basin in the Everglades Panhandle near US Hwy 1, and lower Taylor Slough. This contract documents the ecological benefits of the C-111 SC WF Project and provides data for permit compliance. The three-year project cost is \$356,323 of which \$86,323 in Florida Bay special revenue funds are budgeted in FY14.

Staff Recommendation

Staff recommends approval of this agreement, which will allow the District to collect data and analyze information about the performance of the C-111 Spreader Canal, Western Features Project, monitor water quality changes, provide guidance for the next phase of the C-111 project, and determine its effects on critical habitat areas in southern Taylor Slough, the C-111 Basin, the Model Lands and Florida Bay.

Additional Background

The C-111 Spreader Canal, Western Features Project came online in July 2012 with the implementation of the new S-199 and S-200 pump stations, opening of the Frog Pond detention area, and creation of a hydrologic barrier at the Aerojet Canal extension to reduce seepage from Taylor Slough toward the C-111 Basin to the east. This project will re-distribute water in the southern Everglades by retaining additional fresh water in Taylor Slough and increasing downstream water deliveries to central Florida Bay. The project will potentially reduce flows in the C-111 Basin to the east. The goal is to overall improve estuarine and wetland habitat by restoring vegetation and valued resources such as fisheries and bird prey complex.

Core Mission and Strategic Priorities

This item is aligned with the District mission element to protect water resources by improving water quality and natural systems, and with several District priorities as identified in the 2012-2017 Strategic Plan (SFWMD 2012). It supports a critical CERP project intended to improve the quantity, quality, timing and distribution of water delivered to freshwater wetlands of Taylor Slough and the coastal ecosystem in Florida Bay via science-based research and monitoring. This contract supports the District's goal of habitat restoration and is also an integral component of the goal to collect hydrological data for the purpose of flow determination and hydrologic basin management.

Funding Source

This funding request in an amount of \$356,323 in Florida Bay special revenue funds for which \$86,323 is budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY16 budgets; providing an effective date.

Staff Contact and/or Presenter

Project Manager: Christopher Madden, cmadden@sfwmd.gov <mailto:cmadden@sfwmd.gov>, x4647

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0106

A Resolution of the Governing Board of the South Florida Water Management District to authorize entering into a three-year agreement with Florida International University for ecological monitoring of water quality and habitat associated with the C-111 Spreader Canal Project in an amount of \$356,323 for which \$86,323 in Florida Bay Special Revenue Funds are budgeted and the remainder is subject to Governing Board approval of the FY15-FY16 budgets; providing an effective date. (Contract No. 4600002987)

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate and in the public interest to authorize the execution of a three-year agreement, Contract No. 4600002987, with Florida International University in the amount of \$356,323 subject to Governing Board approval of the FY15-16 budgets, to measure changes in habitat quality, nutrients and salinity associated with the C-111 Spreader Canal Project in surface waters and soil pore waters in wetlands and downstream waters of Florida Bay, in Taylor Slough, the C-111 Basin and the Model Lands.

WHEREAS, the effects of hydrologic restoration of Taylor Slough and Florida Bay by the C-111 Spreader Canal Project will be measured and documented by this work; **now therefore**

BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes the execution of contract number 4600002987 with Florida International University.

Section 2. This resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD
By:

_____ Chairman

Attest:

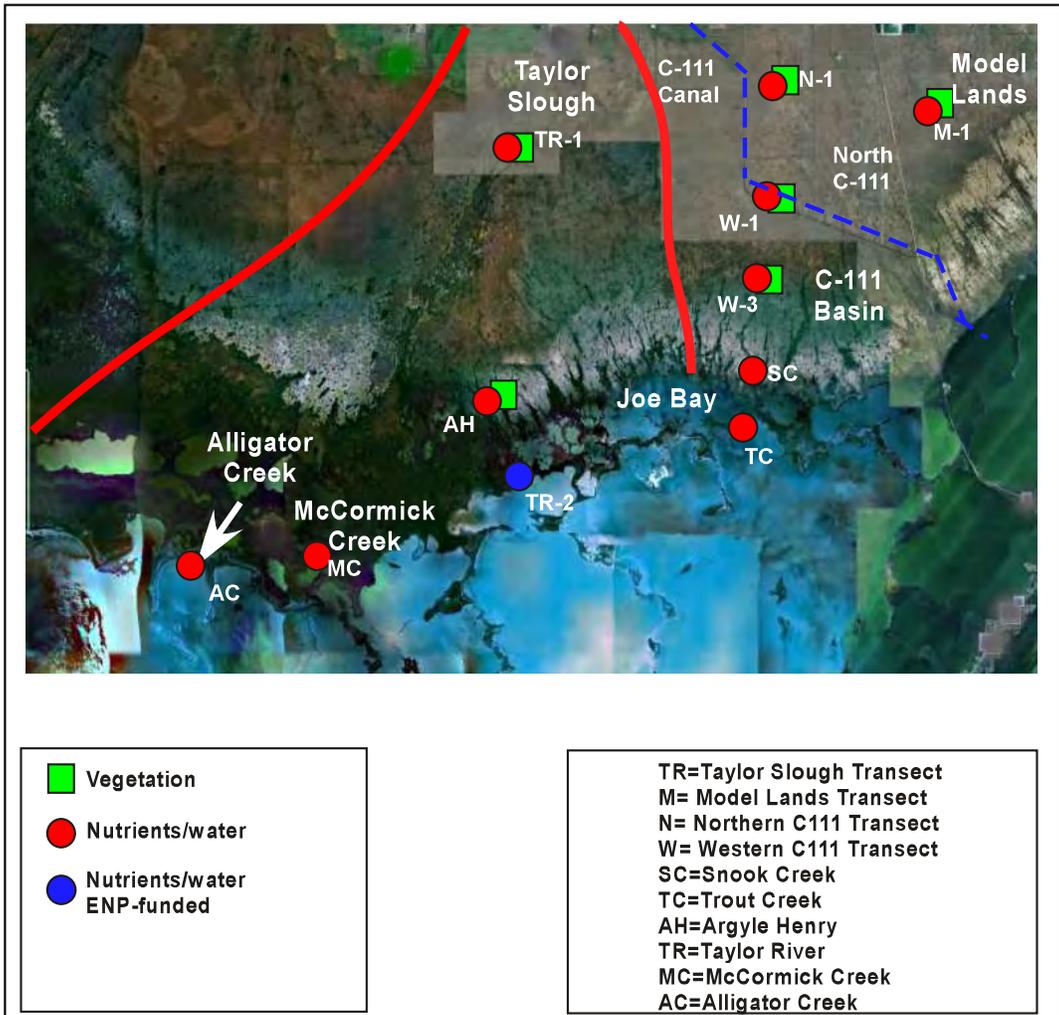
Legal form approved:
By:

_____ District Clerk/Secretary

_____ Office of Counsel

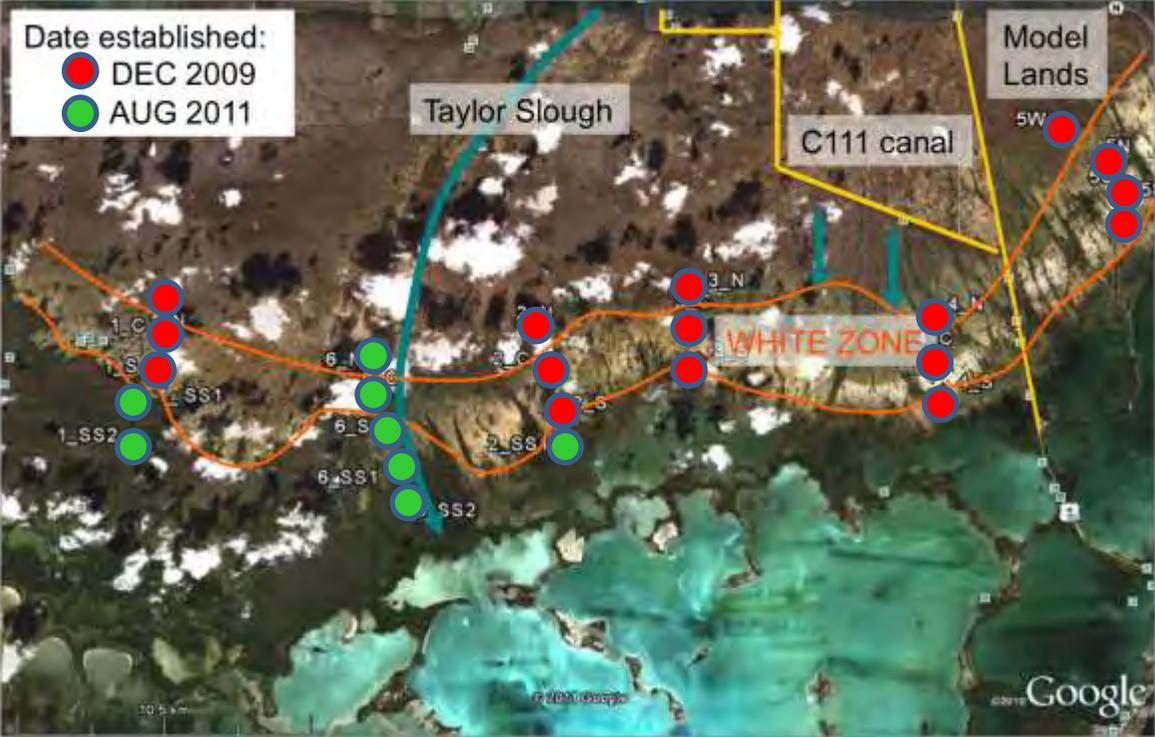
Print name:

C-111 Spreader Canal Western Project Sample Site Map



Map of the Southern Everglades study area, including Taylor Slough, Model Lands and the C-111 Panhandle Region. Sampling sites are for vegetation, nutrients and water quality.

Attachment: Site_maps (Resolution No. 2014 - 0106 : Ecological Monitoring of Water and Habitat Quality Associated with the C-111 Spreader



Map of the Southern Everglades study area, including Taylor Slough, Model Lands and the C-111 Panhandle Region. Spot salinity transects in red indicate general areas of upstream-downstream transects within which specific spot sites will be chosen for repeated sampling.

MEMORANDUM

TO: Governing Board Members

FROM: Terrie Bates, Director, Water Resources Division

DATE: January 09, 2014

SUBJECT: FY2014 Five-Year Water Resource Development Work Program

Summary

The water management districts are required to submit a Five-Year Water Resource Development Work Program to the Florida Department of Environmental Protection (FDEP) following final budget adoption. The work program describes the district's implementation strategy and funding plan for the water resource, water supply and alternative water supply (AWS) development components of each approved regional water supply plan. The work program identifies which projects in the water resource components will provide water, explains how each water resource, water supply and AWS development project will produce additional water available for consumptive uses; estimates the quantity of water to be produced by each project; and, provides an assessment of the contribution of the district's regional water supply plans in providing sufficient water needed to timely meet the water supply requirements of existing and future reasonable-beneficial uses for a 1-in-10 year drought event. The Five-Year Water Resource Development Work Program will be published in the FY2014 South Florida Environmental Report, Volume II as Chapter 5A.

Staff Recommendation

Staff recommends that the Governing Board enter into this resolution accepting the Five-Year Water Resource Development Work Program pursuant to Section 373.536(6)(a)4 F.S. The FDEP has evaluated the work program document and provided comments. FDEP is required to submit a copy of a final evaluation report to the Governor, the President of the Senate and the Speaker of the House of Representatives.

Core Mission and Strategic Priorities

Meeting the current and future demands of water users and the environment is part of the District's core mission. Florida law identifies water resource development projects (primarily the District's responsibility) and water supply development projects (involves public and private facilities which are the responsibility of local water users) as two types of projects to meet water needs. The Five-Year Water Resources Development Work Program is a progress report of water resources development projects identified in the District's regional water supply plans. Projects involving water conservation, resource evaluation and regional water resource development are an example of what is contained in the five-year plan.

Funding Source

Implementation of the water resource and water supply projects identified in the District's regional water supply plans are funded through a combination of local, District and state funds as appropriate and available. The District has allocated \$113.2 million in ad valorem funding in FY2014 for Water Resource Development Projects.

Staff Contact and/or Presenter

Terrie Bates, tbates@sfwmd.gov <mailto:tbates@sfwmd.gov>, (561) 682-6952

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0107

A Resolution of the Governing Board of the South Florida Water Management District accepting the FY2014 Five-Year Water Resource Development Work Program pursuant to Section 373.536(6)(a)4, Florida Statutes; providing an effective date.

WHEREAS, pursuant to Section 373.536(6)(a)4, F.S. the District staff submitted the draft 2014 Five-Year Water Resources Development Work Program (Work Program) to the Florida Department of Environmental Protection (FDEP) for review and comment, including an evaluation of the program's consistency with the furtherance of the District's regional water supply plans and the adequacy of the proposed expenditures;

WHEREAS, the 2014 Work Program will be contained in Volume II of the FY2014 South Florida Environmental Report as Chapter 5A; **now therefore**

BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby accepts the Five-Year Water Resource Development Work Program, to be included as Chapter 5A in Volume II of the FY2014 South Florida Environmental Report.

Section 2. A copy of the report will be made available at <http://www.sfwmd.gov/sfer>.

Section 3. This resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

District Clerk/Secretary

Legal form approved:
By:

Office of Counsel

Print name:

M E M O R A N D U M

TO: Governing Board Members
FROM: Temperince Morgan,
DATE: January 09, 2014
SUBJECT: Everglades Restoration Project Prioritization, Part 2 - State Restoration Projects

Summary

The Governing Board has requested a review of the various restoration projects that are being implemented or considered for implementation to provide recommendations regarding obligations and priorities. Multiple presentations will be given over the course of the next several months to provide background information relevant to this discussion. This is Part 2 of the presentation and will focus on state funded restoration projects.

Staff Recommendation

This item is for information only. No action is required.

Additional Background

The Governing Board has made the request to review the various restoration projects that are being implemented or considered for implementation and provide recommendations regarding obligations and priorities.

Core Mission and Strategic Priorities

All the projects that will be discussed as part of this prioritization support the District's core missions of safeguarding water supply, flood protection and protecting and restoring ecosystems as set forth in the priorities of the 10-Year Strategic Plan.

Funding Source

N/A

Staff Contact and/or Presenter

Temperince Morgan, tmorgan@sfwmd.gov, 561-682-6987

MEMORANDUM

TO: Governing Board Members

FROM: Temperince Morgan,

DATE: January 09, 2014

SUBJECT: Modified Water Deliveries to Everglades National Park and C-111 South Dade Projects Update

Summary

The Modified Water Deliveries to Everglades National Park (Modified Water Deliveries) and C-111 South Dade projects are federal projects designed and constructed to restore more natural hydropatterns to Everglades National Park. Both projects are nearing completion of the construction phase; both efforts are pre-requisites to implementing several key components of the Comprehensive Everglades Restoration program (CERP), including current Central Everglades Planning Project (CEPP). An overview will be provided for each project, including Congressional authorization, the terms of the Project Cooperation Agreements with the United States Army Corps of Engineers, as well as a description of the project purposes, features and the status of construction and operations associated with these projects.

Staff Recommendation

This item is for information only; no action is required.

Additional Background

The Modified Water Deliveries and the C-111 South Dade projects have been included in recent briefings as pre-requisites to the implementation of CEPP. Governing board members have requested a briefing on the history and the current status of these projects so that the dependency of CEPP on the completion of these pre-CERP restoration projects can be better understood.

Core Mission and Strategic Priorities

These projects are consistent with the strategic priority of restoring the Northern and Southern Everglades. The Office of Everglades Policy and Coordination is responsible for policy and cost share negotiations with the Federal government as well as the permitting of structures the District will operate for these projects. OMC will ultimately be responsible for operating and maintaining the structures associated with these projects.

Funding Source

The District's role as local sponsor for the Modified Water Deliveries project is primarily responsible for the operations, maintenance, repair, replacement and rehabilitation (OMRR&R) of certain project features which will be cost shared with the Corps of Engineers. The C-111 South Dade project includes cost sharing with the Corps of Engineers for both construction and OMRR&R of project features. A discussion of the path forward to complete each project will include issues associated with: crediting and cost-sharing arrangements, funding and the schedule to complete construction, the development and testing of operating plans and the process for the transfer of water control facilities to the District for operation and maintenance.

Staff Contact and/or Presenter

Tom Teets, Federal Policy Chief, tteets@sfwmd.gov, (561) 682-6993

M E M O R A N D U M

TO: Governing Board Members

FROM: Temperince Morgan,

DATE: January 09, 2014

SUBJECT: Approving an agreement with FDEP for 319(h) Grant Funding

Summary

On August 22, 2013, the South Florida Water Management District's Section 319(h) Grant Proposal entitled "Evaluation of Water Farming as a Means for Providing Water Storage/Retention and Improving Water Quality in the Indian River Lagoon/St. Lucie Watershed" was accepted for funding by the Florida Department of Environmental Protection. The award includes grant funding in the amount of \$1,506,401 with a requirement for \$1,581,000 in matching funds for the implementation of three Water Farming Pilot Projects to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain, store and treat surface water to reduce total regional run-off and nutrient loading to natural systems. The Grant Funding Agreement provides the framework for grant reimbursables and cost match deliverables during the implementation, operations, maintenance and reporting phases of all three Water Farming Pilot Projects in the St. Lucie River Watershed.

Staff Recommendation

Staff recommends that the Governing Board of the South Florida Water Management District approving an agreement with the Florida Department of Environmental Protection for a Section 319(h) Grant entitled "Evaluation of Water Farming as a Means for Providing Water Storage/Retention and Improving Water Quality in the Indian River Lagoon/ St. Lucie Watershed" in the amount of \$1,506,401 with \$1,581,000 required in matching funds for the implementation of a Water Farming Pilot Program

Additional Background

The Section 319(h) Grant includes grant funding in the amount of \$1,506,401 with a requirement for \$1,581,000 in matching funds for the implementation of three Water Farming Pilot Pilots. These three Pilot Projects include Caulkins Citrus, Bull Hammock/Spur Land and Cattle and Evans Properties. The Grant Funding Agreement project budget by category is summarized below:

| <u>Category</u> | <u>Grant Funding</u> | <u>SFWMD Match Funding</u> |
|-------------------------------|----------------------|----------------------------|
| Project Design and Permitting | - | \$ 110,900 |
| Project Construction | \$ 598,356 | - |
| Project Operations | \$ 908,045 | \$1,237,392 |
| Water Quality Monitoring | - | \$ 68,808 |
| Public Outreach | - | \$ 156,400 |
| Reporting | - | \$ 7,500 |
| | <u>\$1,506,401</u> | <u>\$1,581,000</u> |

Core Mission and Strategic Priorities

Managed under the Dispersed Water Management (DWM) Unit of the Office of State Policy and Coordination, this grant proposal is consistent with the St. Lucie River Watershed Protection Plan storage and water quality goals as well as the strategic priority of protecting and restoring the northern and southern Everglades by expanding and improving water storage.

Funding Source

FDEP section 319 grant for water farming in the amount of \$1,506,401 with a required District funding match of \$1,581,000 from ad valorem funds.

Staff Contact and/or Presenter

Beth Lewis, belewis@sfwmd.gov, ext. 6343

Damon Meiers, dmeiers@sfwmd.gov, ext. 6876

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0108

A Resolution of the Governing Board of the South Florida Water Management District authorizing staff to negotiate and enter into an agreement with Florida Department of Environmental Protection (FDEP) to provide the District with 319(h) Grant funding in the amount of \$1,506,401 for the purpose of supporting the Water Farming Pilot Projects program; providing an effective date.

WHEREAS, FDEP accepted for funding the District's Section 319(h) Grant Proposal entitled "Evaluation of Water Farming as a Means for Providing Water Storage/ Retention and Improving Water Quality in the Indian River Lagoon/ St. Lucie Watershed"

WHEREAS, the FDEP award includes grant funding in the amount of \$1,506,401 with a requirement for District matching funds in the amount of \$1,581,000

WHEREAS, this funding will be used for three pilot projects to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain, store and treat surface water to reduce regional runoff and nutrient loading to natural systems; **now therefore**

BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes staff to negotiate and enter into agreement number 4600002983 with the Florida Department of Environmental Protection for a Section 319(h) Grant entitled "Evaluation of Water Farming as a Means for Providing Water Storage/ Retention and Improving Water Quality in the Indian River Lagoon/ St. Lucie Watershed".

Section 2. This resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

Legal form approved:
By:

District Clerk/Secretary

Office of Counsel

Print name:

MEMORANDUM

TO: Governing Board Members

FROM: Temperince Morgan,

DATE: January 09, 2014

SUBJECT: 36 month contract with the University of Florida Board of Trustees for the DWM Program (4600002986)

Summary

This contract is the result of a 319(h) Grant application and resulting award to the SFWMD for implementing a pilot program, known as the Water Farming Pilot Projects, to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems within the St. Lucie Watershed. The University of Florida Board of Trustees Center for Landscape Conservation Planning (University) will provide watershed coordination assistance associated with the Water Farming Pilot Projects 319(h) Grant. The University will be reimbursed \$156,400 for outreach, options assessment and opportunities identification, and focused follow-up, results and recommendations. The objective of the watershed coordination assistance is to identify opportunities for innovative funding and additional cost-effective strategies for nutrient load reduction. The term of the contract is 3 years and the total contract cost is \$156,400.

Staff Recommendation

Staff recommends approval for a contract with the University of Florida Board of Trustees in the total amount of \$156,400.

Additional Background

None

Core Mission and Strategic Priorities

Managed under the Dispersed Water Management (DWM) Unit of the Office of State Policy and Coordination, this project is consistent with the St. Lucie River Watershed Protection Plan storage and water quality goals as well as the strategic priority of protecting and restoring the northern and southern Everglades by expanding and improving water storage.

Funding Source

Ad Valorem Funds from the Dispersed Water Management Spend Down Plan Reserves in the amount of \$156,400 is budgeted in FY14.

Staff Contact and/or Presenter

Beth Lewis, belewis@sfwmd.gov, ext. 6343

Damon Meiers, dmeiers@sfwmd.gov, ext. 6876

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0109

A Resolution of the Governing Board of the South Florida Water Management District to authorize entering into a three-year contract with the University of Florida Board of Trustees for Dispersed Water Management Program Water Farming Watershed Coordination Assistance for the purpose of providing outreach, options assessment and opportunities identification, and recommendations in the amount of \$156,400 of which \$5,025 is budgeted in FY14 and the remainder is subject to approval of the FY16 budget; providing an effective date.

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate, and in the public interest to authorize entering into a contract with the University of Florida Board of Trustees for Dispersed Water Management Program Water Farming Watershed Coordination Assistance in the amount of \$156,400 of which \$5,025 is budgeted in FY14 and the remainder is subject to approval of the FY16 budget.

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes the execution of Contract No. 4600002986.

Section 2. This Resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD
By:

_____ Chairman

Attest:

Legal form approved:
By:

_____ District Clerk/Secretary

_____ Office of Counsel

Print name:

MEMORANDUM

TO: Governing Board Members

FROM: Temperince Morgan,

DATE: January 09, 2014

SUBJECT: Approving a three year Water Farming Pilot Project agreement with Evans Properties, Inc.

Summary

This contract is the result of a solicitation request from the SFWMD for implementing a pilot program to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems. Evans Properties, Inc. will provide for the design, permitting, construction, operation and maintenance of the Water Farming Pilot Project located in the St. Lucie River Watershed in St. Lucie County. The contract term is 3 years, allowing up to one year for design, permitting and construction, and two years of operation and maintenance. The estimated average annual retention is 3,635 acre-feet per year. Evans Properties, Inc. will be reimbursed up to \$317,780 for facility design, permitting and construction. The contract further provides for a fixed payment of \$537,168.50 on an annual basis for a two year term for operations and maintenance costs. The total not to exceed contract cost is \$1,392,117.

Staff Recommendation

Staff recommends approval for a contract with Evans Properties, Inc. in a total not to exceed amount of \$1,392,117.

Additional Background

In July 2013, the Governing Board authorized staff to begin negotiations in ranked order with respondents to the Water Farming Pilot Project Solicitation (#6000000576). District Staff and the ranked respondent have negotiated the proposed agreement to provide a Water Farming Pilot Project in the St. Lucie River Watershed to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce regional run-off and nutrient loading to natural systems. The contract term is 3 years, allowing up to one year for implementation and two years of operation. The pilot project consists of a pump station, inverted siphon, riser control structures and berms that will retain an estimated 3,635 acre-feet per year of regional runoff on a 900 acre fallow citrus grove located in the St. Lucie River Watershed in St. Lucie County.

Over the two year operational and testing period of the project it is estimated that the cost per volume of storage is \$147 per acre-foot per year.

Core Mission and Strategic Priorities

Managed under the Dispersed Water Management (DWM) Unit of the Office of State Policy and Coordination, this project is consistent with the St. Lucie River Watershed Protection Plan storage and water quality goals as well as the strategic priority of protecting and restoring the northern and southern Everglades by expanding and improving water storage.

Funding Source

This contract is partially funded by an agreement with FDEP for Section 319(h) Grant Funding. Ad Valorem Funds from the Dispersed Water Management Spend Down Plan Reserves in the amount of \$317,780 is budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY16 budgets.

Staff Contact and/or Presenter

Beth Lewis, belewis@sfwmd.gov, ext. 6343

Damon Meiers, dmeiers@sfwmd.gov, ext. 6876

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0110

A Resolution of the Governing Board of the South Florida Water Management District authorizing staff to negotiate and enter into a three-year contract with Evans Properties, Inc. for a Dispersed Water Management Program Water Farming Pilot Project for the purpose of providing water retention services and pilot project implementation information on fallow citrus lands in the St. Lucie River Watershed in an amount not to exceed \$1,392,117, of which \$317,780 is budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY16 budgets and contingent on the execution of the 319(h) Grant Agreement with the Florida Department of Environmental Protection; providing an effective date.

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate, and in the public interest authorizing staff to negotiate and enter into a contract with Evans Properties, Inc. for a Dispersed Water Management Program Water Farming Pilot Project in an amount not to exceed \$1,392,117; contingent on the execution of the 319(h) Grant Agreement with the Florida Department of Environmental Protection.

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes staff to negotiate and enter into Contract No. 4600002949.

Section 2. This Resolution shall take effect immediately upon adoption.

PASSED and ADOPTED this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

District Clerk/Secretary

Legal form approved:
By:

Office of Counsel

Print name:

MEMORANDUM

TO: Governing Board Members

FROM: Temperince Morgan,

DATE: January 09, 2014

SUBJECT: Approving a 3 year Water Farming agreement with Spur Land and Cattle, LLC & Bull Hammock Ranch Ltd.

Summary

This contract is the result of a solicitation request from the SFWMD for implementing a pilot program to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce total regional run-off and nutrient loading to natural systems. Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. will provide for the design, permitting, construction, operation and maintenance of the Water Farming Pilot Project located in the St. Lucie River Watershed in Martin County. The contract term is 3 years, allowing up to one year for design, permitting and construction, and two years of operation and maintenance. The estimated average annual retention is 870 acre-feet per year. Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. will be reimbursed up to \$136,000 for design, permitting and construction. The contract further provides for an annual fixed payment of \$54,720 for operations and maintenance costs for a two year term. The total not to exceed contract cost is \$245,440.

Staff Recommendation

Staff recommends approval for a contract with Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. in a total not to exceed amount of \$245,440.

Additional Background

In July 2013, the Governing Board authorized staff to begin negotiations in ranked order with respondents to the Water Farming Pilot Project Solicitation (#6000000576). District Staff and the ranked respondent have negotiated the proposed agreement to provide a Water Farming Pilot Project in the St. Lucie River Watershed to test and determine the cost effective feasibility of utilizing fallow citrus lands to retain and store surface water to reduce regional run-off and nutrient loading to natural systems. The contract term is 3 years, allowing up to one year for implementation and two years of operation. The pilot project consists of a pump station, impoundment, riser control structures and berms that will retain an estimated 870 acre-feet per year of regional runoff on a 60 acre fallow citrus grove and 150 acres of adjacent open land located in the St. Lucie River Watershed in Martin County.

Over the two year operational and testing period of the project it is estimated that the cost per volume of storage is \$81 per acre-foot per year.

Core Mission and Strategic Priorities

Managed under the Dispersed Water Management (DWM) Unit of the Office of State Policy and Coordination, this project is consistent with the St. Lucie River Watershed Protection Plan storage and water quality goals as well as the strategic priority of protecting and restoring the northern and southern Everglades by expanding and improving water storage.

Funding Source

This contract is partially funded by an agreement with FDEP for Section 319(h) Grant Funding. Ad Valorem Funds from the Dispersed Water Management Spend Down Plan Reserves in the amount of \$136,000 is budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY16 budgets.

Staff Contact and/or Presenter

Beth Lewis, belewis@sfwmd.gov, ext. 6343

Damon Meiers, dmeiers@sfwmd.gov, ext. 6876

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0111

A Resolution of the Governing Board of the South Florida Water Management District authorizing staff to negotiate and enter into a three year contract with Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd for a Dispersed Water Management Program Water Farming Pilot Project for the purpose of providing water retention services and pilot project implementation information on fallow citrus lands in the St. Lucie River Watershed in an amount not to exceed \$245,440, of which \$136,000 is budgeted in FY14 and the remainder is subject to Governing Board approval of the FY15-FY16 budgets and is contingent on the execution of the 319(h) Grant Agreement with the Florida Department of Environmental Protection; providing an effective date.

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate, and in the public interest authorizing staff to negotiate and enter into a contract with Spur Land and Cattle, LLC and Bull Hammock Ranch, Ltd. for a Dispersed Water Management Program Water Farming Pilot Project in an amount not to exceed \$245,440.

NOW THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby authorizes staff to negotiate and enter into Contract No. 4600002948.

Section 2. This Resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

By:

Chairman

Attest:

Legal form approved:

By:

Office of Counsel

District Clerk/Secretary

Print name:

M E M O R A N D U M

TO: Governing Board Members

FROM: Karen Estock, Division Director

DATE: January 09, 2014

SUBJECT: Approve the acquisition of fee title land containing 4,604.22 acres, more or less, for STA-1W

Summary

STA-1W is located in Western Palm Beach County as shown on the attached map as Exhibit "A". The acquisition of approximately 4,604.22 acres of lands adjacent to STA-1W as shown on the attached map ("STA-1W Expansion Area") is critical to the expansion of STA-1W to meet the Water Quality Based Effluent Limit ("WQBEL") as prescribed in the Everglades Forever Act ("EFA") and National Pollution Discharge Elimination System ("NPDES") consent orders and permits. Shortly after the EFA and NPDES permits and consent orders became final in September 2012, the South Florida Water Management District ("District") began discussions with the landowners within the STA-1W Expansion Area, namely, Florida Crystals subsidiaries ("Crystals") and Gladeview Holdings, LC ("Gladeview"). Such discussions were tabled for approximately seven months pending resolution of third party legal challenges to extensions of Crystals' leases of Trustees of the Internal Improvement Trust Fund lands within the Everglades Agricultural Area. Discussions resumed in July 2013 after the litigation had been resolved. At its October 10, 2013 meeting, the District's Governing Board approved a non-binding letter of intent that provided the general terms of the proposed acquisition and exchange transaction. The Governing Board presentation and memorandum summarized the cost components of the transaction for all the parties. Crystals, Gladeview, and District staff have since worked out all other terms in a Land Exchange Agreement. The significant terms of the Land Exchange Agreement include:

- The District will acquire a total of approximately 4,604.22 acres of land as shown on the map attached as Exhibit "A." The breakdown of the acreage is that the subsidiaries of Crystals will convey approximately 2,003.38 acres ("Crystals Parcel") to the District and Gladeview will convey approximately 2,600.84 acres ("Gladeview Parcel") to the District.
- The District will convey to Crystals approximately 8,700 acres of land ("District Parcel"), and Crystals has the option to acquire a remaining additional 55 acres of land (the "Option Lands"), all as shown on the attached map.
- Gladeview will acquire approximately 2,865 acres from Crystals ("2,865 Acre Parcel") as shown on the attached map.
- The District will provide cash consideration to Gladeview in the amount of \$5,978,474.
- The District will receive \$450,000 from Crystals as detailed in the "Environmental Analysis" section below.
- The Option Lands consist of four (4) separate parcels that are currently being evaluated by Crystals for point source contamination.
- The District will lease back the 4,604.22 acres to Crystals on an interim basis consistent with the STA-1W Expansion Project, as detailed in the "Leases" section below.

- The District will extend two (2) existing leases with Crystals containing approximately 1,691 acres, as detailed in the “Lease” section below.
- Crystals will acquire the District Parcel from the District subject to the existing U.S. Sugar Corporation lease.
- The Closing of the land exchange is targeted for April or May of 2014.
- Each party will pay for the closing costs (documentary stamp tax and title insurance) in connection with the lands they are acquiring. The District is exempt from paying documentary stamp tax in connection with its acquisition of the Crystals and Gladeview Parcels.
- Each party will be responsible for any environmental remediation disclosed in the parties environmental audit for the lands they are acquiring.

Staff Recommendation

Staff recommends approval of the acquisitions, exchanges and other considerations as detailed herein.

Additional Background

The following represents additional information used for further evaluation of the transaction.

Appraisal Information

The District obtained two appraisals for the District, Crystals, and Gladeview Parcels. Crystals also obtained an appraisal for the District Parcel and the combined Crystals and Gladeview Parcels. The appraisal information is set forth in the table below.

| Appraisals | District Parcel | Crystals Parcel | Gladeview Parcel | <i>Combined Crystals and Gladeview Parcels</i> |
|------------------|-----------------|-----------------|------------------|--|
| SFWMD | \$ 63,000,000 | \$ 18,400,000 | \$ 23,900,000 | \$ 42,300,000 |
| SFWMD (approved) | \$ 68,000,000 | \$ 18,760,000 | \$ 24,600,000 | \$ 43,360,000 |
| Average | \$ 65,500,000 | \$ 18,580,000 | \$ 24,250,000 | \$ 42,830,000 |
| Crystals | \$ 56,800,000 | | | \$ 42,000,000 |

Environmental Analysis

The SFWMD has conducted an environmental audit of the Crystals and the Gladeview Parcels. The audit identifies two (2) different categories of contamination:

- (1) The contamination for which remediation is required to render the subject property suitable for use as a water resource project component has an estimated corrective action costs ranging from approximately \$7,500,000 to \$23,275,000. The corrective action costs will be the responsibility of the SFWMD and it is anticipated that those corrective actions will be integrated into the project construction process.

- (2) The contamination characterized as “point source” items represent localized areas of impact to be remediated regardless of the end use of the new owner. The total estimated corrective action costs for the “point source” items are \$710,000, of which Crystals will pay the District \$450,000 before May 2016.

Lease Analysis

Leaseback of Crystals and Gladeview Parcels

At Closing, the District will lease to Crystals the 4,604.22 acres at an annual market rental of \$150 per acre. The following terms will be reflected in the lease:

- In January 2016, approximately 320 acres will be removed from the lease so that the District can commence project construction.
- In May 2016, another approximately 1284 acres will be removed from the lease so that the District can expand the project construction.
- Beginning May 2016, the remaining approximately 3000 acres will be leased by Crystals through February 1, 2017 for \$0 per acre. This offsets Crystal’s obligation to manage water within the construction area at no cost to the District during the lease back term and the risks of farming within an active construction project.

Lease Extensions

At Closing, the District will extend through March 31, 2019 at their current lease rental rates, two existing leases with Crystals, one for approximately 927.45 acres that originally commenced on January 5, 2006 and currently terminates on March 31, 2015 and one for approximately 763.44 acres that originally commenced on August 9, 2007 and currently terminates on March 31, 2016. The subject leased lands, identified as the Parker lands and Parcel 2 lands on Exhibit “B” are located in the District’s Compartment A-2 Everglades Agricultural Area in Palm Beach County and are adjacent to other District lands leased to Crystals through March 31, 2019.

Core Mission and Strategic Priorities

The STA-1W Expansion Project is of critical importance to comply with the Restoration Strategies Regional Water Quality Plan Consent Orders for the purpose of meeting State Water Quality Standards in the Everglades Protection Area. The subject land exchange provides the optimal acreage necessary to allow the District to stay on schedule and meet upcoming consent order milestones. The ability to utilize lands adjacent to the exiting STA-1W for the expansion project has been evaluated by the District engineering staff as the desired location negating the need to build additional conveyance and multiple pump stations needed to move water if the District used the current District Parcel L-8 lands. Building the expansion on lands adjacent to the existing STA-1W conveys a higher level of certainty the STA-1W expansion project and will assist in achieving the WQBEL as required by the EFA and NPDES permits and consent orders issued for the Everglades STA’s on September 12, 2012.

Funding Source

Ad valorem funds will be used for the \$5,978,474 cash payment and associated costs.

Staff Contact and/or Presenter

Richard Bassell, rbassell@sfwmd.gov <mailto:rbassell@sfwmd.gov>, 561-682-2510

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0112

A Resolution of the Governing Board of the South Florida Water Management District to approve the acquisition of fee title land interests containing 4,604.22 acres, more or less, for the STA-1W Expansion Project, in Palm Beach County, along with the receipt of \$450,000, in exchange for the conveyance of fee title land interests in Palm Beach County containing 8,700 acres, more or less, and the option to require the District to convey fee title land interests containing 55 acres, more or less, for no additional consideration, and the payment of cash consideration in the amount of \$5,978,474 and associated costs for which ad valorem funds are budgeted; approve declaring surplus for exchange and conveyance of fee title land interests in Palm Beach County containing 8,755 acres, more or less, all without reservation of interests under Section 270.11, Florida Statutes; approve entering into a lease agreement with respect to the lands containing 4,604.22 acres, more or less, in Palm Beach County; approve lease extensions; providing an effective date.

WHEREAS, the South Florida Water Management District (District) operates Stormwater Treatment Area 1West ("STA-1W") located in Western Palm Beach County as shown on the map attached as Exhibit "A"; and

WHEREAS, the STA-1W Expansion Project is a critical component of the District's Restoration Strategies Regional Water Quality Plan to meet State Water Quality Standards in the Everglades Protection Area; and

WHEREAS, the South Florida Water Management District is authorized to acquire land, or interests or rights in land, pursuant to Section 373.139, Florida Statutes and to exchange lands, or interests or rights in lands, pursuant to Section 373.089, Florida Statutes; and

WHEREAS, the Governing Board of the South Florida Water Management District at its October 10, 2013 meeting, approved a non-binding letter of intent that provided the general terms of the proposed acquisition and exchange transaction reflected by this Resolution; and

WHEREAS, the other parties to the acquisition and exchange transaction and the staff of the South Florida Water Management District have since worked out all other terms in a Land Exchange Agreement; and

WHEREAS, for the purpose of providing the District with the necessary lands for the STA-1W Expansion Project, the South Florida Water Management District desires to enter into the Land Exchange Agreement whereby (1) the District will acquire fee title to a total of 4,604.22 acres, more or less, as shown on Exhibit "A: from Gladeview Holdings, LC ("Gladeview") and subsidiaries of the Florida Crystals Corporation ("Crystals"), (2) the District will convey to Crystals fee title to 8,700 acres, more or less, as shown on Exhibit "A", (3) Crystals has the option to acquire an additional 55 acres, more or less, as shown on Exhibit "A: (4) Gladeview will acquire from Crystals 2,865 acres, more or less, as shown on Exhibit "A", (5) the District will be paid \$450,000 cash consideration, and (6) the District will provide cash consideration to Gladeview in the amount of \$5,978,474; and

WHEREAS, as further provided in the Land Exchange Agreement, the District will lease back the 4,604.22 acres to Crystals on an interim basis consistent with the STA-1W Expansion Project, so that approximately 320 acres will be removed from the lease in January 2016, approximately 1284 acres will be removed from the lease in May 2016, and the remaining approximately 3000 acres will be leased through February 1, 2017; and

WHEREAS, as further provided in the Land Exchange Agreement, the District will extend two (2) existing leases with Crystals of the Parker Lands and Parcel 2, containing a total of approximately 1,691 acres, as shown on attached Exhibit "B", for a period through March 31, 2019.

NOW THEREFORE, BE IT RESOLVED by the Governing Board of the South Florida Water Management District:

Section 1. The Governing Board of the South Florida Water Management District hereby approves the acquisition of fee title land interests containing 4,604.22 acres, more or less, for the STA-1W Expansion Project in Palm Beach County, and the receipt of \$450,000 cash consideration, in exchange for the conveyance of fee title land interests in Palm Beach County containing 8,700 acres, more or less, the grant of an option to require the District to convey fee title land interests in Palm Beach County containing 55 acres, more or less, and the payment of cash consideration of \$5,978,474 and associated costs, for which ad valorem funds are budgeted.

| Owner | Tract No. | Interest | Acres | SFWMD Appraised Value |
|------------------------|-----------|----------|-----------------|-----------------------|
| Stofin Co., Inc. | 49102-249 | Fee | 1,537.73 | \$14,460,000 |
| S.D. Sugar Corp. | 49102-251 | Fee | 465.65 | \$ 4,300,000 |
| Gladeview Holdings, LC | 49102-250 | Fee | 2,600.84 | \$24,600,000 |
| TOTALS | | | 4,604.22 | \$43,360,000 |

| Owner | Tract No. | Interest | Acres | SFWMD Appraised Value |
|---|-----------|----------|-------|-----------------------|
| South Florida Water Management District | SC200-030 | Fee | 8,713 | \$68,000,000 |

BUDGET

| Dollars | Fund | Fund Center | Functional Area | Commitment Item GL Acct # |
|-------------|------------------------|-------------|-----------------|---------------------------|
| \$5,978,474 | 401000, 402000, 406000 | 3510144000 | B199 | 580020 |

Section 2. The Governing Board of the South Florida Water Management District hereby further approves declaring surplus for exchange and conveyance land interests containing 8,755 acres, more or less, all in Palm Beach County. The Governing Board hereby determines that the 8,755 acres, more or less, subject lands are no longer needed for conservation purposes and this Resolution has been approved by at least a two-thirds (2/3) vote of the Governing Board.

Section 3. The Governing Board of the South Florida Water Management District hereby further approves entering into a lease agreement with Crystals for the lease back of the 4,604.22 acres, more or less.

Section 4. The Governing Board of the South Florida Water Management District hereby further approves entering into extensions to two (2) existing lease agreements with Crystals of the Parker Lands and Parcel 2, containing a total of approximately 1,691 acres for a period through March 31, 2019.

Section 5. The Governing Board of the South Florida Water Management District hereby authorizes the Chair to execute the Agreement for Sale and Purchase and any instrument(s) of conveyance required to consummate the transaction contemplated therein. The Governing Board of the South Florida Water Management District hereby authorizes the Executive Director or the Executive Director's designee to execute all other documents necessary to consummate this transaction.

Section 6. This Resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

Legal form approved:

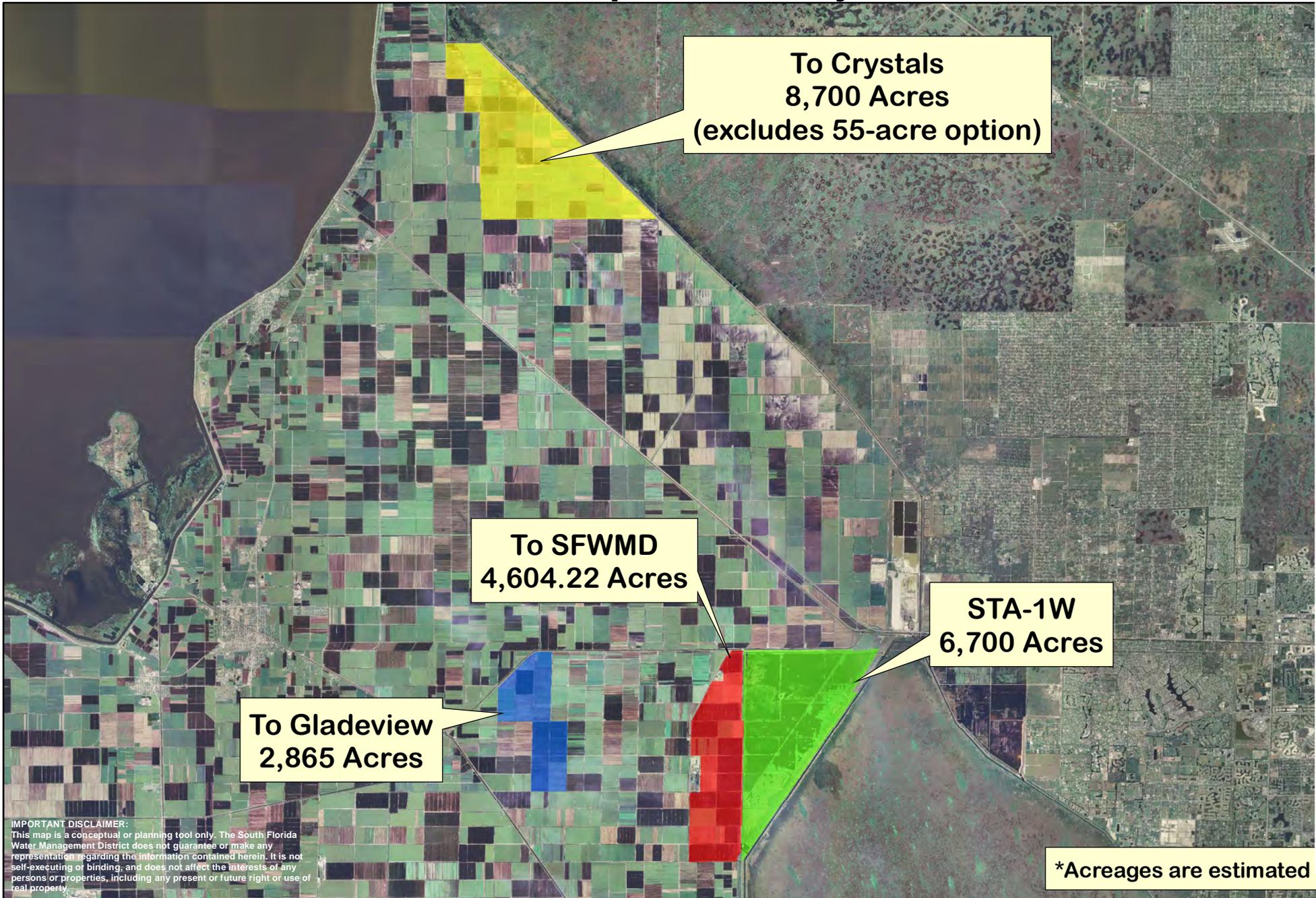
By:

District Clerk/Secretary

Office of Counsel

Print name:

Land Exchange STA-1W Expansion Project

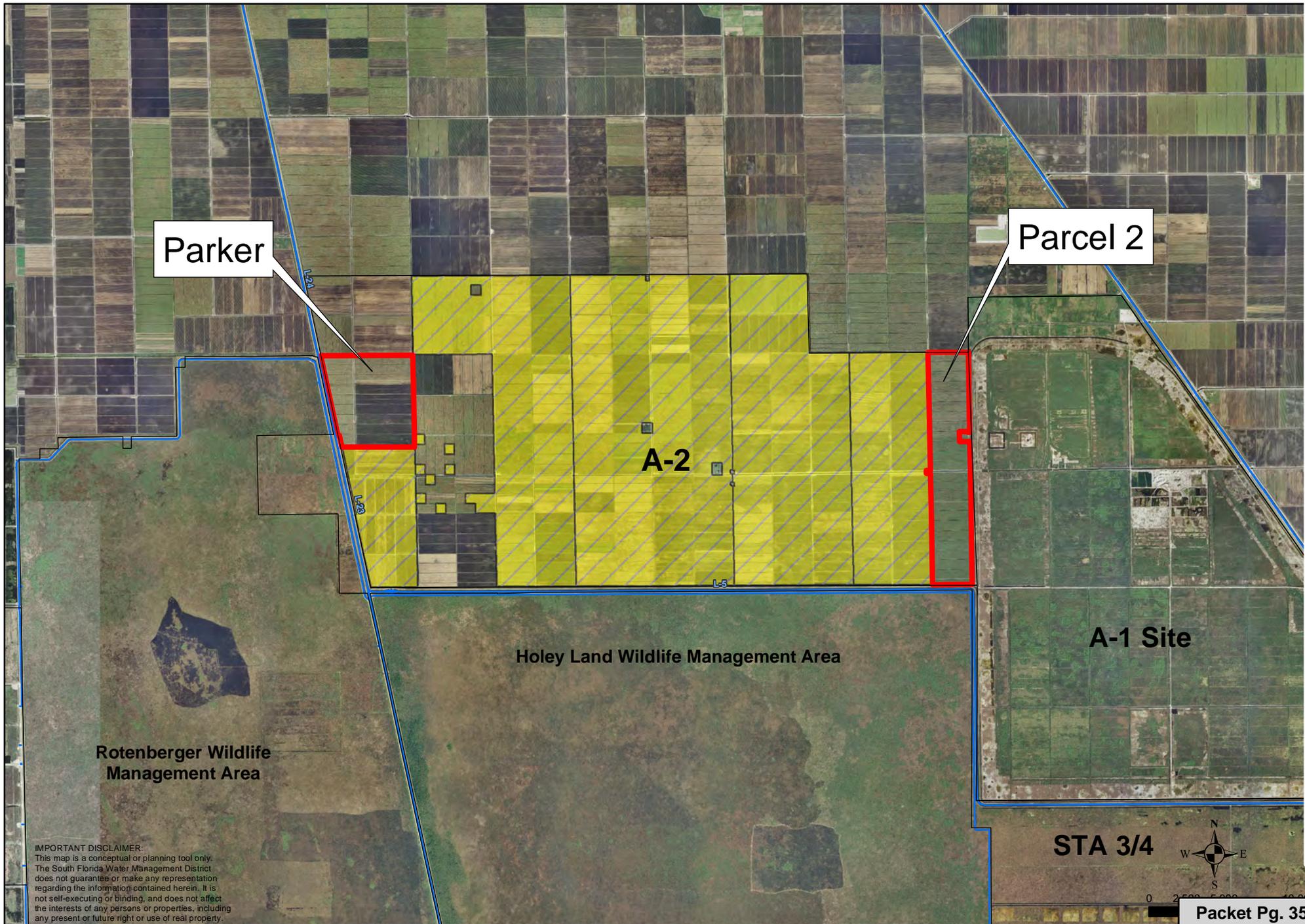


IMPORTANT DISCLAIMER:
 This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property.

*Acreages are estimated

Attachment: ExhA_Map_ID_1680_203 (Resolution No. 2014 - 0112 : Approve the acquisition of fee title

Lease Extensions



IMPORTANT DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property.

Attachment: ExhB_Map_ID_1680_203 (Resolution No. 2014 - 0112 : Approve the acquisition of fee title

M E M O R A N D U M

TO: Governing Board Members

FROM: Jeff Kivett, Division Director

DATE: January 09, 2014

SUBJECT: S-13 Refurbishment - Contract Number 4600002993

Summary

The S-13 Pump Station was built in 1954 by the United States Army Corps of Engineers (USACE). The pump station is a coastal structure located on the C-11 canal in Broward County near the Town of Davie. This station provides area flood protection and acts as a barrier to the inland movement of salt water.

Due to age and current condition of the facility, the District initiated the S-13 Pump Station Repowering and Automation Project in February 2011 with the following goals: provide new electronically-controlled low-emissions engines, refurbish right-angle gear reducer and pump, provide new gen-sets, provide new ventilation fans for station, provide new trash rake and conveyor and provide complete station electrical upgrades.

Construction is scheduled to start in February of 2014 and continue 790 days through April of 2016. The project is phased for dry season construction. The District contracted in June 2013 for the purchase of three engines to meet the December 31, 2013 engine production deadline and December 31, 2015 installation date to meet Tier 4i engine emission requirements.

Staff Recommendation

The project should proceed in a timely manner with a construction notice-to-proceed to meet the requirements of dry season / wet season construction and the Tier 4i statutory requirements. Staff recommends approval to enter into a 790 day contract in the amount of \$6,841,000.00 with Douglas N. Higgins, Inc., the lowest responsive and responsible bidder, for the construction of the S-13 Repowering and Automation.

Core Mission and Strategic Priorities

One of the District's most critical missions is flood control. The S-13 Repowering and Automation project will refurbish and upgrade the pump station equipment and provide improved reliability. The project includes the automation of the station to the newest District standards and upgrading the engine drive systems to meet the new Tier 4i requirements.

Funding Source

The lowest responsive and responsible bidder is Douglas N. Higgins, Inc. with a total amount of \$6,841,000.00 for which ad valorem funds of \$1,800,000.00 are budgeted and the remainder is subject to Governing Board approval of the FY15-FY16 budgets.

Staff Contact

John Mitnik, Bureau Chief, Engineering and Construction
561-682-2679 / jmitnik@sfwmd.gov

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0113

A Resolution of the Governing Board of the South Florida Water Management District to authorize entering into a 790-day contract with Douglas N. Higgins, Inc., the lowest responsive and responsible bidder for the S-13 Repowering and Automation project in the total amount of \$6,841,000 for which ad valorem funds of \$1,800,000 are budgeted and the remainder is subject to Governing Board approval of the FY15-FY16 budgets; providing an effective date. (Contract Number 4600002993)

WHEREAS, the S-13 pump station provides flood control and salt water intrusion protection for central Broward County; and

WHEREAS, repowering and automation of the S-13 pump station supports the District's flood control mission; and

WHEREAS, the Governing Board of the South Florida Water Management District deems it necessary, appropriate and in the public interest to authorize entering into this 790 day contract with Douglas N. Higgins, Inc., for the S-13 Repowering and Automation project; **now therefore**

BE IT RESOLVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT:

Section 1. The Governing Board of the South Florida Water Management District hereby approves the 790 day contract with Douglas N. Higgins, Inc. for the construction of the S-13 Repowering and Automation, in the amount of \$6,841,000.00.

Section 2. This project supports the District's Mission of flood control in central Broward County.

Section 3. This resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD
By:

Chairman

Attest:

Legal form approved:

By:

District Clerk/Secretary

Office of Counsel

Print name:

MEMORANDUM

TO: Governing Board Members

FROM: Karen Estock, Division Director

DATE: January 09, 2014

SUBJECT: Adopting the SFWMD Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II

Summary

Highlights

The 2014 SFER - Volume II, Chapter 6A presents the 2014 Florida Forever Work Plan.

Work Plan Updates

- Added the Lake Hicpochee Hydrologic Enhancement and Rio St. Lucie Stormwater Quality - Sediment Nutrients, NEEPP projects.
- Removed the Hybrid Wetland Treatment Technology, NEEPP project that has been transferred to FDACS as the lead agency.
- Removed the inactive Strazzulla Wetlands, CERP project. The land acquired for this project will be exchanged for U.S. Department of Interior land, located on the western side of Loxahatchee National Wildlife Refuge, which will become part of the Restoration Strategies Program.
- The Picayune Strand Restoration, CERP project land acquisition boundary has been revised to identify for acquisition the Fakahatchee Strand and Belle Meade land to be hydrologically impacted by the project, as determined by a revised 2013 Takings Analysis completed by the US Army Corps of Engineers.
- The conceptual land acquisition boundary for the Loxahatchee River Watershed Restoration Project (LRWRP), CERP has been updated, refining the acquisition area for the LRWRP Flow-way 2 Storage feature.

Staff Recommendation

Adopt the SFWMD Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report, providing an effective date.

Additional Background

FY2013 Land Acquisition Highlights

- 70 acres for the Cutler South Flowway of the Biscayne Bay Coastal Wetlands, CERP project; and 3 acres for the Loxahatchee River Watershed Restoration, CERP project were acquired by the District through donation.
- Tenant Improvements located within the Kissimmee River Restoration Project flood plain were purchased for demolition and removal at a cost of \$440,400.
- Construction easements totaling 6 acres were acquired through donation for the Herbert Hoover Dike Rehabilitation Project and Loxahatchee River Watershed Restoration projects.
- A 6-acre access easement along the Cocohatchee Canal was conveyed to the District through a right-of-way permit.
- 235,695 acres (59%) of land acquired for CERP as of September 30, 2013

FY2013 External Partner Activity

- Miami-Dade County, as an external partner, acquired 91 acres of land for \$234,560 within the Biscayne Bay Coastal Wetlands, CERP project; and 3 acres of land were acquired through donation within the C-111 Spreader Canal, CERP project.

Core Mission: Natural Systems/Water Quality Strategic

Priority 1: Completing and implementing key ongoing and new restoration projects

Priority 2: Expanding and improving water storage

Priority 3: Implementing cost effective solutions to improve water quality treatment; reduce nutrient loads and achieve water quality standards

Funding Source

The Plan identifies projects eligible for funding under the Florida Forever Act, as well as projects eligible for state acquisition monies from the appropriate account or trust fund under Section 373.139, Florida Statutes. Additionally, a summary of land acquisition activity as of September 30, 2013 is provided. Details on the District's land management activities are presented in Volume II, Chapter 6B.

Staff Contact and/or Presenter

Ray Palmer, ext. 2246

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Resolution No. 2014 - 0114

A Resolution of the Governing Board of the South Florida Water Management District adopting the SFWMD Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report; providing an effective date.

WHEREAS, pursuant to Chapter 2005-36, amending Section 373.199, F.S., by March 1st of each year, as part of the consolidated water management annual report required by S. 373.199(7), the South Florida Water Management District is required to file a yearly update of the South Florida Water Management District Florida Forever Work Plan to further the goals of the Florida Forever Act and to submit the Work Plan to the Secretary of the Florida Department of Environmental Protection, the Governor, the President of the Florida Senate, and the Speaker of the Florida House of Representatives; and

WHEREAS, the South Florida Water Management District Florida Forever Work Plan, 2014 Annual Update is contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report; and

WHEREAS, pursuant to Section 373.139, F.S., a public hearing was duly held with regard to the intention of the South Florida Water Management District to adopt the South Florida Water Management District Florida Forever Work Plan, 2014 Annual Update; and

WHEREAS, on January 9, 2014, the South Florida Water Management District Florida Forever Work Plan, 2014 Annual Update, Chapter 6A, Volume II of the 2014 South Florida Environmental Report, was presented to the Governing Board of the South Florida Water Management District adopting the Work Plan 2014 Update;

NOW THEREFORE, BE IT RESOLVED by the Governing Board of the South Florida Water Management District:

Section 1. The Governing Board of the South Florida Water Management District hereby adopts the South Florida Water Management District Florida Forever Work Plan, 2014 Annual Update, contained in Chapter 6A, Volume II of the 2014 South Florida Environmental Report.

Section 2. A copy of the report will be made available at <http://www.sfwmd.gov/sfer>.

Section 3. This Resolution shall take effect immediately upon adoption.

PASSED and **ADOPTED** this 9th day of January, 2014.

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD

By:

Chairman

Attest:

Legal form approved:

By:

Office of Counsel

District Clerk/Secretary

Print name:

M E M O R A N D U M

TO: Governing Board Members

FROM: Sharon M. Trost, PG, AICP, Director, Regulatory Division

DATE: January 09, 2014

SUBJECT: Adopt Proposed Rules for CUP Consistency

Summary

The Florida Department of Environmental Protection (DEP) is leading a statewide effort (referred to as CUPcon) to improve consistency in the consumptive use permitting programs implemented by the water management districts (WMDs). The CUPcon goals include: 1) making the consumptive use permitting program less confusing for applicants; 2) treating applicants equitably statewide; 3) providing consistent protection of the environment; 4) streamlining the process; and 5) incentivizing behavior that protects water resources. The key changes to the rules include:

- Incorporation of updates to Chapter 62-40, F.A.C.;
- Revision of permit types to include: 1) General Permits by Rule for landscape irrigation, short-term dewatering and closed-loop systems; 2) Noticed General Permits; and 3) Individual Permits for those that do not qualify for a general permit;
- Revision of standard public water supply conservation plan and inclusion of goal based plans;
- Consistent standard permit conditions with the other WMDs and updating existing permit conditions;
- Reorganization of Applicant's Handbook (formerly Basis of Review);
- Inclusion of semi-annual pumpage reporting instead of quarterly reporting; and
- Incorporation of standardized application and compliance forms

Staff Recommendation

Adopt Proposed Rules 40E-40E-1.021, 40E-1.602, 40E-1.603, 40E-1.6065, 40E-1.607, 40E-1.6107, 40E-1.615, 40E-1.659, 40E-2.011, 40E-2.041, 40E-2.061, 40E-2.071, 40E-2.091, 40E-2.101, 40E-2.301, 40E-2.321, 40E-2.331, 40E-2.381, 40E-3.011, 40E-3.021, 40E-3.040, 40E-3.051, 40E-3.301, 40E-3.451, 40E-5.011, 40E-5.041, 40E-5.301, 40E-8.011, 40E-8.421, 40E-8.431, 40E-10.011, 40E-10.031, 40E-10.051, 40E-20.010, 40E-20.011, 40E-20.061, 40E-20.091, 40E-20.101, 40E-20.301, 40E-20.302, 40E-20.321, 40E-20.331, 40E-20.351, 40E-20.381, 40E-24.011, 40E-24.101, 40E-24.201, F.A.C., and reorganize and rename the Basis of Review For Water Use Permit Applications Within the South Florida Water Management District to improve consistency among the

WMDs' consumptive use permitting programs. The proposed rules are included in the Governing Board materials for this agenda item.

Additional Background

The SFWMD held ten public workshops across the SFWMD boundaries and two stakeholder meetings. The DEP and WMDs reviewed all comments submitted by participants and amended the rule language as appropriate. A Statement of Economic Costs (SERC) was prepared to determine the regulatory impact of the CUPcon amendments. The SERC indicates the amendments will not have an adverse impact on economic growth; on permittees, small business, or small governments; or increase regulatory costs.

The proposed rules were published in FAR on December 10, 2013. The proposed rules were also provided to the Office of Fiscal Accountability and Regulatory Reform and the Joint Administrative Procedures Committee on November 26, 2013. As of December 16, 2013, the SFWMD has not received any comments from OFARR or JAPC. The District may publish a Notice of Change to address public comments received after publication of the Notice of Proposed Rule.

Core Mission and Strategic Priorities

This item supports the core mission by simplifying the water use permitting process for its permittees while protecting the water resources of the District. The Water Use Permitting Bureau will implement the CUPcon amendments.

Funding Source

The publication of the Notice of Proposed Rule was funded from Office of Counsel. The Water Use Permitting Bureau will fund implementation of the CUPcon amendments.

Staff Contact: Maria C. Clemente, P.E., Water Use Bureau Chief
Phone (561) 682-2308

Jennifer Bokankowitz, Attorney, Office of Counsel
Phone (561) 682-2258

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1.0 GENERAL PROVISIONS

Chapter 373, Florida Statutes (F.S.), enables and directs the District to regulate the use of water within its jurisdictional boundaries. The purpose of the water use regulatory

program is to ensure that those water uses permitted by the District are reasonable-beneficial, will not interfere with any presently existing legal uses of water, and are consistent with the public interest pursuant to Section 373.223, F.S. The District has adopted rules for regulating the consumptive use of water, which are set forth in Chapters 40E-2 and 40E-20, Florida Administrative Code (F.A.C.). The Applicant's Handbook Basis of Review is incorporated by reference into Chapter 40E-2, F.A.C., and The Basis of Review must be read in conjunction with Chapters 40E-2 and 40E-20, F.A.C., as applicable.

1.1 Definitions

Additional definitions can be found in Chapter 373, F.S., and Chapters 40E-3, 40E-8, and 62-40, F.A.C.

Allocation Coefficient - A multiplier used in calculating permit allocations which accounts for the irrigation system efficiency and the effects on the relevant water storage system (see Resource Efficiency).

Annual Withdrawal - The quantity of water permitted to be withdrawn during any 12 month time period.

Aquifer - A geologic formation, group of formations, or part of a formation that contains sufficient saturated, permeable material to yield significant quantities of water to wells and springs.

Aquifer Remediation - A use of water involving the withdrawal of groundwater for the authorized removal of contaminants for the purposes of restoring water quality.

Aquifer Storage and Recovery - A well system operated ~~Projects involving approved Class V injection wells for the purpose of injecting injection and storing recovery of fresh water in an aquifer for direct retrieval and use into a ground water reservoir.~~

Area of Influence - For groundwater systems the area of influence is defined by the cone of depression, and for surface water systems the area of influence is defined as the extent to which the withdrawal results in a measurable change in surface water levels or flows.

Brackish Groundwater - ~~For purposes of the additional permitting requirements within the Central Florida Coordination Area (CFCA), brackish groundwater means groundwater in or below the Lower Floridan Aquifer that: has chloride concentrations at or above 1000 milligrams per liter (mg/L); has total dissolved solids concentrations at or above 1500 mg/L; or is located east of the C-35, C-36, and C-37 canals; south of latitude 28 degrees 7 minutes north; north of latitude 27 degrees, 54 minutes north and west of the District's boundary lying between these two latitude lines as described in section 373.069(2)(e), F.S., delineated on Figure 3-3.~~

Certification or Certify – means the formal determination by the District, through a validation process consistent with state and federal law, of the total amount of water made available for consumptive use by a water resource development project or project phase.

Cone of Depression – The conical shape taken by the potentiometric surface showing the variation of drawdown with distance due to pumping from a well or wellfield.

Confined Aquifer - An aquifer that contains groundwater which is confined under pressure and bounded between significantly less permeable materials, such that water will rise in a fully penetrating well above the top of the aquifer. In cases where the hydraulic head is greater than the elevation of the overlying land surface, a fully penetrating well will naturally flow at the land surface without means of pumping or lifting.

Confining Unit - A body of significantly less permeable material than the aquifer, or aquifers, that it stratigraphically separates. The hydraulic conductivity (K) may range from nearly zero to some value significantly lower than that of the adjoining aquifers.

Conservation - The beneficial reduction of water use through voluntary or mandatory altering of water use practices, reduction of distribution losses or installation and maintenance of low-volume water use systems, fixtures, or devices.

Constant Drawdown - In dewatering systems, the practice of pumping the source unit to a static level for a long duration. Also used in context with aquifer performance tests associated with flowing wells.

Consumptive Use - Any use of water which reduces the supply from which it is withdrawn or diverted.

Demand Management - Reducing the demand for water through activities that alter water use practices, improve efficiency in water use, reduce losses of water, reduce waste of water, alter land management practices and/or alter land uses.

~~**Demonstrated 2013 Demand** - For purposes of the additional permitting requirements within the Central Florida Coordination Area, demonstrated 2013 demand means the quantity of water that an applicant establishes it will need to meet demands in 2013.~~

Desalination - The process of removing or reducing salts and other chemicals from seawater or other highly mineralized water sources.

Detention - The delay of stormwater runoff prior to discharge into receiving waters.

Drawdown - The vertical distance between the static water level and the surface of the cone of depression.

Due Diligence - Taking all actions that a reasonably prudent person would take to meet the schedule requirements in the permit for developing and using all required supplemental water supplies. Particular circumstances beyond the permittee's control will be considered in determining whether due diligence has been exercised.

Effluent - Water that is not reused after flowing out of a wastewater treatment facility.

Elevation - The height in feet above mean sea level according to National Geodetic Vertical Datum (NGVD, 1929). May also be expressed in feet above mean sea level (MSL) as reference datum.

Evapotranspiration - The total loss of water to the atmosphere by evaporation from land and water surfaces and by transpiration from plants.

Existing Legal Use of Water - A water use that is authorized under a District consumptive use permit or is existing and exempt from permit requirements.

Florida-Friendly Landscaping - A landscaping method that details nine landscape principles that conserve water, protect the environment, and promote planting native flora adaptable to local conditions. The principles are described in Section 373.185, F.S. The definitions set forth in Chapter 40E-8, F.A.C. shall be incorporated into the Applicant's Handbook.

Flow Meter - An instrument, when properly installed and calibrated, that is used for the accurate measurement of water flow through a closed pipe.

Freshwater - An aqueous solution with a chloride concentration equal to or less than 250 milligrams per liter (mg/L).

Heat Stress Damage - Exposure to high temperature extremes such that the crop or plant is economically damaged.

Hydraulic Conductivity (K) - For an isotropic medium and homogeneous fluid, the volume of water at the existing kinematic viscosity that will move in unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.

Hydroperiod - The range of water level fluctuation coupled with the duration of the periods of inundation or saturation and drying in a wetland.

Irrigation Water Use - A consumptive use classification which incorporates all uses of water for supplemental irrigation purposes including golf, nursery, agriculture, recreation and landscape.

Irrigation Return Flow - The flow of water under the influence of gravity, to a watercourse, which occurs as surface water flow or shallow groundwater flow resulting from the application of water for supplemental irrigation purposes.

Irrigation System Efficiency - A measure of the effectiveness of an irrigation system in delivering water to a crop for irrigation and freeze protection purposes. It is expressed as the ratio of the volume of water used for supplemental crop evapotranspiration to the volume pumped or delivered for use.

Impoundment - Any lake, reservoir, or other containment of surface water occupying a depression or bed in the earth's surface and having a discernible shoreline.

Lake Recharge - The withdrawal of water for the purpose of replacing a volume of water removed from a lake system or other water body utilized as a source of water supply or indirectly as a source of wellfield recharge. Lake recharge does not include artificial maintenance of the water level of a surface water body at a desired elevation for aesthetic purposes, but may include augmentation of the volume of water stored within a surface water body that is effecting recharge to an adjacent wellfield.

Landscape Irrigation - The outside watering of shrubbery, trees, lawns, grass, ground covers, vines, gardens and other such flora, not intended for resale, which are planted and are situated in such diverse locations as residential and recreation areas, cemeteries, public, commercial and industrial establishments, and public medians and rights of way.

Leakance - The vertical movement of water from one aquifer to another across a confining zone or zones due to differences in hydraulic head. Movement may be upward or downward depending on hydraulic head potential in source aquifer and receiving aquifer. This variable is typically expressed in units of $\text{gpd}/\text{cu.ft}^3$.

Letter Modification - An administrative process that allows for the modification of an existing permit to account for minor changes that do not result in significant change to the terms and conditions of the permit.

Linear Move Irrigation System - A type of self-propelled overhead irrigation system that utilizes laterals which emit water under low pressure at a distance of 3 - 4 feet above the crop at a rate ranging from 4 to 16 gallons per minute.

Listed species – Those animal species which are endangered, threatened or of special concern and are listed in Sections 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C., and those plant species listed in 50 Code of Federal Regulation 17.12, when such plants are found to be located in a wetland or other surface water.

Lower East Coast Everglades Waterbodies - as used in Subsection Section 3.2.1.E., is defined as the surface and groundwater from Water Conservation Area 1, 2A, 2B, 3A

and 3B, the Holeyland/Rotenberger wildlife management areas, and the freshwater portions of Everglades National Park, as depicted in Figure 3-1.

Maximum Daily Allocation - The maximum quantity permitted to be withdrawn in any single 24 hour period.

Maximum Monthly Allocation - The maximum quantity of water assigned to the permit to be withdrawn during the month in the growing season when the largest supplemental crop requirement is needed by the specific crop for which the allocation is permitted.

Micro-irrigation - The application of small quantities of water on or below the soil surface as drops or tiny streams of spray through emitters or applicators placed along a water delivery line. Micro-irrigation includes a number of methods or concepts such as bubbler, drip, trickle, mist or microspray and subsurface irrigation.

National Geodetic Vertical Datum (NGVD) - A geodetic datum derived from a network of information collected in the United States and Canada. It was formerly called the "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

North Palm Beach County /Loxahatchee River Watershed Waterbodies - as used in Subsection Section 3.2.1.E., is defined as the surface and groundwater from the Grassy Waters Preserve, Water Catchment Area, Pal-Mar and J.W. Corbett Wildlife Management Area, Loxahatchee Slough, Loxahatchee River, Riverbend Park, Dupuis Reserve, Jonathan Dickenson State Park, Kitching Creek, Moonshine Creek, Cypress Creek, and Hobe Grove Ditch, as depicted in Figure 3-2.

Other Surface Waters – Surface waters other than wetlands, as described and delineated pursuant to Rule Section 62-340.600, F.A.C., as ratified by Section 373.4211, F.S.

Plume - A body of contaminated groundwater originating from a specific source and influenced by such factors as the local groundwater flow pattern, density of contaminant and character of the aquifer.

Portable Guns - Large sprinklers that discharge high volumes of water at high pressures through the air and are moved from location to location irrigating in a circular spray pattern and include truck or tractor mounted units.

Potable Water - Water that is suitable for drinking, culinary, or domestic purposes.

Potentiometric Surface - A surface which represents the hydraulic head in an aquifer and is defined by the level to which water will rise above a datum plane in wells that penetrate the aquifer.

Public Supply Utility - Any municipality, county, regional water supply authority, special district, public or privately owned water utility, or multi-jurisdictional water supply authority, that provides water for use by the general public.

Public Water Supply - Water that is withdrawn, treated, transmitted and distributed as potable or reclaimed water.

~~**Reclaimed Water** - Water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility.~~

Reservation water body - Areas within the District as identified in Rules 40E-10.021 and 40E-10.041, F.A.C., for which a water reservation has been established.

Resource Efficiency – The efficient use of water as measured in terms of the net impact on the relevant water storage system. A relevant water storage system will include the surface water and groundwater bodies which are determined by the District to provide storage, using the factors stated in Subsection Section 2.3.1.C.2.a 2-3-3.2 of the Applicant's Handbook.

Restricted Allocation Area - Areas designated within the District for which allocation restrictions are applied with regard to the use of specific sources of water. The water resources in these areas are managed in response to specific sources of water in the area for which there is a lack of water availability to meet the projected needs of the region from that specific source of water.

Retention - The prevention of stormwater runoff from direct discharge into receiving waters; included as examples are systems which discharge through percolation, exfiltration, filtered bleed-down and evaporation processes.

Retrofit - The replacement or changing out of an existing irrigation system with a different irrigation system such as a conversion from an overhead sprinkler system to a micro-irrigation system.

Runoff - That component of rainfall which is not absorbed by soil, intercepted and stored by surface water bodies, evaporated to the atmosphere, transpired and stored by plants, or infiltrated to groundwater, but which flows to a watercourse as surface water flow.

Saline Water - An aqueous solution with a chloride concentration greater than 250 mg/L and less than that of seawater.

Saline Water Interface - Hypothetical surface of chloride concentration between freshwater and saline water where the chloride concentration is 250 mg/L at each point on the surface.

Seasonal High Water Level - The elevation to which the groundwater or surface water can be expected to rise due to a normal wet season.

Seawater or Saltwater - Groundwater or surface water with a chloride concentration at or above 19,000 mg/L.

Seepage Irrigation System - A means to artificially supply water for plant growth which relies primarily on gravity to move the water over and through the soil, and does not rely on emitters, sprinklers or any other type of device to deliver water to the vicinity of expected plant use.

Semi-Confined Aquifer - A completely saturated aquifer that is bounded above by a semi-pervious layer, which has a low, though measurable permeability, and below by a layer that is either impervious or semi-pervious.

Service Area - The geographical region in which a water supplier has the ability and the legal right to distribute water for use.

~~**Similar Applicant** - For purposes of the additional permitting requirements within the Central Florida Coordination Area (CFCA), a similar applicant means an applicant, other than a public supply utility, whose projected water demand after 2013 will exceed its demonstrated 2013 demand.~~

Staff Report - A written report prepared by District staff presenting the staff's conclusions and recommendations, based on review of the application.

Staged Drawdown - In dewatering systems, the practice of pumping the source unit to discrete, incremental levels.

Standby Facility - The minimal operation of a withdrawal facility to maintain the mechanical integrity of the pumping apparatus as recommended by the manufacturer or for a limited time period each month.

Supplemental Irrigation Requirement (SIR) – The volume of water, usually expressed in acre-inches, representing the difference between the estimated evapotranspiration of a given crop and the effective rainfall available in a specific geographic area over some prescribed time period and climatic event.

~~**Supplemental Water Supply** – For purposes of the additional permitting requirements applicable within the Central Florida Coordination Area (CFCA), supplemental water supply means surface water, stormwater, water that is reused after one or more public supply, municipal, industrial, commercial or agricultural uses, and saltwater. Brackish groundwater may be considered a supplemental water supply if it can be developed in a manner that will not cause or contribute to harmful impacts from cumulative groundwater withdrawals in the CFCA. This definition shall not govern the District's funding decisions made pursuant to section 373.1961(3), F.S.~~

Traveling Guns - Large sprinklers that discharge high volumes of water through the air above the level of the plant being irrigated at high pressures which are self-propelled and move slowly across the area being irrigated, such as lateral move or linear irrigation systems.

Treatment Facility - Any plant or other works used for the purpose of treating, stabilizing, or holding wastewater.

Unconfined Aquifer - A permeable geologic unit or units only partly filled with water and overlying a relatively impervious layer. Its upper boundary is formed by a free water table or phreatic surface under atmospheric pressure. Also referred to as Water Table aquifer.

Upconing - Upward migration of mineralized or saline water as a result of pressure variation caused by withdrawals.

Use of Reclaimed Water – The deliberate application of reclaimed water, in compliance with Florida Department of Environmental Protection and District rules, for a beneficial purpose.

Utility - Any legal entity responsible for supplying potable water for a defined service area.

Wastewater - The combination of liquid and water-carried pollutants from residences, commercial buildings, industrial plants and institutions together with any groundwater, surface runoff or leachate that may be present.

Water Table - The surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere; defined by the level where water within an unconfined aquifer stands in a well.

Water Use - Any use of water which reduces the supply from which it is withdrawn or diverted.

Water Well - Any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is for the location, acquisition, development, or artificial recharge of groundwater. This term does not include any well for the purpose of obtaining or prospecting for oil, natural gas, minerals, or products of mining or quarrying; for inserting media to dispose of oil brines or to re-pressure oil-bearing or natural gas-bearing formation; for storing petroleum, natural gas, or other products; or for temporary dewatering of subsurface formations for mining, quarrying or construction purposes. [Section 373.303(7), F.S.].

Wetlands – Those areas that are inundated or saturated by surface water or groundwater at a frequency and a duration sufficient to support, and under normal

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptation, have the ability to grow, reproduce, or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto. The landward extent of wetlands shall be delineated pursuant to Sections 62-340.100 through 62-340.550, F.A.C., as ratified by Section 373.4211, F.S.

Wind Stress Damage - Exposure to high wind such that the crop or plant is economically damaged.

1.2 Acronyms and Abbreviations

| | |
|---------------------|--|
| APT | aquifer performance test |
| ASR | aquifer storage and recovery |
| BEBR | University of Florida Bureau of Economics and Business Research |
| CUP | consumptive use permit |
| DRI | development of regional impact |
| ERP | environmental resource permit |
| ET | evapotranspiration |
| F.A.C. | Florida Administrative Code |
| FDEP | Florida Department of Environmental Protection |
| F.S. | Florida Statutes |
| gal./flush | gallons per flush |
| gal./min. | gallons per minute |
| GPCD | gallons per capita day |
| GPD | gallons per day |
| gpd/ft ³ | gallons per day per cubic foot |
| IFAS | University of Florida, Institute of Food and Agricultural Sciences |
| K | hydraulic conductivity |
| LORS | Lake Okeechobee Regulation Schedule |
| MFL | minimum flow and level |
| mg/L | milligrams per liter |
| MG | million gallons |
| MGD | million gallons per day |
| MGM | million gallons per month |
| MGY | million gallons per year |
| MSL | mean sea level |
| NAVD | North American Vertical Datum (1988) |
| NGVD | National Geodetic Vertical Datum (1929) |
| NRCS | Natural Resources Conservation Service |

| | |
|------|---|
| NTU | Nephelometric Turbidity Unit |
| NWI | National Wetland Inventory |
| OFW | Outstanding Florida Water |
| PSC | Public Service Commission |
| psi | pounds per square inch |
| RPC | Regional Planning Council |
| SWM | surface water management |
| USDA | United States Department of Agriculture |

1.3 Consumptive Use Permit Program Objectives, Organization, and Authorizations

The objective of the Applicant's Handbook is to further specify the general procedures and information used by District staff for review of consumptive use permit applications. All criteria in the Applicant's Handbook apply to processing individual permit applications, and specified criteria apply to processing of notices of intent for noticed general permits ~~notices of intent~~. The criteria contained herein are flexible, with the primary goal being to meet District water resource objectives.

In addition, procedures for processing consumptive use permit applications are set forth in Chapters 40E-0 and 40E-1, F.A.C. Rule 40E-1.610, F.A.C., provides procedures for permit renewals and Rule 40E-1.6107, F.A.C., sets forth procedures for permit transfers.

1.4 Permitting Procedures

The permit application will be processed pursuant to Chapters 40E-0 and 40E-1, F.A.C., for individual and noticed general permits. These rules set forth procedures for filing applications, requests for additional information, permit application modification, public noticing of permit applications, permit transfers, and requests for administrative hearings.

1.4.1 Permits Required, Thresholds, and Permits Types by Rule

The District has established two categories for permits based on the quantity and source of water permitted: ~~individual and general. General permits include: (1) minor standard general permits by rule for uses of 3 million gallons per month or less; and (2) noticed major standard general permits for uses greater than 3 million per month up to 15 million gallons per month; and (3) dewatering general permits.~~

Applicants using seawater or reclaimed water to meet their total water needs are not required to obtain water use permits. However, if reclaimed water is discharged into an unlined pond, lake, or surface water management system, thereby commingling the reclaimed water with surface water or groundwater, from which the applicant then uses, diverts, or withdraws the commingled water, a water use permit shall be required to ensure the proposed use is not harmful to the water resources of the area and is consistent with overall objectives of the District.

1.4.2 Pre-application Considerations

If the application is for a project which involves complex issues or if an applicant requires assistance in completing an application, a pre-application meeting between the Applicant and District Staff may be useful. A pre-application discussion may aid in expediting the application evaluation process by identifying items and issues that need to be addressed in more detail. This process allows the Applicant to submit a more complete application and may prevent or avoid delays in processing the application.

1.4.3 Third Party Interests

Frequently, other governmental entities, organizations, or affected citizens have an interest in the outcome of a permit action. Third party interests that would be substantially affected by issuance of a requested permit will have the opportunity to request an administrative hearing, pursuant to Sections 120.569 and 120.57(1), F.S., prior to issuance of the permit. In order to obviate any delays in permit issuance, discussions with such entities regarding their water resource concerns prior to or during permit application review is encouraged. Issuance of a consumptive use permit by the District does not relieve the Applicant of the responsibility to obtain all necessary federal, state, local, or other District permits or authorizations.

1.4.4 Competing Applications

Pursuant to Section 373.233, F.S., applications are considered to be competing when Staff evaluation indicates that the proposed use of water by two or more applicants will exceed the amount of water that is available for consumptive use due to water resource availability or interference with existing legal use concerns as defined in the Applicant's Handbook. ~~All permit applications that are pending at the same time, prior to being deemed complete and are requesting water from a limited source will be considered competing. Once a competing application has been determined to be complete, such application will not be considered competing with applications filed after its completion date. Good faith effort must be shown by all applicants to complete pending, competing applications as expeditiously as possible. If good faith efforts are not made to complete the application, the application may be denied for lack of response pursuant to Rule 40E-1.603, F.A.C.~~ Competing permit applications will be processed pursuant to Section 373.233, F.S.

1.4.5 Phased Projects

Many large-scale or long-term projects are developed over a number of years through a number of phases of development. The District encourages planning for long-term water needs in order to compare the projected demands of the project with water availability in a region. Applicants for projects that are to be developed in phases should consider their water needs for all phases of the proposed project. However, the District evaluates permit applications based on the demonstrated need of water for the project only through the recommended duration of the permit; therefore, applicants should focus their water use projections for the term of the permit and only for those phases of the project reasonably expected to utilize water under the permit during or prior to the permit expiration date. As additional phases are projected to be constructed, the existing consumptive use permit can be modified to reflect the increasing demand

associated with the new phase or phases pursuant to the criteria applicable at the time of the modification. The permittee cannot rely on receiving permit authorization for unpermitted phases of a project due to issuance of a consumptive use permit for a portion of the phased project.

1.4.6 Environmental Resource Concurrency

For individual permit applications, if the proposed water use is associated with a project for which a modification to an existing surface water management system is required or for which a new surface water management system is required, the water use permit application will not be considered complete until the surface water management (construction) or environmental resource (construction) permit application is deemed complete. If a new or modified surface water management (construction) or environmental resource (construction) permit is required in conjunction with the proposed water use, the individual water use permit may only be issued concurrently with the applicable surface water management (construction) or environmental resource (construction) permit or permit modification. An individual water use permit will not be issued in conjunction with a surface water management or environmental resource conceptual permit without a required construction permit.

1.4.7 Application Support Information

Pursuant to Rule 40E-1.603, F.A.C., additional information may be required to be submitted in support of consumptive use applications for projects located in areas where there is a lack of available hydrologic information; or for projects in which there are concerns regarding water resource availability; or potential impacts as a result of proposed withdrawals. The District shall require detailed site-specific information in support of the application in order to satisfy the conditions for permit issuance. The supporting information may include aquifer performance tests, water quality surveys, well inventories, and environmental assessments, as required. The need for supporting information will be based, in part, on the amount of the proposed withdrawal, characteristics of the requested water source in the region, potential for environmental harm, potential for interference with existing legal uses, and proximity of applicable and relevant existing data.

1.4.8 Professional Certification of Supporting Documents

All final plans, calculations, analyses, or other geologic/engineering documents, submitted as part of a permit application are required to be certified by signing and sealing by an appropriate registered professional pursuant to Section 373.117, 373.1175, or Chapter 492, F.S., as appropriate.

1.4.9 Contiguous and Non-contiguous Parcels

A water user seeking an individual water use permit should obtain one permit for all withdrawals that are intended to serve contiguous property. For example, an agricultural operation that has multiple wells on a contiguous parcel of land shall apply for one permit.

Applicants with legal control over multiple non-contiguous parcels within a county may apply for one permit encompassing all such parcels, provided that it is shown that the water use for each parcel is in the same water use classification. If multiple water use classifications, such as drinking water and landscape irrigation, are served by separate withdrawal facilities, separate consumptive use permits shall be required for each use.

1.4.10 Proposed Water Uses

Proposed water uses for an individual and noticed general permit must meet the conditions for issuance of permits pursuant to Rule 40E-2.301, F.A.C., ~~and proposed water uses under a general permit must meet the conditions for issuance of authorization pursuant to Rule 40E-20.302.~~ Applications for initial permits or permit renewals shall be processed as proposed water uses. Applications for existing unpermitted uses of water shall be processed as proposed water uses. An existing unpermitted use includes a use previously authorized by a permit that has expired due to failure to file an application for renewal prior to the permit expiration date. An application for a permit modification for an increased allocation will be processed as a proposed water use. Withdrawal facilities that have been constructed or that otherwise exist will not be taken into consideration in favor of issuance of a consumptive use permit.

1.4.11 Permit Modifications

Permit modifications will be processed in accordance with Rule 40E-2.331, F.A.C.

1.4.12 Permit Renewals

Applications for permit renewals shall be made pursuant to Rule 40E-1.610, F.A.C., ~~any time within six months prior to permit expiration. Permittees are encouraged to apply for renewal at least 90 days prior to the expiration date.~~ Permits for which renewal applications have been submitted shall remain in effect past the expiration date until final agency action on the application is taken. Permittees are encouraged to apply for renewal at least 90 days prior to the expiration date.

1.4.13 Permit Transfers

Permit transfers will be processed in accordance with Rules 40E-1.6107 and 40E-2.351, F.A.C.

1.4.14 Transport and Use of Water aAcross County Boundaries

Sections 373.016, 373.223(3) and 373.1962, F.S., govern the review of consumptive use permit applications for the transport and use of water across county boundaries, including provision of exemptions and limitations on the application of such requirements. The following provides specific guidance as to the applicability of certain statutory exemptions and limitations within these statutes:

- A. A transport and use of groundwater across county boundaries pursuant to Section 373.223(3), F.S., does not occur when: (1) a project withdraws groundwater for use on its overlying property and the drawdowns associated the groundwater withdrawals cross county boundaries; or (2) water is withdrawn from

an under groundwater storage unit where it has been stored pursuant to an aquifer storage and recovery project and may, in its stored state, cross county boundaries.

- B. Transport and use of water by self-suppliers of water for which the proposed water source and areas of use or application are located on contiguous private properties are exempt from review under the provisions in Section 373.223(3), F.S., including a project whose boundary straddles county borders and water from one part of the project serves another part of the same project in the neighboring county.
- C. Transport and use of water across county boundaries by water supply authorities meeting the requirements of Section 373.1962(9), F.S., are exempt from Section 373.223(3), F.S.; and
- D. The transport and direct or indirect use of water within the areas encompassed by the Central and Southern Florida Flood Control Project is exempt pursuant to Sections 373.016(4)(a) and 373.223(3), F.S.

1.5 Permit Duration

1.5.1 General Duration Provision

~~Pursuant to Section 373.236, F.S.,~~ When requested by an applicant, a consumptive use permit shall have a duration of 20 years, or as provided by Section 373.236, F.S., if the applicant demonstrates reasonable assurance that the proposed use meets the conditions for issuance for the requested duration; otherwise, permits may be issued for a shorter duration that reflects the time period for which such reasonable assurances can be provided. This determination shall be made pursuant to requirements in Chapters 40E-2 and 40E-20, F.A.C., as applicable, and this Subsection Section.

1.5.2 Special Duration Factors

- A. Unless revoked or otherwise modified, the duration of a consumptive use permit issued pursuant to Chapter 40E-2 ~~and Chapter 40E-20~~, F.A.C., is the lesser of:
 1. The duration established in Subsections C-, D-, or E-, below; -
 2. The time period for which the permit applicant demonstrates that water will be needed to meet the projected demands and during which the conditions for issuance of a permit in Rule 40E-2.301, F.A.C., will be met;
 3. The time period for which the permit applicant demonstrates legal control pursuant to Subsections Section 2.1.1, 2.1.2, and 2.1.3;
 4. For aquifer remediation projects, the period shall not exceed that required to complete the operation as specified in the Remedial Action Plan approved by the state or local agency having legal jurisdiction over such activities or 20 years, whichever is less;

5. For independent secondary use permits within a diversion and impoundment system, the duration will not exceed the expiration date of the associated diversion and impoundment permit;
 6. Where the permittee must implement an action to correct noncompliance with the previous consumptive use permit, the permit duration shall be based on the time period necessary to ensure the success of the mitigative or remedial action; or,
 7. For ~~minor standard~~ general water use permits, the permit duration shall not exceed 20 years.
- B. Sources of Limited Availability. For purposes of ~~this the paragraph Section~~, the following are Sources of Limited Availability:
1. Upper East Coast Regional Water Supply Planning Area: Surficial Aquifer System.
 2. Lower East Coast Regional Water Supply Planning Area: Biscayne/surficial aquifer system to the extent that withdrawals result in induced seepage from the Central and Southern Florida Project, except when stormwater discharge or wet season discharge occurs; Lake Okeechobee; Central and Southern Florida Project; the Caloosahatchee River/Canal; and the Saint Lucie River/Canal.
 3. Lower West Coast Regional Water Supply Planning Area: Water table aquifer, Lower Tamiami aquifer, Sandstone aquifer, mid-Hawthorn aquifer.
 4. ~~Kissimmee Regional Water Supply Planning Area Within the Central Florida Coordination Area; Groundwater.~~
- C. The following uses shall receive a 20 year permit, if:
1. For uses from sources other than those listed in ~~sub-paragraphs~~ subparagraphs 1.5.2.B. 1 through 3 4 above, the allocation necessary to meet the 20 year demands is consistent with Chapters 40E-2 and 40E-20, F.A.C., as applicable, provided that the demands are realized according to the schedule set forth in the permit, for the duration of the permit; ~~or~~
 2. The applicant is requesting a permit for "back-up" supplies addressing emergency or short-term interruption in service for reclaimed water end users per sub-paragraph Section 2.2.4.C.1 ~~3.2.3.3~~; or,

3. The applicant is requesting renewal of a permit from a source of limited availability identified in paragraph subsection B, above, and the following conditions are satisfied:
- a. For all use classes, the allocation satisfies the requirements of Chapter 40E-2 or ~~Chapter 40E-20~~, F.A.C., as applicable, for the duration of the permit; and
 - b. For public water supply use class, the quantity of water to be allocated for a 20 year duration permit shall not exceed that quantity necessary to meet the demands of the population existing at the time of permit renewal at the per capita rate approved under the Applicant's Handbook Basis of Review;
 - c. For the irrigation use class, the quantity of water to be allocated for a 20 year duration permit shall not exceed that quantity of water necessary to irrigate historically irrigated acreage, including documented intermittent irrigated acreage, as determined by sub-paragraph Section 2.3.2.C.1; or,
 - d. For other use classes, the quantity of water to be allocated for a 20 year duration permit shall not exceed that quantity approved under Chapter 40E-2 or ~~Chapter 40E-20~~, F.A.C., as applicable, and shall not exceed the allocation in the permit being renewed.
4. ~~The applicant proposes groundwater withdrawals within the Central Florida Coordination Area to satisfy demands from that source up to its demonstrated 2013 demand and proposes to develop at least one specific supplemental water supply project to meet demands greater than 2013 demand set forth in subsection 3.2.1.F.3, and otherwise satisfies the requirements of Chapter 40E-2 or 40E-20 F.A.C., as applicable, for the duration of the permit.~~
- D. Requests for Allocations in Excess of sub-paragraph subsection 1.5.2.C.3 1.7.2.2.C.3, Permit Modifications, or Initial Permits from Sources of Limited Availability:

The baseline duration under this Subsection Section shall be five years or as otherwise provided below. The following factors shall be considered and balanced in determining the duration of a permit:

1. Whether the permit will require the permittee to perform mitigative or remedial action for an impact caused or projected to be caused by the water use. Consideration of this factor will lead to a permit duration appropriate for ensuring the success of the mitigative or remedial action;

2. Whether the permittee is proposing to implement innovative and extraordinary water conserving measures that are beyond those generally feasible for the subject use such that the proposed demands are significantly reduced from the source of limited availability as a result of the innovative and extraordinary water conserving measures, including best management practices associated with peak or high efficiency systems. Where the permittee proposes to implement innovative and extraordinary water conservation measures, consideration of this factor will lead to a longer duration than the applicable duration as an incentive for the investment in innovative and extraordinary water conservation;
 3. Whether increased impacts of the requested allocation on the source of limited availability will be offset through the implementation of an alternative source. Consideration of this factor will lead to a longer duration;
 4. Whether the requested allocation is supplied by a saline brackish water source, consistent with the use of saline water in Subsection Section 3.4.1;
 5. Whether the modification of the permit results in no more than a de minimis increase in impact to water resources and existing legal uses, as compared to the existing permit. Consideration of this factor will lead to a duration consistent with the permit being modified; ~~or~~
 - ~~6. A public supply utility applicant or similar applicant proposing groundwater withdrawals within the Central Florida Coordination Area and does not propose to satisfy demands greater than demonstrated 2013 demands with at least one specific supplemental water supply project as set forth in subsection 3.2.1.F.3, or does not otherwise comply with subsection 3.2.1.F.3. Consideration of this factor will lead to a maximum permit duration of 2013.~~
- ~~E. Pursuant to Section 373.236, F.S., the permit duration may be up to 50 years in the case of a municipality or other governmental body, or of a public works or public service corporation, where such a period is required to provide for the retirement of bonds for the construction of waterworks and waste disposal facilities, if the applicant provides reasonable assurances of compliance with Chapters 40E-2 and 40E-20, F.A.C., as applicable.~~

If only a portion of the requested allocation satisfies the conditions for a permit 20-year duration of 20 years or longer, the remaining allocation may be approved for a shorter duration, as appropriate.

2.0 DEMONSTRATION OF WATER NEED, SOURCE(S), AND DEMAND

To receive a general or individual permit, an applicant must demonstrate that the proposed water use is a reasonable-beneficial use of water, as required by Section 373.223, F.S. In order to demonstrate that a water use is reasonable-beneficial, the Applicant must show "need" for the water in the requested amount. This chapter describes the factors involved in determining whether there is need and for determining the appropriate permit allocation, or "demand," for a particular water use.

2.1 Demonstration of Water Need

~~For twenty year duration permits, the permittee shall ensure that, on a continual basis, the conditions for permit issuance are met for the duration of the permit, including requirements for attaining the maximum reasonable beneficial use of water, preventing inefficient uses of water, and ensuring that uses continue to be consistent with the public interest. Every ten years the permittee shall be required to evaluate and update the water use based on current District rules regarding efficiency of use and reasonable demands.~~

Demonstration of "need" requires consideration of several factors, including: 1) legal control over the project site, facilities, and for public water supplies, the proposed service area; and 2) compatibility of the proposed water use with the land use at the project site or area to be supplied water. Demonstration of "demand" is dependent on the specific water use classification requirements set forth in Subsections ~~Sections~~ 2.2 through 2.3 ~~2.8~~.

2.1.1 Legal Control over Project Site

Applicants for irrigation, industrial, commercial, and dewatering general or individual permits must demonstrate the legal right to conduct the water use on the project lands or site. This is demonstrated through property ownership or other property interest, such as a leasehold, in the project site. Applicants are required to provide copies of legal documents demonstrating ownership or control of property. A demonstration of legal control throughout the requested permit duration must be provided. Permit duration shall be based on the time period of the legal interest in the property. The permit will expire upon termination of a non-renewable lease.

2.1.2 Legal Control over Withdrawal Facilities

All applicants for general or individual permits must be able to show legal control to use surface water pumps or groundwater wells associated with the water use throughout the duration of the permit. If a withdrawal facility will be used by an entity other than the entity on whose land the facility is located, such user must demonstrate legal control to access and maintain the facility through an agreement, easement or contract.

2.1.3 Legal Control over Water Supply Uses

An applicant for a general or individual permit proposing to supply water to another entity, such as a public water supplier, must establish need for a water allocation through demonstration of the legal right and obligation to supply the requested

allocation. This legal control can be established through service area designations, water sale or delivery contracts, or other proof of such legal obligation. Public water suppliers required to receive a service area certificate or order of exemption from the Public Service Commission, shall obtain such designation prior to issuance of a water use permit pursuant to Section 367.031, ~~F.S. Florida Statutes~~. The aApplicant's right to the requested allocation will expire upon termination of the legal obligation to supply water to the receiving entity. Requested water allocations must be supported with detailed demand information and plans of the supply system proposed for the permit duration. The permit aApplicant must make a prima facie showing of legal control over the proposed service area. If a prima facie showing is demonstrated by two water suppliers, the service area dispute between such competing water suppliers must be resolved between the parties.

2.1.4 Compatible Land Use

To demonstrate need for the requested allocation, a general or individual permit applicant must provide reasonable assurances that the requested water use classification and the water demand projection are compatible with the land use of the project site, or in the case of a public water supplier, with the land use of the area to be supplied water. The land use of the project site or area to be supplied water must be that designated in the applicable local government zoning regulations and comprehensive plan. If the requested water use classification is prohibited due to incompatibility with the land use at the project site or area to be supplied water, the need for the requested allocation has not been demonstrated and staff cannot recommend approval. The permit aApplicant is advised that the proposed water use, including the demand projections and water use classification, must be compatible with any ~~Development of Regional Impact (DRI)~~ or Development Order issued for the project. Detailed hydrologic data that has been required in the DRI process may be utilized as a submittal in the water use permit application subject to review by the District. The approval of a DRI does not guarantee or ensure issuance of a water use permit.

2.2 Source Identification

District permits are required for all non-exempt existing and proposed uses of fresh and saline sources. Sources are described as surface water or groundwater which can be further identified with the name of the water body and/or aquifer. Applicants using seawater or reclaimed water to meet their total water needs are not required to obtain use permits. However, if these sources are utilized, in part, to meet the aApplicant's water demand, the aApplicant ~~shall~~ should identify the quantities obtained from these sources that are used to meet the demand. If a source is not reliable throughout the year, the aApplicant may request withdrawal quantities from secondary and standby sources of supply, which may be used when the primary supply is limited. The permit will identify the secondary and backup sources and the conditions and time periods for which they are likely to be required.

2.2.1 Multiple Sources

If the use of water is from multiple supply sources, each source should be identified as a primary, secondary or back-up source. The aApplicant shall provide a breakdown of how the water will be distributed among the multiple sources as part of the application review process. Each of the identified primary sources will receive a separate allocation, the sum of which will not exceed the maximum monthly demand for the projected use.

The secondary sources will be used based upon the need for alternative sources during high stress periods or in the event of temporary interruption of the use of the primary facilities. The secondary sources will receive an allocation based on the rated capacity of the secondary source withdrawal facilities or the maximum monthly demand, whichever is less. The back-up sources will not receive a specific allocation. The use of these facilities will be recognized in the permit based on the routine operation for maintenance purposes as recommended by the pump manufacturer.

2.2.2 Wellfield Operations

Users that derive water supply from multiple withdrawal facilities shall submit a wellfield operating plan for review. The plan may include more than one configuration of withdrawals provided each configuration meets the conditions of permit issuance, the total withdrawals of each configuration do not exceed the allocation and each withdrawal configuration represents a normal operation protocol of the use (e.g. short term emergency operation plans are not required). Approved operational plans shall be incorporated as limiting conditions in the permit. Pursuant to Ssection Section 3.7, subsequent permit applicants shall not be allowed to interfere with an approved operational plan. Changes to an approved operational plan involving modifications to the normal operating protocols approved in the permit that would persist throughout the remaining permit duration shall be authorized through the issuance of a modification per Rule 40E-2.331 ~~or 40E-20.331~~, F.A.C., as applicable. Short term changes in operations associated with emergencies or wellfield maintenance will not require modifications of the wellfield operating plan.

2.2.3 Use of Lowest Quality Water for Intended Purpose

Consideration must be given to the availability of the lowest quality water, which is acceptable for the intended use. If a water source of lower quality is available and is feasible for all or a portion of an aApplicant's use, this lower quality water must be used. Such lower quality water may be in the form of reclaimed water, recycled irrigation return flow, collected stormwater, saline water, or other sources.

2.2.4 Reclaimed Water Reuse Criteria

The encouragement and promotion of water conservation and use of reclaimed water are state objectives and considered to be in the public interest. In Section 373.250, F.S., the Legislature finds that use of reclaimed water provided by domestic wastewater treatment plants, permitted and operated under a reuse program approved by the FDEP ~~Florida Department of Environmental Protection~~ is environmentally acceptable and not a threat to public health and safety.

A. Public Water Utilities with Associated Wastewater Treatment Plants

Public water supply utilities that control, either directly or indirectly, a wastewater treatment plant, and which have determined, in accordance with Section 403.064, F.S., that use of reclaimed water is feasible, must provide the District with each of the following:

1. The existing reuse feasibility study or plan applicable to the utility's service area. Examples of such studies or plans include a reuse feasibility study prepared for the FDEP Department pursuant to Section 403.064, F.S., or a reuse project plan prepared for the PSC ~~Public Service Commission~~ pursuant to Section 367.0817, F.S.
2. A copy of the schedule of implementation for reuse, including any available information regarding areas to be served, construction of reclaimed water distribution lines and associated capacities.
3. Documentation of the amount of presently uncommitted reclaimed water supply that is currently generated and is projected to be generated by the treatment plant over the duration of the permit.
4. Information regarding whether or not a local ordinance concerning use of reclaimed water has been enacted pursuant to either Chapter 125 or Chapter 180, F.S., which establishes a mandatory reclaimed water zone. Information should include a copy of the ordinance and applicable maps or legal description that delineates the zone.

B. Reuse Requirements

Permit applicants requesting an allocation of at least 100,000 GPD or within a mandatory reuse zone must evaluate the feasibility of using reclaimed water to meet all or a portion of their needs, as follows:

1. **Mandatory Reclaimed Water Zones.** For projects located either wholly or in part within areas designated by local ordinance as a mandatory reclaimed water zone and required by such local ordinance to use reclaimed water, permit applicants will only be allocated that quantity of water necessary to meet remaining reasonable-beneficial demands, if necessary, and a quantity necessary for emergency backup. When an ordinance exists, but reclaimed water supplies are not available at the time of permit application, the District will allocate water from conventional sources of supply and condition the permit to use the reclaimed water when it becomes available. At that time, the permit will be modified to reduce the allocation commensurate with the amount of reclaimed water provided.

2. End User Feasibility Evaluation: When reclaimed water is readily available it must be used in place of higher quality water sources, unless it is demonstrated by the Applicant that its use is either not environmentally, economically or technically feasible. The following criteria are used to demonstrate feasibility:
- a. Environmental Feasibility: Reclaimed water reuse is considered environmentally feasible if the ~~FDEP Department~~ has permitted the reuse facility that will provide the reclaimed water supply and has permitted the use or discharge of the reclaimed water to the receiving water body, if applicable.
 - b. Technical Feasibility: In performing the technical feasibility portion of the evaluation, the applicant shall contact the applicable reuse utility and request a letter stating that reclaimed water is not available or provide the following information and consider the response provided by the reuse utility in its evaluation:
 - i. Whether a reclaimed water distribution line is at the applicant's project boundary.
 - ii. If a reclaimed water distribution line is not at the project boundary, then:
 1. Estimate the distance in feet from applicant's project to the nearest potential connection point to a reuse line.
 2. The date the reuse utility anticipates bringing the connection to the applicant's project boundary.
 - iii. If reclaimed water is available at the project boundary, then:
 1. The minimum quantity in gallons per day of reclaimed water supply available from the nearest potential connection point under a 1-in-10 year drought condition.
 2. The reliability of the potential reclaimed water supply (i.e., on-demand 24/7, or bulk-interruptible diurnal or seasonal, length of supply agreement, or other basis).
 3. The typical operating pressures at which the reuse utility will provide reclaimed water at the nearest connection point to the applicant's project, including

any typical seasonal or other fluctuations in the operating pressure.

4. The water quality parameters of the reclaimed water for the constituents that the applicant has identified as pertinent to the intended use.

Reclaimed water reuse is considered technically feasible if reclaimed water is available at the site of the proposed use to meet all or part of the applicant's water needs as defined herein. In the event the supply of reclaimed water available is not adequate to fully meet the project's 1-in-10 year drought demands, the applicant may request a partial allocation of water from a non-reclaimed water source. However, such partial allocation will not exceed that amount necessary to compensate for the shortfall in reclaimed water supply, in light of total project demands calculated pursuant to the Applicant's Handbook Basis of Review. Available at the project site means the utility has initially provided the distribution facilities at its cost to the project boundary. In the event distribution lines are not provided at the project boundary, the applicant must then provide an assessment of extending the lines to the project as a part of the economic feasibility analysis.

- c. **Economic Feasibility:** If the applicant asserts that reuse is not economically feasible, then the applicant must provide the District with an assessment of the economic feasibility of use of reclaimed water use.
 - i. In performing the assessment, the applicant shall contact the applicable reuse utility and request a letter stating that reclaimed water is not available or provide the following information and consider the response provided by the reuse utility in its analysis:
 - A. The reclaimed water rate(s) the reuse utility would charge the applicant (e.g., the cost per/1000 gallons) and any other periodic, fixed, or minimum charges for use of reclaimed water by the applicant.
 - B. The reclaimed water availability charges the reuse utility would charge the applicant in lieu of connection to the reclaimed system.
 - C. Other one-time charges for the connection to the reuse.

- D. Whether the reuse utility helps fund potential reclaimed customers' costs to connect to the reclaimed line or convert its operation to use reclaimed water.
- ii. The applicant's economic feasibility analysis must consider all of the following:
 - A. Costs associated with purchase of a reclaimed water supply source including: 1) pump and distribution costs; 2) storage costs; 3) monthly rates charged for the reclaimed water supply; and 4) costs associated with risk of loss of reclaimed supply;
 - B. Costs associated with development of an otherwise permittable supply source including: 1) well, pump, and distribution; and 2) operational costs including increased fertilizer costs, where applicable, power costs, pumping, and system operation and maintenance costs;
 - C. Alteration in the rates charged by the permit applicant's business to account for costs associated with using reclaimed water; and
 - D. Other factors affecting the economic feasibility of using reclaimed water as proposed by a permit applicant in light of their particular situation.

If the reuse utility fails to respond or does not provide the information within 30 days after receipt of the applicant's request, the applicant shall 1) provide the District a copy of the applicant's written request and a statement that the reuse utility failed to provide the requested information; and, 2) complete the end user feasibility evaluation with the best available information.

C. Unanticipated Loss of Reclaimed Water Supply

1. Emergency / short-term interruption of service: In order to account for such interruption of service, the reclaimed water end-user may request a permit for a "back-up" supply. The amount of water allocated for such use will be based upon historic reclaimed water treatment plant delivery performance or a 30-day supply, as determined by criteria described in Subsection Section 2.3.1.C.1 2-3-2, whichever is less. A "back-up" allocation will be issued for a duration of 20 years.
2. Long-term interruption / cancellation of service: The reclaimed water end-user may apply for a temporary or conventional water use permit. Should

competition arise between a permit applicant who has lost its reclaimed water supply source and another permit applicant, the District shall consider the former reclaimed water end-user who has lost its supply to best serve the public interest under Section 373.233, F.S.

2.3 Demonstration of Demand

The requested allocation to serve the aApplicant's need for water will be based upon the demonstrated demand.

2.3.1 General Criteria

Sections 2.3 2-2 through identifies identify the components of demand that must be identified for applicants of individual and general permits for each water use type.

A. Reasonable Demand

Applicants for individual and general permits must identify the quantities needed for each component of demand in order to justify the quantities requested in the permit application. Typically, the requested quantities are based on documented historical information.

The proposed withdrawal of water must be supported by information specified in Section 2.0 of this Handbook manual, demonstrating that the withdrawal quantities are necessary to supply a certain reasonable need or demand. Only that portion of the requested demand that is supported by adequate documentation will be recommended for issuance through the time period specified by the permit duration.

B. Allocation Expressions

Applicants shall request quantities in gallons per day for each component of demand according to the terms listed below. The District will evaluate the quantities requested and identify the quantity allocated in gallons in each permit. The resulting allocation may be in one or more of the following expressions designations:

~~Annual (MG)~~
~~Maximum Monthly (MG)~~
~~Maximum Daily (MG)~~

1. Annual Allocation:

The annual allocation is determined by calculating the quantity of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition for the associated use class. Applicants, other than irrigation uses, must determine the annual quantity by adding the quantities required by each component of demand for the particular use. The total demand is then considered along with other factors affecting withdrawals such as treatment losses; other sources of water; conservation practices employed and water purchased, sold, or transferred to determine the annual withdrawal quantity. For irrigation uses, the annual allocation is determined under Subsection ~~Section~~ 2.3.1.C.

2. Maximum Monthly Allocation

The maximum monthly allocation is the greatest quantity permitted to be withdrawn in any single month. The maximum monthly allocation is determined by identifying the peak month demand under the 1-in-10 year drought condition for the associated use class. For irrigation uses, the maximum monthly allocation is determined under Subsection Section 2.3.1.C.

3. Maximum Daily Allocation

The maximum daily allocation is the maximum quantity of water permitted to be withdrawn in any single 24-hour period. This quantity is permitted to account for frost/freeze protection for agricultural water use permits.

C. Irrigation Water Demand Components

The reasonable need for irrigation water use is equal to the supplemental crop requirement multiplied by the allocation coefficient except when the available water supply is restricted due to adverse resource impacts or the aApplicant's limited need for or ability to use the water. If the total rated capacity of all existing and proposed withdrawal facilities is less than the calculated demand, the recommended allocation will be based on the lesser value. Applicants shall identify the crop type, net planted acreage, irrigation method, soil type, planting dates, and periods of irrigation.

1. Supplemental Irrigation Requirement

The supplemental irrigation requirement for individual and general permits is the amount of water needed for a particular crop beyond the amount of water provided by effective rainfall. There are several ways to determine this amount:

- a. Except as described in Subsection b B, below, the supplemental irrigation requirement for all crop types is determined using the Modified Blaney-Criddle method as described in the "Water Use Management System Design and Evaluation Aids: Supplemental Crop Requirement and Withdrawal Calculation". This procedure estimates the potential amount of water lost to evapotranspiration and determines the supplemental irrigation requirement using soil moisture capacity, rainfall, and other variables. The maximum month and annual allocation will be based on the supplemental irrigation requirement for a 1-in-10 year drought condition.
- b. If the method described in Subsection a A- above, is not applicable due to localized allocation coefficients, soil characteristics, hydrologic conditions, crop type, or crop coefficient, the supplemental irrigation requirement may also be determined based on specific reports related to evapotranspiration estimates published by the ~~University of Florida, Institute of Food and Soil Conservation Service (IFAS), or other reliable source, such as the Soil Conservation Service or the~~ NRCS ~~Natural Resources Conservation Service.~~

2. Allocation Coefficients

The allocation coefficient for individual and general permits incorporates the type of irrigation and its efficiency. The supplemental irrigation requirement will be multiplied by the net irrigated acreage and the appropriate allocation coefficient listed in Table 2-1 in determining the allocation requirements, if the alternative allocation coefficient described below.

Applicants may request an allocation coefficient different than the criteria outlined above. In determining which allocation coefficient is appropriate, District staff will consider factors such as: site-specific soil characteristics, evapotranspiration and effective rainfall, depth to background water level, height of groundwater mound, irrigation field boundary conditions, or other site-specific information as it relates to increased resource efficiency.

TABLE 2-1
Allocation Coefficient Multiplier

| Irrigation System Type | Allocation Coefficient Multiplier |
|-------------------------------|--|
| Micro-irrigation | |
| Drip | 1.18 |
| Micro-sprinkler | 1.18 |
| Overhead Sprinkler | |
| Linear Move | 1.25 |
| Solid Set Sprinkler | 1.30 |
| Traveling Gun | 1.40 |
| Portable Gun | 1.50 |
| Nursery Container | 3.60 |
| Subirrigation | |
| Seepage, Furrow | 2.00 |
| Semi-Closed Flow-Through | 2.00 |
| Crown Flooding | 2.00 |

- a. Resource Efficiency: Resource efficiency shall be evaluated by using the following factors: evaporation, runoff to areas other than the relevant water storage system, runoff and infiltration back into the relevant water storage system, aquifer recharge potential gained through the retention/detention of stormwater, the recycling of irrigation return flow, related environmental and operational factors such as the ability to maintain historical surface and groundwater levels and, the ability to conserve the water resource.

- b. **Irrigation System Efficiency:** The most efficient irrigation system shall be considered to be that which minimizes water lost to evaporation, relative to other irrigation systems in a region. Irrigation system efficiency shall be based on ratings published in Efficiencies of Florida Agricultural Irrigation Systems (Smajstrla et al. IFAS Bulletin 247). Applicants may demonstrate that a different factor is applicable for a particular system. This factor may be based on information provided by the manufacturer of the system. The irrigation system efficiency associated with water that is conveyed over large distances before being utilized for irrigation purposes is determined based upon a combined efficiency factor incorporating the efficiency of the system delivering the water to the point of diversion into an irrigation system and the efficiency of the irrigation system itself. The combined irrigation system efficiency is calculated based upon the appropriate allocation coefficient identified in Table 2-1 and a multiplying factor of 1.5 to account for conveyance losses. If the aApplicant does not agree with the use of the 1.5 multiplying factor, another value shall be used if the aApplicant provides sufficient documentation which supports the use of a different value.
- c. **Standard Irrigation Systems:** The accepted standard irrigation system for specific crop types will be required of all initial consumptive use permit applicants whose irrigation systems are not constructed. As new information is made available or new technologies are developed, irrigation standards for other crop types will be established by rule. Upon permit renewal, ~~in Critical Water Supply Problem Areas,~~ the irrigation standard will be required of acreage added to existing, permitted projects; when the existing water use permit contains irrigated acreage for which the allocation was not used and is proposed to be used or for that part of the irrigation system which is being retrofitted. The following two standards are incorporated into this rule.
- i. The accepted irrigation methodology for citrus projects is a microirrigation system such as drip, micro-sprinkler, or other system capable of meeting the equivalent irrigation system efficiency of a micro-irrigation system.
 - ii. The accepted irrigation methodology for nursery container projects is a micro-irrigation system, overspray irrigation water recovery system, or other specific design elements capable of achieving the equivalent efficiency of a micro-irrigation system.

D. Drainage Districts

Applicants for an individual or general permit who are dependent users pursuant to Subsection Section 2.3.2.C.2.A 2.7.3.A and are supplied water by a permitted Drainage or Water Control District do not need to be permitted separately for supplemental quantities unless there is a change in the withdrawal source for which the Drainage or Water Control District has no authority or permission to use. The allocation of the supply from the additional source will be authorized through the issuance of a separate permit specific to the new source classification.

2.3.2 Criteria for Use Classes

Applicants for water use general or individual permits must demonstrate that the quantities requested represent reasonable irrigation, livestock, and other agricultural water needs specific to the use class.

A. Agriculture and Nursery

For irrigation, livestock, and other agricultural water uses, reasonable need and water conservation is demonstrated by providing information on the types and planted acreage of crops to be irrigated, planting dates and length of crop growing season, the irrigation system or systems utilized, frost/freeze protection, soil type, the type and number of livestock, and other specific use information. The reasonable demand for agricultural water use is composed of one or more demand components, depending on the specific agricultural use. Where more than one use is served by the same allocation, i.e., improved pasture irrigation and livestock watering, the allocation shall represent the sum of the components. Supplemental irrigation demands calculated pursuant to this Subsection and Subsection 2.3.1.C meet water conservation requirements.

1. Demand Components

The supplemental irrigation requirement for agricultural and nursery uses is calculated as specified in Subsection 2.3.1.C of this Handbook.

2. Frost/Freeze Protection

Freeze protection quantities for general and individual permits may be identified based on the number of acres to be protected and the type of freeze protection utilized. If the rated capacity of existing and proposed withdrawal facilities is less than the calculated freeze protection value, the total rated capacity of the existing and proposed withdrawal facilities will be the basis for the recommended maximum daily allocation for freeze protection. The freeze protection allocation will be made on the basis of a 24-hour maximum daily requirement per freeze event. The following values will be utilized for freeze protection calculations unless alternative, reasonable acceptable agricultural practices can be documented by the aApplicant.

Flood: 0.10 MGD/acre
 Sprinkler: 0.16 MGD/acre
 Micro-sprinkler: 0.05 MGD/acre

The allocation calculated for freeze protection shall not be used to determine if the proposed use qualifies for a general or individual permit.

3. Micro Irrigated Citrus

The annual allocation for micro irrigated citrus will be calculated using methodology and coefficients described in Subsection Section 2.3.1.C 2.3.2. The maximum month allocation will be defined by the highest month value for full evapotranspiration for either March, April, or May, as determined using the methodology in Subsection Section 2.3.1.C 2.3.2. In the event that the allocation calculated by this methodology is insufficient to meet the supplemental irrigation requirements of an applicant's grove under a 1-in-10 year drought condition, the applicant may apply for an allocation in excess of the allocation calculated by Subsection Section 2.3.1.C 2.3.2. In such circumstances, the applicant must affirmatively demonstrate the need for a higher allocation by provision of information such as: site specific soil hydrologic characteristics, depth to the water table, salinity of irrigation water (when additional water is needed to flush salts from the soil), calibrated historic pumpage data, or the results from an on-site irrigation efficiency evaluation conducted by a qualified irrigation auditor, such as a Mobile Irrigation Lab. In the event the irrigation water exceeds 1,200 milligrams per liter total dissolved solids, the maximum month allocation will be increased to include 1 inch of water for the purposes of flushing accumulated salts from the soil.

4. Improved Pasture Irrigation

Authorization of water use for improved pasture shall be given if the applicant documents that an irrigation system exists or is proposed and is capable of delivering the requested amount. For proposed systems, a schedule for implementation of the irrigation system is required. The applicant will be required to document the amount of improved pasture acreage reasonably expected to be irrigated in any given growing season as the basis for the net irrigated acreage. In determining the reasonable irrigation allocation for improved pasture under Section 2.3, the following specific requirements shall apply:

- a. Overhead sprinkler irrigation: The allocation will be based on the number of acres of pasture grass that will be irrigated, the type of irrigation equipment utilized and its efficiency (Table 2-1), and the methodologies and crop coefficients for pasture grass as described in Subsection Section 2.3.1.C 2.3.2.A.
- b. Sub-irrigation: The allocation will be based on the amount of water needed to maintain water levels of the irrigation canals that comprise the water delivery system. The applicant shall calculate the demands based on the number of acres pasture grass that will be irrigated using the methodologies and crop coefficients for pasture grass as described in Subsection Section 2.3.1.C 2.3.2.

The irrigated acreage shall be determined from the extent to which the water is distributed over the land. Irrigation systems constructed with lateral ditch spacing of 60 to 400 feet are considered to provide irrigation to all the acreage incorporated within the system (U.S.D.A. Florida Conservation Service Florida Irrigation Guide, August 1982). Applicants may provide site specific information on soil and pasture grass type to support lateral spacing greater than 400 feet. For irrigation systems that consist of main ditches without laterals, or laterals with a spacing greater than is sufficient to provide irrigation to all the pasture grass, the irrigated acreage will be calculated by multiplying the length of the ditches by the effective irrigation area as determined by soil and turf type.

Applications for the irrigation of unimproved pasture will not be approved.

5. Other Agricultural Needs

The reasonable need for other agricultural uses, such as cooling of animals or product, is determined based on supporting information provided by the aApplicant for a general or individual permit. The supporting information must demonstrate that the requested allocation is a reasonable-beneficial use.

- a. **Livestock:** The reasonable need for livestock use for individual and general permits is determined by multiplying the estimated total number of animals by gallons needed per day per animal as estimated by IFAS or other sources directly related to specific industry process requirements. Unless the aApplicant can demonstrate that a different factor is appropriate for their particular needs, the livestock water use will be determined using the values identified in Table 2-2.

**TABLE 2-2
Livestock Water Needs**

| Animal | Use per Animal (gpd) |
|---------------|-----------------------------|
| Dairy Cattle | 150 |
| Beef Cattle | 12 |
| Horses | 12 |
| Hogs | 2 |
| Sheep | 2 |
| Turkeys | 1 |
| Chickens | 0.1 |

- b. **Aquaculture:** The reasonable need for aquaculture is determined by the number and volume of ponds and tanks and their filling and recirculation requirements and other factors that may contribute to maintaining necessary water levels or water quality. An applicant

for a general or individual permit must demonstrate that the requested allocation is a reasonable-beneficial use.

B. Dewatering

Dewatering activities that require a water use permit include withdrawals of water for construction activities, mining operations, and minor uses such as exploratory testing, short-term Remedial Action Plans, and APTs aquifer performance tests. There are three types of District permits for dewatering projects that are primarily based on the duration and volume of water associated with the project. As summarized in Table 2-3, one ~~two~~ of the permits is ~~are~~ for short duration dewatering projects and the other two ~~are~~ is for long-term projects. The dewatering duration for a project is considered by Staff to be the period of time necessary to complete all dewatering for the project. An applicant is ~~Staff will not~~ eligible for issue multiple general short-term dewatering permits by rule for a single project or different phases of a project.

1. General Permit by Rule for Short-Term Dewatering
Criteria for General Permits by Rule for Short-Term Dewatering are found in Rule 40E-2.061(2), F.A.C.

2. Dewatering Individual Permits

Dewatering individual permits apply to projects that exceed the thresholds and criteria described in Rule 40E-2.061(2), F.A.C., Basis of Review, Sections 2.5.1 and 2.5.2, above. Two types of individual dewatering permits are available from the District. For projects where all the dewatering activities are defined at the time of the permit application, the applicant may apply for a standard individual permit. For long-term, multi-phased projects, with undefined activities or no contractor at the time of the permit application, the applicant may apply for a master individual permit.

Applicants for all individual dewatering permits must satisfy the conditions of issuance for Individual Permits (Rule 40E-2.301, F.A.C.) In order to provide reasonable assurances that water reserved in Rule 40E-10.041, F.A.C., will not be withdrawn, all water from the dewatering activity shall be retained on site. If the applicant demonstrates that retaining the water on site is not feasible, the project shall be modified to demonstrate pursuant to Subsection section 3.11 that reserved water will not be withdrawn. The applicant may elect to begin dewatering for a single period of only 180 ~~90~~ days in areas of the project that meet the general permit by rule No-Notice criteria specified in Rule Section 40E-2.061(2), F.A.C., 2.5.1 of this Basis of Review once an application for an individual dewatering permit has been submitted to the District.

The applicant must provide the information required in paragraphs a. through i., below, as applicable for the Dewatering General Permit as specified in Section 2.5.2. In addition, the applicant shall provide estimates of the maximum monthly and annual dewatering withdrawals for the project and will be required to submit records of monthly withdrawals for each dewatering pump to the District. Staff

shall not specify maximum monthly or annual withdrawal volumes in the recommended permit conditions. Permit applications for a dDewatering General pPermit must:

- a. Provide reasonable assurances that the project will not cause harm to the resource, existing legal uses, offsite land uses, and wetland environments or cause harmful saline water intrusion or movement of pollutants, as described in Chapter 3 of this Handbook. If the potential for harm exists, the applicant shall redesign the dewatering activities, including recharge trenches or storage areas to offset the potential drawdown impacts of the proposed activity; -
- b. Demonstrate that the requested allocations represent reasonable dewatering needs. These needs are generally demonstrated by providing information on the water budget for the operation, including all sources and losses of water utilized in the dewatering process. The water budget should demonstrate where and in what quantities water is generated to accomplish the dewatering, including any associated losses, and where and in what quantity water is stored, recharged, disposed, or reused. If processing of materials is associated with the dewatering, a separate water budget describing these activities is required. The water budget may be in the form of a spreadsheet or a flow diagram that indicates all water sources and losses;
- c. Identify the areal extent and depth of the proposed excavation, the depth of dewatering, and the areal extent of the drawdown of the Water Table aquifer associated with the proposed dewatering.
- d. Provide reasonable assurances that all dewatering water will be retained on the project site, unless the applicant demonstrates that it is not technically feasible to retain the dewatering water onsite. If any offsite discharge is requested due to demonstrated technical infeasibility of onsite retention, the applicant must provide the following information with the permit application:
 - i. Documentation of authorization that allows the applicant to discharge directly into the receiving water body and/or adjacent lands (e.g., NPDES or ERP permit), and a demonstration that the receiving water body or adjacent lands are capable of accepting the dewatering discharge;
 - ii. An operational plan which demonstrates that the discharge to the receiving water body will meet all applicable State Water Quality standards prior to discharge;

- iii. ~~A~~an operational plan which demonstrates that the discharge to protected wetlands will not contain turbidity levels in violation of State Water Quality standards (must be less than 29 NTU above background levels) prior to discharge;
 - iv. A a monitoring plan which includes, at a minimum, proposed sampling locations and daily turbidity measurements of the discharge and background conditions in the receiving body and/or wetland; and,
 - v. ~~A~~ a contingency plan which includes procedures for ceasing dewatering operations and correcting the situation until monitoring demonstrates water quality standards are met.
- e. Demonstrate that reserved water will not be withdrawn pursuant to ~~Rule paragraph 40E-2.301, F.A.C., by retaining all water on site. If the applicant demonstrates that retaining the water on site is not feasible, the application shall be processed as an individual permit pursuant to Section 2.5.3;~~
 - f. Provide reasonable assurances that fresh dewatering water will not be discharged to saline tidal waters, unless the applicant demonstrates that it is not technically feasible to prevent discharge to saline water and requests specific authority from the District for discharge. Saline dewatering water, as defined in this Applicant's Handbook Basis of Review, may be discharged to tidewater;
 - g. Provide an operational plan which describes how stormwater will be handled during dewatering operations;
 - h. ~~For sStandard iIndividual pPermits, t~~The applicant shall specify all proposed dewatering activities for the project in terms of depth, duration, and areal extent of dewatering and proposed routing of dewatering water, the estimated magnitude and extent of drawdown, proposed recharge/storage areas, and the potential for harm. The applicant may proceed with all dewatering activities once the permit has been approved; and,
 - i. ~~For mMaster iIndividual pPermits, d~~Due to project uncertainties, the applicant may not be able to specify all aspects of the proposed dewatering activities at the time of the permit application. In order to receive a "master" dewatering permit, the applicant must meet all conditions of issuance and specify the depth, duration, and areal extent of dewatering, the proposed routing of dewatering water, the estimated magnitude and extent of drawdown, proposed

recharge/storage areas, and the potential for harm for “typical” dewatering activities for the project. In addition, the applicant shall provide an estimated project schedule showing dewatering activities and calculated estimated maximum monthly and annual dewatering withdrawals. After approval of the permit, the applicant shall be required by limiting condition to supply site-specific dewatering plans for each proposed dewatering activity to the District for review and approval at least two weeks prior to dewatering. The applicant may not initiate dewatering prior to receiving written notification from District Staff, that the proposed dewatering activity is consistent with the approved master permit.

Individual dDewatering applications will be reviewed concurrently with ERP Environmental Resource or SWM Surface Water Management construction permit applications, and the dewatering application will not be considered complete until both applications are complete. An applicant may request that the dewatering permit include a later “start” date to coincide with the actual start of dewatering activities at the project. Staff will recommend a permit expiration date, based on the proposed “start” date. Any temporary dewatering water holding areas must be constructed and operated using sound engineering practices to protect public health, safety, and welfare and, as necessary, dewatering activities must meet all applicable ERP criteria.

**TABLE 2-3
Dewatering Permits**

| PERMIT REQUIRED | MAXIMUM DAILY PUMPAGE | TOTAL PROJECT PUMPAGE | DURATION | COMMENTS |
|---|-----------------------|-----------------------|----------------|--|
| General Permit by Rule for Short-Term Dewatering 40E-2.061(2), F.A.C. BOR Section 2.3.2.B.1 | 5 MG | 100 MG | Up to 180 Days | No potential for resource impacts. No offsite discharge unless an aquifer performance test. |
| Standard Individual Permit 40E-2, F.A.C. Subsection 2.3.2.B.h | No limitation | No limitation | Up to 20 Years | Standard permit for defined projects. No allocations assigned. |
| “Master” Individual Permit 40E-2, F.A.C. Subsection 2.3.2.2.i | No limitation | No limitation | Up to 20 Years | Permit for phased projects, projects with undefined activities, or no contractor at time of permit application. No allocations assigned. |

C. Diversion and Impoundment Systems

This subsection ~~Section~~ contains criteria for calculating the allocation for diversion and impoundment systems and the criteria for users within diversion and impoundment systems to obtain consumptive use rights.

A diversion and impoundment permit is required for projects, excluding District operated facilities, that divert surface water through a pump or operable water control structure, or divert a combination of surface and groundwater to a conveyance canal network system which the applicant has legal control to operate and maintain for the purposes of providing for the reasonable-beneficial demands of secondary users and consumptive and non-consumptive uses.

Users of surface water maintained through operation of a diversion and impoundment system are considered secondary users of the diversion and impoundment system. The District recognizes dependent and independent secondary users as the two categories of surface water users within a diversion and impoundment system that may attain water rights through the permitting process. The distinction between these two categories is related to the manner in which the secondary user attains its water right. Unless exempt, such secondary users must obtain a consumptive use right through an independent permit or by incorporation into the diversion and impoundment permit. Criteria for each of these methods are set forth below.

1. Demand Calculations

Reasonable demand calculations for diversion and impoundment systems will be based on the following factors: the extent (length, cross sections, and depth) of the canal network used to deliver the water associated with the diversion and impoundment operation; land use classifications within the area served by the diversion and impoundment system; surface water demands directly withdrawn from the diversion and impoundment system; seepage losses; water necessary to maintain groundwater elevations for the purpose of aquifer recharge and saltwater intrusion prevention; evaporation losses from the canal surfaces; and established control elevations during 1-in-10 year drought events.

For permit renewals in which no changes are proposed over historic operations, the demands may be determined from historic pumpage records, consistent with the criteria in Subsection ~~Section~~ 3.1.1 ~~4.7.5.1~~. For modifications where the proposed allocation is increasing, the demands shall be determined with the use of models consistent with the criteria in Subsection ~~Section~~ 3.1.2 ~~4.7.5.2~~, using the applicable efficiency and conservation measures for each use type served by the project while considering cycling of water from project to project within the system.

In addition to the requirements of the ~~a~~ Application Form RC-1W, diversion and impoundment permit applicants must submit: (1) a map identifying the location of all secondary users of their system, including irrigated acreage and land use type; upon permit modification this map must be updated to reflect changes in

secondary users of the diversion and impoundment system; and (2) copies of the agreements executed with dependent secondary users pursuant to Subsection Section 2.3.2.C.A 2.7.3.A.

2 Conditions of Issuance for Secondary Users

- a. Dependent Secondary Users are users of surface water from a diversion and impoundment system that have elected to obtain their water right through the diversion and impoundment permittee's permit, as evidenced by a legal agreement in compliance with the following:
 - i. Agreement that the secondary user will comply with water shortage restrictions imposed by District rule or order issued pursuant to Chapter 40E-21, F.A.C.;
 - ii. Agreement that the secondary user will comply with all applicable water conservation standards required in the diversion and impoundment permit;
 - iii. Agreement that the secondary user will notify the diversion and impoundment permittee of any changes in water use demands or sources;
 - iv. Agreement that the secondary user will continue to evaluate the feasibility of using reclaimed water in accordance with the requirements contained within the diversion and impoundment permit;
 - v. Agreement that the secondary user will mitigate harm to the resources or existing legal uses caused by the secondary user;
 - vi. Agreement that the secondary user will submit a map identifying their system's location, irrigated acreage, and land use type; and,
 - vii. Agreement that the dependent secondary user will comply with the above stated conditions and applicable conditions within the diversion and impoundment entities' consumptive use permit or be subject to potential District enforcement action pursuant to Chapter 373, F.S.
- b. Independent Secondary Users are users of surface water from a diversion and impoundment system that have obtained their water right through a separate consumptive use permit from the District. The District will utilize the applicable demand calculation criteria for the use class associated with the secondary use to determine the

proposed project's demand, contained in the Applicant's Handbook Basis of Review. Site specific resource evaluation must be conducted as required by Section 3.0. Impact evaluation associated with the diversion and impoundment system's withdrawal from the regional system will not be required. Resource impact evaluations must be conducted as required by Section 3.0. In addition, the requested allocation must be consistent with the diversion and impoundment permit as evidenced by demonstration of legal access to the diversion and impoundment system and by demonstration that the proposed secondary use will not cause the diversion and impoundment permittee to exceed its permitted allocation.

D. Industrial/Commercial/Power Plants

Applicants ~~for an individual permit~~ must demonstrate that the quantities applied for relate to reasonable processing and manufacturing needs. The aApplicant shall demonstrate need for the water by providing information on the water balance for the operation, including all sources of water and losses of water utilized in production processes, personal/sanitary needs of employees and customers, power generation, treatment losses, and unaccounted uses.

1. Water Conservation Requirements

All individual permit applicants for an industrial/commercial/power plant water use permit must submit a water conservation plan at the time of permit application. The conservation plan shall be prepared and implemented for the pPermittee's proposed use and, at a minimum, incorporate the following mandatory components:

- a. An audit of the amount of water used in the aApplicant's various operational processes. For new pPermittees, an audit will not be required as a condition of permit issuance; however, such audit must be conducted within two years of permit issuance.

The following measures will be required within the first year of permit issuance or audit completion if found to be cost effective in the aApplicant's audit:

- i. implementation of a leak detection and repair program;
- ii. implementation of a recovery/recycling or other program providing for technological, procedural or programmatic improvements to the aApplicant's facilities, and;
- iii. Use of processes to decrease water consumption.

- b. Develop and implement an employee awareness and consumer education program concerning water conservation.
- c. Procedures and time-frames for implementation shall be included in the conservation plan.

2. Demand Components

Applicants for industrial/commercial/power plant uses must identify the demand for each of the following components:

- a. Process requirements:- water lost in processing and manufacturing where water is an input in the process. This quantity is determined through the calculation of a water balance. The water balance demonstrates where water is generated and in what quantities, where water is used in manufacturing or processing and the associated losses, and where and in what quantities water is disposed of or reused. The balance may be in the form of a spreadsheet or a flow diagram that indicates all water sources and losses. All sources of water that input to the activity must be listed.
- b. Other uses: - determined by calculating the total withdrawal quantity minus the quantity for the uses identified above. Other uses include lawn and landscape irrigation, outside use, air conditioning and cooling, water lost through leaks, and unaccounted uses.

3. Pollution Remediation

An industrial/commercial water use permit is required for remediation projects that include ground-water or surface water withdrawals. The application for a pollution remediation use must include a copy of an approved state or federal remedial action plan. The volume of water to be withdrawn shall be consistent with the remedial action plan. The applicant must demonstrate that the treated water is discharged in a manner that is ultimately returned to the aquifer or is otherwise put to a reasonable-beneficial use, unless such discharge is technically or environmentally infeasible or is otherwise not practicable. Technical infeasibility exists if there is no reasonable access or capacity of permeable surface upon which the aquifer recharge could take place. Environmental infeasibility exists when there is no reasonable way of providing compatible quality discharge water to the receiving water, consistent with primary State Water Quality standards.

E. Landscape/Recreational

1. Water Conservation Requirements

All individual permit applicants for landscape and golf course irrigation projects shall develop a conservation program incorporating the following mandatory

elements. This conservation program must be submitted at the time of permit application.

- a. The use of Florida-Friendly landscaping principles for proposed projects and modifications to existing projects where it is determined that Florida-Friendly landscaping is of significant benefit as a water conservation measure relative to the cost of Florida-Friendly landscaping implementation and meets the requirements of Section 373.185(2)(a)-(f), F.S.
- b. The installation and use of rain sensor devices, automatic switches or other automatic methods that have the capability to override the operation of the irrigation system when adequate rainfall has occurred is required. Systems which use soil moisture sensors to determine irrigation requirements are not required to also install rain sensors.
- c. The limitation of all lawn and ornamental irrigation to the hours and days specified in Rule 40E-24.201, F.A.C., or alternative landscape irrigation conservation measures adopted by local government ordinance in accordance with Rule 40E-24.301, F.A.C.

2. Demand Components

The supplemental irrigation requirement for individual and general permits is calculated as specified in subsection Section 2.3.1.C.1.

F. **Public Water Supply**

In order to accurately calculate demand, public water supply general or individual permit applicants must meet the criteria included in Subsection Section 2.1 and identify the demand for each of the uses listed in this section. Information required to demonstrate reasonable demand for each component includes the number, type, and size of service connections; past pumpage records; projected population data for the service area; data on the specific uses; and data specific to the forecasting models used. Demand quantities shall be based on raw water demand or that volume of water necessary to be withdrawn from existing or proposed sources. The quantities must be expressed in average gallons per day for each component of demand.

Where metering, billing, or other record-keeping methods do not provide accurate use estimates, the aApplicant must provide the best estimates for each use type and must document the estimation method used.

In applications where a portion of the demand is derived from large use customers who redistribute water (e.g., a county utility sells water to a municipality), the aApplicant must obtain and report demand information from each customer. This information is required to demonstrate that the quantities applied for are supported by reasonable demand. Per

capita use guidelines and water use cConservation pPlans presented below in Section 2.6.4 apply to redistributing water customers as well as the aApplicant.

1. Water Conservation Requirements

In addition to any required conservation measures pursuant to an applicable adopted minimum flow and level recovery or prevention strategy, a All public water supply applicants utilities are required to develop and shall implement a standard water conservation plan described in Subsection 2.3.2.F.1.a or a goal-based water conservation plan described in Subsection 2.3.2.F.1.b. The water conservation elements of each plan need to be identified as part of the application. A timetable outlining the implementation schedule of each of the required water conservation elements will be required to be submitted or shown to already exist prior to issuance or renewal of a public water supply water use permit. The conservation plan shall be prepared and implemented for the service area incorporating, at a minimum, the following mandatory components. For those components which require ordinance adoption, such ordinance should incorporate the entire boundary of the enacting jurisdiction. The Permittee shall provide a copy of the ordinances for each of the mandatory elements for which ordinances are adopted. The mandatory water conservation elements are as follows: The proposed water conservation plan shall allow no reduction in, and increase where environmentally, technically, and economically feasible, overall utility-specific water conservation effectiveness. The applicant may use publications and materials from Conserve Florida, the Alliance for Water Efficiency, and other similar industry guidance to assist in developing and supporting the selection of measures in its conservation plan and in demonstrating that increases in water use efficiency were achieved through water conservation.

The elements and implementation schedule for the water conservation plan shall be developed by the applicant. The District shall review and approve the plan submitted by the applicant as part of the public water supply permit. In reviewing the applicant's proposed plan for sufficiency, the District will consider whether the elements and sub-elements proposed to be implemented in the plan, taken as a whole, will promote effective conservation. The water conservation plan shall be subject to the schedule and reporting requirements specified in the permit. If implementation of the plan fails to demonstrate progress toward increasing water use efficiency, the permittee shall request a permit modification, if necessary, to revise the plan to address the deficiency.

- a. Standard Water Conservation Plan The limitation of all lawn and ornamental irrigation to the hours and days specified in Rule 40E-24.201, F.A.C., or alternative landscape irrigation conservation measures pursuant to Rule 40E-24.301, F.A.C.

The applicant shall implement each of the following five elements as necessary to achieve efficient water use to the extent economically,

environmentally, and technically feasible. The applicant will explain how its proposed plan will effectively promote water conservation.

- i. A water conservation public education program. A program shall consist of one or more sub-elements. The applicant will consider education sub-elements such as those listed below. Implementation of these sub-elements may be achieved through collaboration with other entities, including the District. For each educational sub-element included in the applicant's program, the applicant shall identify the frequency, duration, and implementation schedule for the sub-element.
 - A. Water conservation public service announcements;
 - B. Water conservation speakers, posters, literature, videos, and/or other information provided to schools and community organizations;
 - C. Public water conservation exhibits;
 - D. Water conservation articles and/or reports provided to local news media;
 - E. A water audit customer assistance program to address indoor and outdoor water use;
 - F. Water conservation information provided to customers regarding year-round landscape irrigation conservation measures;
 - G. Water conservation information posted on the supplier's website;
 - H. The construction, maintenance, and publication of water efficient landscape demonstration projects;
 - I. Water conservation information provided in customer bills or separate mailings; and,
 - J. Other means of communication proposed by the applicant.

- ii. An outdoor water use conservation program. The applicant shall consider the following sub-elements.
 - A. The adoption of an ordinance or condition of service limiting lawn and landscape irrigation that is provided to the District, and is either no less stringent than or consistent with the irrigation restrictions adopted by the District.
 - B. The adoption of an ordinance or condition of service requiring the use of Florida-Friendly landscaping principles, Florida Water Star, or other generally

- accepted water conservation programs, guidelines, or criteria that address outdoor water conservation.
- C. The adoption of an ordinance or condition of service consistent with Section 373.62, F.S., relating to automatic landscape irrigation systems.
- D. The provision of a landscape irrigation audit program for businesses and residents, including the provision of information to assist customers in implementing the recommendations of the audit. The applicant shall provide a description of the program including implementation details and the content of the audits to be provided.
- E. An education element focusing on outdoor conservation as part of the water conservation public education program required by Subsection 2.3.2.F.1.a.i.
- F. Any other conservation measures or programs proposed by the applicant designed to reduce outdoor water use.
- iii. The selection of a rate structure designed to promote the efficient use of water by providing economic incentives. The rate structures may include, but not be limited to, increasing block rates, seasonal rates, quantity based surcharges, and/or time of day pricing as a means of reducing demands. The District shall afford the utility wide latitude in adopting a rate structure in accordance with section 373.227(3), F.S.
- iv. A water loss reduction program, if water losses exceed 10% as calculated pursuant to Subsection 2.3.2.F.2.
- v. An indoor water conservation program. The applicant will consider indoor conservation sub-elements such as those listed below. Implementation of these sub-elements may be achieved through collaboration with other entities, including the District. For each indoor conservation sub-element included in the applicant's program, the applicant shall provide the frequency, duration, and implementation schedule for the element.
- A. Plumbing retrofit rebates;
- B. Faucet aerator and showerhead giveaways;
- C. An education element focusing on indoor conservation as part of the water conservation public education program required by Subsection 2.3.2.F.1.a.i; and,

D. Other indoor conservation measures proposed by the applicant.

b. Goal-Based Water Conservation Plan ~~Where the local government operating the public water supply utility, pursuant to section 125.568 or 166.048, F.S., determines that Florida-Friendly Landscaping would be of significant benefit as a water conservation measure relative to the cost of Florida-Friendly Landscaping implementation, the local government operating the public water supply utility is required to adopt a Florida-Friendly landscape ordinance meeting the requirements of section 373.185(2)(a)-(f), F.S. In the event such a Florida-Friendly Landscaping ordinance is proposed for adoption, the permit Applicant shall submit the draft ordinance to the District for determination of compliance with section 373.185(2)(a)-(f), F.S. If the ordinance which the local government has or proposes to adopt includes an alternative set of requirements which do not encompass those contained in section 373.185(2)(a)-(f), F.S., eligibility for the incentive program will not be achieved. The District, in compliance with section 373.185, F.S., offers the following incentive program, to those local governments who are eligible, consisting generally of information and cost-benefit analysis assistance. Specifically, the information provided interested parties will consist of an explanation of the costs and benefits of Florida-Friendly Landscapes; the types of plants suitable for Florida-Friendly Landscapes within the local government's jurisdiction; the types of irrigation methods suitable for Florida-Friendly Landscaping and the use of solid waste compost. Further, if requested, the District will assist local governments in determining whether the benefits of requiring Florida-Friendly Landscaping outweigh the costs within that local government's jurisdiction; this assistance may consist of economic considerations, technical information or referral to other agencies that can provide information the local government may need to perform its cost benefit determination. The Governing Board finds that the implementation and use of Florida-Friendly Landscaping, as defined in section 373.185, F.S., contributes to the conservation of water. The Governing Board further supports adoption of local government ordinances as a significant means of achieving water conservation through Florida-Friendly Landscaping.~~

A public water supply applicant may propose a goal-based water conservation plan in lieu of a standard water conservation plan. A goal-based plan allows the applicant to demonstrate effective water conservation by selecting plan elements that are different from those in the standard water conservation plan, but which are appropriate to the applicant's service area. A permittee operating under a standard conservation plan pursuant to this rule, or conservation plan required by a permit issued prior to this rule's effective date, may request to convert its current conservation plan to a goal-based plan through a letter modification.

A goal-based water conservation plan prepared pursuant to s. 373.227(4), F.S., shall contain the following:

- i. A description of water conservation measures selected for implementation and an implementation schedule for each measure; and,
- ii. An explanation of why the alternative elements included in the goal-based plan are appropriate to achieve effective water conservation in the applicant's service area if any of the five elements of the standard water conservation plan are not selected for inclusion in the goal-based plan.

If a public water supply applicant provides reasonable assurance that the goal-based plan will achieve efficient water use by meeting the above criteria, the District shall consider the goal based plan to achieve effective water conservation at least as well as a standard water conservation plan.

c. In order to promote significant water savings beyond that required to achieve efficient water use in the permit, a public water supply permittee implementing a standard water conservation plan or a goal-based water conservation plan shall receive a permit extension for quantifiable water savings attributable to water conservation when the following conditions are met:

- i. The permittee is in compliance with the conditions of its permit.
- ii. The permittee demonstrates quantifiable water savings exceeding those required in the permit. Acceptable methods for quantifying water savings include reductions in residential per capita, gross per capita, per service connection use, or the use of treated potable water for outdoor irrigation. The quantification method used to establish the currently permitted allocation.
- iii. The permittee demonstrates a need for the conserved water to meet the projected demand for the term of the extension.
- iv. The permittee demonstrates water savings sufficient to qualify for at least a one-year permit extension.
- v. The permit extension shall provide only for the modification of the duration of the permit and shall not be used to increase the quantity of the allocation.

- iv. The permittee demonstrates that increases in efficiency were achieved through water conservation and not as a result of population changes, economic or other factors unrelated to conservation. In the absence of factors unrelated to conservation, if the permittee demonstrates timely implementation of its District-approved conservation plan, then the water savings shall be attributed to implementation of the conservation plan.
- v. The specific duration of the extension will be calculated based on the quantity of water saved through conservation and the demonstration of water demand based on projected growth, as calculated at the time of the extension request. A permittee may request an extension no sooner than 5 years after issuance of the original permit, and no more frequently than every 5 years thereafter.
- vii. For permits with a duration of 5 years or less, a permittee may request an extension no sooner than one year prior to the original permit expiration date.
- viii. An allocation having a duration of 5 years pursuant to Subsection 1.5.2.D shall not be granted a permit extension under this section.
- ix. Multiple permit extensions may be requested to reflect additional water saved over the term of the permit. However, in no case shall the cumulative duration of all extensions exceed ten years from the original permit expiration date.

The permittee may request the extension through a letter modification request.

- ~~C. The adoption of an ordinance requiring the installation of ultra-low volume plumbing fixtures in all new construction, such that plumbing fixtures are installed to comply with the following maximum flow volumes at 80 psi: Toilets: 1.6 Gal./Flush; Shower Heads: 2.5 Gal./Min.; and Faucets 2.0 Gal./Min.~~
- ~~D. The adoption of water conservation-based rate structures. Such rate structures should include at least one of the following alternative components: increasing block rates, seasonal rates, quantity based surcharges and/or time of day pricing as a means of reducing demands.~~
- ~~E. The implementation of leak detection programs by utilities with unaccounted-for water losses of greater than 10% is required. Such leak detection program must include water auditing procedures, in-field leak detection efforts and leak repair. The program description should include the number of man-hours devoted to leak detection, the type of leak detection equipment being used and an accounting of the~~

~~water saved through leak detection and repair. It is the policy of the District to encourage public water supply systems to have no more than 10% unaccounted-for water losses.~~

- ~~F. For local government applicants, the adoption of an ordinance requiring any person who purchases and installs an automatic lawn sprinkler system to install, operate and maintain a rain sensor device or automatic switch which will override the irrigation cycle of the sprinkler system when adequate rainfall has occurred pursuant to Section 373.62, F.S.~~
- ~~G. The implementation of water conservation public education programs.~~
- ~~H. For those potable public water supply utilities who control, either directly or indirectly, a wastewater treatment plant, an analysis of the economic, environmental and technical feasibility of making reclaimed water available. Use of the Guidelines for Preparation of Reuse Feasibility Studies published by the Department in November, 1991 is suggested.~~
- ~~I. Procedures and time frames for implementation shall be included in the conservation plan.~~

2. Demand Components

All public water supply applicants for an individual or general permit must identify the demand for the following components:

- a. Residential Use - at a minimum, shall be divided into single-family residential use and multi-family residential use;
- b. Other metered uses - include all uses other than residential accounted for by meter;
- c. Unaccounted uses - the total water system output minus all accounted uses above. Unaccounted use includes unmetered use, water lost through leaks, water used to flush distribution lines, fire-fighting, and other unidentified uses. This quantity should not exceed 10 percent of total distribution quantities. Applicants with unaccounted use greater than 10 percent are required to address the reduction of such use through the formation of a formal leak detection program;
- d. Treatment and Distribution Losses - In some circumstances, not all water that is withdrawn is actually used. This circumstance may be a result of losses in the system during distribution, or because the water must undergo a treatment process before it is usable. This component should only be calculated when such losses are significant. Some water treatment technologies, such as desalination or sand filtration, may cause significant portions of the withdrawn water to be unusable. In such cases, the applicant shall

be required to indicate the withdrawal quantity treated, the percent product (usable) water, the percent reject (unusable) water, and the manner in which the reject water will be disposed.

- e. Large User's Agreements - for those utilities which provide water to other entities through large user's agreements or other similar contracts, the quantity of water delivered to each end user (both average and peak day) and the duration of the water service delivery shall be identified. For those utilities which purchase supplemental water from another utility, the volume of water historically purchased (or contracted to be purchased for proposed uses) for both an average and maximum daily basis and the duration of the contract shall be provided.

3. Per Capita Daily Water Use

Per capita daily water use is a guideline used to measure the reasonable withdrawal requests of public water supply applicants for an individual or general permit. Per capita water use includes population-related withdrawals associated with residential, business, institutional, industrial, miscellaneous metered, and unaccounted uses. The average per capita daily use rate is calculated for the last five years or period of record, whichever is less, by dividing the average daily water withdrawals for each year of record by the permanent or seasonally adjusted population served by the utility for the same period of time. The per capita use rate that is most representative of the anticipated demands, considering the water conservation plans required by criteria in Subsection section 2.3.2.F.1 2-6-1, shall be identified and used for water demand projection purposes. The historical demand patterns may not always be appropriate for projection purposes. This may occur when there are current large users whose growth is not related to population, or when future development may take on characteristics very different than those of present development. In such cases, alternative per capita estimates, such as a design per capita based on dwelling unit type, population characteristics, seasonality of the population and comparison with adjacent similar developments, shall be presented accompanied by necessary documentation. If no historical water use data exists or in the case of proposed developments, a design per capita use shall be used based on the above alternative criteria. Per capita daily water use greater than 200 gallons per capita per day (gpcd) must be supported with additional information explaining the rate of use.

4. Maximum Monthly Peaking Ratio

The recommended maximum monthly allocation for a public water supply general or individual permit is based on the average monthly demand for the duration of the permit times the maximum monthly to average monthly peaking ratio.

Listed below are methodologies used to calculate the maximum monthly to average monthly peaking ratio depending on the available data. Extensive non-domestic use may cause variations in methodologies.

- a. In cases where several years of pumpage records are available, the maximum monthly peaking ratio is calculated for each year. The ratio is generally the average of the peaking ratios of the last three years of record, unless changes in the historic water use patterns require the use of a more representative timeframe (such as when there is a projected significant increase for commercial/industrial demands or the applicant enters into a new large user agreement).
- b. For proposed developments, a ratio between 1.3 and 1.7 will be used, depending upon the operation of the utility, although engineering documents justifying a different ratio will be considered.
- c. When a utility operates more than one treatment plant and the plants operate independently (no interconnections), the maximum monthly peaking ratio must be determined for each treatment plant and its associated wellfield(s).

5. Population Estimates and Data

In service areas without significant seasonal population fluctuations, the use of permanent population estimates is appropriate. In service areas where there are significant seasonal population changes, the general or individual permit applicant shall estimate the seasonal population for use in conjunction with permanent population in the calculation of per capita daily water demand. The aApplicant is advised that if significant seasonal population fluctuations are not accounted for, per capita water daily water use may be over-estimated. Permanent and seasonal (if applicable) population growth must be projected for the requested duration of the permit, on a yearly basis, for the area served by the application.

When population estimates are required for years in between published or referenced estimates, the aApplicant must interpolate the data. The aApplicant may assume that population increases in equal increments in the years between established estimates.

Population data should be derived from the prevailing Comprehensive Land Use Plan developed under Part II, Chapter 163 9J-5, F.S., and the implementing rules found in Title 73C, F.A.C. If the aApplicant's population estimate varies from the Comprehensive Plan, other accepted sources of population data to validate the variance include the following: (1) ~~University of Florida Bureau of Economics and Business Research (BEBR);~~ (2) ~~Regional Planning Council (RPC);~~ (3) County Planning Departments; or, (4) the District's Planning Department.

6. Health Review

The aApplicant for a public water supply general or individual permit is advised that permits or certifications regarding water quality may be required by other governmental agencies, such as the FDEP Florida Department of Environmental Protection and Department of Health and Rehabilitative Services, for public health purposes.

G. Aquifer Storage and Recovery Systems

ASR systems shall be permitted in conjunction with the applicable use type.

Demand Components

Impact evaluations shall be based on the reasonable demand for water associated with the proposed ASR system. The reasonable demand for ASR water will be based on the volume of water needed for recovery by the ASR system considering losses related to the initial volume stored for recovery.

Reasonable Demand: The allocation for the proposed project without ASR shall be calculated using methods contained in Section 2.0 for the appropriate use class such that the total project allocation with the ASR component provides for the 1-in-10 year drought demands of the project. The final allocation for the project will be adjusted, if necessary, for storage losses based on the nature of the demand for water as described as follows.

1. For projects with water demands that are expected to increase over the duration of the permit, the incremental demands shall be calculated in five-year increments. The volume of water calculated at the end of each five-year period (Q) is available for seasonal storage during that five-year cycle. For each of the five years, the amount of water stored combined with the amount of water used shall not exceed the annual average permitted volume of the fifth year (Q). This allows the user to store both the unused portion of the allocation and the seasonal component of the demand. By the end of the five year cycle, a sufficient buffer zone in the storage horizon should be built up to provide for efficient recovery of the seasonal demand component. However, should the applicant demonstrate through past ASR performance or documentation of unique aquifer characteristics of the storage horizon (such as high permeability and poor confinement) that high losses of the stored fresh water occur, a supplemental allocation to account for the losses may be requested. The amount of supplemental water needed to account for the ASR losses shall be evaluated as to the overall efficiency of the water supply system. In the event that the volume of water lost during injection and storage is large (30% or more), the applicant shall evaluate and implement options to reduce the losses to an acceptable level.

2. For projects that will achieve the build out demand within five years of permit issuance or which have demands that are not expected to increase, the reasonable demand shall be determined by the seasonal shift in demand combined with a supplemental allocation to account for losses should site specific characteristics of the storage horizon warrant

For projects where the site specific characteristics of the storage horizon result in the need for additional allocation to cover storage losses, the applicant shall quantify the losses and request an adjustment in the annual allocation to account for reasonable storage losses. The losses shall be based on the degree to which the recovered water, combined with the conventional supply, produces a water quality that is usable for the permitted demand based on federal, state and local water quality standards.

3.0 WATER RESOURCE IMPACT EVALUATION

Section 373.223, F.S., provides a three-pronged test for evaluating each proposed water use: (1) the use must be reasonable-beneficial; (2) must not interfere with any existing legal use of water; and, (3) must be consistent with the public interest. Reasonable assurances that the proposed water use from both an individual and cumulative basis meets this three-pronged test are provided, in part, by the Applicant's compliance with the Conditions for Issuance, set forth in Rule 40E-2.301, F.A.C.

The Applicant's Handbook following is intended to ensure that each permit application is based on consistent, reliable technical evaluations conducted using accepted industry or professional standards. When determining whether the permit applicant has provided reasonable assurances the conditions for permit issuance are met, the District will consider the projected impact of the proposed withdrawal, along with impacts from any existing legal uses and other pending applications for a consumptive use permit under conditions, up to and including a 1-in-10 year drought event. These assurances can be provided through applicable historic monitoring data or modeling data, as defined below. If the criteria described in this Section 3.0 are not met, applicants may consider reduction of withdrawal quantities, a pumpage rotation schedule, mitigation, change in withdrawal source, or other means to bring the proposed use into compliance with the technical criteria.

The impact of withdrawals on the Applicant's surface water management system must be evaluated and submitted with the consumptive use permit application. The cumulative withdrawals as a result of the water use request must be evaluated in conjunction with the cumulative drainage effects of the surface water management system.

3.1 Data Collection, Evaluation, and Modeling

In support of an application for a water use permit, applicants shall submit monitoring data and modeling, as applicable.

3.1.1 Monitoring Data

Monitoring data in support of a permit application shall be accurate and verifiable, and collected at the represented withdrawal rates requested in the permit application during: (1) at least a 1-in-10 year drought, as defined by the yearly total rainfall accumulation for regulatory rainfall stations (pursuant to SFWMD, Part B Water Use Management System Design and Evaluation Aids, Part V,- Supplemental Crop Requirement and Withdrawal Calculation, within Volume 3, Permit Information Manual for Water Use Permit Applications,); or (2) 90 days without effective recharge.

Pumpage data collected from a calibrated accounting method authorized in the previous permit is considered accurate and verifiable.

Water level and quality data collected pursuant to limiting conditions in a permit must provide a sufficient basis to determine if conditions of permit issuance will be met. Additional assurances will be required in cases where the monitor data does not represent the conditions of the resource as affected by the past withdrawals. An example would include wetland photographs without corresponding hydrologic data necessary to determine the withdrawal impacts on wetland hydroperiod, or water quality data from monitor wells that have collapsed or are constructed into zones that do not relate to potential for salinity movement.

The use of historic monitor data to prove conditions of permit issuance are met may be applied to permit renewals and to that portion of a modification that represents the historic use that was monitored. Additional assurances will be required in case where a modification renders the historic data non-representative. An example would include the use of new source of supply, a significant relocation of the points of withdrawal, or an increase in the allocation.

Other relevant information regarding the actual use of water or impact of the actual use of water will be considered. Such information could include identification of irrigated acreage that occurred over time, wellfield operations, and the use of a state approved functional assessment of wetland or other surface waters, to determine impacts of prior consumptive uses.

3.1.2 Modeling Data

Applicable modeling data may consist of basic analytic impact assessments or calibrated numeric system simulation models. The modeling impact assessments shall be conducted for the proposed withdrawal alone, as well as the proposed withdrawal combined with all other permitted uses and pending applications within the cone of depression of the proposed use. The cone of depression is defined by the 0.1 foot drawdown contour for the proposed withdrawal from the water table aquifer and the 1.0 foot contour for the proposed withdrawal from a confined aquifer.

For an ASR system, the applicant shall identify the area of influence based on the volume of water calculated in Subsection section 2.3.2.G A. The area of influence of an ASR system shall address two factors: 1) the area affected by the pressure change

resulting from the injection and removal of stored water; and 2) the orientation of the stored fresh water and associated buffer zone.

Applicants proposing an impact offset [Subsection 62-40.416(7), F.A.C.] or substitution credit [Subsection 62-40.416(8), F.A.C.] must demonstrate that the conditions for permit issuance are met, in part, through the submittal of assessments described in Subsection 3.1.2, below. Subsections 62-40.416(7) and (8), F.A.C., are incorporated by reference in Subsection 40E-2.091(3), F.A.C..

A. Basic Impact Assessment

Basic analytic impact assessments utilize an approved analytic equation(s), such as the Theis or Hantush-Jacob equation, applied to the requested maximum month allocation that simulates continued withdrawal for 90 days without recharge (which is considered for purpose of these simulations to be equivalent to a 1-in-10 year drought condition). Aquifer characteristics derived from approved aquifer performance tests (APT) or specific capacity tests (SFWMD, Part B Water Use Management System Design and Evaluation Aids, Part II Aquifer Performance Test) located within one mile of the project site are acceptable. If more than one set of aquifer characteristics data exists within one mile of the site, the value measured closest to the proposed project will be used unless the applicant can demonstrate that hydrogeologic conditions at the project site are not represented by such data. If the location of the nearest site where aquifer characteristics were measured is greater than one mile from the project site, the average of the nearest three APT or specific capacity test sites is acceptable providing that two of the three values are within one standard deviation of the mean. If this is not the case, the applicant shall demonstrate that the conditions of permit issuance are met for the highest and lowest values of the three sites, or the applicant may opt to conduct an APT or specific capacity test at the site.

The use of numeric models such as Modflow without calibration is acceptable under the following configurations: (1) the model represents the aquifer or aquifer system as no more than two layers; (2) each layer uses a single value for transmissivity/permeability, storage/storativity and a single value is used for leakance between the layers; (3) the simulation time is 90 days with no recharge; and, (4) surface water recharge features are not represented. The modeling shall include separate runs using the highest and lowest measured values of transmissivity/permeability, storage/storativity, and leakance from the region, based on published data and pump test values calculated as described above. The selected high and low aquifer values will be approved provided they significantly overestimate the withdrawal impacts that would occur on the site. The use of a numeric model without calibration is acceptable for representing seepage irrigation systems where the applicant models the portion of the irrigation water that returns to the water table aquifer, provided the model is configured as described in this paragraph and the change in the water table elevation predicted by the model is field verified with water level data from at least one water table piezometer located adjacent to the irrigated field.

B. Calibrated Numeric Simulation Models

For complex systems that cannot be accurately evaluated pursuant to Subsection paragraph 3.1.2.A, above, the applicant may provide assurances that the conditions for issuance will be met through a calibrated numeric simulation model, as described herein. District approved numeric system simulation models are used to simulate withdrawals from complex aquifer systems, such as multiple layered aquifers with varying degrees of hydraulic conductivity, integrated surface and groundwater systems, and withdrawals that involve density dependent flows or transport of contaminants.

Staff will approve simulations that utilize documented model codes that have undergone professional peer review and accurately represent the physical system. In order to demonstrate that a model is representative of the physical system, the applicant shall calibrate the model. An acceptable calibration method shall be identified between the applicant and District staff while taking into consideration the range of water levels across the model domain, location of available water level monitor data, and the degree to which the monitor data accurately reflects area groundwater conditions versus sporadic influences of local pumpage. Whenever possible, the numeric models should be calibrated to within ± 1 foot for at least three monitor wells distributed randomly within the model domain for each month of the simulation period.

For the purpose of model calibration, when using monitor data that has daily measurements, the applicant shall average those daily values for each month. For monitor wells in which a single measurement was made for the month, in determining whether the calibration is acceptable, the pumpage and rainfall conditions immediately preceding or during the single sampling event shall be considered.

Model calibrations will be conducted using monthly time steps for a calibration timeframe of at least 18 months. The applicant may select the calibration period for the model based on availability of representative time variant data. When long term water level monitoring data is not available, the applicant shall calibrate the model to site specific pump test data. This calibration shall be based on a comparison of actual pump test water level changes with calculated water level changes derived from the model. The pump test shall be run for a sufficient time for the water levels to approach equilibrium for the production zone and the surficial aquifer.

The simulation model run shall be conducted using monthly time steps starting with a minimum of three months of average annual demand and rainfall, followed by twelve months of 1-in-10 year drought conditions, followed by a minimum of six months of average annual demand and rainfall. The applicant shall utilize SFWMD, Part B Water Use Management System Design and Evaluation Aids, Part V, Supplemental Crop Requirement and Withdrawal Calculation, within Volume 3, Permit Information Manual for Water Use Permit Applications, to determine the 1-in-10 year drought and average rainfall conditions for the purpose of evaluating drought recharge rates.

When District staff evaluates a calibrated model for approval, the range of parameters used in the model will be checked against published ranges of values for each

parameter evaluated in order to determine the reasonableness of the values used in the model. Calibrations that are achieved using parameters outside of the range of acceptable values for south Florida will not be accepted. Steady state numeric models are not acceptable for the purposes of providing reasonable assurances.

The location of all actual measured time invariant parameters used to estimate each data array shall be identified and documented for each layer in the model. Data arrays without at least three (3) actual measured values will require a sensitivity analysis to be conducted that evaluates the range of potentially acceptable values for the parameter in question. If a model is submitted that does not meet the calibration criteria, the applicant may collect additional data and revise the model. If a model is not calibrated to an acceptable level it will not be acceptable for providing reasonable assurances.

3.2 Source Specific Criteria

3.2.1 Restricted Allocation Areas

Due to concerns regarding water availability, the following geographic areas are restricted with regard to the utilization of specific water supply sources. These areas and sources include the following:

- A. Lake Istokpoga/Indian Prairie Canal System: No additional surface water will be allocated from District controlled surface water bodies over and above existing allocations. No increase in surface water pump capacity will be recommended.
- B. C-23, C-24 and C-25 Canal System: No additional surface water will be allocated from District canals C-23, C-24 and C-25, or any connected canal systems that derive water supply from these District canals, over and above existing allocations. No increase in surface water pump capacity will be recommended.
- C. L-1, L-2 and L-3 Canal System: No additional surface water will be allocated from District canals L-1, L-2 and L-3 over and above existing allocations. No increase in surface water pump capacity will be recommended.
- D. Pumps on Floridan Wells: No pump shall be placed on a flowing Floridan well in Martin or St. Lucie County, except under the following guidelines:
 - 1. If the pump was in place and operational prior to March 2, 1974, and is still in place or a replacement pump with a similar capacity is in place, or
 - 2. The proposed pump is installed for the purpose of increasing pressure in attached piping (e.g., drip or micro-jet irrigation systems) and not for the purpose of increasing flow over and above that flow which naturally emanates from the well. The determination of the appropriate pump capacity must occur after well construction and measurement of the actual natural flow rate. Prior to any pump installation, the Permittee shall provide

measurements of flow from each well using calibrated flow equipment. The method of accounting, calibration data, corrections for well losses, proposed pump information, and the basis for the requested flow rate shall be submitted to District Staff for review and approval, or

3. The Applicant conducts and provides the results of a study, approved by District staff, which shows that pump installation and subsequent withdrawals will not interfere with any presently existing legal use, as defined in Subsection 3.7, or
 4. The proposed pump is installed to temporarily assist in producing the permitted allocation associated with freeze protection pursuant to Subsection section 2.3.2.A.2 2.3.4, or
 5. The proposed pump is installed to temporarily assist in meeting allowable withdrawals for the duration of a water shortage declared pursuant to Chapter 40E-21, F.A.C.
- E. Lower East Coast Regional Water Availability. In addition to all other applicable consumptive use statutory and rule provisions, the following restrictions shall apply when allocating water by permit for consumptive use withdrawals within the Northern Palm Beach County Service Area and Lower East Coast Service Areas 1, 2 or 3.

This Subsection section 3.2.1.E is a component of recovery strategies for MFLs for the Everglades and the Northwest Fork of the Loxahatchee River, as set forth in Chapter 40E-8, F.A.C., and assists in implementing the objective of the District to ensure that water necessary for Everglades restoration and restoration of the Loxahatchee River Watershed is not allocated for consumptive use upon permit renewal or modification under this rule.

1. The additional restrictions in this Subsection shall only apply to applications for new or modified permits or for permit renewals.
2. Except as provided in this Subsection, an applicant must demonstrate, pursuant to the impact evaluation provisions in Subsection section 3.1.2 1.7.5.2, the requested allocation will not cause a net increase in the volume or cause a change in timing on a monthly basis of surface water and groundwater withdrawn from the Lower East Coast Everglades water bodies or the North Palm Beach County/Loxahatchee River Watershed water bodies (which are hereinafter referred to as the "water bodies") over that resulting from the base condition water use.

The evaluation of water withdrawn from water bodies under this Subsection shall address the impacts of the proposed use on surface water and groundwater from: (a) integrated conveyance systems that are

hydraulically connected to the subject water bodies and are tributary to or receive water from such water bodies; and (b) the water bodies. Integrated conveyance systems that are hydraulically connected to the subject water bodies include primary canals used for water supply including, but not limited to, the Central and Southern Florida Project Canals, and secondary and tertiary canals that derive water from primary canals.

3. The “base condition water use” shall be as provided below, but in no case shall exceed the withdrawal permitted to the applicant as of April 1, 2006:
 - a. For the public water supply use class, the maximum quantity of water withdrawn by the applicant from the permitted source during any consecutive twelve month period during the five years preceding April 1, 2006. If a permit allocation existing as of April 1, 2006 contains an allocation based on a conversion of a water treatment system, the base condition water use shall be increased to account for the additional volume used as if the modified treatment system was operational as of April 1, 2006;
 - b. For the irrigation use class, the quantity of water calculated using Subsection section 2.3.1.C 2-3.2 to meet demands for the following: 1) the number of acres actively irrigated by the applicant over the duration of the irrigation permit existing as of April 1, 2006; or 2) if the irrigation project, or a portion thereof, has not yet been constructed pursuant to a required surface water management construction permit or environmental resource permit as of April 1, 2006, the number of acres authorized to be irrigated by such project when constructed, consistent with a consumptive use permit existing as of April 1, 2006;
 - c. For the diversion and impoundment use class, the demands of the applicant calculated pursuant to Subsection section 2.3.2.C 2-7.2 for the physical conditions of the diversion and impoundment system as of April 1, 2006; or
 - d. For other use classes, the quantity of water withdrawn by the applicant during the twelve months preceding April 1, 2006.

In determining the base condition water use, pursuant to Ssubsections 3.2.1.E.3 (a.) through (d.) above, the District shall consider and allow adjustments if the applicant demonstrates that such use is not representative of normal operations due to unanticipated conditions affecting the actual quantity of water withdrawn, such as extreme climatic conditions or equipment failure. Only uses conducted consistent with the existing consumptive use permit limiting conditions shall be considered in

identifying the base condition water use. The base condition water use shall not exceed that permitted as of April 1, 2006.

The base condition water use shall include water made available through implementation of offsets, alternative water supplies, or terminated or reduced base condition water uses, specifically required by permit limiting condition to prevent increased water from being withdrawn from the subject water bodies. Under these circumstances, the applicant shall demonstrate that such actions were implemented and function as required by the permit.

4. Applicants shall conduct a preliminary evaluation to determine whether the proposed use has the potential for increasing the withdrawal of water from the water bodies over the applicant's base condition water use. Such preliminary evaluations may include a basic analytic impact assessment described in Subsection section 3.1.2.A ~~4.7.5.2.A~~ or other acceptable evaluation pursuant to Subsection section 3.1 ~~4.7.5~~.

If based on a preliminary evaluation the proposed use has the potential for increasing the withdrawal of water from the water bodies, the following two evaluations will be compared to identify any changes in location, timing and volume of the withdrawals from the water bodies:

- a. A quantification of the withdrawal of surface water and groundwater from the water bodies under the base condition water use; and
- b. A quantification of the withdrawal of surface water and groundwater from the water bodies under the requested allocation.

In conducting this evaluation, the applicant shall consider the timing of the withdrawals as they affect the water bodies, i.e., the public water supply use class requires water throughout the year based on seasonal demand trends of the service area, versus the agriculture use class which uses water based on growing cycles of the particular crop.

When evaluating the affects of the proposed use on the water bodies, the applicant shall evaluate the resource efficiency of the use, i.e., the public water supply class demands are based on the demands of the service area and the type of treatment, and generally do not provide return flow to the source at the location of the withdrawal; whereas, the agricultural use class demands are based on the crop type, irrigation method and soil conditions, and typically provide some component of recharge at or near the point of withdrawal. The location component is evaluated based on the distance of the withdrawal from and the specific individual area of the subject water bodies as depicted in Figures 3-1 and 3-2, e.g., Water

Conservation Area 1, 2A, or 2B, or the Northwest Fork of the Loxahatchee River or Loxahatchee Slough.

5. If the comparison of the evaluations identified in Subsection Paragraph 3.2.1.E.4 (4), above, identifies an increase in the volume or change in timing of water requested to be withdrawn from the water bodies, the applicant shall do one or more of the following:
 - a. Certified project water. Identify that additional water from the water bodies has been made available through implementation of a project for water resource development, as defined in Section 373.019(22), F.S. Florida Statutes, and such water has been certified as available by the Governing Board, as defined in Subsection section 1.1 4-8.
 - b. Offsets. Propose, identify a schedule for implementation, and construct and operate adequate offsets to eliminate the projected increase in volume or change in timing of withdrawals from the water bodies over the base condition water use. An offset will be approved if it prevents an increase in volume or change in timing of surface and groundwater withdrawn from the water bodies over the base condition water use. Offsets include the use of impact offsets [Chapter 62-40.416(7), F.A.C.], recharge systems, and seepage barriers that meet the above requirement;
 - c. Alternative water supply. Propose, identify a schedule for implementation, and construct and operate alternative water supplies, as defined in Section 373.019(1), F.S. Florida Statutes. An alternative water supply will be approved under this rule if it is adequate to meet the reasonable increased demands without causing an increased volume or change in timing of the withdrawal from the water bodies over the base condition water use;
 - d. Terminated or reduced base condition water use. Identify terminated or reduced base condition water uses as stated below. The request will be approved if the applicant demonstrates that the requested allocation does not cause an increase in volume or change in timing of withdrawals from the water bodies over the applicant's base condition water use due to the reduction or elimination of other base condition water uses that existed on April 1, 2006. The applicant must demonstrate that water is available through providing documentation of implementation of a substitution credit [Chapter 62-40.416(8), F.A.C.] or other the modification or termination of the historic consumptive use permit prior to issuance of the proposed permit under this rule; or,

- e. Available wet season water. Identify water is available during the wet season as set forth below. The wet season water will be approved if the applicant demonstrates that water is available under the conditions described below during the wet season, provided the applicant demonstrates that such water is not required to achieve the restoration benefits to the water bodies pursuant to the Comprehensive Everglades Restoration Plan, North Palm Beach County Comprehensive Water Management Plan, and the Acceler8 program. Water available under these conditions shall be limited to the wet season discharges that are projected to persist following implementation of the entire Comprehensive Everglades Restoration Plan, North Palm Beach County Comprehensive Water Management Plan, and the Acceler8 program.
- i. Available surface water discharges during the wet season shall be identified based on best available information at the time of permit application evaluation used to quantify surface water flows from or to the restored water bodies, as reflected in the Comprehensive Everglades Restoration Plan, North Palm Beach County Comprehensive Water Management Plan, and the Acceler8 program, in their entirety;
- ii. Available wet season surface water discharges will be identified based on 1-in-10 drought conditions during May 1st through November 1st, as determined by annual rainfall statistics measured from gauges that are proximal to the applicant's point of withdrawal defined in Part B Water Use Management System Design and Evaluation Aids, Part IV Supplemental Crop Requirement and Withdrawal Calculation; and,
- iii. Wet season surface water requested by the applicant must be derived within the same hydrologic area where the available surface water is identified.

The District will assist the permit applicant in identifying the best available information necessary to make the determination of wet season water availability. Offsets, alternative water sources and terminated or reduced base condition water uses implemented after April 1, 2006 shall be considered in addressing requested increases in withdrawals from water bodies under this Subsection. Notwithstanding, as stated in Subsection Paragraph 3.2.1.E.3 (3), water made available from the permitted source through offsets, alternative water supplies and terminated or reduced base condition water uses implemented consistent with permit limiting conditions to prevent increased water from being withdrawn from

the subject water bodies, shall be considered in the base condition water use.

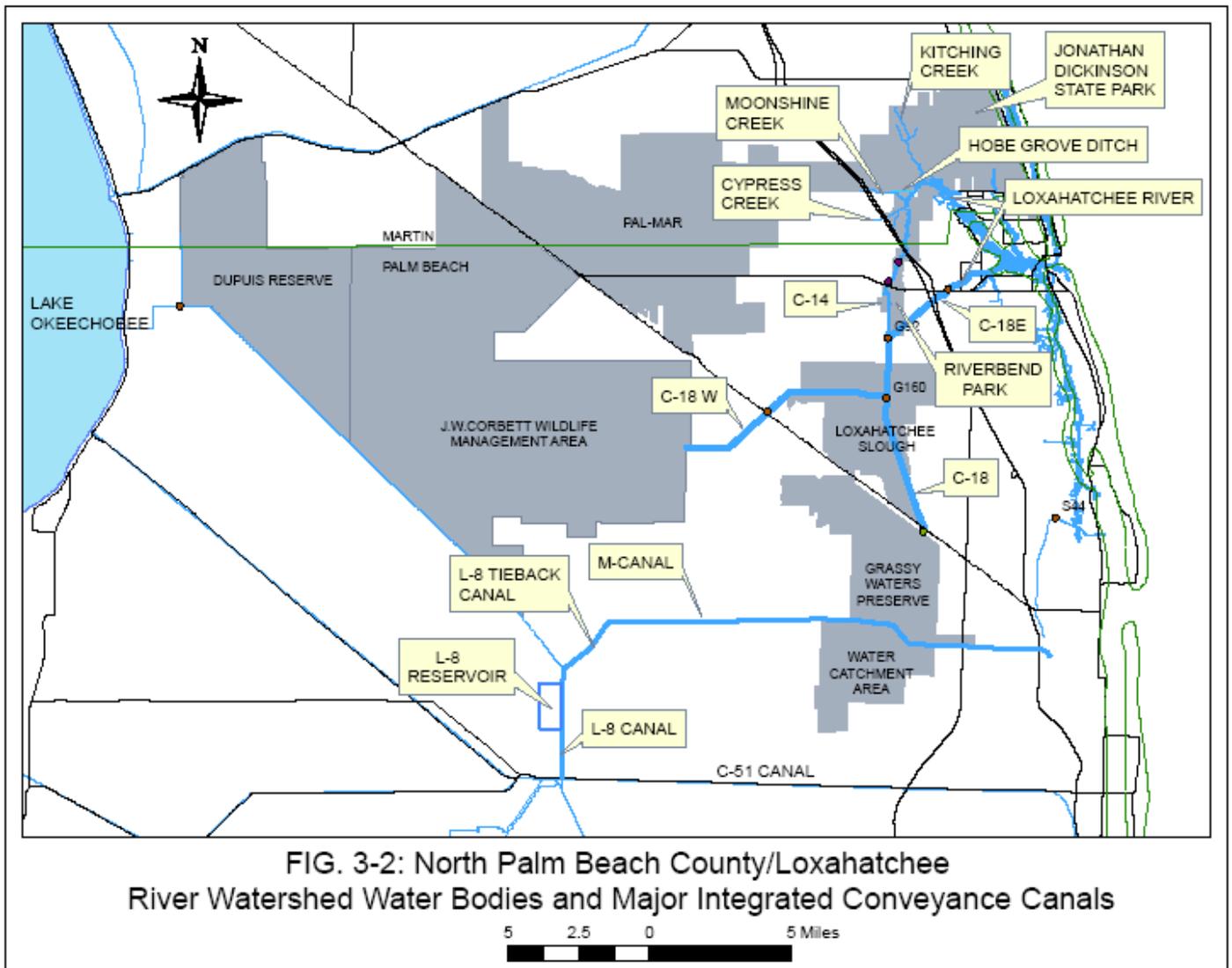
6. Consistent with Subsection 3.2.1.E.5 (5), above, the permit applicant may obtain an allocation for additional water from the water bodies over the applicant's base condition water use, as identified below:
- a. Certified project water. Water certified by the Governing Board as available for consumptive use through operation of a water resource development project, as provided in Section 3.2.1.E.5.a (5)(a);
 - b. Temporary allocation. Water temporarily required to meet the applicant's reasonable demands while implementing an alternative water supply pursuant to Subsection 3.2.1.E.5.c (5)(c) or while implementing an offset identified pursuant to Subsection 3.2.1.E.5.b (5)(b). The permit will be conditioned with dates and milestones for development of the alternative water supply or offset. A temporary allocation shall be reduced to be consistent with this Subsection when the alternative source is projected to be available, consistent with permit limiting conditions. The temporary allocation shall be adjusted, as necessary, to reflect the offset on the water bodies when the offset is projected to be available, consistent with the permit limiting conditions.

The limiting conditions governing the quantity and time period for the temporary allocation shall be based on expected due diligence of the permit applicant, as determined by applying the factors in Subsections subparagraphs 3.2.1.E.6.b i. 1. through iii. 3., below, to implement the alternative water supply or offset in an expeditious manner, not to exceed five years unless specifically approved by the Governing Board. The time period shall be determined considering the following factors:

- i. The projected time period for design, receipt of necessary authorizations, and construction of the alternative supply or offset;
 - ii. The timing of demands to be met from the alternative supply or offset;
 - iii. Other factors that indicate the reasonable period required to develop the alternative supply or offset.
- c. Water made available through implementation of offsets or the termination or reduction of base condition water use withdrawals.

Water made available through implementation of offsets pursuant to subsection 3.2.1.E.5.b (5)(b) or water made available through the termination or reduction of other users' base condition water use withdrawals pursuant to subsection 3.2.1.E.5.d (5)(d), consistent with permit limiting conditions; or,

- d. Available wet season water. Water available during the wet season, provided the applicant demonstrates that such water is not required to achieve the restoration benefits to the water bodies pursuant to the Comprehensive Everglades Restoration Plan, North Palm Beach County Comprehensive Water Management Plan, and the Acceler8 program, pursuant to subsection 3.2.1.E.5.e 5(e). Pursuant to permit limiting conditions, additional surface water withdrawals will be permitted only when flood control regulatory releases are being made, and not when water supply deliveries are being made, from the water bodies.
7. Permit applicants must meet the requirements of any established MFL and water reservation, if applicable.



- F. Lake Okeechobee Service Area Water Availability. The following restrictions shall apply when allocating surface water derived from the Lake Okeechobee water body for consumptive use within the Lake Okeechobee Basin as depicted in Figure 3-5. This rule is a component of the recovery strategy for the MFL for Lake Okeechobee, as set forth in Chapter 40E-8, F.A.C., to address lower lake management levels and storage under the U.S. Army Corps of Engineers' interim LORS, adopted to protect the public health and safety (April 28, 2008). Compliance with this rule along with the other criteria contained in the Applicant's Handbook Basis of Review implements the objectives of the District to protect the public health and safety, to prevent interference among legal users of Lake water, to be consistent with the MFL recovery strategy as defined in Rule 40E-8.421, F.A.C., and to ensure that water necessary for Everglades restoration is not allocated for consumptive use.

1. The rule applies to applications for new projects, existing unpermitted projects, modifications to existing projects, and permit renewals for existing projects located within the Lake Okeechobee Basin as depicted in Figure 3-5, that propose to use surface water from the "Lake Okeechobee water body," defined as:
 - a. Lake Okeechobee as identified in Subsection 40E-8.021(12); or
 - b. Integrated conveyance systems that are hydraulically connected to and receive water from Lake Okeechobee such as the Caloosahatchee River, the St Lucie Canal, or secondary canal systems that receive Lake Okeechobee water for water supply purposes via gravity flow or by pump.

This Subsection does not apply to groundwater withdrawals such as withdrawals from wells, mining, and dewatering, or to projects that request to use a volume of water less than or equal to 3 MGM from the Lake Okeechobee water body ~~at or below the threshold contained in Subsection 40E-20.302(1)(a).~~

2. Except as otherwise provided in this Subsection, an applicant must demonstrate the requested allocation will not cause a net increase in the volume of surface water withdrawn from the Lake Okeechobee water body over the entire "base condition water use" as defined in Subsections ~~subsections~~ 3.2.1.F.2 (a₁) through (d₁), below. In determining the base condition water use, pursuant to Subsections ~~subsections~~ 3.2.1.F.2 (a₁) through (d₁), below, the District shall consider and allow adjustments if the applicant demonstrates that such use is not representative of normal operations due to unanticipated conditions affecting the actual quantity of water withdrawn, such as extreme climatic conditions or equipment failure.
 - a. Public Water Supply Use Class: the maximum quantity of water withdrawn by the applicant from the Lake Okeechobee water body during any consecutive twelve month period between April 1, 2001 and January 1, 2008, consistent with the conditions of the existing permit. If a permit allocation existing on January 1, 2008 contains an allocation based on a conversion of a water treatment system, the base condition water use shall be increased to account for treatment losses of the new treatment plant as if the treatment system was operational during the above stated time interval;
 - b. Irrigation Use Classes: the quantity of water calculated using Subsections ~~Section~~ 2.3.1.C 2-3 and 3.9.1 considering:
 - i. The maximum number of acres actively irrigated by the applicant between April 1, 2001 and January 1, 2008 along

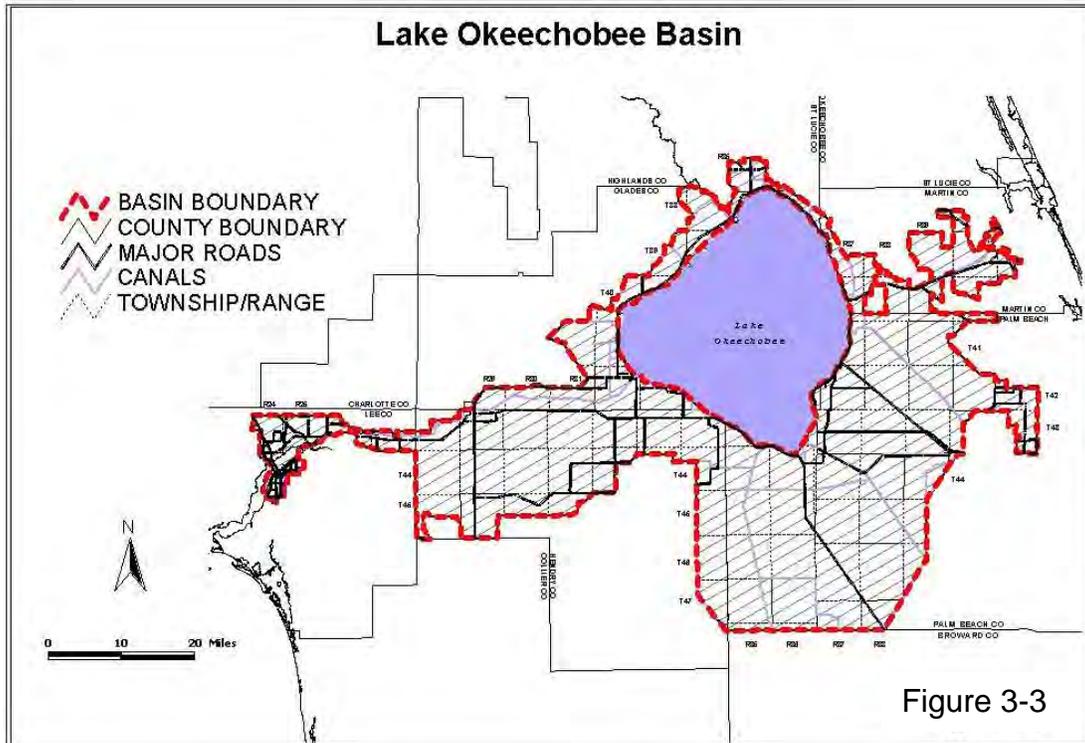
- with the associated crop type and irrigation method used. When determining the numbers of acres actively irrigated, data regarding historic crop plantings will be evaluated however short term reductions in historic plantings caused by disease or poor market conditions are not to be used in determining the actively irrigated acreage; or
- ii. If the irrigation project, or a portion thereof, has been authorized but not yet constructed pursuant to the conditions of a surface water management construction or environmental resource permit or authorization existing on January 1, 2008, the base condition water use will be calculated based on the number of acres and crop type identified in the environmental resource and consumptive use permit or authorization in place as of January 1, 2008;
 - c. **Diversion and Impoundment Use Class:** the demands of the applicant calculated pursuant to Subsection Section 2.3.2.C 2-7.2 for the physical conditions of the diversion and impoundment system as of January 1, 2008. In situations where historic uses were supplied by the diversion and impoundment project but not expressly identified or incorporated in the diversion and impoundment permit, the base case condition water use will be as calculated to include the historic demands served by the diversion and impoundment project between April 1, 2001 and January 1, 2008, consistent with the conditions of the existing permit.
 - d. **Other Use Classes:** the maximum quantities of water withdrawn by the applicant (annual and maximum month) between April 1, 2001 and January 1, 2008, consistent with the conditions of the existing permit.
3. Applicants shall provide reasonable assurances that the requested allocation will not cause a net increase in the volume of surface water withdrawn from the Lake Okeechobee water body over the entire base condition water use. This demonstration is provided when the following criteria are met on a project by project scale as calculated pursuant to Subsection 3.2.1.F.2 (G)(2), above:
 - a. **Permit Renewals:** Those projects which timely seek re-issuance of a previous permit without modifications.
 - b. **Modifications that Maintain or Reduce Base Condition Water Use Calculated Pursuant to the Existing Permit:** Examples of such modifications include changes to withdrawal facilities, irrigated acreage, crop type within the permitted use class, or irrigation

efficiency that results in an allocation that is equal to or less than the project's base condition water use calculated pursuant to the existing permit. In the event that the modification results in a use that is less than the project's base condition water use, the applicant will be required to calculate the reduction from the project's base condition water use associated with the requested modification.

- c. New Projects, Existing Unpermitted Projects, or Modifications Requesting Base Condition Water Use in Excess of the Amount Calculated Pursuant to the Previous Permit: Except for those uses as identified in Subsection 3.2.1.F.4 (4) as an incompatible use, allocations will be provided from the following sources:
- i. Certified Project Water. Water provided from an operational water resource development project, as defined in Section 373.019(22), Florida Statutes, that has been certified by the Governing Board for allocation to consumptive uses, as defined in Subsection Section 1.1 1-8;
 - ii. Lake Okeechobee water body Withdrawals Offset by Alternative Sources. An alternative source of water that is demonstrated to replace the volume, including timing, of water proposed to be withdrawn from the Lake Okeechobee water body over the base condition water use. Examples of offsets include recharge provided by reclaimed water applied to provide recharge to the water body in equal or greater amounts than the proposed increase over the base condition water use;
 - iii. Alternative Water Supply. Water provided from a source not restricted under this Subsection such as groundwater, reclaimed wastewater or stored storm-water; or
 - iv. Unassigned, Terminated, or Reduced Base Condition Water Use. The requested allocation is for available base condition water use calculated pursuant to Subsection 3.2.1.F (G)(2), above, that was not authorized by an existing permit (i.e., "unassigned"), permitted base condition water use that has been made available through a permit which was terminated after January 1, 2008, or water made available pursuant to a modification made after January 1, 2008 which reduced the permitted base condition water use of an existing permit. In the event of competition for allocation of available base condition water use, those projects that seek an allocation of water in volumes equal to or less than that which was

previously permitted to that project and/or used by that project shall be a positive consideration when determining which project best serves the public interest. Prior to February 28, 2010, the Governing Board reserves the right to restrict the re-allocation of terminated base condition water use if it determines that such water is demonstrated to improve the performance of an MFL water body under recovery in terms of shortening the frequency or duration of projected MFL violations or improve the performance of meeting a restoration target as defined in an approved District restoration plan or project while also considering if alternative water supplies are available, whether the proposed use is ancillary to an agricultural use and other relevant public interest considerations. On or after February 28, 2010, the Governing Board reserves the right to restrict the re-allocation of unassigned, terminated, or reduced base condition water use, if it determines that such water is demonstrated to improve the performance of an MFL water body under recovery in terms of shortening the frequency or duration of projected MFL violations or improve the performance of meeting a restoration target as defined in an approved District restoration plan or project while also considering if alternative water supplies are available, whether the proposed use is ancillary to an agricultural use and other relevant public interest considerations.

4. Incompatible Use Type: Requested allocations for new public water supply uses that exceed 3 MGM ~~the thresholds in Subsection 40E-20.302(1)(a), F.,A.C.,~~ or increases in existing uses above the project's base condition water use calculated pursuant to Subsection 3.2.1.F.2.a (2)(a), above, shall not be permitted from the Lake Okeechobee water body.
5. Requests for temporary increases over the project's base condition water use from the Lake Okeechobee water body shall be granted to accommodate increased demands during a reasonable time period while alternative sources are constructed provided all other consumptive use permit criteria are satisfied. The duration of the temporary increase shall be determined based on a construction schedule for the alternative source to be implemented with due diligence and defined in permit conditions. Additionally, the permit shall include requirements to reduce the allocation to the base condition water use in accordance with this construction schedule.



3.2.2 Areas of Special Concern

If the District determines that the application is in an area of special water concern because of either limitations on water availability or other potentially adverse impacts associated with the proposed withdrawal, then:

- Allocation of water shall be restricted or denied for irrigation purposes when reclaimed water is available and is economically, technically and environmentally feasible,
- Irrigation shall be restricted to the use of a micro-irrigation system or the irrigation allocation limited to the quantity of water equivalent to the efficiency achieved by a micro-irrigation system, or
- Monitoring programs shall be imposed to delineate the cone of depression surrounding a withdrawal.

3.3 Evaluation of Impacts to Water Resources

This subsection ~~Section~~ establishes the standards and thresholds for protection of wetlands and other surface waters from harm pursuant to the condition for permit issuance in Rule ~~paragraph~~ 40E-2.301(4)(e), F.A.C., including ensuring a water use shall not be harmful to the water resources of the area and is otherwise consistent with the overall objectives of the District. The standards and thresholds specified herein shall apply to all water uses, including applications for the initial use of water and modifications and renewals of consumptive use permits, and authorized water uses, herein referred to as the "water use". In its evaluation of the applicant's water use, the

District shall consider the extent of hydrologic alterations caused by the applicant's water use, except as otherwise provided herein.

To provide reasonable assurances of compliance with the condition of issuance in Rule paragraph 40E-2.301(1)(e), F.A.C., an applicant must demonstrate that hydrologic alterations caused by the consumptive use shall not adversely impact the values of wetland and other surface water functions so as to cause harm to the: a) A- abundance and diversity of fish, wildlife and listed species; and b) B- the habitat of fish, wildlife, and listed species. For the purposes of this Subsection, an adverse impact to the value of wetland and other surface water functions in violation of the above shall constitute "harm."

This Subsection requires assessment of whether impacts of a consumptive use constitute harm. If a consumptive use would cause harm, then the applicant must comply with the elimination or reduction of harm provisions pursuant to Subsection Section 3.3.5, and mitigation requirements of Subsection Section 3.3.6.

Impacts to wetlands and surface water bodies associated with wetland enhancement, restoration, creation, preservation or other mitigation permitted pursuant to Part IV of Chapter 373, F.S., or other wetland regulatory program implemented by a local, regional, or federal governmental entity, shall be considered under this Subsection.

Impacts on wetlands and other surface waters not caused by the consumptive use, including, but not limited to, impacts caused by existing surface water management activities, drainage, water table lowering, roads, levees and adjacent land uses, are not considered under this Subsection.

The hydrologic characteristics resulting from construction or alterations undertaken in violation of Chapter 373, F.S., or District rule, order or permit, shall be evaluated based on historic, pre-violation conditions, as if the unauthorized hydrologic alteration had not occurred.

3.3.1 Wetlands and Other Surface Waters

A. Delineation: Wetlands and other surface waters within the area of influence of the consumptive use, delineated pursuant to Rules Sections 62-340.100, F.A.C. through 62-340.600, F.A.C., as ratified by Section 373.4211, F.S., are subject to this Subsection Section, except as provided in Subsection B below.

In accordance with Subsection 62-340.300(1), F.A.C., reasonable scientific judgment shall be used to evaluate the existence and extent of a wetland or other surface water, including all reliable information, such as visual site inspection and aerial photo interpretation, in combination with ground truthing. In addition, relevant information submitted pursuant to Chapter 62-340, F.A.C., in support of an ERP/SWM Environmental Resource Permit/Surface Water Management Permit shall be considered. Field delineations of wetlands and other surface waters boundaries shall be required if such boundaries are in dispute.

In determining the location and category of wetlands and other surface waters, the applicant may consult several sources of information for guidance, as part of the information identified in Subsection Section 3.3.2. This includes the staff reports of previously issued ERPs Environmental Resource and SWM Surface Water Management pPermits for the site and adjacent sites, National Wetland Inventory (NWI) Maps, Land Use/Land Cover maps, NRCS Natural Resource Conservation Service soils maps, formal and informal wetland determinations conducted by the District, and wetland maps produced by local governments. District staff may inspect the site to confirm the location, categorization and delineation of wetlands and surface waters, and other site specific information. Site specific topographical data including elevations of hydrologic indicators, wetland boundary and bottom elevations shall be required in the event that the categorization of a wetland or other surface water is in question. In the event that access to offsite wetlands or other surface waters has been denied by the property owner, the District and the applicant shall mutually agree on a method of establishing the locations, categorizations and delineations of the offsite wetlands or other surface waters.

- B. Exclusions: Harm to the following wetlands and other surface waters shall not require elimination or reduction of harm and mitigation, under this Subsection:
1. Isolated wetlands one half (1/2) acre or less in size unless:
 - a. The wetland or other surface water is used by threatened or endangered species; (Nothing herein is intended to relieve an applicant of the obligation to comply with the Florida Fish and Wildlife Conservation Commission (FWC) rules pertaining to listed species, and with the Federal Endangered Species Act.)
 - b. The wetland or other surface water is located in an area of critical state concern designated pursuant to Chapter 380, F.S.; or
 - c. The wetland or other surface water is connected by standing or flowing surface water at seasonal high water level to one or more wetlands, where the combined wetland acreage is greater than one half acre.
 2. Wetlands or other surface waters which have been authorized to be impacted to the extent established in a construction approval through an ERP Environmental Resource Permit or a SWM Surface Water Management Permit issued under Part IV of Chapter 373, F.S.
 3. Constructed water bodies including borrow pits, mining pits, canals, ditches, lakes, ponds, and water management systems, not part of a permitted wetland creation, preservation, restoration or enhancement

program. However, consideration of the design functions of water management systems shall be considered by Subsection ~~Section~~ 3.6, Existing Offsite Land Uses.

4. Wetlands or other surface waters to the extent they have been specifically authorized to be impacted or mitigated pursuant to Subsections ~~Section~~ 3.3.5, 3.3.6, or 3.3.7 in a consumptive use permit, unless the applicant proposes additional impacts.

3.3.2 Permit Application Submittals

The following shall be included in the applicant's submittal:

- A. For purposes of determining whether the wetland or other surface water is excluded under Subsection ~~Section~~ 3.3.1.B., the applicant shall provide supporting documentation, including a scaled map and recent aerial photograph marked with the wetland or other surface water location and reason for being excluded under Subsection ~~Section~~ 3.3.1.B. If it is demonstrated that the wetland or other surface water is excluded under Subsection ~~Section~~ 3.3.1.B., no additional information submittals shall be required under this Subsection.
- B. For wetlands or other surface waters that are not excluded under Subsection ~~Section~~ 3.3.1.B, scaled maps and recent aerial photographs that identify:
 1. The area of influence of the consumptive use;
 2. In accordance with Subsection ~~Section~~ 3.3.1.A., the locations of all wetlands and other surface waters that occur within the area of influence of the consumptive use, including wetlands and other surface waters located outside the applicant's property boundaries;
 3. The locations of existing and proposed withdrawal facilities; and
 4. The categorization of each wetland or other surface water located within the area of influence of the consumptive use as described in Subsection ~~Section~~ 3.3.3.
- C. Information about the current condition of the wetlands and other surface waters and the hydrology.
- D. Information regarding the potential impact of the consumptive use on the wetland or other surface water in its current condition.
- E. Information regarding site specific considerations required to be submitted pursuant to Subsection ~~Section~~ 3.3.4.C ~~3.3.4.3~~.

- F. Where there is potential for harm, information required to determine the extent of elimination or reduction of harm pursuant to Subsection ~~Section~~ 3.3.5 and mitigation required under Subsection ~~Section~~ 3.3.6, including an assessment of the use of the wetlands and other surface waters by listed species.
- G. A monitoring plan to assess the effects of the consumptive use, if required. A monitoring plan shall be required when necessary to provide continued verification that no harm is occurring due to the consumptive use, such as when the cumulative impacts of consumptive uses approach the numeric thresholds in Subsection ~~Section~~ 3.3.4.B ~~3.3.4.2~~ or when the applicant elects to use an alternative simulation condition or evaluation methodology pursuant to the narrative standard of Subsection ~~Section~~ 3.3.4.A ~~3.3.4.1~~.
- H. If the applicant asserts the exclusions in Subsection ~~Section~~ 3.3.1.B.2 or 3.3.1.B.4 or considerations in Subsection ~~Section~~ 3.3.7 apply to wetlands or other surface waters within the cone of influence of the proposed consumptive use, the applicant must provide appropriate information supporting this assertion, including relevant information from the permit file.

3.3.3 Categorization of Wetlands and Other Surface Waters

Wetlands and other surface waters subject to consideration under this Subsection are grouped into three categories based on their normal hydrologic characteristics and their susceptibility to harm as a result of hydrologic alteration from consumptive use withdrawals. Normal hydrologic characteristics are defined as the hydropattern that would occur without the impact of any authorized or unauthorized consumptive uses.

In cases where existing surface water management "works" have permanently altered the normal hydrologic characteristics of the wetland or other surface water, the categorization shall be based on the resulting hydrology caused by the permanent alteration. Alterations that can effect wetland hydrology include canals, ditches, roads, structures or levees. The hydrologic characteristics resulting from construction or alterations undertaken in violation of Chapter 373, F.S., or District rule, order or permit, shall be evaluated based on historic, pre-violation conditions, as if the unauthorized hydrologic alteration had not occurred.

Wetlands and other surface waters are subject to evaluation under this Subsection ~~Section~~, in accordance with the following:

Category 1: Natural lakes, deep ponds, rivers, streams, deepwater slough systems, coastal intertidal wetlands, and cypress strands that are permanently flooded throughout the year, except in cases of extreme drought. These include "permanently flooded" and "intermittently exposed" surface waters in the NWI ~~National Wetland Inventory~~ maps.

Category 2: Seasonally inundated wetlands including cypress domes, emergent marshes, cypress strands, mixed hardwood swamps, or shrub swamps and exhibit standing water conditions throughout most of the year. These include "semi-permanently flooded" or "seasonally flooded" wetlands in the NWI ~~National Wetland Inventory~~ maps.

Category 3: Temporarily flooded and saturated wetlands including wet prairies, and shallow emergent marshes, as well as seepage slopes, bayheads, hydric hammocks, and hydric flatwoods. These include "temporarily flooded" and "saturated" wetlands in the NWI National Wetland Inventory maps.

This Subsection shall be applied on a case by case basis to categorize wetlands and other surface waters based on their normal hydrologic characteristics and susceptibility to harm as a result of hydrologic alterations from consumptive use withdrawals.

3.3.4 "No Harm" Standards and Thresholds

To demonstrate that no harm will occur to wetlands and other surface waters, reasonable assurances must be provided by the applicant that the narrative standard for Category 1, 2 and 3 wetlands and other surface waters in this Subsection ~~Section 3.3.4.A 3.3.4.1.~~ is met.

For Category 2 wetlands, demonstration that the narrative standard is met shall be achieved through complying with the numeric threshold set forth in Subsection ~~Section 3.3.4.B 3.3.4.2.~~, unless such threshold is deemed by the District to be inapplicable due to the site specific considerations identified in Subsection ~~Section 3.3.4.C 3.3.4.3.~~ Site specific considerations may render the numeric threshold inapplicable. In these cases, the applicant shall demonstrate that harm as defined in the narrative standard in Subsection ~~Section 3.3.4.A 3.3.4.1~~ will not occur, notwithstanding the numeric threshold.

The analysis for determining harm shall include an assessment of the projected hydrologic alterations caused by the consumptive use and a cumulative assessment encompassing other existing legal uses, and resulting impact on the wetlands and other surface waters. In circumstances of cumulative contributions to harm, an applicant shall only be required to address its relative contribution of harm to the wetlands and other surface waters.

In the evaluation of the applicant's consumptive use, the District shall consider the extent of hydrologic alterations to wetlands and other surface waters caused by the applicant's consumptive use based upon analytical or numerical modeling, or monitor data, as required by Subsection ~~Section 3.1.1 4.7.5,~~ and this Subsection.

The determination of harm shall consider the temporary nature of consumptive use drawdowns and seasonal application of certain consumptive uses. Such consideration includes a determination of whether the hydrologic alteration is constant or if it recovers seasonally.

A. Narrative Standard

For Category 1, 2, and 3 wetlands and other surface waters, an applicant shall provide reasonable assurances that hydrologic alteration caused by the consumptive use shall

not adversely impact the values of wetland and other surface water functions so as to cause harm to the:

1. Abundance and diversity of fish, wildlife and listed species; and
2. Habitat of fish, wildlife, and listed species.

B. Numeric Thresholds for Category 2 Wetlands

Unless site specific considerations identified pursuant to Subsection Section 3.3.4.C ~~3.3.4.3~~ exist indicating the following numeric threshold for Category 2 wetlands is not applicable, the consumptive use shall not be considered harmful when the modeled drawdown resulting from cumulative withdrawals in the unconfined aquifer beneath all portions of the wetland is less than 1.0 feet.

Consumptive use withdrawals shall be modeled based on a maximum monthly allocation simulated for 90 days without recharge and as otherwise directed under Subsection Section 3.1.2 ~~4.7.5.2~~. If the applicant chooses to use an alternative simulation condition, the narrative standard in Subsection Section 3.3.4.A ~~3.3.4.1~~ shall apply.

C. Site Specific Considerations

Site specific information shall be submitted by the applicant, if requested by the District or if otherwise deemed relevant by the applicant, for determining whether the narrative standard in Subsection Section 3.3.4.A ~~3.3.4.4~~ is met, including whether the numeric threshold in Subsection Section 3.3.4.B ~~3.3.4.2~~ is applicable. The applicant shall provide site specific information on the local hydrology, geology, actual consumptive use or unique seasonality of consumptive use, including, but not limited to:

1. Site specific hydrologic or geologic features that affect the projected drawdown shall be evaluated, including the existence of clay layers that impede the vertical movement of water under the wetland, preferential flow paths, seepage face wetlands that receive high rates of inflow, or the effects of soil depth and type on moisture retention, to the degree that actual field data support how these factors affect the potential for impacts of the consumptive use on the wetland or other surface water.
2. If the applicant asserts that the actual consumptive use has not caused harm to wetlands or other surface waters, site specific information on the condition of the wetlands or other surface waters in question must be provided in conjunction with pumpage records or other relevant evidence of actual consumptive use to substantiate the assertion. Applicable monitor data as described in Subsection Section 3.1.1 ~~4.7.5.4~~ shall be submitted, if available.
3. Other relevant factors or information in assessing the potential for harm to wetlands and other surface waters, such as the condition, size, depth,

uniqueness, location, and fish and wildlife utilization, including listed species, of the wetland or other surface water.

3.3.5 Elimination or Reduction of Harm

To the extent that harm is determined, the applicant shall modify the project design or consumptive use, to the extent practicable, to eliminate or reduce harm to protected wetlands and other surface waters.

Modifications to the project or consumptive use include developing alternative water supply sources, modification of pumpage, relocation of withdrawal facilities, implementation of water conservation measures and creation of hydrologic barriers.

A proposed modification that is not technically capable of being implemented, not economically viable, or adversely affects public safety through the endangerment of lives or property, is not considered "practicable". In determining whether a proposed modification is practicable, consideration shall be given to:

- A. Whether the wetlands and other surface waters have been impacted by authorized activities other than the consumptive use (such as development, adjacent land use, drainage activities, operations of Works of the District, or an Environmental Resource or Surface Water Management Permit), and will continue to be impacted by such activities;
- B. The cost of the modification for elimination or reduction of harm compared to the environmental benefit such modification would achieve, including consideration of existing infrastructure; and
- C. As applicable for permit renewals, the considerations provided in Subsection Section 3.3.7.

The District shall not require the applicant to implement design modifications to reduce or eliminate harm when the ecological value of the functions provided by the wetlands and other surface waters to be adversely affected is low based on site specific analysis, and the proposed mitigation will provide greater long term ecological value.

3.3.6 Mitigation of Harm

Upon determination by the District that elimination or reduction of harm is not practicable, the District shall consider proposals for mitigation. Mitigation is required to offset the harm to the functions of wetlands and other surface waters caused by the consumptive use as described herein.

In certain cases, mitigation cannot offset impacts sufficiently to yield a permissible project. Such cases often include activities that harm OFW Outstanding Florida Waters, habitat for listed species, or wetlands or other surface waters not likely to be successfully recreated.

Mitigation shall not be required for impacts to wetlands and other surface waters previously mitigated through federal, state or local permit authorizations, such as other consumptive use permits or ERP ~~Environmental Resource~~ or SWM ~~Surface Water Management~~ Permits.

The District shall assess the condition of the wetland or other surface water as it exists at the time of the application submittal when determining mitigation requirements.

For permit renewals, mitigation requirements shall also be determined based on the provisions in Subsection ~~Section~~ 3.3.7.

Application of ERP Provisions in Determining Mitigation Requirements

- A. In the application of this Subsection, the following Environmental Resource Permit provisions within the Environmental Resource Permit Applicant's Handbook, Volume I (General and Environmental) Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, regarding mitigation, shall be applied:
- Subsection 10.4.2.2.3 ~~4.2.2.3~~ regarding Assessment of Impacts;
 - Subsection 10.3.1 ~~4.3.1~~ regarding Types of Mitigation, specifically Subsections 10.3.1.1 ~~4.3.1.1~~, 10.3.1.3 ~~4.3.1.3~~ and 10.3.1.8 ~~4.3.1.8~~;
 - Subsection 10.3.2 ~~4.3.2~~ regarding Mitigation Ratio Guidelines;
 - Subsection 10.3.3 ~~4.3.3~~ regarding Mitigation Proposals;
 - Subsection 10.3.4 ~~4.3.4~~ regarding Monitoring Requirements for Mitigation Areas;
 - Subsection 10.3.5 ~~4.3.5~~ regarding Protection of Mitigation Areas;
 - Subsection 10.3.6 ~~4.3.6~~ regarding Mitigation Success; and
 - Subsection 10.3.7 ~~4.3.7~~ regarding Financial Responsibility for Mitigation;

The above Subsections are herein incorporated by reference through Rule 40E-2.091, F.A.C.

- B. Mitigation to offset the proposed harm shall be provided within the same drainage basin as the proposed harm, unless the applicant demonstrates that mitigation proposed outside of the drainage basin can fully offset the harm. Drainage basins, for purposes of this Subsection, are set forth in Figure 4.2.8-1 of the Applicant's Handbook Basis of Review for Environmental Resource Permit Applications, herein incorporated by reference.
- C. In determining whether mitigation proposed outside of the drainage basin fully offsets the harm, consideration shall be given to the effect on the values of the remaining wetland and other surface water functions within the drainage basin, if the harm is mitigated outside of the drainage basin.

3.3.7 Consideration of Elimination or Reduction, and Mitigation of Harm, for Consumptive Use Permit Renewals

In addition to the considerations in Subsections ~~Sections~~ 3.3.5 and 3.3.6, for renewal of a consumptive use permit, the determination of whether elimination or reduction, and

mitigation, will be required for impacts to wetlands or other surface waters not identified or expressly authorized to be impacted by the previous consumptive use permit, shall be made considering the following:

- A. The existing wetland and surface water functions;
- B. The degree to which the wetland or other surface water functions are reasonably expected to recover if the withdrawal is reduced or eliminated;
- C. The projected impacts on the existing functions of the wetlands or other surface waters from continuing the consumptive use;
- D. Whether the wetland or other surface water is connected by standing or flowing surface water to, or is part of, an OFW ~~Outstanding Florida Water~~, Aquatic Preserve, state park, or other publicly owned conservation land with significant ecological value; and
- E. As part of the fish and wildlife utilization considerations in Subsections A, B, and C, above, special consideration shall be given to whether the wetland or other surface water is used for resting, nesting, breeding, feeding or denning by listed species.

3.4 Saline Water Intrusion

A water use permit application will be denied if the application requests freshwater withdrawals that would cause harm to the water resources as a result of saline water intrusion. Harmful saline water intrusion occurs when:

- A. Withdrawals result in the further movement of a saline water interface to a greater distance inland toward a freshwater source except as a consequence of seasonal fluctuations; climatic conditions, such as drought; or operation of the Central and Southern Flood Control Project, secondary canal systems, or stormwater systems.
- B. Withdrawals result in the sustained upward movement of saline water. Sustained upward movement is the level of movement that persists when the withdrawals have ceased. When the saline interface occurs beneath the point of withdrawal, the maximum amount of pumpage from any well shall be constrained as follows:

$$Q = \frac{2\pi}{3} (b-l)^2 \frac{\Delta\rho}{\rho} K$$

Where: Q is the maximum safe yield of well

b is the thickness of fresh water

l is the distance between top of aquifer and well screen

p is the density of fresh water

$\Delta\rho$ is the change in density of fresh water

K is the hydraulic conductivity of the aquifer

In order to provide reasonable assurances that harmful saline water intrusion will not occur, the Applicant shall demonstrate that:

1. A groundwater divide (mound of fresh water) greater than one foot higher than the potentiometric head at the saline water source exists between the withdrawal point and the saline water source (defined by the location of the 250 mg/L \pm isochlor); or
2. A hydrologic analysis of groundwater flow demonstrates that there will be no further net inflow of groundwater from the saline water source toward the withdrawal point; except as a consequence of seasonal fluctuations; climatic conditions, such as drought; or operation of the Central and Southern Flood Control Project, secondary canal systems, or stormwater systems, or
3. Other evidence shows saline water intrusion will not cause harm to the wellfield and water resource, if pumpage is allowed or increased. Should the Applicant's proposed withdrawals occur in an area where the saline water interface is unstable (as demonstrated by increases in measured chloride concentration levels within the influence of the proposed use), the applicant shall determine the cause of the saline movement and the extent of future movement through the duration of the permit and shall demonstrate that the proposed withdrawal will not cause harmful saline intrusion through the duration of the permit.

3.4.1 Use of Saline Water

The District encourages the use of the lowest water quality suitable for the use intended, while also providing for the long-term protection of the water resources. The use of saline water is permitted by the District as a source of supply for all uses. The use of saline water may cause limited increases in salinity but not to the extent of interfering with any presently existing legal use of water, otherwise harming water resources, or rendering the resource no longer usable by the Permittee. In order to provide reasonable assurances that harmful increases in salinity will not occur in violation of this Subsection, the Applicant must demonstrate that:

- A. The quality of the proposed source will be adequate for the intended use throughout the duration of the permit;
- B. The proposed use will not cause harm to presently existing legal use of water as defined in Subsection Section 3.7; and
- C. The proposed use of water will not cause harm to freshwater sources that come in contact with saline water as a result of the proposed use. Under the following

conditions, the use of saline water will not be considered harmful to the receiving water body under this subsection:

1. The affected receiving water body is non-productive or low yielding in nature (hydrologic conductivity of less than 10 feet per day);
2. The saline source water will discharge directly to tide after use;
3. The saline source water will be diluted to less than 200 mg/L chloride concentration prior to use; or
4. The impacts of the saline water use are compatible with surrounding land uses.

Any use of saline water that comes into contact with fresh water as a result of the proposed use will require a detailed water quality monitoring program as a limiting condition of any permit issued. This rule is not intended to allow the District to consider disposal of concentrate resulting from desalination of saline water in determining compliance with the consumptive use permit conditions for issuance.

3.5 Pollution of the Water Resources

The issuance of a water use permit shall be denied if the withdrawals would cause significant degradation of surface or groundwater quality through the induced movement of pollutants into a water resource that is not polluted. Significant water quality degradation may result from altering the rate or direction of movement of pollutants, as evidenced by the predicted influence the water withdrawals would have on inducing movement of the pollutants or as indicated by a sustained increase in background levels in pollutant concentrations.

3.6 Existing Offsite Land Uses

Pursuant to Rule paragraph 40E-2.301(4)(b), F.A.C., a permit applicant must demonstrate that the proposed withdrawal will not cause harm to offsite land uses, as defined in this subsection Section. This subsection does not establish a property right in water; but prohibits harm from a consumptive use withdrawal to certain land uses that are dependent upon water being on or under the land surface based on the considerations set forth below.

Whether a particular offsite land use is considered under this Subsection Section depends on whether there is a reasonable expectation that water will continue to exist on or under the land surface. When determining whether there is a reasonable expectation in the occurrence of water for a particular offsite land use, the District will consider: (1) the historic natural and artificial hydrologic variations on the property; (2) the purpose and nature of the water or water source, such as surface water management or water quality treatment; and (3) the practicability of protecting the land use without supplementation (for example, restricting consumptive uses from impacting water levels in a cow pond versus supplementing water levels in the cow pond with

another water source). This Subsection is not intended to protect wetlands and other surface waters, which are protected against harm pursuant to Rule paragraph 40E-2.301(4)(c), F.A.C., and Subsection Section 3.3.

Only land uses that existed prior to the initiation of the consumptive use are protected under this Subsection. When a permit modification is considered under this Subsection, only the land use existing at that time of the pending application is considered. The responsibility to mitigate for harm to an offsite land use only extends to offsite land uses that predate the request for modification and only applies to harm projected to occur due to the requested modification. For permit renewals, the applicant is required to demonstrate that the allocation being renewed will not cause harm to land uses that existed at the time the allocation or portions of the allocation were first authorized either through an original permit or permit modification, consistent with the above provisions.

The following offsite land uses are protected from harm caused by a consumptive use withdrawal under this Subsection, when consistent with the considerations identified above:

- A. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged; not including aesthetic values. The designed function of a water body is that identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g., fill for construction, mining, or drainage canal).
- B. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or
- C. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

The applicant must identify those land uses that are potentially impacted from the withdrawal, such as sinkhole prone areas, seepage irrigated crop lands, and surface water management systems. The applicant must demonstrate that the resulting change in water levels related to the proposed consumptive use will not cause harm, as described above.

In order to receive protection under this rule, the impact on a land use must be the result of a consumptive use withdrawal. Impacts to land use can occur as a result of many different activities, such as drainage activities, reduced rainfall, regional trends, and other non-consumptive use related influences. Impacts from these non-consumptive use influences will not be protected or mitigated for under this Subsection. Sufficient technical and scientific proof of the cause and effect of the alleged land use impact must exist, demonstrating that associated consumptive use harms the offsite land use.

If the applicant cannot provide reasonable assurance that a proposed withdrawal will not harm an offsite land use, the applicant must submit a mitigation plan. The mitigation plan shall identify actions necessary to mitigate once the impact has occurred, or is imminent. Such actions must be sufficient to provide water consistent with the authorized use and will require a permit modification if required by Rule 40E-2.331, F.A.C. As necessary to offset the harm, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

The Permittee shall mitigate harm to offsite land uses that was caused in whole or in part by the permittee's withdrawals, consistent with the approved mitigation plan. The mitigation plan will require a permittee to mitigate immediately, or upon the actual occurrence of harm. The determination of when mitigation is required is based upon the likelihood that the harm is projected to occur.

3.7 Interference with Existing Legal Users

To obtain a water use permit the applicant must provide reasonable assurance that it will not interfere with any existing legal use of water, pursuant to Section 373.223(1)(b), F.S. In general, a permit applicant must provide reasonable assurances that the proposed withdrawal of water, together with other exempt or permitted withdrawals within the cone of influence of the proposed withdrawal, will not result in interference with existing legal uses.

3.7.1 Definition of "Existing Legal Use"

The determination of whether a water use is an existing legal use in the relation to the proposed withdrawal must be made under this analysis. Existing legal uses are protected from interference from other existing legal uses established subsequent to the establishment of the existing legal use. An existing legal use is defined by the terms and limiting conditions of the permit authorizing the withdrawal, if any. A use of water not permitted nor exempt pursuant to Part II of Chapter 373, F.S., is not an existing legal use.

The following criteria describe application of the existing legal use protection when permit modifications or renewals occur:

- A. When a permit modification is considered under this rule, only the existing legal uses existing at that time of the pending application are considered existing legal uses. The responsibility to mitigate for interference to an existing legal use only extends to interference to existing legal uses that predate such request and only applies to impacts that occur due to the requested modification.
- B. For permit renewals, the applicant is required to demonstrate that the allocation being renewed will not interfere with existing legal uses that existed at the time the allocation, or portions of the allocation, were first authorized either through an original permit or permit modification, consistent with the above provisions.

- C. Individual uses served by a permitted diversion and impoundment permit, are considered to be existing legal uses for purposes of this rule. However, interruption of service to uses served by a diversion and impoundment project, when such interruption is due to project operations of the diversion and impoundment project, shall not be considered interference under this Subsection.

3.7.2 Definition of Interference with Existing Legal Use

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1-in-10 year drought event that results in the:

- A. Inability to withdraw water consistent with provisions of the permit or exempt use, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference;
- B. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or when such change is imminent; or
- C. Inability of an existing legal user to meet its permitted demands without exceeding the permitted allocation.
- D. If the proposed use is an ASR system, an applicant shall identify all existing legal uses within the area of influence and provide reasonable assurance that the operation of the proposed ASR system will not cause interference per the criteria contained in Subsection Section 3.7 and Subsection 3.10.

3.7.3 Mitigation Requirements for Interference with Existing Legal Uses

If the permit applicant cannot provide reasonable assurance that a proposed withdrawal will not interfere with existing legal uses, the applicant must submit a mitigation plan. The mitigation plan shall identify actions necessary to mitigate for interference once the impact has occurred, or is imminent. Such actions must be sufficient to provide water consistent with the authorized use and will require a permit modification if required by Rule 40E-2.331, F.A.C. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Once the permit is issued, the pPermittee shall mitigate interference with existing legal uses that was caused in whole or in part by the permittee's withdrawals, consistent with the approved mitigation plan. The mitigation plan will require a permittee to mitigate immediately, or upon the actual occurrence of an interference. The determination of when mitigation is required is based upon the likelihood that the interference is projected to occur.

3.8 Otherwise Harmful

The issuance of a permit shall be denied if the withdrawal or use of water would otherwise be harmful to the water resources.

3.9 Minimum Flows and Levels

Applications for consumptive use permits for water uses that directly or indirectly withdraw water from MFL water bodies must meet the criteria in this Subsection, in addition to all other conditions for permit issuance in Chapters 40E-2, F.A.C. or 40E-20, as applicable. Applications that meet the criteria contained in this Subsection are considered to comply with Rule paragraph 40E-2.301(1)(I), F.A.C. Consumptive use permit applications shall be reviewed based on the recovery or prevention strategy approved at the time of permit application review.

3.9.1 Evaluations for MFL Water Bodies Subject to a Recovery Strategy

Evaluations for direct or indirect withdrawals from MFL water bodies that are subject to a recovery strategy:

- A. Permit Renewals: A request for renewal of an existing permitted allocation, which directly or indirectly withdraws water from a MFL water body, shall meet the requirements of this Subsection if: (1) the impact of the withdrawal of water will be corrected through implementation of a recovery strategy; and (2) the level of impacts from the allocation approved in the expiring permit are no greater under the requested renewal.

If the level of certainty under the expiring permit is changed to a 1-in-10 year level of certainty by rule (e.g. a golf course irrigation level of certainty changed from a 1-in-5 to a 1-in-10 year level of drought) the levels of impact from the withdrawal of water under the expiring permit shall be normalized to a 1-in-10 drought level of certainty in order to evaluate the impact of the withdrawal of water.

- B. New or Modified Permits – Direct Withdrawals:- A request for a new or increased permit allocation which directly withdraws water from a MFL water body, shall meet the requirements of this Subsection, if:
1. Sufficient additional water has been made available for the new or increased portion of the requested allocation via certification of a project or project phase of the recovery strategies, as certified by the District, pursuant to paragraph 40E-8.421(1)(e), F.A.C. Water made available from a certified project or project phase of a recovery strategy for new or increased uses will be allocated based on the criteria in the Applicant's Handbook and Chapter 40E-2 or 40E-20, F.A.C.; or
 2. The request incorporates a District approved alternative measure or source that prevents additional impacts to the MFL water body from the new or increased portion of the requested allocation. An example of an acceptable alternative measure is an aquifer storage and recovery system, which stores excess water during the wet season in order to minimize new or increased withdrawals during the dry season. The permit conditions shall require the District approved alternative measure or

source to be operating or otherwise available concurrently with the new or increased use.

- C. New or Modified Permits – Indirect Withdrawals: - A request for a new or increased permit allocation which indirectly withdraws water from a MFL water body, shall meet the requirements of this Subsection, if the new or increased use is consistent with the recovery strategy as delineated in the applicable regional water supply plan.

3.9.2 Evaluations for MFL Water Bodies Subject to a Prevention Strategy

Evaluations for direct or indirect withdrawals from MFL water bodies that are subject to a prevention strategy:

- A. Permit Renewals: - A request for renewal of an existing permitted allocation that directly or indirectly withdraws water from a MFL water body shall meet the requirements of this Subsection if the level of impacts from the allocation approved in the expiring permit are no greater under the requested renewal. If the level of certainty under the expiring permit is changed to a 1-in-10 year level of certainty by rule (e.g. a golf course irrigation level of certainty changed from a 1 in 5 to a 1-in-10 year level of drought) the levels of impact from the withdrawal of water under the expiring permit shall be normalized to a 1-in-10 drought level of certainty in order to evaluate the impact of the withdrawal of water.
- B. New or Modified Permits: - A request for a new or increased permit allocation that directly or indirectly withdraws water from a MFL water body, shall meet the requirements of this Subsection if the request is consistent with the prevention strategy(ies) as delineated in the applicable regional water supply plan.

3.9.3 Maximum Developable Limits

Reasonable assurances shall be provided that the proposed use shall not cause harmful drawdowns so as to mine semi-confined freshwater aquifers on the Lower West Coast. The potentiometric head within the Lower Tamiami aquifer, Sandstone aquifer and mid-Hawthorn aquifer shall not be allowed to drop to less than 20 feet above the top of the uppermost geologic strata that comprises the aquifer at any point during a 1-in-10 drought condition. This criteria must be met except in areas closer than 50 feet from any existing pumping well. Reasonable assurances shall consider actual measured water level data for the affected area for the most recent 1-in-10 drought condition combined with the calculated drawdowns for all permits issued since that drought located within the area of influence of the requested allocation combined with the requested allocation.

3.10 Aquifer Storage and Recovery Systems

Applicants for ~~Aquifer Storage and Recovery (ASR)~~ systems authorized per Rule 40E-5.041, F.A.C., shall demonstrate the provisions of Rule 40E-2.301, F.A.C., are met during: a) diversion of the water for storage; b) the time period in which the water is introduced into an aquifer for storage and stored within the aquifer; and, c) recovery of

the stored water. Unless otherwise noted in Subsection 2.3.2.G or below, the criteria used to demonstrate that the provisions of Rule 40E-2.301, F.A.C., are met are contained in applicable Subsections of the Applicant's Handbook.

The applicant shall demonstrate that the diversion of water for storage in an ASR system shall not cause harm to the water resource as outlined in Rule subsection 40E-2.301(4), F.A.C., during the wet and dry seasons. As part of this demonstration, the applicant shall provide reasonable assurances that the wet season demands for the ASR diversions do not cause harm to wetlands and other surface waters or harmful saline water intrusion. The applicant shall identify the area of influence based on the volume of water calculated under Subsection 2.3.2.G A., above. The area of influence of an ASR system shall address two factors: 1) the area affected by the pressure change resulting from the injection and removal of stored water; and, 2) the orientation of the stored fresh water and associated buffer zone. The applicant shall identify all existing legal uses within the area of influence and provide reasonable assurance that the operation of the proposed ASR system will not cause interference per the criteria contained in Subsection Section 3.7.

An ASR monitoring program will be required in the event there is a potential for interference with an existing legal user or harm to the water resources as described in Section 4.0.

3.11 Water Reservations

3.11.1 Picayune Strand and Fakahatchee Estuary

A permit applicant shall provide reasonable assurances that the proposed use will not withdraw water reserved under Subsections 40E-10.041 (1) and (2), F.A.C., except that water uses less than 100,000 gallons per day associated with land management or public access/recreation shall be permissible. Compliance with the following criteria constitutes reasonable assurances that water reserved in Rules 40E-10.041 (1) and (2), F.A.C., will not be withdrawn. Water not reserved under Rules 40E-10.041 (1) and (2), F.A.C., shall be allocated pursuant to Subsections A and B, below.

For this Subsection, the following definitions apply:

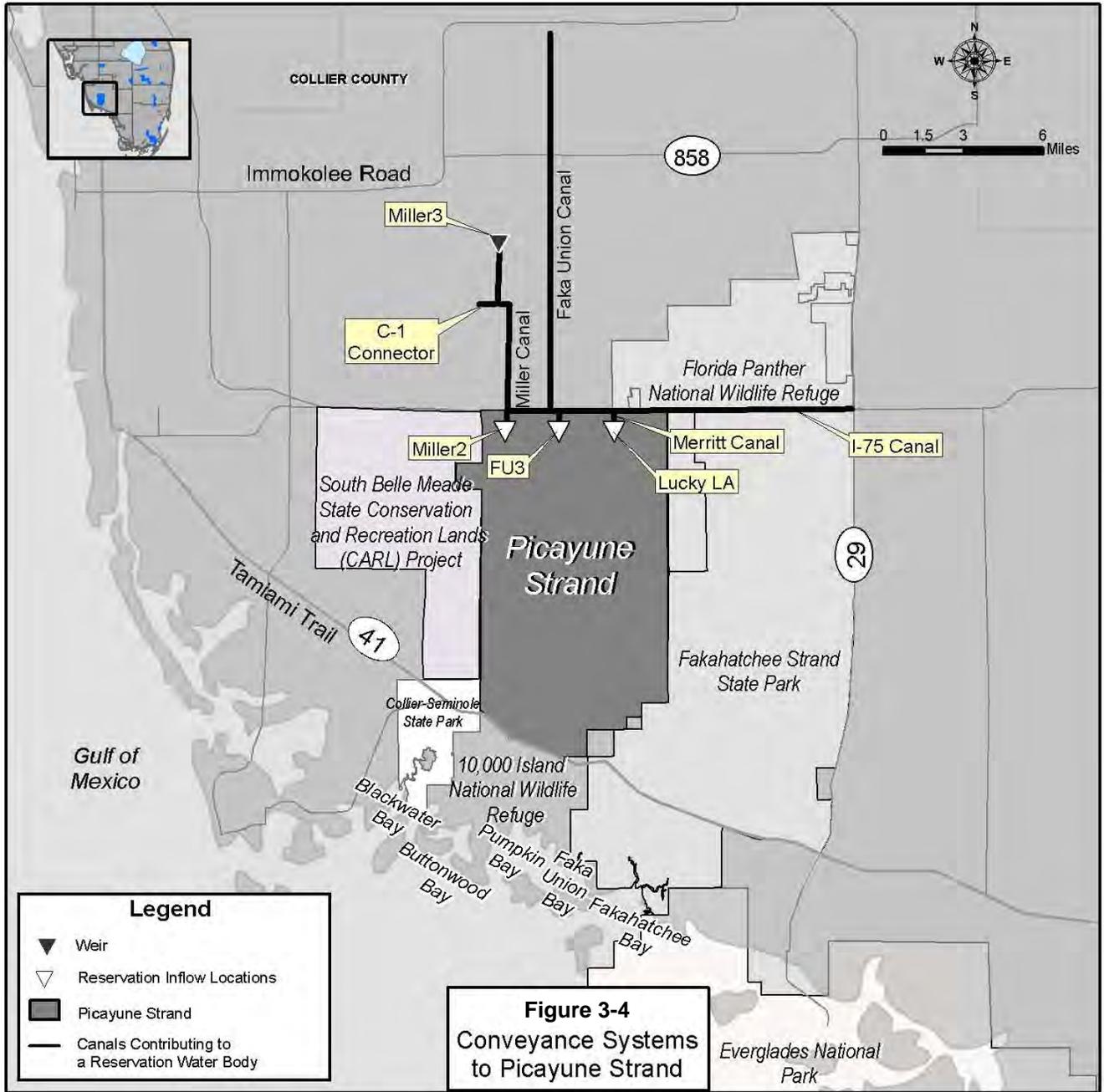
Direct Withdrawals from Groundwater: Water pumped from a well(s) constructed within the boundaries of the Picayune Strand or Fakahatchee Estuary into the water table or unconfined portions of the Lower Tamiami aquifer.

Indirect Withdrawals from Groundwater: a) a groundwater withdrawal from a well(s) constructed outside the boundaries of Picayune Strand and Fakahatchee Estuary into the water table or Lower Tamiami aquifer that results in a 0.1 foot or greater drawdown in the water table aquifer at any location underlying the Picayune Strand or the Fakahatchee Estuary, as determined by an evaluation conducted pursuant to Subsection Section 3.1.2.A 4.7.5.2.A.; or b) a groundwater withdrawal that causes a water table drawdown of 0.1 foot or

greater underlying any canal identified in Figure 3-4 3-6, as determined by an evaluation conducted pursuant to Subsection Section 3.1.2.A 4.7.5.2.A.

Direct Withdrawals from Surface Water: Withdrawal of surface water from facilities physically located within the Picayune Strand or Fakahatchee Estuary boundaries.

Indirect Withdrawal from Surface Water: Withdrawal of surface water from any canal identified in Figure 3-4 3-6.



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- A. The following uses do not withdraw reserved water:
1. Withdrawals from the Sandstone aquifer, Mid-Hawthorn aquifer or the Floridan Aquifer Systems;
 2. Withdrawals authorized by subsection ~~40E-2.061(2)~~ ~~40E-20.302(3)~~, F.A.C. (General Permit by Rule for No-Notice Short-Term Dewatering General Water Use Permit);
 3. A renewal of a water use authorized by a permit existing on July 2, 2009. If the level of certainty under the permit being renewed is changed to a 1-in-10 year level of certainty pursuant to Subsection Section 2.3.1.C 2.3.2 (e.g., a golf course irrigation level of certainty changed from a 1 in 5 to a 1-in-10 year level of drought), the resulting 1-in-10 year allocation shall be authorized;
 4. A permit modification that does not change the source, increase the allocation or change withdrawal locations, such as replacement of existing wells with similar construction and at similar locations, crop changes that do not change the allocation or timing of use, or decrease in allocation;
 5. A permit modification that does not result in a direct or indirect withdrawal as demonstrated through an analysis conducted consistent with Subsection Section 3.1.2.A 4.7.5.2.A. When a modification to an existing permit is requested, the 0.1 foot threshold for determining a direct or indirect withdrawal will be applied to the effect of the modification only. The change in the drawdown solely associated with the applicant's proposed modification is calculated at the location of the 0.1 foot drawdown contour associated with the existing permit. If the change in drawdown associated with the proposed modification is less than 0.1 foot, the applicant's modification does not withdraw reserved water;
 6. A proposed new use that does not result in a direct or indirect withdrawal as demonstrated through an analysis conducted pursuant to Subsection Section 3.1.2.A 4.7.5.2.A.
 7. A proposed new use with a direct or indirect withdrawal and no greater impact, including changes in timing, on a reservation water body than the terminated or reduced permit existing on July 2, 2009 within the same project site. This evaluation will be conducted pursuant to Subsection Section 3.1.2 4.7.5.2.
 8. A proposed new use or proposed modification of a permit with an indirect withdrawal that does not withdraw reserved water from the Picayune

Strand or the Fakahatchee Estuary. The determination that reserved water is not withdrawn shall be demonstrated by conducting the Model Impact Evaluation in Subsection 3.11.1.B, below.

- B. Model Impact Evaluation. If required by Subsection 3.11.1.A, above, the applicant shall demonstrate water reserved for the Picayune Strand and Fakahatchee Estuary will not be withdrawn by conducting the following Model Impact Evaluation. A pre-application meeting between the Applicant and District staff is strongly recommended to be conducted prior to initiating model development.
1. Defining Scope of Model Evaluation:
 - a. For groundwater withdrawals, identify the cone of influence of the proposed withdrawal per Subsection Section 3.1.2.A ~~4.7.5.2.A~~. Based on this analysis, the aApplicant shall identify which reservation inflow locations (set forth in Figures 1 and 2 in Rule 40E-10.021, F.A.C.) and conveyance system(s) identified on Figure 3-4 ~~3-6~~ are potentially influenced by the proposed withdrawal.
 - b. For surface water withdrawals, identify the reservation inflow locations, reservation water body (set forth in Figures 1 and 2 in Rule 40E-10.021, F.A.C.), and conveyance system(s) identified on Figure 3-4 ~~3-6~~ that are potentially influenced by the proposed withdrawal.
 2. Conditions of Model Development:
 - a. Boundary Conditions: The model domain and resolution of grid cell size shall be identified using professional standards for model development considering the area of influence, while avoiding boundary condition biases. At a minimum, boundaries shall be situated sufficiently distant from the area of interest or in such a manner as to prevent non-representative impacts from specified boundary conditions on predicted stages and/or flow in the area of interest.
 - b. Surface and groundwater interactions: Surface and groundwater model codes that have undergone professional peer review and are representative of the physical system being simulated shall be used. Where integrated surface water and groundwater models are applied, time steps will be selected with consideration given to the resolution of the available data and the resolution necessary for quantifying flow volumes. Surface waters and overland flow time steps not exceeding 4 hours in length, canal flows time steps not exceeding 3 minutes, and groundwater time steps not exceeding 6

hours in length shall be considered acceptable. Alternative time steps may be used providing they produce an acceptable calibration as described in Subsection Section 3.11.1.B.2.f ~~3.11.1.B.2(f)~~. For the purposes of model calibration, the time steps used for simulating stages shall be averaged and flows shall be summed to produce daily values for comparison to measured data.

- c. Hydrologic Conditions: Rainfall and evapotranspiration shall be simulated based on data collected from 1988 through 2000 for the model domain.
- d. Land Use/Water Use: The model shall simulate 2000 land use existing on December 31, 2000 within the model domain (as identified in Subsection 3.11.1.B.2.(a), above). The consumptive use withdrawal data used for the model calibration shall reflect actual use during the period of 1988 through 2000. In the case of irrigation type uses, a supplemental crop irrigation module from the model code selected per Subsection 3.11.1.B.2.(b) shall be acceptable for calculating variable demands.
- e. Project Features and Operations: Model simulations shall include project features and operations of the Picayune Strand Restoration Project utilized to simulate the flows identified in Rule 40E-10.041, F.A.C.
- f. Model Calibration: To calibrate the model, the model output shall be compared to the affected flow probability distribution(s) in Rule 40E-10.041 and surface water, groundwater stage, and flow data from monitoring sites located within the model domain. The model shall be considered calibrated when surface water and groundwater stage and flow are calibrated as required by Subsections (i.), (ii.) and (iii.), below, and the resulting flow probability distribution curves from the Applicant's model are consistent with the magnitude and timing of flows in the flow probability distribution curves identified in Rule 40E-10.041, F.A.C., for the time period including 1988 through 2000. In the event that the simulated model output for a monitoring site(s) or the flow probability distribution(s) does not meet these criteria, the Applicant shall provide a justification of the deviation. If such justification adheres to documented physical conditions in the field and comports with professionally accepted principles of hydrology, the monitoring sites or flow probability distribution(s) that do not meet the criteria shall be accepted.
- i. Groundwater Stage Data: The mean error determined by comparing the model calculated groundwater stage as described in Subsection 3.11.1.B.2.(b) with the

- corresponding measured data shall not exceed 1.0 foot for the time period including January 1, 1995 through December 31, 1999. If the mean error is exceeded at a monitoring location, the groundwater calibration shall be considered acceptable when the absolute mean error of all the groundwater monitoring locations within the model domain do not exceed 1.0 foot and the deviation between the model simulation value and the measured value is explained as set forth in Subsection 3.11.1.B.2.(f).
- ii. Canal Stage Data: The average mean error determined by comparing the model simulated surface water stages as described in Subsection 3.11.1.B.2.(b) with the corresponding measured data should not exceed 0.3 foot for the time period including January 1, 1995 through December 31, 1999.
 - iii. Flow Data: The mean error determined by comparing the model simulated surface water flow as described in Subsection 3.11.1.B.2.(b) with the corresponding measured data shall not exceed ten percent for the time period including January 1, 1995 through December 31, 1999.
3. Impact Evaluation: Once the model is calibrated, applicants shall demonstrate that water reserved for the Picayune Strand and Fakahatchee Estuary will not be withdrawn, based on the following:
- a. "Without scenario": All existing legal uses at the effective date of the rule shall be represented using the allocation in the permit. For the purposes of this evaluation and Subsection (b) the annual allocation shall be distributed on a monthly basis based on the use type. For a public water supply use type, the monthly distribution shall be calculated based on the measured monthly pumpage divided by the annual total pumpage using the average of the three most recent representative years. Representative years shall not include years with water shortage restrictions, years with plant failures or other years that are not representative of normal pumpage. For an irrigation use type, the monthly distribution shall be determined using the Blaney-Criddle distribution calculated for each project pursuant to "Part B Water Use Management System Design and Evaluation Aids" of the Volume III, Permit Information Manual for Water Use Applications referenced in the "Applicant's Handbook ~~Basis of Review~~ for Water Use Permit Applications within the South Florida Water Management District", which is incorporated by reference in Rule 40E-2.091, F.A.C., the annual allocation and the associated monthly distribution shall be

- simulated using the calibrated model developed in accordance with the criteria identified in Subsection 3.11.1.B.2 in order to generate a daily flow data for each represented inflow location identified in Subsection 3.11.1. These data shall be presented as daily hydrographs as well as seasonal and period of record flow probability curves.
- b. "With Scenario": The "with scenario" includes all existing legal uses at the time of the evaluation of the application and the proposed use and pending applications for which the evaluation under this subsection is being conducted. The annual allocation and the associated monthly distribution shall be simulated using the calibrated model developed in accordance with the criteria identified in Subsection 3.11.1.B.2 in order to generate a daily flow data for each represented inflow location identified in Subsection 3.11.1. These data shall be presented as daily hydrographs as well as seasonal and period of record flow probability curves.
 - c. The resulting flow volume distributions of the "with" and "without" scenarios shall be compared to determine whether the proposed use withdraws reserved water. Withdrawals of reserved water occur when the simulated flow volume probability curve(s) of the "with scenario" differs in flow distribution when compared to the "without scenario" at any of the inflow locations identified in Subsection 3.11.1.B.1.
4. Alternative Model Evaluations: Applicants may propose alternative modeling evaluations in order to provide reasonable assurances that the proposed project does not withdraw water reserved under Rule 40E-10.041, F.A.C. Such modeling shall evaluate the impacts of the proposed project on the reservation water body under a representative range of hydrologic conditions for which the water reservations have been established (e.g. wet, average, dry hydrologic conditions). Proposed alternative modeling evaluations shall be submitted in writing to the District for review and comment prior to conducting such modeling either in a pre-application meeting or as part of the permit application. District staff shall approve those model approaches which utilize documented model codes that have undergone professional peer review and accurately represent the physical system; are calibrated consistent with the criteria contained in Subsection 3.11.1.B.2, i., ii., and iii. or other appropriate criteria; accurately represents impacts to inflows of reserved water into the reservation water body as described in Rule 40E-10.041 F.A.C.; and represents existing legal uses and the proposed project withdrawals.
 5. Reduced or Terminated Permit Impacts: If an existing legal use at the effective date of the rule has been reduced or terminated and results in

increased inflows that result from the reduced or terminated use into the reservation water body, the applicant may seek an allocation that withdraws such increased inflows at any of the inflow locations identified in Subsection 3.11.1.B.1. provided that the waters reserved in Rule 40E-10.041, F.A.C. are not reduced as demonstrated through an analysis conducted pursuant to Subsection 3.11.1.B.3- or 4- The quantity of increased inflow shall be available for allocation unless the Governing Board determines that allocation of the water is not consistent with the public interest under Section 373.223(1)(c), F.S.

In the event these criteria cannot be met, the applicant shall modify the application to otherwise meet the requirements of this Subsection.

3.11.2 North Fork of the St. Lucie River

The North Fork of the St. Lucie River water reservation, as stated in Rule 40E-10.051, F.A.C., protects Comprehensive Everglades Restoration Plan project water needed for protection of fish and wildlife within the North Fork of the St. Lucie River. Applications deemed complete prior to the conditions identified in Subsection 40E-10.051(1), F.A.C., and which otherwise satisfy the requirements of Chapter 40E-2 or ~~Chapter 40E-20~~, F.A.C., as applicable, are determined not to use the water reserved pursuant to Rule 40E-10.051, F.A.C.

3.11.3 Nearshore Central Biscayne Bay

A permit applicant shall provide reasonable assurances that the proposed use will not withdraw water reserved under subsection 40E-10.061(1), F.A.C. Compliance with the following criteria constitutes reasonable assurances that water reserved in Rule 40E-10.061, F.A.C., will not be withdrawn. Water not reserved under Rule 40E-10.061, F.A.C., shall be allocated pursuant to Subsection A.

For this section, the following definitions apply:

Direct withdrawal: Withdrawal of surface water from facility intakes physically located within the surface water column of Nearshore Central Biscayne Bay as depicted on Figure 3-1 in Chapter 40E-10, F.A.C. No direct withdrawals shall be authorized pursuant to this rule.

Indirect withdrawal: Withdrawal of surface water from facility intakes physically located within the surface water column of any canal reach identified in Figure 3-1 in Chapter 40E-10, F.A.C.

The following uses do not withdraw reserved water:

- A. Withdrawals of groundwater; ~~and~~
- B. Withdrawals authorized by Rules 40E-2.061, F.A.C. (~~No Notice General Permits by Rule~~), and dewatering operations that 1) will not exceed a maximum of ten

(10) mgd, with a maximum of eighteen hundred (1800) mg total pumpage, and 2) will not exceed a total duration of one year for the entire project; 40E-20.302(2) and (3), F.A.C. (Dewatering General Water Use Permit and No-Notice Short Term Dewatering General Water Use Permit)

- C. Renewals of indirect withdrawals authorized by a permit existing on July 21, 2013; -
- D. A permit modification involving an Indirect withdrawal authorized by a permit existing on July 21, 2013 that does not change the source, increase the allocation or change withdrawal locations, such as replacement of existing surface water pumps or intakes, crop changes that do not change the allocation or timing of use, or decrease in allocation; -
- E. A new indirect withdrawal with no greater allocation and impact, including changes in timing, than a terminated or reduced permit that was existing on July 21, 2013 and occurs upstream of the same coastal structure; and, -
- F. Indirect withdrawals which do not withdraw reserved water as defined in Rule 40E-10.061, F.A.C.

4.0 MONITORING REQUIREMENTS

To ensure continuing compliance with the conditions of permit issuance, monitoring and reporting activities shall be required as special limiting conditions of the permit pursuant to Section 5.0. The details of all required monitoring plans shall be submitted by the aApplicant for District review and approval as part of the water use permit application and shall be a condition of permit issuance. The permit will require implementation of the approved monitoring programs.

4.1 Withdrawal Quantity

The following subsections identify withdrawal quantity monitoring requirements for withdrawal facilities within the District.

4.1.1 **Water Flow Monitoring and Calibration**

Proper accounting for water use is essential to establish that the use is a reasonable-beneficial use of the resource and in the public interest. In addition, proper accounting of the various water uses enables the District to better estimate water use and to implement water shortage plans.

All permittees with an average daily maximum monthly allocation of greater than 100,000 ~~3.0 million~~ gallons, or irrigation water users located within the South Dade County Water Use Basin (as designated in Figure 21-11, Chapter 40E-21, F.A.C.) with an average daily maximum monthly allocation of greater than 300,000 ~~15.0 million~~ gallons, are required to monitor and report withdrawal quantities from each withdrawal facility or point of diversion.

If applicable, pPermittees shall submit Form No. 1378, Water Use Pumpage Report Form and Form No. 1389, Crop (Freeze) Protection Form, incorporated by reference in paragraphs 40E-2.091(2)(b) and (a), F.A.C) following forms, if applicable, electronically or at the address provided on the form. forms: Alternatively, the permittee may submit documentation with the information required by Water Use Pumpage Report Form.

- ~~0188-QMQ, Quarterly Report of Withdrawals, incorporated by reference in Subsection 40E-2.091(1), F.A.C.;~~
- ~~0188-QASR, Quarterly Report of Injections and Withdrawals for Aquifer Storage and Recovery (ASR) Wells, incorporated by reference in Subsection 40E-2.091(2), F.A.C.;~~
- ~~0188-QMQF, Quarterly Report of Withdrawals from Wells and Surface Water Pumps, incorporated by reference in Subsection 40E-2.091(3), F.A.C.;~~
- ~~0188-QBWDR, Quarterly Report of Bulk Water Delivered and Received, incorporated by reference in Subsection 40E-2.091(4), F.A.C.~~

A reliable, repeatable water use accounting system must be identified to monitor water usage from all withdrawal facilities, in accordance with permit conditions. The District considers a reliable water use accounting method to be accurate within +/- 10 percent of the actual flow. For pumped systems, acceptable water use accounting systems include flowmeters, or clocks which totalize pump operation. For gravity flow systems, acceptable methods include the use of rated water control structures. Water control structure rating curves certified by a professional engineer shall be submitted at the time of permit application and updated at a minimum of the five years as required in the permit limiting conditions. Rating curves for water control structures shall consider multiple headwater/tailwater conditions indicative of their site specific conditions. Irrigation quantities will be calculated based on the measured headwater/tailwater conditions to the water control structure rating curves and submitted to the District at the frequency specified in the permit limiting conditions.

Permit applicants must submit documentation of the water use accounting method and calibration method as a part of the permit application. Prior to the use of any authorized facility, the approved water use accounting method must be operating and the initial calibration submitted to the District. Recalibration results for the water use accounting method shall be submitted to the District every five years from permit issuance.

If applicable, pPermittees shall submit the following forms, incorporated by reference in Subsection 40E-2.091(2)(f) and (g), F.A.C., electronically or at the address provided on the forms:

| <u>Form No.</u> | <u>Form Title</u> |
|-----------------|--|
| 1387 | <u>Flow Meter Accuracy Calibration Report Form</u> |
| 1388 | <u>Alternative Method Calibration Report Form</u> |

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Alternatively, the permittee may submit documentation containing the information required by above-listed forms.

Withdrawal quantities for each permitted withdrawal facility shall be calculated monthly and reported to the District ~~semi-annually~~ quarterly, unless otherwise conditioned on a greater frequency due to the potential for resource harm. Permittees, whose full demands are met through a combination of their own withdrawals or other sources, such as reclaimed water or water sales agreements, shall report the monthly totals supplied from sources other than their own withdrawals, unless the use of those sources are reported to another state agency, in which case the District shall obtain the water use information from said agency.

For special districts with withdrawal facilities that supply several individual users, such as diversion and impoundment systems and sub-basins within the Everglades Agricultural Area Water Use Basin which collectively derive their water supply from District operated structures, the water use shall be monitored at the primary withdrawal facilities. Individual surface water users within such systems do not need to submit individual pumpage reports, unless otherwise required by a water shortage order or as a part of a District permit compliance action.

The District advises diversion and impoundment permit applicants and surface water users within such systems that retaining accurate records of the types of crops, irrigated acreage, and duration of irrigation of such crops is relevant information for assessing system efficiency. In the event the District determines the diversion and impoundment system is inefficiently using water, then the District, at a minimum, will require the diversion and impoundment system or surface water users within such systems, as appropriate, to implement additional monitoring and conservation measures. Inefficient use of water by a diversion and impoundment permittee includes consideration of such factors as withdrawals in excess of the permit conditions in a drought condition less severe than a 1-in-10 year drought event and use of water in excess of that quantity of water calculated pursuant to Subsection Section 2.3.2.C. Such additional measures could include internal surface water quantity withdrawal monitoring or irrigation system efficiency assessment by a mobile irrigation lab.

For those special districts in which water is passed through the project, the permittee may be required to report the volumes of water that flow out of the project if necessary to quantify the water consumed by the project.

4.1.2 Water Loss

The implementation of leak detection programs by utilities with unaccounted-for water losses of greater than 10% is required. Such leak detection program must include water auditing procedures, in-field leak detection efforts and leak repair. The program description should include the number of man-hours devoted to leak detection, the type of leak detection equipment being used and an accounting of the water saved through leak detection and repair. It is the policy of the District to encourage public water supply systems to have no more than 10% unaccounted-for water losses.

4.2 Water Quality

The following subsections identify water quality monitoring requirements within the District.

4.2.1 Saline Water Monitoring

The purpose of saline water monitoring is to ensure that harmful saline water intrusion, whether lateral from a surface or groundwater saline source, vertical from an aquifer containing lower quality water, or a combination of both, does not occur. Saline water monitoring is accomplished by routine sampling of the discharge water from production wells or from separate monitor wells. However, in areas of known saline water movement, separate monitor wells are required to be designed and constructed expressly for the purpose of saline water intrusion monitoring. The dissolved chloride concentration and the water level elevation, referenced to NGVD 1929 National Geodetic Vertical Datum shall be measured. Frequency of measurements may be weekly, monthly, or quarterly, and will be identified in the permit limiting conditions. The data shall be reported using Form No. 1377, Water Quality Report Form 0188-QMON, Quarterly Report of Monitoring Requirements, incorporated by reference in paragraph Subsection 40E-2.091(2)(c)(5), F.A.C. Alternatively, the permittee may submit documentation containing the information required by the Water Quality Report Form.

Applicants shall submit a saline water monitoring program for review and approval when:

- A. The withdrawal facility is within one mile of a brackish or saltwater body, including canals and tidal creeks;
- B. The withdrawal facility is located seaward of the 250 mg/L chloride line mapped at the base of the aquifer or located seaward of a line between two adjacent salinity control structures;
- C. The land on which the withdrawal facility is located is between the Intracoastal Waterway and the Atlantic Ocean; between a tidal creek and the Atlantic Ocean; between a tidal creek and the Gulf of Mexico; or between the Intracoastal Waterway and the Gulf of Mexico;
- D. Saline water is located either above or below the producing zone;
- E. A history of saline water intrusion or increasing chloride concentrations exists for either groundwater or surface water in the vicinity of the withdrawal facility;
- F. Staff evaluation indicates that, at projected withdrawal rates, saline water intrusion may occur to the extent that the existing treatment process will no longer be capable of producing potable water;

- G. Staff evaluation indicates that, at projected withdrawal rates, saline water intrusion may occur in neighboring withdrawal facilities; or
- H. Staff evaluation indicates saline water may come in contact with a fresh water source as a result of the proposed use.

Guidelines for establishing a saline water monitoring program, as well as sampling, sample handling, and analysis guidelines, are available from the District.

4.2.2 Pollution Source Monitoring

The purpose of pollution source monitoring is to ensure withdrawals do not cause harmful movement of contaminants in violation of state water quality standards. Movement of contaminants consistent with a state approved remediation plan is not considered harmful. In order to effectively monitor a pollution source, separate monitor wells must be installed and monitored to evaluate withdrawal effects on movement of the pollution. The Applicant shall submit a pollution source monitoring program identifying chemical constituents, monitoring frequencies, and well construction details and locations to the District for review and approval when the project's withdrawals have the potential for a direct influence on a contaminant plume.

4.3 Hydrologic and Ecologic Monitoring

The following subsections identify hydrologic and ecologic monitoring requirements that are deemed necessary to ensure wetlands and other surface waters, offsite land uses, existing legal users, and the water resources of the District are not harmed by the withdrawal.

4.3.1 Water Level Monitoring

The purpose of water level monitoring programs is to ensure existing legal uses, offsite land use, and water resources, are not harmed by lowered water levels. Applicants shall submit a water level monitoring program to the District for review and approval when:

- A. A saline water monitoring program or a pollution source monitoring program is required (see Subsections Sections 4.2.1 and 4.2.2 4.3);
- B. A wetland hydrobiologic monitoring program is required (see Subsection Section 4.3.2 4.5); or,
- C. Uncertainty in computer modeling or data exists to define the drawdown resulting from withdrawals from groundwater or surface water sources and to ensure that existing legal uses, offsite land use, water resources, and wetland and surface water functions are not harmed by withdrawals.

4.3.2 Wetland and Other Surface Waters Monitoring

Wetland monitoring shall be required to ensure that harm to wetland and other surface waters does not occur. Monitoring shall consist of various types of data collection, such as groundwater and surface water levels, surface water quality, biological parameters,

ground and aerial photography, rainfall, pumpage, and land cover assessments. Guidelines for establishing a wetland hydrobiologic monitoring program are available from the District. The Applicant shall submit a wetland hydrobiologic monitoring program to the District for review and approval when:

The impacts of the proposed use, either individually or cumulatively with other permitted users, produces drawdowns approaching the applicable drawdown criteria in Subsection Section 3.3.

4.3.3 Aquifer Storage and Recovery Systems Monitoring

An ASR monitoring program will be required in the event there is a potential for interference with an existing legal user or harm to the water resources. Such a monitoring program will include monitor well(s) to measure aquifer pressure and water quality. In addition, the quantity of water that is stored and recovered shall be monitored and reported for permitted ASR systems.

4.4 Compliance Reports

Except for permits issued pursuant to subsection 373.236(6), F.S., permits issued for a duration of 20 years or longer shall require submittal of a compliance report under subsection 373.236(4), F.S., once every ten years, when necessary to maintain reasonable assurances that the conditions for issuance can continue to be met. Permits issued for greater than 20 years pursuant to subsection 373.236(6), F.S. shall require submittal of a compliance report once every five years. The report shall include sufficient information to maintain reasonable assurance that the permittee's use can continue, for the remaining duration of the permit, to meet the conditions for issuance set forth in the rules existing when the District issued the permit.

In accordance with subsection 373.236(4), F.S., after reviewing this report, the District will modify the permit if required to ensure that the use of water authorized by the permit can continue to meet the conditions for issuance set forth in the rules existing when the District issued the permit. As required by Sections 120.569 and 120.60, F.S., the District shall provide notice of intent to modify the permit. For all water use classes, when economic conditions or population growth rates result in the actual water use being lower than permitted water use, a modification to reduce the permitted allocation shall only be made by the District when there is no reasonable likelihood that the allocation will be needed during the permit term. For agricultural water use permits for irrigation, reductions in actual use compared to permitted consumptive use that are due to weather events, crop diseases, nursery stock availability, or changes in crop type shall not result in a permit modification by the District to reduce the permitted allocation during the term of the permit. Additionally, in order to incentivize conservation of water, if actual water use is less than permitted water use due to documented implementation of water conservation measures, the permitted allocation shall not be modified by the District due to these circumstances during the term of the permit.

Nothing in this subsection shall be construed to alter the Districts' authority to reduce permitted consumptive use under circumstances not addressed by this section, nor be

construed to alter the water conservation requirements of the permit for the duration of the permit.

~~A. Where necessary to maintain reasonable assurance that the conditions for issuance of a permit can continue to be met over the duration of a 20-year permit, the District shall require the permittee to submit a compliance report pursuant to subsection 373.236(4), F.S., no more than once every ten years. The permit shall be conditioned to assure compliance with the initial conditions for issuance, including implementation of schedules for Water Need and Demand Methodologies under Section 2.0, maintaining updated water conservation and efficiency requirements, and updated allocation methodologies, pursuant to District rules.~~

~~The compliance report shall contain sufficient information to maintain reasonable assurance that the permittee's use of water will continue to meet Chapters 40E-2 and 40E-20, F.A.C., as applicable, for the remaining duration of the permit. The compliance report shall, at a minimum, include all of the information specifically required by the permit limiting conditions.~~

~~B. Following the District's review of this report, the District shall require the permittee to take such actions as necessary to ensure that the use of water will continue to meet the conditions for permit issuance.~~

~~C. Notwithstanding the above, the District is not prohibited from requiring reports at any time when necessary to ensure compliance with the terms of the permit or provisions in Chapters 40E-2 or 40E-20, F.A.C.~~

5.0 PERMIT LIMITING CONDITIONS

Water use permits shall be conditioned, as necessary, to ensure that the permitted use continues to meet the conditions for issuance in Rule 40E-2.301, F.A.C. There are two categories of permit conditions that will be applied to water use permits. Standard conditions contain general information and operational constraints that generally apply to all water uses unless waived or modified by the District upon a determination that the conditions are inapplicable to the use authorized by the permit. Not all special conditions are imposed on each permit as they vary among use classes, sources, geographic locations, and other permit-specific factors.

~~Water use permits shall be conditioned as necessary so that the use is consistent with the overall objectives of the program and are not harmful to the water resources of the area. There are two categories of permit conditions that will be applied to water use permits. Standard Conditions contain general information and operational constraints that apply to all uses of water. Special Conditions address project specific considerations that may vary among use classes, sources of supply and geographic locations.~~

5.1 Standard Permit Conditions

5.1.1 Overall Compliance/Notification

All water uses authorized by this permit shall be implemented as conditioned by this permit, including any documents incorporated by reference in a permit condition. The District may revoke this permit, in whole or in part, or take enforcement action, pursuant to Section 373.136 or 373.243, F.S., unless a permit modification has been obtained to address the noncompliance.

The Permittee shall immediately notify the District in writing of any previously submitted material information that is later discovered to be inaccurate.

5.1.2 Other Permits Required

Permittee is advised this permit does not relieve the Permittee from the responsibility to obtain any other required local, state, or federal authorization.

5.1.3 Change of Ownership/Legal Control

Permittee shall notify the District in writing within 30 days of any sale, transfer, or conveyance of ownership or any other loss of permitted legal control of the Project and/or related facilities from which the permitted consumptive use is made. Where Permittee's control of the land subject to the permit was demonstrated through a lease, the Permittee must either submit a new or modified lease showing that it continues to have legal control or documentation showing a transfer in control of the permitted system/project to the new landowner or new lessee. All transfers of ownership are subject to the requirements of Rule 40E-1.6107, F.A.C. Alternatively, the Permittee may surrender the consumptive use permit to the District, thereby relinquishing the right to conduct any activities under the permit.

~~Permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the real property on which the permitted activities are located. All transfers of ownership are subject to the requirements of section 40E-1.6107, F.A.C.~~

5.1.4 Water Shortage

~~Nothing in this permit should be construed to limit the authority of the District to declare a water shortage and issue orders pursuant to Chapter 373, F.S. In the event of a declared water shortage, the Permittee must adhere to the water shortage restrictions, as specified by the District. The Permittee is advised that during a water shortage, reports shall be submitted as required by District rule or order. In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan, Chapter 40E-21, F.A.C. The Permittee is advised that during a water shortage, pumpage, water levels, and water quality data shall be collected and submitted as required by District orders issued pursuant to Chapter 40E-21, F.A.C.~~

5.1.5 Property Rights Not Conveyed

This permit does not convey to the Permittee any property rights or privileges other than those specified herein, nor relieve the permittee from complying with any applicable local government, state, or federal law, rule, or ordinance.

~~The permit does not convey any property right to the Permittee, nor any rights and privileges other than those specified in the permit and Chapter 40E-2, F.A.C.~~

5.1.6 Inspection

With advance notice to the Permittee, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications. The permittee shall either accompany District staff onto the property or make provision for access onto the property.

~~Authorized representatives of the District, with advance notice to the permittee, shall be permitted to enter, inspect, and observe the permitted system to determine compliance with permit conditions.~~

5.1.7 Modification/Use Class/Other Changes

- A. A Permittee may seek modification of any term of an unexpired permit. The Permittee is advised that Section 373.239, F.S., and Rule 40E-2.331, F.A.C., are applicable to permit modifications.
- B. Permittee shall notify the District in writing 30 days prior to any changes to the Project that could potentially alter the reasonable demand reflected in the permitted allocation. Such changes include, but are not limited to, change in irrigated acreage, crop type, irrigation system, large users agreements, or water treatment method. Permittee will be required to apply for a modification of the permit for any changes in permitted allocation.

5.1.8 Violations

If any condition of the permit is violated, the permit shall be subject to review and modification, enforcement action, or revocation pursuant to Chapter 373, F.S.

5.1.9 Existing Legal Users

Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the Permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1-in-10 year drought event that results in the:

- A. Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or
- B. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

5.1.10 Harm to Natural Resources/Saline Intrusion/Pollution

Permittee shall mitigate harm to the natural resources caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:

- A. Reduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface;
- B. Reduction in water levels that harm the hydroperiod of wetlands;
- C. Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond;
- D. Harmful movement of contaminants in violation of state water quality standards; or,
- E. Harm to the natural system including damage to habitat for rare or endangered species.

5.1.11 Off-site Impacts

Permittee shall mitigate harm to existing off-site land uses caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

- A. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)

- B. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or
- C. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

5.2 Special Permit Conditions

- A. This Permit is issued to:
- B. This Permit shall expire on (date).
- C. Water use classification: [primary water use type and secondary water use type(s)]
- D. Source classification is:
- E. Allocation:
Total annual allocation is _____ MG (_____ GPD or MGD)
Total maximum monthly allocation is _____ MG.

Allocation from a specific source (aquifer, waterbody, facility, or facility group)

Maximum annual allocation from (a specific source) shall not exceed ____ MG (_____ GPD or MGD)

Maximum monthly allocation from (a specific source) shall not exceed ____ MG (_____ GPD or MGD)

These allocations represent the amount of water required to meet the water demands as a result of a rainfall deficit during a drought with the probability of recurring one year in ten. The Permittee shall not exceed these allocations in hydrologic conditions less than a 1-in-10 year drought event. Compliance with the annual allocation is based on the quantity withdrawn over a 12-month time period. Compliance with the maximum monthly allocation is based on the greatest quantity withdrawn in any single month. The annual allocation expressed in GPD or MGD is for informational purposes only.

If the rainfall deficit is more severe than that expected to recur once every ten years, the withdrawals shall not exceed that amount necessary to continue to meet the reasonable-beneficial demands under such conditions, provided no harm to the water resources occur and:

1. All other conditions of the permit are met; and
2. The withdrawal is otherwise consistent with applicable declared Water Shortage Orders in effect pursuant to Chapter 40E-21, F.A.C.

- F. Withdrawal Facilities:
- G. Permittee shall submit all data as required by the implementation schedule for each of the limiting conditions to: SFWMD at www.sfwmd.gov/ePermitting, or Regulatory Support Bureau, MSC 9611, P.O. Box 24680, West Palm Beach, FL 33416-4680
- H. Permittee must submit the appropriate application form incorporated by reference in Rule 40E-2.101, F.A.C., to the District prior to the permit expiration date in order to continue the use of water.
- I. Permittee shall implement the following operating plan:
- J. This Permit supersedes and/or cancels the following Water Use Permit(s):
- K. This is an existing project. A surface water management permit will be required prior to any change in land use or modification of the drainage system.

5.2.1 Use Class

A. Public Water Supply

1. Permittee shall notify the District within 30 days of any change in service area boundary that results in a change in demand that affects its permitted allocation. The allocation shall be modified to effectuate such change.
2. Permittee shall implement the wellfield operating plan described in District staff report prepared in support of recommendation for permit issuance.
3. Permittee shall determine unaccounted-for distribution system losses. Losses shall be determined for the entire distribution system on a monthly basis. Permittee shall define the manner in which unaccounted-for losses are calculated. Data collection shall begin within six months of Permit issuance. Loss reporting shall be submitted to the District on a yearly basis from the date of Permit issuance.
4. Permittee shall maintain an accurate flow meter at the intake of the water treatment plant for the purpose of measuring ~~daily/monthly~~ inflow of water. ~~The monthly total inflow to the treatment plant shall be reported to the District.~~
5. Permittee shall maintain an accurate flow meter at the point of discharge from the treatment plant for the purpose of measuring the daily flow of water.
6. ~~The Standard following elements in the Water Conservation Plan described in required by Subsection Section 2.3.2.F.1.a 2-6-4 of the Applicant's Handbook Basis of Review for Water Use Permit Applications~~

within the South Florida Water Management District and the Staff Report, must be implemented in accordance with the approved implementation schedule.

7. The Goal-Based Water Conservation Plan described in Subsection 2.3.2.F.1.b of the Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District and the Staff Report must be implemented in accordance with the approved implementation schedule.
8. Permittee shall provide annual status reports to the District that summarizes the Aquifer Storage and Recovery cycle testing activities. The first reports shall be submitted by:
9. Permittee shall notify the District within 30 days of entering into an inter-local agreement, contract, or other similar instrument to deliver or receive water outside of its service area or to serve a demand not identified to determine the allocation described in this permit. A copy of such agreement shall be provided to the District. The monthly volume of water delivered and/or received via each inter-local agreement, contract, or other similar instrument shall be submitted to the District on a quarterly basis.

B. Irrigation

The conditions listed below are applicable to all irrigation use classes. Subsections 5.2.1.C through 5.2.1.E contain additional permit conditions for the specific irrigation use class.

For new or increased allocations over previously permitted allocations from sources not categorized as sources of limited availability, the permit shall expire within five years of issuance to the extent that permitted acreage has not been planted consistent with the timelines contemplated in the Permit, or to the extent the allocation has otherwise been abandoned pursuant to Section 373.243, F.S.

C. Landscape Irrigation

1. Landscape and golf course Permittees must comply with the water conservation plan requirements submitted pursuant to in Subsection section 2.3.2.E.1 2.3.4 of the Applicant's Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District and described in the Staff Report.
2. Landscape irrigation shall comply with day and time restrictions described in Rule 40E-24.201, F.A.C., or alternative landscape irrigation measures adopted pursuant to Rule 40E-24.301, F.A.C.

3. Withdrawal from the surface water source(s) for irrigation shall be equal to the amount of water used for replacement/recharge on a monthly basis (for example, the volume of water withdrawn from the lake must be the same volume of water put into the lake), except when the surface water drainage system is discharging. The replacement/recharge of groundwater into surface water is for water quality treatment or supplementation and not the artificial maintenance of lake levels.
4. The amount of water used for irrigation replacement/recharge shall not exceed the amount of water withdrawn from the surface water sources(s) on a monthly basis (for example, there cannot be more water put into the lake than is pumped out of the lake). The replacement/recharge of groundwater into surface water is for water quality treatment or supplementation and not the artificial maintenance of lake levels.

D. Golf Course Irrigation

1. Permittee must comply with the water conservation plan submitted pursuant to Subsection 2.3.2.E.1 2-3.4 of the Applicant's Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District and described in the Staff Report.
2. ~~Landscape and~~ Golf course irrigation is prohibited between the hours of 10:00 A.M. and 4:00 P.M., except as follows:
 - a. Irrigation using micro-irrigation system is allowed anytime.
 - b. Users whose average annual allocation is made up of 75% or greater volume of reclaimed water for irrigation may irrigate at any time.
 - c. Irrigation of, or in preparation for planting, new golf courses and recreational areas is allowed at any time of day for one 30 day period provided irrigation is limited to the amount necessary for plant establishment. Irrigation of newly seeded or sprigged golf course areas is allowed any time of day for one 60 day period.
 - d. Watering in of chemicals, including insecticides, pesticides, fertilizers, fungicides, and herbicides when required by law, recommended by the manufacturer or constituting best management practices is allowed anytime within 24 hours of application.
 - e. Irrigation systems may be operated anytime for maintenance and repair purposes.
 - f. The use of water to protect golf course turf from heat and wind stress damage is allowed anytime.

3. Withdrawal from the surface water source(s) for irrigation shall be equal to the amount of water used for replacement/recharge on a monthly basis (for example, the volume of water withdrawn from the lake must be the same volume of water put into the lake), except when the surface water drainage system is discharging. The replacement/recharge of groundwater into surface water is for water quality treatment or supplementation and not the artificial maintenance of lake levels.
4. The amount of water used for irrigation replacement/recharge shall not exceed the amount of water withdrawn from the surface water sources(s) on a monthly basis (for example, there cannot be more water put into the lake than is pumped out of the lake). The replacement/recharge of groundwater into surface water is for water quality treatment or supplementation and not the artificial maintenance of lake levels.

E. Agricultural Irrigation

The Permittee shall complete Form No. 1376, Report of Planting and Harvest of Seasonal Crops Form 0188-QCROP, Report of Planting and Harvest of Seasonal Crops, incorporated by reference in Rule 40E-2.091, F.A.C., and submit it with the appropriate Form No. 1378 Water Use Pumpage Report Form "Quarterly Report of Withdrawals From Wells and Surface Water Pumps" (Form No. 0188-QMQF), incorporated by reference in Rule Subsection 40E-2.091(1)(3), F.A.C.

F. Diversion and Impoundment

1. The independent secondary user must advise the diversion and impoundment permittee prior to applying to the District for a proposed change in surface water allocation from the diversion and impoundment system.
2. The ~~d~~Dependent secondary users listed herein must advise the District and the diversion and impoundment permittee prior to any change in demands.
3. The diversion and impoundment system permittee is responsible for all violations of the diversion and impoundment permit terms, except the violations of the dependent secondary users.
4. Within 90 days of the diversion and impoundment permittee agreeing to the inclusion of a dependent secondary user consistent with the requirements in Subsection Section 2.3.2.C.2.a 2.7.3.A. of the Applicant's Handbook, the diversion and impoundment permittee is responsible for submitting a request for a permit modification to the District to include the dependent secondary user.

5. All dependent secondary users must comply with the terms of their agreement with the diversion and impoundment entity and applicable terms of this permit.
6. This is an independent secondary use permit within a diversion and impoundment system; therefore, the duration may be modified or reduced such that it will not exceed the expiration date of the associated diversion and impoundment permit.

G. Dewatering

1. A copy of the permit, its limiting conditions, and dewatering plan is required to be kept on site at all times during dewatering operations by the lead contractor or site manager.
2. At least 72 hours pPrior to initial dewatering, the Permittee shall notify the District that dewatering is about to commence and verify all precautions are in place prior to project commencing with pumping operation, including:
 - a. The location and design of the recharge trenches and on-site retention areas where dewatering water will be retained;
 - b. The location of monitoring facilities; and,
 - c. Other site-specific issues related to the protection of the resource or other existing legal users.

Failure of the Permittee or his representative contractor to notify the District before dewatering is initiated will result in enforcement action.

If necessary, the District shall conduct a site visit.

Notification of commencement of dewatering can be made by contacting:

3. Permittee shall conduct dewatering activities in adherence to the following operating plan:
4. The excavation shall be constructed using sound engineering practice. If the excavation or dewatering activities endangers the properties of adjacent owners (through erosion, side wall collapse, etc.), the Permittee shall cease operation until a method to prevent such occurrences is found and instituted. The Permittee shall be responsible for finding and instituting methods to stop such occurrences.
5. All dewatering shall be retained on the Permittee's land. Off-site discharge of dewatering effluent shall not be made.

6. Off-site discharge may be made via the facilities and conditions that follow:
7. Permittee shall not lower the water table below the following depths:
8. Turbidity measurements of the dewatering water shall be made daily prior to discharge and submitted to the District weekly. If turbidity levels in the dewatering water exceed 29 NTU above background conditions in the receiving waterbody, the Permittee is required to cease dewatering operations and correct the situation until monitoring demonstrates turbidity standards are met.
9. Within 30 days of completion of ~~Following~~ the dewatering operation, the temporary recharge ditches shall be filled and regraded to natural ground elevation, or an elevation approved in the Environmental Resource Permit.
10. Permittee shall immediately cease dewatering when continued dewatering would create a condition hazardous to the health, safety, and general welfare of the people of the District.
11. Permittee shall be responsible for clearing shoaling if the Permittee's dewatering operation creates shoaling in adjacent water bodies.
12. Offsite discharge may be made via the facilities and conditions that follow:
13. At least two weeks prior to commencing dewatering, the Permittee shall provide site specific dewatering plans for each proposed dewatering activity to the District for review and approval. Permittee shall not initiate dewatering prior to receiving written notification from district staff, that the proposed dewatering activity is consistent with the approved master permit.
14. Pursuant to Section 2.3.2.B.2 of the Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District, neither maximum monthly nor annual allocation volumes are specified.

H. Mining Dewatering

The Permittee is advised that this Permit does not relieve the Permittee of complying with all county, state, and federal regulations governing these operations, maintenance, and reclamation of the borrow pit.

I. Industrial/Commercial/Power Plant

Industrial pPermittees must comply with the water conservation plan submitted in compliance with requirements in Subsection section 2.3.2.D.1 2-4.1 of the Applicant's

Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District and described in this Staff Report.

5.2.2 Compliance, Monitoring, and Reporting

The following subsections contain additional compliance, monitoring, and reporting permit conditions.

A. Pumpage

These conditions apply to permits with an average annual allocation greater than 100,000 gallons per day or, if in the South Miami-Dade Agricultural Area, greater than 300,000 gallons:

1. Prior to any withdrawals at the Project, the Permittee shall provide the results of the calibration testing of the identified water accounting method(s) and equip all existing and proposed withdrawal facilities with approved water use accounting method(s) pursuant to Subsection Section 4.1.1 of the Applicant's Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District.
2. Monthly withdrawals for each withdrawal facility shall be reported to the District semi-annually ~~quarterly~~. The water accounting method and means of calibration shall be stated on each report.
3. Every five years from the date of Permit issuance, the Permittee shall submit re-calibration data for on each water pumping accounting facility, for those Permittees whose accounting method(s) require re-calibration.
4. Permittees, who are dependent on other sources of water supply such as reclaimed water or water sale agreements to meet a portion of their demands, shall include the monthly volumes from all other sources in the report to the District, unless the use of those sources is reported to another state agency, in which case the District will obtain the water use information from said agency. The water accounting method and means of calibration shall be stated on each report.

B. Wetlands

Within six months of permit issuance, the Permittee shall implement the Wetland/Environmental Monitoring Program described in the District staff report prepared in support of recommendation for permit issuance.

C. Water Levels

Within six months of permit issuance, the Permittee shall implement the Water Level Monitoring Program described in the District staff report prepared in support of recommendation for permit issuance.

D. Saline Water

1. The Permittee shall develop a saline water intrusion monitoring program. Within three months of permit issuance, an updated or a preliminary proposal shall be submitted to District staff for approval. The purpose of this program shall be to ensure that harmful saline water intrusion does not occur. The Program shall include the name of the facilities/sample points to be monitored and their locations, method of water quality analysis, and frequency of data collection. The monitoring program shall be implemented upon District approval.
2. The Permittee shall implement the following saline water intrusion monitoring program:.
3. If the chloride ion concentration of water collected from the well(s), pump(s), or monitoring station(s) exceeds the stipulated concentration(s) or demonstrates an increasing trend, additional assurances shall be required to demonstrate that the conditions for permit issuance will continue to be met.

E. Water Quality

1. The Permittee shall develop a water quality monitoring program. Within three months of permit issuance, an updated or a preliminary proposal shall be submitted to district staff for approval. The purpose of this program shall be to ensure that harmful contamination does not occur. The program shall include the name of the facilities/sample points to be monitored and their locations, method of water quality analysis, and frequency of data collection. The monitoring program shall be implemented upon District approval.
2. The Permittee shall implement the following water quality monitoring program:

F. Other Reports

1. Pursuant to Section 373.236(4), F.S., every ten years from the date of permit issuance, the Permittee shall submit a water use compliance report for review and approval by District Staff to SFWMD at www.sfwmd.gov/ePermitting, or the Regulatory Support Bureau, P.O. Box 24680, West Palm Beach, FL 33416-4680.
2. Pursuant to Section 373.236(6), F.S., every five years from the date of permit issuance, the Permittee shall submit a water use compliance report for review and approval by District Staff to SFWMD at www.sfwmd.gov/ePermitting, or the Regulatory Support Bureau, P.O. Box 24680, West Palm Beach, FL 33416-4680.

G. Alternative Water Supply

The Permittee shall develop alternative water supplies (including reclaimed water), at a minimum, in accordance with the schedules described in the District staff report and Exhibit XX. The Permittee shall provide annual updates of the status of all alternative water supply projects. The status report shall include work completed to date, expenditures, and any anticipated changes in timelines.

H. Reclaimed Water

1. Upon notification from the District of the availability of reclaimed water pursuant to Section 373.250, F.S., the Permittee shall investigate the feasibility of obtaining reclaimed water and actively participate in discussions and negotiations with potential suppliers of reclaimed water when the supplies become available.
2. Should reclaimed water become unavailable, the Permittee shall apply to the District for an emergency water use permit prior to temporarily increasing withdrawals above the permitted allocation.
3. If reclaimed water becomes available prior to the expiration date of this permit, the Permittee shall apply for a modification of the water use permit to reflect that portion of the allocation which is to be provided for by reclaimed water. The Permittee is required to request a permit modification when an agreement has been executed between both parties, the transmission lines are constructed to the Project site, and the necessary on-site modifications and authorizations are obtained.
4. The Permittee shall continue to investigate the feasibility of utilizing reclaimed water as an alternative water supply for this Project. To this end, the Permittee, or its successor, shall provide the District with periodic reclaimed water feasibility reports, to be submitted at five (5) year intervals commencing on (date 5 years from permit issuance) and continuing through the duration of this water use permit. Such reclaimed water feasibility reports shall evaluate the feasibility of utilizing reclaimed water and specifically consider: (1) whether a suitable reclaimed water supply source is available and permitted; (2) whether reclaimed water supply lines are available at the property boundary in sufficient capacity to serve Ppermittee's needs; (3) whether the Ppermittee is capable of accessing the reclaimed water source through distribution lines; (4) whether use of reclaimed water is technically, environmentally, and economically feasible; and, (5) whether use of reclaimed water would adversely affect requirements contained in Ppermittee's surface water drainage permit, if appropriate.

I. Public Water Utilities Reuse Information Updates

1. Public water utilities that control, either directly or indirectly, a wastewater treatment plant, and which have determined pursuant to Section 403.064,

F.S., that use of reclaimed water is feasible, must provide the District with annual updates of the following information: (1) the status of distribution system construction, including location and capacity of lines; (2) a summary of uncommitted supplies for the next year; (3) copies of any new or amended local mandatory reclaimed water reuse zone ordinances; and (4) a list of end-users who have contracted to receive reclaimed water and the agreed upon quantity of water to be delivered.

2. Public water utilities that control, either directly or indirectly, a wastewater treatment plant, and which had determined, at the time of issuance of its consumptive use permit and pursuant to Section 403.064, F.S., that reuse of reclaimed water was not feasible must advise the District of any change in this determination that may occur during the term of the consumptive use permit. In the event the utility determines reuse has become feasible, then the District will require the utility to provide the information listed in Subsections Sections 2.2.4.A 3.2.3.4 and 5.2.1.H.1 5.2.5.2.A.

J. Water Wells

1. Permittee shall secure a well construction permit prior to construction, repair, or abandonment of all wells, as described in Chapter 40E-3, F.A.C.
2. If a proposed well location is different from a location specified in the application, the Permittee shall submit to the District an evaluation of the impact of pumpage from the proposed well location on adjacent existing legal uses, pollution sources, environmental features, the saline water interface, and water bodies one month prior to all new well construction. The Permittee is advised the proposed well locations and resulting impacts must be in compliance with all permitting criteria and performance standards in effect at that time.
3. Permittee shall submit to the District an updated "SECTION IV – SOURCES OF WATER" of Form No. 1379 Water Use Permit Application Form Well Description Table (Table "A") within 90 days of completion of the proposed wells identifying the actual total and cased depths, pump manufacturer and model numbers, pump types, intake depths and type of meters.
4. Permittee shall submit to the District an updated "SECTION IV – SOURCES OF WATER" of Form No. 1379 Water Use Permit Application Form Well Description Table (Table "A") within six months of permit issuance, identifying which wells have been properly plugged and abandoned according to Subsection 40E-3.531(3), F.A.C., and which wells are to be maintained as water level monitoring wells.

5. Within six months of permit issuance, the Permittee shall plug and abandon the following wells in accordance with Chapter 40E-3, F.A.C.: ~~(individual wells identified based on project specifications)~~
6. Permittee shall submit to the District a well survey that shall include the following: well cased depth, total well depth, and chloride ion concentration of the water in the wells not having this information listed in the "SECTION IV – SOURCES OF WATER" of Form No. 1379 Water Use Permit Application Form Well Description Table (Table "A"). This survey shall be submitted for the following wells within six months of permit issuance: ~~(individual wells identified based on project specifications)~~
7. The Permittee shall submit to the District an updated "SECTION IV SOURCES OF WATER" of Form No. 1379 Water Use Permit Application Form within 90 days of installation of the proposed pumps identifying the surface water source, local drainage district (if applicable), pump type, diameter, capacity and horsepower, intake elevation (feet, NGVD), and water use accounting method.
8. If at any time there is an indication that the well casing, valves, or controls leak or have become inoperative, repairs or replacement shall be made to restore the system to an operating condition. Failure to make such repairs shall be cause for filling and abandoning the well, in accordance with procedures outlined in Chapter 40E-3, F.A.C.

K. Region Specific Special Conditions

1. A "Water Rights Compact Among the Seminole Tribe of Florida, the State of Florida, and the South Florida Water Management District", which confirms tribal rights has been approved. Exercise of tribal rights in the future may impact allocations sought by the Permittee in future permit modifications and renewals.
2. The property which is the subject of this Permit is located in the area covered by Chapter 40E-63, F.A.C, (Works of the District within the Everglades). This special condition is intended to notify the Permittee that this property may be subject to additional or new permitting or water quality requirements as specified in Chapter 40E-63, F.A.C.
3. Permittee shall be subject to all the stipulations agreed to in any executed landowner agreement reached between the Permittee, the District and the Seminole Tribe of Florida. Such stipulations may impact allocations sought by the Permittee in future Permit modifications and renewals.
4. Permittee and the Lake Worth Drainage District have previously entered into an interlocal agreement for mitigation of impacts. It is acknowledged

and agreed by the Permittee that this modification of the permit shall be incorporated into and made part thereof the interlocal agreement.

5. Permittee will be responsible for mitigation to domestic uses, including but not limited to those shown in the District staff report for this permit, in the event that declining water levels result in domestic uses suffering a loss of water supply and the event is confirmed by application of the following factors by District staff. Factors used in determining mitigation responsibility include, but are not limited to, water level monitoring data, local pumpages, and climatic conditions. Failure by the Permittee to mitigate any adverse impacts that occur as a result of the Permittee's withdrawals, for which mitigation responsibility has been determined, will be considered a permit violation.
6. Prior to any permanent pump installation on Floridan aquifer wells in Martin or St. Lucie counties, the Permittee shall provide measurements of flow from each well using calibrated flow equipment. The method of accounting, calibration data, corrections for well losses, proposed pump information, and the basis for the requested flow rate shall be submitted to the District for review and approval. Staff approval will be granted if the natural flow rate of the well is greater than that of the proposed pump.
7. Temporary pumps installed on Floridan aquifer wells in Martin or St. Lucie counties to increase flow for freeze protection withdrawals must be removed within 72 hours of the conclusion of the freeze event.
8. Upon notification from the District, water withdrawals from a source classified as "S" pursuant to Rule 40E-22, F.A.C., shall be terminated when the minimum level specified in Rule 40E-22, F.A.C. is reached. The following source and minimum level shall apply:

40E-1.021 Definitions.

When used in this Chapter, Chapters 40E-2, 40E-3, 40E-4, ~~40E-20, 40E-40~~, 40E-41, and 40E-61, and ~~40E-400~~, F.A.C.:

(1) through (5) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 668.003, 668.004, 668.50 FS. History–New 10-1-06, Amended 10-23-12, _____.

40E-1.602 Permits Required.

Unless expressly exempt by statute or District rule, permits must be obtained from the District prior to commencement of the following activities:

(1) A water use individual or general permit pursuant to Chapter 40E-2 ~~or 40E-20~~, F.A.C., must be obtained prior to use or withdrawal of water or dewatering activities;

(2) through (11) No change.

Rulemaking Authority 373.044, 373.113, 373.4131, 373.4135 FS. Law Implemented 120.60, 373.085, 373.106, Chapter 373 Parts II and IV FS. History–New 9-3-81, Formerly 16K-1.06, Amended 7-26-87, 5-11-93, 10-3-95, 4-1-96, _____.

40E-1.603 Application Procedures for Processing Permit Applications or Notices of Intent.

(1) No change.

(a) No change.

(b) If the District determines that the application is incomplete, the District shall request the information needed to complete the application within 30 days of its receipt. ~~For individual water use permits, and standard general water use permits,~~ The applicant shall have 90 days from receipt of a timely request for additional information to submit that information to the District.

(c) through (e) No change.

(2) No change.

(3)(a) Agency action on all other individual permits and standard permits shall occur within 90 days of receipt of a complete application, including receipt of all requested information and correction of any error or omission of which the applicant was timely notified.

(b) An authorization to proceed for noticed standard general water use permits in Chapter 40E-20, F.A.C., shall occur within 30 ~~60~~ days of receipt of a complete notice of intent, unless a notice that the project does not qualify for the noticed general permit is sent by regular United States mail or electronic mail by the District within 30 days. If notice that the proposed project does not qualify for the noticed general permit is sent by regular United States mail or electronic mail by the District to the applicant, the review process under subsection (1) shall be initiated or the applicant shall be required to apply for the appropriate permit if the requested activity is not covered by the noticed general permit rule. including receipt of all requested information and correction of any error or omission of which the applicant was timely notified.

Rulemaking Authority 373.044, 373.113, 373.4131 FS. Law Implemented 120.60, 373.107, 373.109, 373.116, 373.229, 373.4131, 373.417, 373.421, 373.422, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Formerly 16K-1.08(1)-(8), Amended 7-1-86, 7-26-87, 11-21-89, 5-11-93, 10-3-95, 4-1-96, 7-2-98, 6-12-00, 10-1-06, Amended 12-1-11, 10-23-12, _____.

40E-1.6065 Consideration of Intended Agency Decision on Permit Applications.

(1) No change.

(2) The District shall consider the application for a standard right of way occupancy or works of the district permit at its next available regularly scheduled regulatory meeting following the mailing or electronic mailing of notice of intended agency decision, unless an administrative hearing is requested and granted pursuant to Section 120.569, F.S. The District shall also consider all permit applications that staff recommends for denial, the District shall consider the application for a conceptual approval, individual environmental resource, individual surface water management, or water use permit application at its next available regularly scheduled regulatory meeting following the mailing or electronic mailing of notice of intended agency decision, unless an administrative hearing is requested and granted pursuant to Section 120.569, F.S.

(3) In no case shall agency action be taken later than 60 days after the application for a conceptual approval or individual environmental resource permit, or later than 90 days ~~after for~~ an individual water use ~~permit~~, water well, right of way occupancy, or works of the district permit, is declared complete unless waived by the applicant or stayed by the filing of a petition for an administrative hearing. The permit applicant may voluntarily waive the timeline for governing action on the permit application in Section 120.60, F.S., in order to resolve any outstanding issues, including third party objections, regarding the project.

(4) No Change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 120.60, 373.079, 373.083, 373.107, 373.109, 373.116, 373.4131, 668.003, 668.004, 668.50 FS. History—New 7-2-98, Amended 6-12-00, 10-1-06, 10-23-12, _____.

40E-1.607 Permit Application Processing Fees.

A permit application processing fee is required and shall be paid to the District when certain applications are filed pursuant to District rules. An application shall not be considered complete until the appropriate application fee is submitted. These fees are assessed in order to defray the cost of evaluating, processing, monitoring, and inspecting for compliance required in connection with consideration of such applications. Fees are non-refundable in whole or part unless the activity for which an application is filed is determined by the District to be exempt or the fee submitted is determined by the District to be incorrect. Failure of any person to pay the applicable fees established herein will result in denial of an application. Activities that do not require a permit or are exempt pursuant to Rule 40E-2.051 or 40E-3.051, F.A.C., are not subject to the following permit application fees. The District’s permit application processing fees are as follows:

(1) Water Use Permit Application processing fees are in the following table:

TABLE 40E-1.607(1)
PERMIT APPLICATION PROCESSING FEES FOR
WATER USE PERMIT APPLICATIONS
REVIEWED PURSUANT TO CHAPTERS ~~40E-2 AND 40E-20~~, F.A.C.

Fee amounts shall apply to applications for new permits, permit modifications, and permit renewals, except as noted.

| Category | Amount |
|--|--------------|
| <u>Individual Permit, except Mining/Dewatering</u> | |
| <u>Up to 3 million gallons per month (mgm)</u> | <u>\$350</u> |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

| | |
|--|-----------------------------------|
| <u>Greater than 3 mgm through 15 mgm</u> | <u>\$1000</u> |
| Individual Public Water Supply with a duration less than 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 million gallons per month (mgm) through 30 mgm | \$2,700 |
| Greater than 30 mgm through 300 mgm | \$5,500 |
| Greater than 300 mgm | \$7,000 |
| Individual Public Water Supply with a duration of <u>at least</u> 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 million gallons per month (mgm) through 30 mgm | \$4,200 |
| Greater than 30 mgm through 300 mgm | \$8,500 |
| Greater than 300 mgm | \$11,500 |
| Individual Irrigation with a duration less than 20 years | \$1,000 |
| Individual Irrigation with a duration of <u>at least</u> 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$1,600 |
| Greater than 30 mgm through 300 mgm | \$3,400 |
| Greater than 300 mgm | \$5,600 |
| Individual Mining/ (Dewatering) | |
| Maximum monthly allocation: | |
| <u>Standard Individual Permit for up to one year</u> | <u>\$500</u> |
| Greater than 15 mgm through 30 mgm | \$1,800 |
| <u>Standard Individual Permit greater than one year</u> Greater than 30 mgm through | <u>\$1,800</u> \$3,250 |
| 300 mgm | |
| <u>Master Individual Permit</u> Greater than 300 mgm | <u>\$4,000</u> |
| Individual Industrial with a duration less than 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$1,400 |
| Greater than 30 mgm through 300 mgm | \$2,750 |
| Greater than 300 mgm | \$3,500 |
| Individual Industrial with a duration of <u>at least</u> 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$2,000 |
| Greater than 30 mgm through 300 mgm | \$3,650 |
| Greater than 300 mgm | \$5,600 |
| Individual Diversion and Impoundment with a duration less than 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$1,400 |
| Greater than 30 mgm through 300 mgm | \$2,750 |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

| | |
|---|------------------------|
| Greater than 300 mgm | \$3,500 |
| Individual Diversion and Impoundment with a duration of <u>at least</u> 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$2,000 |
| Greater than 30 mgm through 300 mgm | \$3,950 |
| Greater than 300 mgm | \$6,200 |
| Independent Secondary User of a Diversion and Impoundment with a duration of <u>at least</u> 20 years | |
| Maximum monthly allocation: | |
| Greater than 15 mgm through 30 mgm | \$1,000 |
| Greater than 30 mgm through 300 mgm | \$2,000 |
| Greater than 300 mgm | \$3,200 |
| <u>Noticed General Standard Water Use Permit</u> | |
| Maximum monthly allocation through Aquifer Storage and Recovery | |
| <u>Application filed electronically at www.sfwmd.gov/ePermitting million gallons</u> | \$100 \$350 |
| <u>per month (Minor)</u> | |
| <u>Application filed by other means</u> | \$350 |
| Greater than 3 mgm through 15 mgm (Major) | \$1,000 |
| Short-term Dewatering | \$500 |
| Aquifer Storage and Recovery: (cost added to the applicable use type listed above) | \$1,000 |
| (cost added to the applicable use type listed above) | \$1,000 |
| Permit Transfer to Another Entity Pursuant to Rules 40E-0.107 and 40E-2.351, F.A.C. | \$300 |
| Letter Modification | no fee |
| <u>General Permit by Rule</u> | <u>no fee</u> |

(2) through (7) No change.

Rulemaking Authority 373.044, 373.109, 373.113, 373.421(2), 373.421(6)(b), 373.4131 FS. Law Implemented 218.075, 373.109, 373.4131, 373.421(2), 373.421(6)(b), 403.201 FS. History—New 1-8-89, Amended 1-2-91, 11-15-92, 6-1-93, 1-23-94, 10-3-95, 4-1-96, 11-8-99, 5-24-00, 6-26-02, 7-11-02, 8-10-03, 8-14-03, 11-18-07, 11-1-09, 12-15-11, 10-23-12, _____.

40E-1.6107 Transfer of Environmental Resource, Surface Water Management, or Water Use, or Wetland Resource Permit.

(1) The procedures for the transfer of environmental resource permits are set forth in Rule 62-330.310, F.A.C. To transfer a surface water management, water use permit, or wetland resource permit, the permittee, in addition to satisfying the applicable provisions in Rules 40E-2.351 and ~~40E-20.351~~, F.A.C., must submit Form No. 0483, Form No. 0483, (October 1, 2013), <http://www.flrules.org/Gateway/reference.asp?No=Ref-02753>, Request for Surface Water Management, Water Use, or Wetland Resource Permit Transfer, incorporated by reference

herein. Form No. 0483 is also available at no cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800)432-2045, ext. 6436, or (561) 682-6436.

(2) through (5) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.083, 373.171, 373.309, 373.416, 373.426, 373.429, 373.436, 668.003, 668.004, 668.50 FS. History—New 5-11-93, Amended 10-3-95, 10-1-06, 10-23-12, _____.

40E-1.615 Coordinated Agency Review Procedures for the Florida Keys Area of Critical State Concern.

(1) No change.

(2) The following coordinated agency review procedures apply to projects which are eligible for exemptions from District environmental resource and water use permitting requirements:

(a) No permit and no coordinated agency review participation by the District is required for the water uses exempted by Rule 40E-2.051 (Exemptions), F.A.C., or identified in Rule 40E-2.061, F.A.C.

(b) No Change.

(3) The following coordinated agency review procedures apply to projects which require permits pursuant to Chapters 40E-2 ~~or 40E-20~~ (Consumptive Use), 62-330 and 40E-4 (Environmental Resource), F.A.C.:

(a) through (f) No change.

Rulemaking Authority 373.044, 373.113, 373.4131, 380.051 FS. Law Implemented 373.4131, 380.051, 668.003, 668.004, 668.50 FS. History— New 9-22-87, Amended 10-3-95, 10-1-06, 12-1-11, 10-23-12, _____.

40E-1.659 Forms and Instructions.

The following forms and instructions are incorporated by reference throughout the District's rules as specified below and are listed herein for convenience. Hyperlinks are provided in the rules in which the forms and instructions are referenced and copies can be obtained without cost by contacting the South Florida Water Management District Clerk's Office, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800) 432-2045, ext. 6436, or (561) 682-6436:

| Form No. | Date | Title |
|--------------------------|-----------------------|---|
| 0186 | 09-12 | State of Florida Water Well Contractor's Application, incorporated by reference in subsection 40E-3.038(3), F.A.C. |
| 1376 QCROP | 0188-10-12 | Report of Planting and Harvest of Seasonal Crops Form Report of Planting and Harvest of Seasonal Crops, incorporated by reference in <u>paragraph</u> subsection 40E-2.091(2)(d)(6), F.A.C. |
| 1377 QMON | 0188-10-12 | Water Quality Report Form Quarterly Report of Monitoring Requirements, incorporated by reference in <u>paragraph</u> subsection 40E-2.091(2)(c)(5), F.A.C. |
| 1378 QMQ | 0188-10-12 | Water Use Pumpage Report Form Quarterly Report of Withdrawals Pumps, incorporated by reference in <u>paragraph</u> subsection 40E-2.091(2)(b)(4), F.A.C. |
| 0188-QASR | 10-12 | Quarterly Report of Injections and Withdrawals for Aquifer Storage and Recovery (ASR) Wells, incorporated by reference in subsection 40E-2.091(2), F.A.C. |

| | | |
|-----------------------|-----------------------|---|
| 0188-QMQF | 10-12 | Quarterly Report of Withdrawals from Wells and Surface Water, incorporated by reference in subsection 40E-2.091(3), F.A.C. |
| 0188-QBWDR | 10-12 | Quarterly Report of Bulk Water Delivered and Received, incorporated by reference in subsection 40E-2.091(4), F.A.C. |
| 0445 | 10-12 | Mining/Dewatering Permit Application, incorporated by reference in subsection 40E-2.101(3), F.A.C. |
| 1379-W01 | 0645-10-12 | Water Use Permit Application Form, incorporated by reference in subsection paragraph 40E-2.101(3)(13)(a), F.A.C. |
| <u>1380</u> | | <u>Water Use Permit Application Supplemental Form A - Agricultural Use, incorporated by reference in paragraph 40E-2.101(3)(a), F.A.C.</u> |
| <u>1381</u> | | <u>Water Use Permit Application Supplemental Form B - Commercial/Industrial Use, incorporated by reference in paragraph 40E-2.101(3)(b), F.A.C.</u> |
| <u>1382</u> | | <u>Water Use Permit Application Supplemental Form C - Landscape/Recreation Use, incorporated by reference in paragraph 40E-2.101(3)(c), F.A.C.</u> |
| <u>1383</u> | | <u>Water Use Permit Application Supplemental Form D - Dewatering Use, incorporated by reference in paragraph 40E-2.101(3)(d), F.A.C.</u> |
| <u>1384</u> | | <u>Water Use Permit Application Supplemental Form E - Public Supply Use, incorporated by reference in paragraph 40E-2.101(3)(e), F.A.C.</u> |
| <u>1386</u> | | <u>Water Use Permit Application Supplemental Form F - Diversion and Impoundment Use, incorporated by reference in paragraph 40E-2.101(3)(f), F.A.C.</u> |
| <u>1387</u> | | <u>Flow Meter Accuracy Calibration Report Form, hyperlink, incorporated by reference in paragraph 40E-2.091(2)(f), F.A.C.</u> |
| <u>1388</u> | | <u>Alternative Method Calibration Report Form, incorporated by reference in paragraph 40E-2.091(2)(g), F.A.C.</u> |
| <u>1389</u> | | <u>Crop (Freeze) Protection Form, incorporated by reference in paragraph 40E-2.091(2)(a), F.A.C.</u> |
| <u>1391</u> | | <u>Notice of Intent to Use a Water Use Noticed General Permit, incorporated by reference in subsection 40E-2.101(4), F.A.C.</u> |
| 0645-G60 | 10-12 | Table A Descriptions of Wells, incorporated by reference in paragraph 40E-2.101(1)(b), F.A.C. |
| 0645-G61-1 | 10-12 | Table B Description of Surface Water Pumps, incorporated by reference in paragraph 40E-2.101(1)(c), F.A.C. |
| 0645-G61-2 | 10-12 | Table C Description of Culverts, incorporated by reference in paragraph 40E-2.101(1)(d), F.A.C. |
| 0645-G65 | 10-12 | Table D Crop Information, incorporated by reference in paragraph 40E-2.101(1)(e), F.A.C. |
| 0645-G74 | 10-12 | Table E Water Received From or Distributed to Other Entities, incorporated by reference in paragraph 40E-2.101(1)(f), F.A.C. |
| 0645-G69 | 10-12 | Table F Past Water Use & Table G Projected Water Use, incorporated by reference in paragraph 40E-2.101(1)(g), F.A.C. |
| 0645-G70 | 10-12 | Table H Projected Water Use (For Per Capita Greater than 200 GPD), incorporated by reference in paragraph 40E-2.101(1)(h), F.A.C. |
| 0645-G71 | 10-12 | Table I Water Treatment Method and Losses, incorporated by reference in |

| | | |
|---------------------|------------------|--|
| | | paragraph 40E-2.101(1)(i), F.A.C. |
| 0645-G72 | 10-12 | Table J Aquifer Storage and Recovery, incorporated by reference in paragraph 40E-2.101(1)(j), F.A.C. |
| 0645-G73 | 10-12 | Table K Water Supply System Interconnections, incorporated by reference in paragraph 40E-2.101(1)(k), F.A.C. |
| 0779 | 01-01 | Application for a Works of the District Permit, incorporated by reference in subsection 40E-63.091(9), F.A.C. |
| 0889 | 12-11 | Certification of Waiver of Permit Application Processing Fee, incorporated by reference in paragraph 40E-1.607(6)(b), F.A.C. |
| 1045 | 11-10 | Application for a C-139 Basin Works of the District Permit, incorporated by reference in subsection 40E-63.430(2), F.A.C. |
| 62-532.900(1) | 10-10 | State of Florida Permit Application to Construct, Repair, Modify or Abandon a Well, incorporated by reference in subsection 40E-3.101(1), F.A.C. |
| 62-532.900(2) | 10-10 | State of Florida Well Completion Report, incorporated by reference in subsection 40E-3.411(1), F.A.C. |

Rulemaking Authority 218.075, 373.044, 373.113, 373.4136, 373.416, 695.03, 704.06 FS. Law Implemented 218.075, 373.113, 373.4135, 373.4136, 373.416, 704.06 FS. History—New 9-3-81, Amended 12-1-82, 3-9-83, Formerly 16K-1.90, Amended 7-26-87, 11-21-89, 1-4-93, Formerly 40E-1.901, Amended 5-11-93, 4-20-94, 10-3-95, 6-26-02, 8-14-02, 8-31-03, 9-16-03, 9-20-04, 2-12-06, 1-23-07, 8-7-07, 7-4-10, 12-15-11, 5-20-12, 10-23-12, _____.

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40E-2.011 Policy and Purpose.

(1) through (2) No Change.

(3) The purpose of this chapter is to set forth the conditions for issuance for all water use permits and establish requirements for the various types of permits available under this chapter.

(4) Additional rules relating to water use are found in Chapters 40E-5, F.A.C. (Artificial Recharge), Chapter 40E-8, F.A.C.; (Minimum Flows and Levels (MFLs)), Chapter 40E-10, F.A.C. (Water Reservations), Chapters ~~40E-20, F.A.C. (General Water Use Permits)~~, 40E-21, F.A.C. (The Water Shortage Plan), 40E-22, F.A.C.; (Regional Water Shortage Plans), and 40E-24, F.A.C. (Mandatory Year-Round Landscape Irrigation Conservation Measures).

(5) ~~(4)~~ Standards for the construction, repair and abandonment of water wells are found in Chapters 40E-3, F.A.C. (Water Wells).

(6) If an application for any proposed water use does not meet the provisions of this chapter for a general permit or evidence indicates the potential for harm, the District will provide the permit applicant with the option to either withdraw the general permit application or supply the additional information and, if applicable, the fee required for an individual permit. In the event one of these options is not selected, staff will recommend that the Governing Board deny the general permit application. The criteria in the "Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District," incorporated by reference in Rule 40E-2.091, F.A.C., will be utilized to determine whether the conditions for issuance in Rule 40E-2.301, F.A.C., are satisfied.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.103(1), 373.203, 373.216, 373.249 FS. History—New 9-3-81, Formerly 16K-2.01, Amended 7-4-82, 2-24-85, 11-18-91, 8-1-02, 8-31-03, 7-2-09, 10-23-12, _____.

40E-2.041 Permits Required.

(1) No Change.

(2) The District issues water use permits in two forms, individual water use permits and general water use permits. ~~An individual water use permit may be obtained by meeting the requirements of this chapter. Chapter 40E-20, F.A.C., provides the requirements for qualifying for a general water use permit.~~

(3) No Change.

(4) A water user seeking a noticed general permit shall obtain one permit for all withdrawals that are intended to serve contiguous property. Two or more properties represented as separate properties shall be aggregated and treated as a single property for permitting purposes when the District determines that the properties are physically proximate and either a) share the same irrigation infrastructure or b) are operated as a common enterprise. However, when multiple use classifications, as set forth in Rule 40E-21.651, F.A.C., are served by separate withdrawal facilities, the District is authorized to issue separate noticed general permits.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.079, 373.083, 373.103(1), 373.219, 373.244 FS. History—New 9-3-81, Formerly 16K-2.03(1), (2), Amended 10-23-12, _____.

40E-2.061 ~~No-Notice~~ General Permits by Rule.

Certain specified uses have been determined to be reasonable-beneficial, not interfering with existing legal uses and consistent with the public interest pursuant to Section 373.223, F.S. The Board hereby grants a General water use Permit by Rule for all non-exempt to each person

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~~that does not otherwise require a consumptive uses of water permit, within the District that satisfy the following criteria:~~

~~(1) General Permit by Rule for Landscape Irrigation to use, withdraw, or divert water at a Ssingle Ffamily Dwelling or Duplex –~~

~~(a) The Board hereby grants a general permit to each person for the use, withdrawal, or diversion of water at a single family dwelling or duplex including, but not limited to, home lawn and ornamental irrigation, car washing, and other incidental uses provided that water is obtained from a single on-site withdrawal facility, such as a private irrigation well or surface water diversion, for each single family dwelling or duplex, provided that landscape irrigation is conducted in accordance with Chapters 40E-21 and 40E-24, F.A.C., or with any approved variance, and that the amount of water used is limited to only that necessary for efficient utilization.~~

~~(b) When reclaimed water is available, the use of a private irrigation well or surface water diversion for home lawn and ornamental irrigation is not authorized under this section. Reclaimed water is deemed available when reclaimed water is provided by a utility through a point of connection at the property boundary.~~

~~(c) Persons using or proposing to use water in a manner that differs from the conditions imposed by Chapter 40E-24, F.A.C., shall apply for a modification of this permit pursuant to subsection 40E-2.331(4), F.A.C.~~

~~(2) General Permit by Rule for Short-Term Dewatering - The filing of an application for a permit under this rule is not required.~~

~~(a) The Board hereby grants a general permit for the use of water in conjunction with short-term dewatering operations, such as well pointing, utility construction, lake construction, exploratory testing, and other minor uses; or aquifer performance tests; or in conjunction with a short-term Remedial Action Plan approved by the state or local agency having legal jurisdiction over such activities, provided the following criteria are met:~~

~~1. Has a maximum daily pumpage of less than 5 million gallons (MG) and a maximum total project pumpage of less than 100 MG over a one year period.~~

~~2. Will retain all discharge on the project site unless associated with an aquifer performance test;~~

~~3. Will not dewater to a depth below 0.0 feet NGVD within 1,000 feet of saline water, except when dewatering water with a chloride concentration of greater than 1,000 milligrams per liter;~~

~~4. Will not occur within 100 feet of a wastewater treatment plant rapid-rate land application system permitted under Part IV of Chapter 62-610, F.A.C.;~~

~~5. Will not occur within 1,000 feet of a known landfill or contamination; and,~~

~~6. Will not occur within 1,000 feet of a freshwater wetland unless dewatering activities are completed within 60 days.~~

~~(b) In proceeding with general permit by rule for dewatering, the permittee acknowledges that the dewatering operation is subject to the Permit Conditions in Section 5.0 of the Applicant's Handbook, including responsibility for mitigating any harm that may occur as a result of the dewatering to existing legal uses, off-site land uses, or natural resources.~~

~~(c) Linear projects, such as roads, utilities, or pipelines, may qualify for multiple general permits by rule. The dewatering activity for these projects may have a rolling one year duration, in which the dewatering operation at the end of each one year period occurs more than 1 mile from the location at the beginning of each one year period.~~

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~~(3) General Permit by Rule for Closed-Loop Systems - When reclaimed water is available, the use of a private irrigation well or surface water diversion for home lawn and ornamental irrigation is not authorized under this section. Reclaimed water is deemed available when reclaimed water is provided by a utility through a point of connection at the property boundary.~~

(a) The Board hereby grants a general permit by rule for the use of water for cooling/heating systems for swimming pools and air conditioning units provided the following criteria are met:

1. The withdrawal and discharge points are on property legally controlled by the permittee;
2. The water is discharged to the same source, aquifer, or permeable zone from which it is withdrawn;

3. The discharge or injection has been permitted by the Department;

4. The water has no contact or mixing with other water sources, additives, and chemicals.

(b) In proceedings with a general permit by rule for closed-loop systems, the permittee acknowledges that the use is subject to the Permit Conditions in Section 5.0 of the Applicant's Handbook, including responsibility for mitigating any harm that may occur as a result of the withdrawals to existing legal uses, off-site land uses, or natural resources.

(c) The permittee shall not utilize the withdrawal facility associated with this general permit by rule for any other type of consumptive use.

~~(4) Persons using or proposing to use water in a manner that differs from the conditions imposed by Chapter 40E-24, F.A.C., shall apply for a modification of this permit pursuant to subsection 40E-2.331(4), F.A.C.~~

~~(5) This no notice general permit by rule does not apply to domestic uses of water, such as water used for household purposes of drinking, bathing, cooking, sanitation, or other indoor uses, at single family dwellings and duplexes, which are addressed by subsection 40E-2.051(1), F.A.C.~~

Rulemaking Authority 373.044, 373.113, 373.118, 373.171 FS. Law Implemented 373.118, 373.219, 373.223 FS. History—New 3-15-10, _____.

40E-2.071 Noticed General Permits and Individual Permits.

The use of water, which does not qualify for a general permit by rule, qualifies for a noticed general permit if the use:

(1) Does not withdraw from the following sources:

(a) Surface water from the C-23, C-24, or C-25 Canals;

(b) Surface water from the L-1, L-2, or L-3 Canals;

(c) Surface water within the Lake Istokpoga/Indian Prairie Canal System depicted in Figures 21-20 and 21-21, Chapter 40E-21, F.A.C.;

(d) Surface or groundwater within the Picayune Strand or Fakahatchee Estuary, groundwater indirectly from the Picayune Strand or Fakahatchee Estuary or any canal identified in Figure 3-6 of the Applicant's Handbook, or surface water indirectly from any canal identified in Figure 3-6 of the Applicant's Handbook;

(e) Surface water from the Lower East Coast Everglades Waterbodies, the North Palm Beach County/Loxahatchee River Watershed Waterbodies, or the integrated conveyance system identified in Figures 3-1 and 3-2 of the Applicant's Handbook;

(f) Surface water from the protected canal reaches identified in Figure 3-1 in Chapter 40E-10, F.A.C.;

(2) Satisfies the following facility restrictions:

(a) Is from facilities having a cumulative withdrawal capacity of less than 1,000,000 GPD;

(b) Is from groundwater wells less than eight (8) inches in diameter; and,

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(c) Is from surface water facilities which have a cumulative intake diameter less than six (6) inches;

(3) Has a cumulative average daily use of less than 100,000 GPD on an annual basis, unless the location and volume criteria in subsection (4), below, is applicable;

(4) Meets the following location and volume criteria, as applicable:

(a) Withdraws groundwater from the Lower Tamiami aquifer within the area depicted in Figure 2-1 and has an annual average allocation of less than 10,000 GPD;

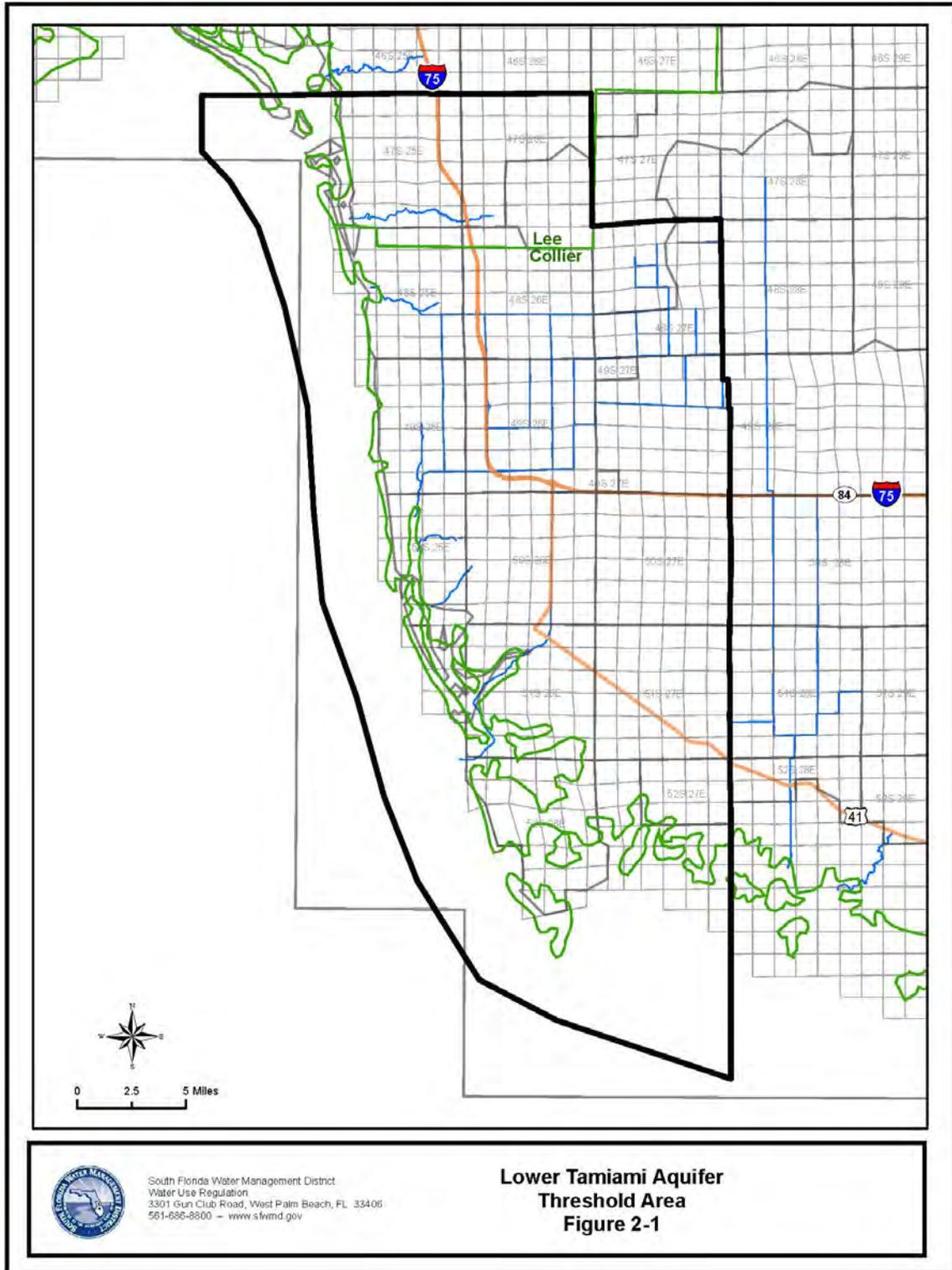
(b) Withdraws groundwater from the Sandstone aquifer within the area depicted in Figure 2-2 and has an annual average allocation of less than 10,000 GPD;

(c) Withdraws groundwater from the Mid-Hawthorn aquifer within the area depicted in Figure 2-3 and has an annual average allocation of less than 10,000 GPD; or,

(d) Withdraws water for irrigation purposes within the South Dade County Water Use Basin depicted in Figure 21-11, Chapter 40E-21, F.A.C., and has an annual average allocation of less than 300,000 GPD, regardless of the facility restrictions in subsection (2), above; and,

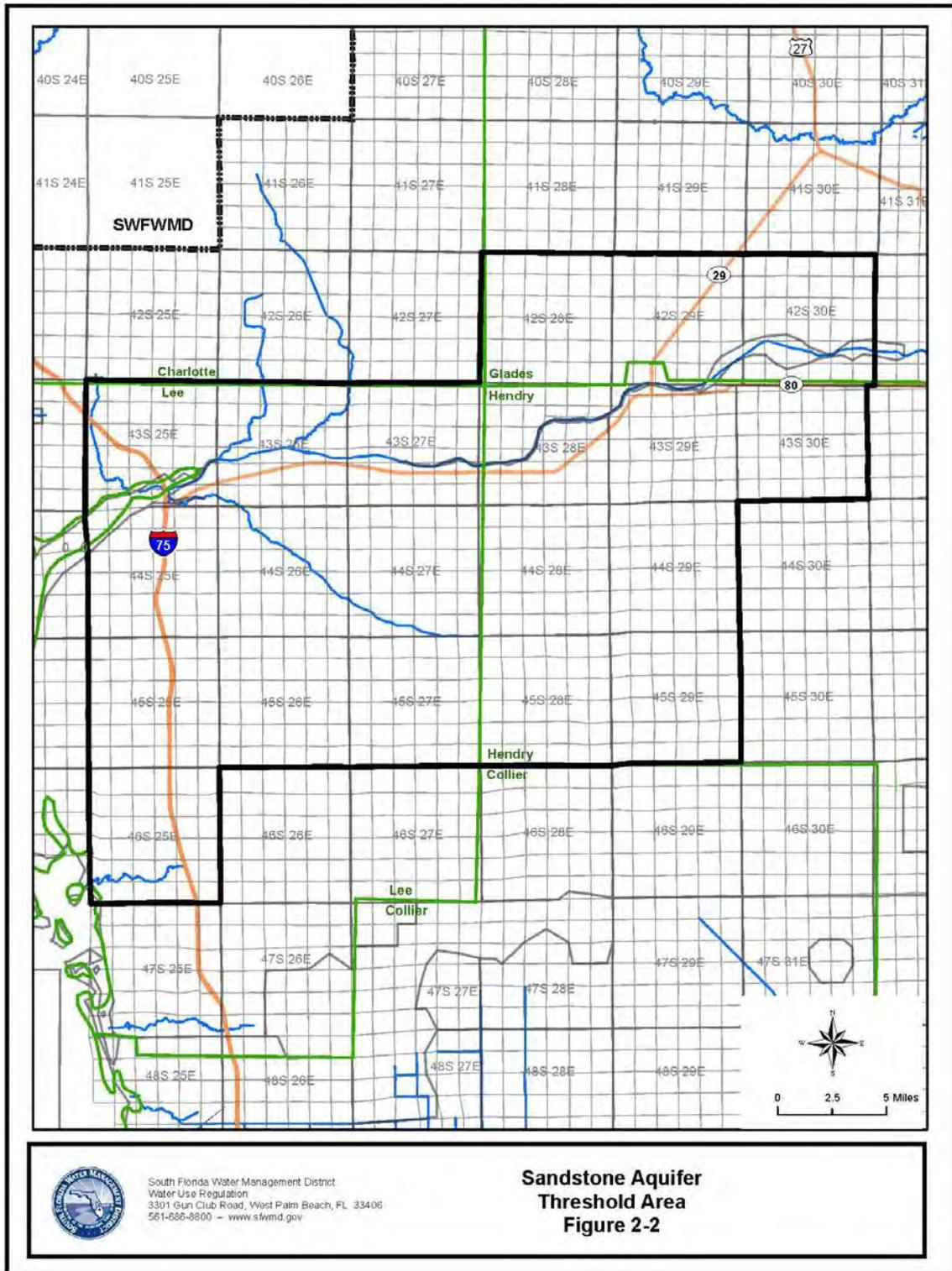
(5) Is consistent with requirements of any applicable mandatory reuse zones.

An individual permit is required for all non-exempt uses that do not qualify for a general permit. Diversion and impoundment uses do not qualify for a general permit and must apply for an individual permit. Dewatering uses that do not qualify for a general permit by rule must apply for an individual permit.



Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

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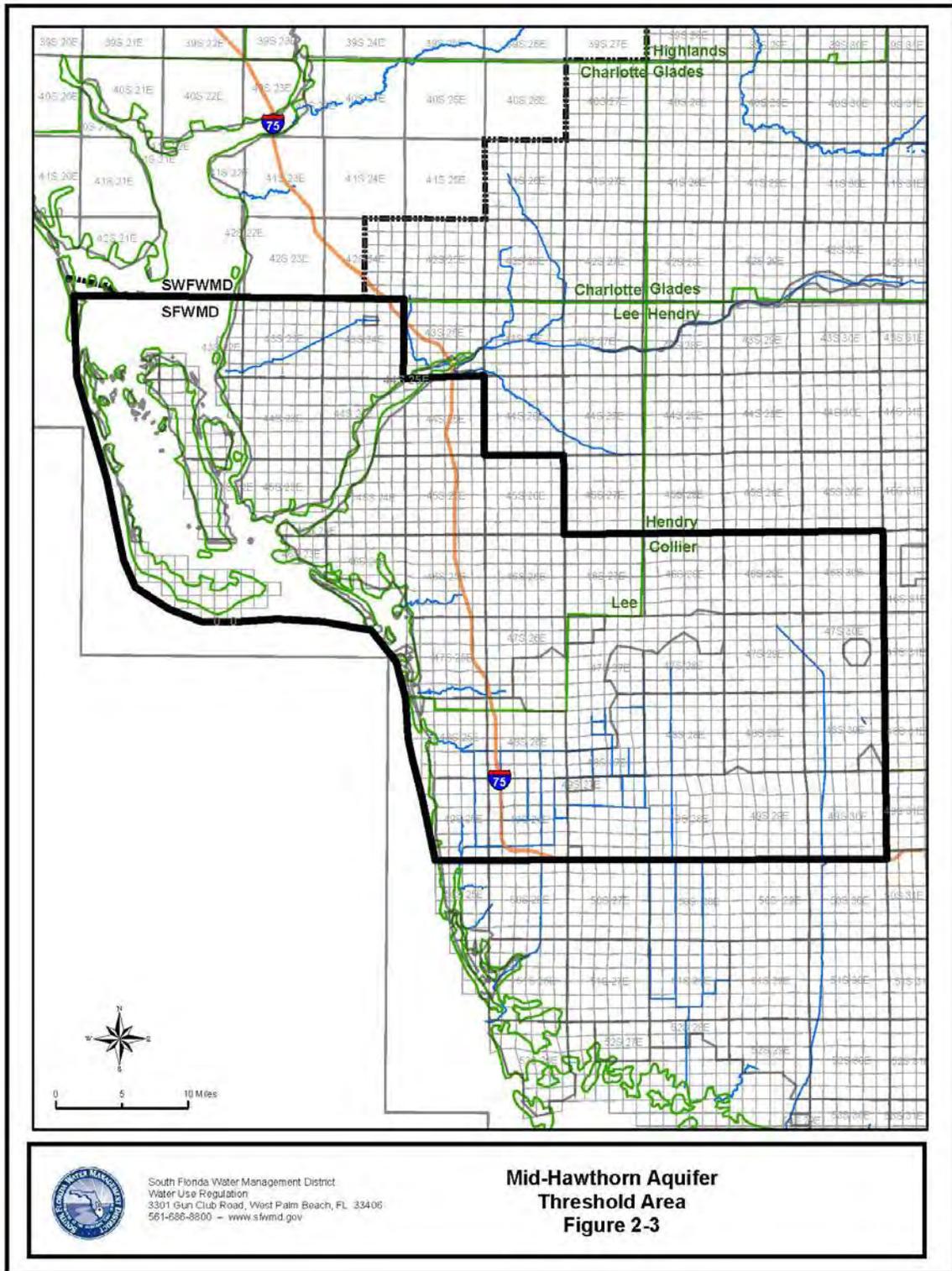


South Florida Water Management District
 Water Use Regulation
 3301 Gun Club Road, West Palm Beach, FL 33406
 561-686-3800 - www.sfwmd.gov

**Sandstone Aquifer
 Threshold Area
 Figure 2-2**

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

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Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

Rulemaking Authority 373.044, 373.113, 373.118, 373.171 FS. Law Implemented 373.118, 373.219, 373.223 FS. History–New _____.

40E-2.091 Publications Incorporated by Reference.

(1) The “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District – _____ October 23, 2012,” ([HYPERLINK](#)), is incorporated by reference herein, ~~and requires the use of the following forms, which are also incorporated by reference herein: Form 0188 QMQ, Quarterly Report of Withdrawals, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01564>,~~ (referenced in Section 4.1);

(2) ~~The Applicant’s Handbook requires the use of the following forms, which are incorporated by reference herein: Form 0188 QASR, Quarterly Report of Injections and Withdrawals for Aquifer Storage and Recovery (ASR) Wells, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01565>,~~ (referenced in Section 4.1);

~~(a) Form No. 0188 QBWDR, Quarterly Report of Bulk Water Delivered and Received, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01567>,~~ referenced in ~~Subsection 4.1;~~ Form No. 1389, Crop (Freeze) Protection Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 4.1.1; and

~~(b) Form No. 1378, Water Use Pumpage Report Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 4.1.1; and~~

~~(c) Form No. 1377, Water Quality Report Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 4.2.1; and~~

~~(d) Form No. 1376, Report of Planting and Harvest of Seasonal Crops Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 5.2.1E; and,~~

~~(f) Form No. 1387, Flow Meter Accuracy Calibration Report Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 4.1.1; and,~~

~~(g) Form No 1388, Alternative Method Calibration Report Form, (EFFECTIVE DATE) ([HYPERLINK](#)), referenced in Subsection 4.1.1; and~~

(3) ~~Subsections 62-40.416(7) and (8), F.A.C., (EFFECTIVE DATE) ([HYPERLINK](#)), incorporated by reference in Subsection 3.1.2A. Form 0188 QMQF, Quarterly Report of Withdrawals from Wells and Surface Water Pumps, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01566>,~~ (referenced in Section 4.1);

~~(4) Form 0188 QBWDR, Quarterly Report of Bulk Water Delivered and Received, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01567>,~~ (referenced in Section 4.1)

~~(5) Form 0188 QMON, Quarterly Report of Monitoring Requirements, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01568>,~~ (referenced in Section 4.2);

~~(6) Form 0188 QCROP, Report of Planting and Harvest of Seasonal Crops, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01569>,~~ (referenced in Section 5.2.3);

(4) The “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District” and forms incorporated therein are available at no cost by contacting the South Florida Water Management District Clerk’s Office, 3301 Gun Club Road, West Palm Beach, FL 33406, 1(800)432-2045, ext. 6436 or (561) 682-6436.

Rulemaking Authority 373.044, 373.113, 373.118, 373.171 FS. Law Implemented 373.042, 373.0421, 373.109, 373.196, 373.219, 373.223, 373.224, 373.229, 373.232, 373.233, 373.236,

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373.239, 373.250 FS. History—New 9-3-81, Formerly 16K-2.035(1), Amended 2-24-85, 11-21-89, 1-4-93, 4-20-94, 11-26-95, 7-11-96, 4-9-97, 12-10-97, 9-10-01, 12-19-01, 8-1-02, 6-9-03, 8-31-03, 4-23-07, 9-13-07, 2-13-08, 10-14-08, 7-2-09, 3-15-10, 3-18-10, 9-26-12, 10-23-12,

40E-2.101 Content of Application.

(1) Except in those circumstances detailed in subsection (5) below, aApplications for permits required by this chapter shall be filed electronically at www.sfwmd.gov/ePermitting, or at the South Florida Water Management District Regulation Reception Desk, 3301 Gun Club Road, West Palm Beach, FL 33406, or at any of the District’s Service Centers. The addresses and phone numbers of the District’s Service Centers are online at www.sfwmd.gov, “Locations”.

~~(a) The application, Form No. 0645-W01, Water Use Permit Application, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01570>, shall include the following forms, if applicable:~~

~~(b) Form No. 0645-G60, Table A Description of Wells, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01571>, for permits with wells;~~

~~(c) Form No. 0645-G61-1, Table B Description of Surface Water Pumps, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01572>, for permits with pumps;~~

~~(d) Form No. 0645-G61-2, Table C Description of Culverts, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01573>, for permits with irrigation culverts;~~

~~(e) Form No. 0645-G65, Table D Crop Information, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01574>, for agricultural permits;~~

~~(f) Form No. 0645-G74, Table E Water Received From or Distributed to Other Entities, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01575>, for public water supply permits;~~

~~(g) Form No. 0645-G69, Table F Past Water Use & Table G Projected Water Use, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01576>, for public water supply permits;~~

~~(h) Form No. 0645-G70, Table H Projected Water Use, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01577>, for public water supply permits;~~

~~(i) Form No. 0645-G71, Table I Water Treatment Method and Losses, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01578>, for public water supply permits;~~

~~(j) Form No. 0645-G72, Table J Aquifer Storage and Recovery, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01579>, for public water supply permits;~~

~~and~~

~~(k) Form No. 0645-G73, Table K Water Supply System Interconnections, October 2012, <http://www.flrules.org/Gateway/reference.asp?No=Ref-01580>, for public water supply permits.~~

(2) The application for all water use permits shall contain:

~~(a) (4)~~ The appropriate permit application processing fee required by Rule 40E-1.607, F.A.C.;

~~(b) (m)~~ The information required in Section 373.229(1), F.S.; and

~~(c) (n)~~ Information sufficient to show that the use meets the criteria and conditions established in Rule 40E-2.301, F.A.C.; and

~~(d) (2)~~ The application forms, as specified below, must be signed by the applicant or the authorized agent of the applicant.

(3) Application for an Individual Water Use Permit shall be made using Form No. 1379, Water Use Permit Application, (EFFECTIVE DATE) (HYPERLINK). Applicants shall also

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submit one or more of the following Supplemental Forms as appropriate for each type of water use proposed in the permit application:

(a) Form No. 1380, Water Use Permit Application Supplemental Form A – Agricultural Use, (EFFECTIVE DATE) (HYPERLINK).

(b) Form No. 1381, Water Use Permit Application Supplemental Form B – Commercial/Industrial Use, (EFFECTIVE DATE) (HYPERLINK).

(c) Form No. 1382, Water Use Permit Application Supplemental Form C, Landscape/Recreation Use, (EFFECTIVE DATE) (HYPERLINK).

(d) Form No. 1383, Water Use Permit Application Supplemental Form D, Dewatering Use, (EFFECTIVE DATE) (HYPERLINK).

(e) Form No. 1384, Water Use Permit Application Supplemental Form E - Public Supply Use, (EFFECTIVE DATE) (HYPERLINK).

(f) Form No. 1386, Water Use Permit Application Supplemental Form F - Diversion and Impoundment Use, (EFFECTIVE DATE) (HYPERLINK).

(4) Application for a Noticed General Water Use Permit shall be made using Form No. 1391, Notice of Intent to Use a Water Use Noticed General Permit, (EFFECTIVE DATE) (HYPERLINK).

(5) The filing of an application is not required to qualify for a General Permit by Rule, provided the criteria in Rule 40E-2.061, F.A.C., are satisfied.

(6) (4) The forms identified in subsections (3) (4) and (4) (3) above are incorporated by reference herein and are available at no cost by contacting the South Florida Water Management District Clerk’s Office, 3301 Gun Club Road, West Palm Beach, FL 33406, (800) 432-2045, ext. 6436 or (561) 682-6436.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.103(1), 373.219, 373.223, 373.229 FS. History–New 9-3-81, Amended 12-1-82, 2-24-85, 11-21-89, Repromulgated 1-4-93, Amended 4-20-94, 8-1-02, 10-23-12, _____.

40E-2.301 Conditions for Issuance of Permits.

(1) No change.

(a) through (g) No change.

(h) For uses with a recommended maximum allocation which exceeds 100,000 GPD or uses within a mandatory reuse zone, m~~M~~akes use of a reclaimed water source in accordance with the criteria contained in the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-2.091, F.A.C.

(i) Is in accordance with any the established minimum flows or and levels and implementation strategy provisions established pursuant to Sections 373.042 and 373.0421, F.S. in Chapter 373, F.S., this chapter and Chapter 40E-8, F.A.C.; and

(j) through (k) No change.

(2) In order to satisfy the conditions for permit issuance in subsection (1), the permit applicant must provide reasonable assurances that the criteria in the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-2.091, F.A.C., are met.

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.036, 373.042, 373.103(4), 373.1501, 373.1502, 373.223, 373.229, 373.2295, 373.470 FS. History–New 8-14-02, Amended 8-31-03, 4-23-07, 2-13-08, 7-2-09, _____.

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40E-2.321 Duration of Permit.

General Duration Provision. When requested by an applicant, a consumptive use permit shall have a duration of 20 years provided the applicant provides sufficient data to demonstrate reasonable assurance that the proposed use meets the conditions for issuance for the requested 20 year permit duration; or otherwise, permits may be issued for a shorter duration that reflects the period for which such reasonable assurances can be provided. This determination will be made pursuant to requirements in Rule 40E-2.301, F.A.C., and the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-2.091, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.236 FS. History—New 9-3-81, Amended 2-24-85, 4-20-94, 7-11-96, 8-31-03, 4-23-07, 2-13-08, _____.

40E-2.331 Modification of Permits.

(1) through (3) No Change.

(4)(a) Modification of an existing water use permit shall be approved by letter, provided the permit is in compliance with all applicable limiting conditions and the modification request:

1. No Change.

2. Does not modify the existing permit expiration date, except ~~that~~ when:

a. ~~When~~ The permit duration is based upon the current lease expiration date, the permit duration shall be extended by letter modification to the new lease date, but shall not exceed the applicable permit duration pursuant to Rule 40E-2.321, F.A.C.; or,

b. A public water supply permittee achieves demonstrable savings attributable to implementation of its water conservation plan beyond that required by Subsection 2.3.2.F.1 of the Applicant’s Handbook; or,

c. A permittee complies with the extension provisions of 373.236(5), F.S.; or,

d. The permit duration is based upon a proposed “start” date for dewatering, the permit duration shall be extended by letter modification to one year from the new “start” date, but shall not exceed the applicable permit duration pursuant to Rule 40E-2.321, F.A.C.; or,

3. Does not potentially interfere with any presently existing legal use of water, cause environmental harm, saltwater intrusion, pollution of the water resources, harm to offsite land uses, does not withdraw water reserved under Chapter 40E-10, F.A.C., or does not otherwise raise issues requiring a Staff determination of whether such impacts would occur pursuant to the “Applicant’s Handook Basis of Review for Water Use Permit Applications within the South Florida Water Management District,”; incorporated by reference in Rule 40E-2.091, F.A.C.; and

4. through 6. No change.

(b) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.079, 373.083, 373.223, 373.229, 373.239 FS. History—New 9-3-81, Formerly 16K-2.09(1), Amended 4-20-94, 7-11-96, 4-9-97, 12-10-97, 8-1-02, 4-23-07, 2-13-08, 7-2-09, 3-15-10, 10-23-12, _____.

40E-2.381 Permit Limiting Conditions.

The District shall impose on any permit granted under this chapter such reasonable ~~standard and special~~ permit conditions as are necessary to assure that the permitted use or withdrawal will be consistent with the overall objectives of the District, will not be harmful to the water resources of the District, is reasonable-beneficial, will not interfere with any presently existing legal uses, and is consistent with the public interest. Standard permit conditions in Section 5.1 of the

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“Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-2.091, F.A.C., shall be set forth in the permit. Special permit conditions, including those specified in Section 5.2 of the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-2.091, F.A.C., shall be set forth in the permit, as applicable.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.042, 373.0421, 373.079, 373.083, 373.219(1) FS. History—New 9-3-81, Amended 2-24-85, 7-26-87, 4-20-94, 7-11-96, 4-9-97, 12-10-97, 9-10-01, 8-1-02, 4-23-07, 2-13-08, 10-23-12, _____.

SFWMD Chapter 40E-3, F.A.C., Water Wells

40E-3.011 Policy and Purpose.

(1) The purpose of Chapter 40E-3, F.A.C., is to implement the duties and responsibilities of the South Florida Water Management District (District) under Part III, Chapter 373, F.S., and those responsibilities and duties delegated to the District by the Department of Environmental Protection (Department) to regulate the location, construction, repair, or abandonment of water wells and the licensing of water well contractors. It is the policy of the Governing Board that these rules are reasonably necessary to insure the protection and management of water resources and the health, safety, and general welfare of the people of this District.

(2) Additional District rules relating to water wells are found in Chapters 40E-5, (Artificial Recharge), and 40E-2, (Consumptive Use), ~~and 40E-30, F.A.C. (General Permits for Wells).~~

Specific Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.103(1), 373.306, 373.308, 373.309, 373.313, 373.314, 373.316, 373.319, 373.323(2), 373.326, 373.329, 373.333, 373.342 FS. History—New 1-1-85, Amended 12-19-89, 3-16-05.

40E-3.021 Definitions.

When used in this chapter:

(1) through (3) No change.

(4) “Consumptive Use Permit” or “Water Use Permit” means a Water Use Permit issued under Chapter 40E-2 ~~or 40E-20~~, F.A.C.

(5) through (19) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.019, 373.106, 373.303, 373.306 FS. History—New 1-1-85, Amended 12-19-89, 3-16-05, 9-26-12, _____.

40E-3.040 Scope of Part I.

The rules in this part relate to the permitting requirements applicable to the construction, repair or abandonment of wells. Unless expressly exempt by statute or this rule, all wells must be permitted prior to construction, repair or abandonment and must be constructed, repaired or abandoned by a licensed water well contractor. This exemption does not relieve the applicant from obtaining permits which may be required under Chapter 40E-2 (Consumptive Use), Chapter 40E-4 (Surface Water Management), ~~Chapter 40E-20 (General Water Use Permits)~~ or Chapter 40E-40 (General Surface Water Management Permits).

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.303, 373.308, 373.309, 373.316, 373.326, 373.342 FS. History—New 1-1-85, _____.

40E-3.051 Exemptions.

(1) The following wells are exempt from Rule 40E-3.041, F.A.C.:

(a) through (d) No Change.

~~(e) In addition, a well which satisfies the requirements of Chapter 40E-30, F.A.C., is exempt from the provisions of Rules 40E-3.301, 40E-3.321, 40E-3.411, 40E-3.501, 40E-3.512, and 40E-3.351, F.A.C.~~

(2) These exemptions do not relieve the applicant from obtaining permits which may be required under Chapter 40E-2 (Consumptive Use), Chapter 40E-4 (Environmental Resource Permits), ~~Chapter 40E-20 (General Water Use Permits)~~ or Chapter 40E-40 (Environmental Resource Standard General Permits), F.A.C.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.303, 373.308,

SFWMD Chapter 40E-3, F.A.C., Water Wells

373.309, 373.313, 373.316, 373.326 FS. History–New 1-1-85, Amended 3-16-05, _____.

40E-3.301 Conditions for Issuance of Permits.

(1) No change.

(2) A water use permit, if applicable, under Chapter 40E-2 ~~or 40E-20~~, F.A.C., must have already been obtained. If a water use permit has not been obtained, an application for a consumptive use permit must be submitted concurrently with the well construction application and must also be approved by the District prior to issuance of the well construction permit.

(3) through (5) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.103, 373.306, 373.308, 373.309, 373.313, 373.342 FS. History–New 1-1-85, Amended 3-16-05, _____.

40E-3.451 Emergency Authorization.

(1) No change.

(2) Emergency permits may be applied for and issued orally. Mere carelessness or lack of planning on the part of the applicant, contractor or driller will not constitute sufficient cause for the issuance of an emergency permit. If Chapter 40E-2 ~~or 40E-20~~, F.A.C., also applies to the well, an emergency permit may be issued only if, in addition to qualifying under subsection (1) above, an application for a consumptive use permit has been filed with the District. Issuance of an emergency permit will not be evidence of any entitlement to the consumptive use permit.

(3) No Change.

Rulemaking Authority 373.044, 373.119, 373.171 FS. Law Implemented 373.308, 373.309, 373.313, 373.326, 373.342 FS. History–New 1-1-85, Amended 7-2-98, 3-16-05, _____.

SFWMD Chapter 40E-5, F.A.C., Artificial Recharge

40E-5.011 Policy and Purpose.

(1) No Change.

(2) It is the intent of the District to consolidate permits issued pursuant to this chapter with consumptive uses regulated under Chapter 40E-2 ~~or 40E-20~~, F.A.C., when such permit is required. Thus, if water is obtained from a regulated surface or ground water source, authorization under this Chapter shall be issued in conjunction with the associated consumptive use permit. If a consumptive use permit for the project is not required pursuant to Chapter 40E-2 ~~or 40E-20~~, F.A.C., (e.g., the recharge water is reclaimed waste water), a separate permit shall be obtained pursuant to this chapter.

(3) through (4) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.106(1) FS. History—New 9-3-81, Amended 8-14-03, _____.

40E-5.041 Permits Required.

(1) Unless expressly exempt by law or District rule, a permit is required pursuant to this chapter to operate an artificial recharge system. The permit applicant shall provide reasonable assurances that the proposed activity meets the criteria set forth in Rule 40E-5.301, F.A.C. In the event the project also requires a consumptive use permit pursuant to Chapter 40E-2 ~~or 40E-20~~, F.A.C., demonstration of reasonable assurances required under Rule 40E-5.301, F.A.C., shall be made in conjunction with application for such permit and a consolidated permit will be issued.

(2) through (3) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.106(1) FS. History—New 9-3-81, Formerly 16K-2.02(1), Amended 8-14-03, _____.

40E-5.301 Conditions for Permit Issuance.

In order to obtain a permit, permit renewal, or permit modification pursuant to this chapter, an applicant must give reasonable assurances that the proposed diversion of water to be introduced into an aquifer and the impact of introducing and recovering the water from an aquifer:

(1) through (2) No change.

(3) Satisfies the criteria contained in the “Applicant’s Handbook ~~Basis of Review~~ for Water Use Permit Applications within the South Florida Water Management District,” incorporated by reference in Rule 40E-2.091, F.A.C.; and

(4) No change.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.106(1) FS. History—New 8-14-03, Amended _____.

40E-8.011 Purpose and General Provisions.

(1) through (3) No change.

(4) The recovery and prevention strategies set forth in Rule 40E-8.421, F.A.C., the consumptive use permitting procedures described in paragraph 40E-2.301(1)(i), Rule 40E-8.431, F.A.C., Section 3.9 of the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rules 40E-2.091 and ~~40E-20.091~~, F.A.C., the water shortage plan implementation provisions specified in Rules 40E-8.441, 40E-21.531, and 40E-21.541, F.A.C., and Part III of Chapter 40E-22, F.A.C., are inseparable components of the MFLs established in Rules 40E-8.321 and 40E-8.331, F.A.C. The District would not have adopted the MFLs set forth in Rules 40E-8.321 and 40E-8.331, F.A.C., for Lake Okeechobee, the Everglades, the Biscayne Aquifer, the Lower West Coast Aquifers, and the Caloosahatchee River without simultaneously adopting their related implementation rules. If the rules cited above, as they pertain to a specified MFL water body, are found to be invalid, in whole or in part, such specified minimum flow(s) or level(s) in Rule 40E-8.321 or 40E-8.331, F.A.C., (including Lake Okeechobee, Everglades, Biscayne Aquifer, Lower West Coast Aquifers, Caloosahatchee River) (month, year) shall not be adopted, or if already in effect, shall not continue to be applied, until the District amends the applicable regional water supply plan(s), as necessary, and amends the subject rules, as necessary to address the reason for invalidity consistent with the requirements of Section 373.0421, F.S. This section shall be triggered after a rule is found to be invalid pursuant to a final order issued under Section 120.56, F.S., and after appellate review remedies have been exhausted.

(5) No change.

Rulemaking Authority §§ 9, 10 P.L. 83-358, 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.036, 373.0361, 373.042, 373.0421 FS. History—New 9-10-01, Amended 4-1-03, 1-19-06, 10-23-12, _____.

40E-8.421 Prevention and Recovery Strategies.

(1) At the time of adoption of this rule, the existing flow or level for certain specified water bodies is below, or within 20 years is projected to fall below, the applicable MFL. For this reason, Section 373.709 ~~373.0361~~, F.S., requires regional water supply plans to contain recovery and prevention strategies, including water resource development and water supply development projects that are needed to achieve compliance with MFLs during the planning period. The implementation of such projects will allow for the orderly replacement or enhancement of existing water sources with alternative supplies in order to provide sufficient water for all existing and projected reasonable-beneficial uses, consistent with Section 373.0421, F.S.

(a) through (b) No Change.

(c) The rules implementing water resource protection tools, including Chapters 40E-2, 40E-8, ~~40E-20~~, 40E-21, 40E-22, F.A.C., and the “Applicant’s Handbook Basis of Review for Water Consumptive Use Permits Within the South Florida Water Management District”, incorporated by reference in Rules 40E-2.091 and ~~40E-20.091~~, F.A.C., identify the specific factors and conditions that will be applied and considered in implementing the conceptual model. Due to the extreme variations in water resource conditions, climatic conditions, hydrologic conditions, and economic considerations that will be faced when implementing these rules, it is critical to apply such criteria flexibly and to reserve for the governing board the ability to implement water resource protection and allocation programs considering all of the District’s missions under Chapter 373, F.S., and to balance water supply, flood protection, resource protection and water

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quality protection needs. Implementation of the recovery and prevention strategies will be achieved in compliance with the assurances to consumptive users and to natural systems contained in the LEC Plan and the LWC Plan.

(d) through (f) No change.

(2) No change.

(3) Biscayne Aquifer. The LEC Plan contains an approved prevention strategy for the Biscayne Aquifer pursuant to Section 373.0421, F.S., which consists of the following:

(a) No Change.

(b) Apply conditions for permit issuance in Chapter 40E-2 ~~or 40E-20~~, F.A.C., to prevent the harmful movement of saltwater intrusion up to a 1-in-10 year level of certainty;

(c) through (e) No change.

(4) through (5) No change.

(6) Northwest Fork of the Loxahatchee River Recovery Strategy: Purpose and Intent.

(a) The Northwest Fork of the Loxahatchee River is currently not meeting the MFL and requires implementation of a recovery strategy to achieve the MFL as soon as practicable, consistent with Section 373.0421, F.S. The recovery strategy consists of projects contained within the following approved plans: the Lower East Coast Regional Water Supply Plan (LEC Plan), the Comprehensive Everglades Restoration Plan (CERP), and the Northern Palm Beach County Comprehensive Water Management Plan (NPBCCWMP). Four phases of recovery are identified in the Technical Documentation to Support Development of Minimum Flows and Levels for the Northwest Fork of the Loxahatchee River, November 2002, which are projected to increase flows to meet the MFL for the Northwest Fork of the Loxahatchee River. As part of the recovery strategy, as provided in this rule, the consumptive use permitting and water shortage requirements in this Chapter and Chapters 40E-2, ~~40E-20~~, 40E-21, F.A.C., and the "Applicant's Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District", incorporated by reference in Rules 40E-2.091 ~~and 40E-20.091~~, F.A.C., including Section 3.2.1.E. regarding Restricted Allocation Areas for Lower East Coast Everglades Waterbodies and North Palm Beach County/Loxahatchee River Watershed Waterbodies, shall apply to consumptive use direct and indirect withdrawals from surface and groundwater sources from the Northwest Fork of the Loxahatchee River and those areas directly tributary to the Northwest Fork.

(b) through (g) No change.

(7)through (8) No change.

Rulemaking Authority §§ 9, 10 P.L. 83-358, 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.036, 373.0361, 373.042, 373.0421, 373.175, 373.216, 373.219, 373.223, 373.246 FS. History—New 9-10-01, Amended 11-11-02, 4-1-03, 1-19-06, 12-12-06, 4-23-07, 10-14-08, 10-23-12, _____.

40E-8.431 Consumptive Use Permits.

(1) Consumptive use permit applications that propose to withdraw water directly or indirectly from a MFL water body, that meet the conditions for permit issuance in Part II of Chapter 373, F.S., (including implementing rules in this chapter, Chapter 40E-2, F.A.C., the "Applicant's Handbook for Water Use Applications within the South Florida Water Management District," incorporated by reference in Rule 40E-2.091, F.A.C. ~~Water Use Basis of Review, and Chapter 40E-20, F.A.C.~~, as applicable), and are consistent with the approved recovery and prevention

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strategies under Section 373.0421, F.S., will be permitted. Consumptive use permit applications will be reviewed based on the recovery and prevention strategy approved at the time of permit application review.

(2) through (3) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.036, 373.0361, 373.042, 373.0421 FS. History–New 9-10-01, _____.

SFWMD Chapter 40E-10, F.A.C., Water Reservations

40E-10.011 Policy and Purpose.

The purpose of this chapter is to define the quantity, location and timing of waters reserved from allocation for the protection of fish and wildlife pursuant to Section 373.223(4), F.S., for specified water bodies. Water reservations are implemented in the water use program pursuant to Chapters 40E-2 and ~~40E-20~~, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-2-09, _____.

40E-10.031 Water Reservations Implementation.

(1) Applicants for consumptive use permits shall meet the requirements of this rule by providing reasonable assurances that Rules 40E-2.301 and ~~40E-20.301~~, F.A.C., and Section 3.11 of the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Management District”, incorporated by reference in Rules 40E-2.091 and ~~40E-20.091~~, F.A.C., are met.

(2) through (3) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-2-09, Amended 3-18-10, _____.

40E-10.051 Water Reservation Areas: Upper East Coast Planning Area.

North Fork of the St. Lucie River, as defined in subsection 40E-10.021(3), F.A.C.:

Surface waters up to and including the mean monthly flow of 130 cubic feet per second flowing over the Gordy Road Structure from November 1st through May 31st; see Appendix 2, Figure 2-2; are reserved from allocation. The water reserved under this Rule will be available for fish and wildlife upon formal determination of the Governing Board, pursuant to state and federal law, that any one or all of the Comprehensive Everglades Restoration Plan’s C-23/C-24 North and South Reservoirs and STA Project are operational. Reservations contained in this Rule and the criteria contained in section 3.11.2 of the “Applicant’s Handbook Basis of Review for Water Use Permit Applications within the South Florida Water Management District,” incorporated by reference in Rule 40E-2.091, F.A.C., shall be revised pursuant to Section 373.223(4), F.S., in light of changed conditions or new information and concurrent with the approval specified, above. Notwithstanding the above, presently existing legal uses for the duration of a permit existing on March 18, 2010 are determined to be not contrary to the public interest pursuant to Section 373.223(4), F.S.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New-3-18-10, Amended 7-21-13, _____.

SFWMD Chapter 40E-20, F.A.C., General Water Use Permits

40E-20.010 Review of General Water Use Permit Applications.

~~General Water Use permit applications are processed pursuant to the provisions of Section 120.60, F.S., and Chapters 40E-1 and 28-106, F.A.C.~~

Rulemaking Authority 120.54(5), 120.60 FS. Law Implemented 120.54(5), 120.60 FS. History—New 7-2-98, Amended 8-14-02, 10-23-12, Repealed.

40E-20.011 Policy and Purpose.

~~(1) The rules in this chapter authorize issuance of general permits for water use for certain specified uses which have been determined by staff review to be reasonable beneficial, not interfering with existing legal uses and consistent with the public interest pursuant to Section 373.223, F.S. The purpose of this chapter is to set forth the conditions for issuance for all general permits in Rule 40E-20.301, F.A.C., and establish requirements for the various types of general permits available under this chapter in Rule 40E-20.302, F.A.C. Persons conducting uses or withdrawals that are not exempt pursuant to Rule 40E-2.051, F.A.C., and do not qualify for a general water use permit under this chapter are required to obtain individual permits pursuant to Chapter 40E-2, F.A.C.~~

~~(2) District staff shall take agency action on applications submitted under this rule pursuant to Section 373.118, F.S., and this chapter. If an application for any proposed water use does not meet the provisions of this chapter, the District will provide the permit applicant with the option to either withdraw the general permit application, or supply the additional information and fee required for an individual permit. In the event one of these options is not selected, staff will recommend that the Governing Board deny the general permit application. Where applicable, criteria in the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District,” incorporated by reference in Rule 40E-20.091, F.A.C., will be utilized to determine whether the conditions for issuance in Rule 40E-20.301, F.A.C., are satisfied.~~

Rulemaking Authority 373.044, 373.083, 373.113, 373.118 FS. Law Implemented 373.042, 373.0421, 373.083, 373.103(4), 373.118, 373.219 FS. History—New 9-3-81, Formerly 16K-2.032(4), 16K-3.031(4), Amended 4-20-94, 7-11-96, 4-9-97, 12-10-97, 11-4-01, 8-14-02, 8-31-03, 4-23-07, 2-13-08, Repealed.

40E-20.061 Delegation of Authority Pertaining to General Water Use Permits.

~~The Governing Board delegates to the Executive Director the authority to issue general water use permits under this chapter pursuant to Section 373.118, F.S. The Executive Director hereby executes such delegated authority through the Chief and supervisors of the Bureau that reviews water use permit applications.~~

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.118 FS. History—New 8-14-02, Amended 10-23-12, Repealed.

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40E-20.091 Publications Incorporated by Reference.

The “Basis of Review for Water Use Permit Applications within the South Florida Water Management District” http://www.flrules.org/Gateway/reference.asp?No=Ref_01629, and associated forms incorporated by reference in Rule 40E 2.091, F.A.C., are applicable and reference throughout this chapter.

Rulemaking Authority 373.044, 373.113, 373.118, 373.171 FS. Law Implemented 373.042, 373.0421, 373.103(4), 373.118, 373.171, 373.223, 373.229 FS. History—New 8-14-02, Amended 8-31-03, 4-23-07, 9-13-07, 2-13-08, 10-14-08, 7-2-09, 3-15-10, 3-18-10, 9-26-12, 10-23-12, Repealed _____.

40E-20.101 Content of General Water Use Permit Applications.

(1) Except in those circumstances detailed in subsection (4) below, an application for a General Water Use permit shall be filed electronically at www.sfwmd.gov.ePermitting, or at the South Florida Water Management District Regulation Reception Desk, 3301 Gun Club Road, West Palm Beach, FL 33406, or at any of the District’s Service Centers. The addresses and phone numbers of the District’s Service Centers are online at www.sfwmd.gov, “Locations.” Water Use Permit Application, Form No. 0645-W-01, which is incorporated by reference in subsection 40E 2.101(1), F.A.C., shall be filed with the District prior to commencement of any use of water authorized in this chapter. The application for all General Water Use Permits shall contain:

- (a) The appropriate permit application processing fee required by Rule 40E 1.607, F.A.C.;
- (b) The information required in subsection 373.229(1), F.S.;
- (c) Information sufficient to show the use meets the criteria and conditions established in Rules 40E 20.301 and 40E 20.302, F.A.C.; and
- (d) Completed application forms, as specified below, signed by the applicant or the authorized agent of the applicant.

(2) Applicants for a Standard General Water Use Permit under subsection 40E 20.302(1), F.A.C., shall submit Form No. 0645-W01, Water Use Permit Application, incorporated by reference in paragraph 40E 2.101(1)(a), F.A.C., and shall include the following forms, if applicable:

- (a) Form No. 0645-G60, Table A Description of Wells, incorporated by reference in paragraph 40E 2.101(1)(b), F.A.C., for permits with wells;
- (b) Form No. 0645-G61-1, Table B Description of Surface Water Pumps, incorporated by reference in paragraph 40E 2.101(1)(c), F.A.C., for permits with pumps;
- (c) Form No. 0645-G61-2, Table C Description of Culverts, incorporated by reference in paragraph 40E 2.101(1)(d), F.A.C., for permits with irrigation culverts;
- (d) Form No. 0645-G65, Table D Crop Information, incorporated by reference in paragraph 40E 2.101(1)(e), F.A.C., for agricultural permits;
- (e) Form No. 0645-G74, Table E Water Received From or Distributed to Other Entities, incorporated by reference in paragraph 40E 2.101(1)(f), F.A.C., for public water supply permits;
- (f) Form No. 0645-G69, Table F Past Water Use & Table G Projected Water Use, incorporated by reference in paragraph 40E 2.101(1)(g), F.A.C., for public water supply permits;
- (g) Form No. 0645-G70, Table H Projected Water Use, incorporated by reference in paragraph 40E 2.101(1)(h), F.A.C., for public water supply permits;
- (h) Form No. 0645-G71, Table I Water Treatment Method and Losses, incorporated by reference in paragraph 40E 2.101(1)(i), F.A.C., for public water supply permits;

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~~(i) Form No. 0645-G72, Table J Aquifer Storage and Recovery, incorporated by reference in paragraph 40E-2.101(1)(j), F.A.C., for public water supply permits; and~~

~~(j) Form No. 0645-G73, Table K Water Supply System Interconnections, incorporated by reference in paragraph 40E-2.101(1)(k), F.A.C., for public water supply permits.~~

~~(a) Part RC-1A Administrative Information for Water Use Permit Applications, and~~

~~(b) Part RC-1W Application for a Water Use permit (all Standard General Water Use Permits) or Part RC-1G Application for a General Water Use Permit (Standard General Water Use Permits with recommended maximum allocations < 3 million gallons per month).~~

~~(3) Applicants for a Dewatering Water Use General Permit under subsection 40E-20.302(2), F.A.C., shall electronically file or file with the District Form 0445, Mining/Dewatering Permit Application, incorporated by reference in subsection 40E-2.101(3), F.A.C.~~

~~(4) Applicants are not required to file an application to qualify for a No Notice Short Term Dewatering Permit, if the conditions of Rule 40E-20.301 and subsection 40E-20.302(3), F.A.C., are satisfied.~~

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.103(1), 373.219, 373.223, 373.229 FS. History—New 8-14-02, Amended 8-31-03 (2), 8-31-03 (3), 10-23-12, Repealed _____.

40E-20.301 Conditions for Issuance of General Water Use Permits.

~~(1) In order to receive a general permit, permit renewal, or permit modification under this chapter, an applicant must provide reasonable assurances that the proposed water use:~~

~~(a) Will not cause harmful saline water intrusion;~~

~~(b) Will not harm offsite land uses;~~

~~(c) Will not cause harm to wetlands or other surface waters;~~

~~(d) Will not cause pollution of the water resources;~~

~~(e) Is otherwise a reasonable beneficial use as defined in subsection 373.019(13), F.S., with consideration given to the factors set forth in subsection 62-40.410(2), F.A.C.~~

~~(f) Will not interfere with presently existing legal uses;~~

~~(g) Is in accordance with Section 373.2295, F.S., concerning interdistrict transfer of groundwater and Section 373.223(3), F.S., concerning water transport and use of groundwater or surface water across county boundaries.~~

~~(h) For uses with a recommended maximum allocation which exceeds 3 million gallons per month or uses within a mandatory reuse zone, makes use of a reclaimed water source in accordance with the criteria contained in the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-20.091, F.A.C.~~

~~(i) Is in accordance with the established minimum flows and levels (MFL) and implementation provisions in Chapter 373, F.S., Chapters 40E-2 and 40E-8, F.A.C.; and~~

~~(j) Is consistent with Sections 373.016, 373.1501, 373.1502 and 373.036, F.S., and otherwise is consistent with the public interest as prescribed by Chapter 373, F.S., and this chapter.~~

~~(k) Will not withdraw water reserved under Chapter 40E-10, F.A.C.~~

~~(2) In order to satisfy the conditions for permit issuance in subsection (1), the permit applicant must provide reasonable assurances that the criteria in the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-20.091, F.A.C., are met.~~

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.036, 373.042,

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373.103(4), 373.1501, 373.1502, 373.223, 373.229, 373.2295, 373.470 FS. History—New 8-14-02, Amended 8-31-03, 4-23-07, 2-13-08, 7-2-09, 9-26-12, 10-23-12, Repealed _____.

40E-20.302 Types of General Water Use Permits.

~~(1) Standard General Water Use Permit—The use of water, which does not exceed a recommended maximum allocation of 15 million gallons per month (MGM), except as stated below, shall qualify for a Standard General Water Use Permit, provided the conditions for issuance in Rule 40E-20.301, F.A.C., are met. There are two types of Standard General Water Use Permits, as follows:~~

~~(a) Minor Standard General Water Use Permit, authorizes allocations of three (3) million gallons per month or less; and~~

~~(b) Major Standard General Water Use Permit, authorizes allocations greater than three (3) million and up to fifteen (15) million gallons per month, and includes a requirement under paragraph 40E-20.301(1)(h), F.A.C., and the applicable requirements in the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-20.091, F.A.C., that the permit applicant meet the requirements for use of reclaimed water. In addition the monitoring and reporting permit limiting conditions in Sections 4.0 and 5.0 of the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-20.091, F.A.C., are applicable.~~

~~(2) Dewatering General Water Use permit—The use of water in conjunction with short-term dewatering operations such as well pointing, utility construction, lake construction, exploratory testing, and other minor uses; or in conjunction with a short-term Remedial Action Plan approved by the state or local agency having legal jurisdiction over such activities, shall qualify for a Dewatering General Water Use Permit, provided the conditions for issuance in Rule 40E-20.301, F.A.C., and the following requirement is met:~~

~~The proposed dewatering operation will not exceed a maximum of ten million gallons per day, with a maximum of eighteen hundred (1800) million gallons total pumpage and will not exceed a total duration of one year for the entire project.~~

~~(3) No Notice Short Term Dewatering General Water Use Permit—The use of water in conjunction with short-term dewatering operations, such as well pointing, utility construction, lake construction, exploratory testing, and other minor uses; or aquifer performance tests; or in conjunction with a short-term Remedial Action Plan approved by the state or local agency having legal jurisdiction over such activities, shall qualify for a No Notice Short Term Dewatering General Water Use Permit, provided the conditions for issuance in Rule 40E-20.301, F.A.C., and the following requirement is met:.~~

~~(a) The proposed dewatering operation will not exceed a maximum of five (5) million gallons per day, with a maximum of one hundred (100) million gallons total pumpage and will not exceed a total duration of 90 days for the entire project, except for linear construction projects, such as roads, utilities, and pipelines, which may have a rolling 90-day duration in which the dewatering operation at the end of each 90-day period occurs more than 1 mile from the location at the beginning of each 90-day period.~~

~~(b) To demonstrate compliance with paragraph 40E-20.301(1)(k), F.A.C., all water shall be retained on-site.~~

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.042, 373.0421, 373.103(4), 373.118, 373.219, 373.223 FS. History—New 9-3-81, Amended 12-1-82, Formerly

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16K-2.031(1), 16K-2.032(1)(b), Amended 2-24-85, 3-29-87, 7-26-87, 4-20-94, 7-11-96, 4-9-97, 12-10-97, 11-4-01, 8-14-02, 8-31-03, 4-23-07, 2-13-08, 7-2-09, Repealed _____.

40E-20.321 Duration of General Water Use Permits.

~~(1) The duration of general water use permits shall equal the time period for which sufficient data is available to provide reasonable assurances that the conditions for permit issuance will be met, the time period for which the permit applicant demonstrates legal control, or the applicable general permit expiration date in subsections (2) through (5), whichever occurs first.~~

~~(2) The duration of the general water use permit authorized in subsection 40E 20.302(1), F.A.C., shall not exceed the following time periods:~~

~~(a) For uses with a maximum monthly allocation less than 3 million gallons per month (mgm), authorized by a Minor Standard General Water Use Permit, the period shall not exceed 20 years.~~

~~(b) For uses with a maximum monthly allocation greater than 3 mgm (up to 15 mgm), authorized by a Major Standard General Water Use Permit, the period shall be based on the provisions in Rule 40E 2.321, F.A.C., and the applicable provisions in the "Basis of Review for Water Use Permit Applications within the South Florida Water Management District", incorporated by reference in Rule 40E 20.091, F.A.C.~~

~~(3) The duration of the general permit authorized in subsection 40E 20.302(2), F.A.C., shall not exceed one (1) year from the date of issuance.~~

~~(4) The duration of the general permit authorized in subsection 40E 20.302(3), F.A.C., shall not exceed ninety (90) days after commencing dewatering.~~

~~(5) The duration of a general permit issued for a Remedial Action Plan approved by the state or local agency having legal jurisdiction over such activities will correspond with the termination of the water use activities under the plan or the applicable general permit expiration date, whichever occurs first.~~

~~(6) Extension of time shall be granted by the District under circumstances that could not be reasonably foreseen and that are outside the control of the permittee, as determined by District staff.~~

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.118, 373.236 FS. History—New 9-3-81, Formerly 16K-2.031(2)(j), 16K-2.032(2)(d), Amended 7-26-87, 4-20-94, 8-14-02, 8-31-03, 4-23-07, 2-13-08, 10-23-12, Repealed _____.

40E-20.331 Modification of General Water Use Permits.

~~(1) A permittee shall apply to the District for approval of any modification of an unexpired general water use permit pursuant to Section 373.239, F.S., and Rule 40E 1.609, F.A.C.~~

~~(2) Applications for modification except for modifications issued pursuant to subsection (3) shall contain the information required in Rule 40E 20.101, F.A.C., will be evaluated using the conditions and requirements specified in Rules 40E 20.301 and 40E 20.302, F.A.C., and will be subject to the limiting conditions specified in Rule 40E 20.381, F.A.C. Modifications shall be approved if the conditions and requirements in Rules 40E 20.301 and 40E 20.302, F.A.C., are met.~~

~~(3)(a) Modification of an existing general water use permit shall be approved by letter, provided the permit is in compliance with all applicable limiting conditions and the modification request:~~

~~1. Does not exceed the applicable general permit allocation limitations in Rule 40E 20.302,~~

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F.A.C.;

~~2. Does not result in a requested permit duration which exceeds the expiration date of the existing permit, except that when the permit duration is based upon the current lease expiration date, the permit duration may be extended by letter modification to the new lease date, but shall not exceed the applicable permit duration pursuant to subsection 40E-20.321(2), F.A.C.;~~

~~3. Does not potentially interfere with any presently existing legal use of water, cause harm to wetlands or other surface waters, harmful saltwater intrusion or pollution of the water resources, harm to offsite land uses, does not withdraw water reserved under Chapter 40E-10, F.A.C., or does not otherwise raise issues requiring a Staff determination of whether harm to the water resources would occur pursuant to the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, incorporated by reference in Rule 40E-20.091, F.A.C.;~~

~~4. Does not change the permitted withdrawal source; and~~

~~5. Does not result in a modification of the permit which must be approved by the Governing Board pursuant to Section 373.239(2), F.S.;~~

~~6. Does not allow more cumulative days and time to conduct landscape irrigation pursuant to Chapter 40E-24, F.A.C., for those permits classified as landscape irrigation use.~~

~~(b) The time frames set forth in Rule 40E-1.603, F.A.C., shall apply to the processing of applications for letter modifications.~~

Rulemaking Authority 373.044, 373.113, 373.171, 373.216 FS. Law Implemented 373.223, 373.229, 373.239 FS. History–New 4-20-94, Amended 7-11-96, 4-9-97, 12-10-97, 8-14-02, 8-31-03, 4-23-07, 2-13-08, 7-2-09, 3-15-10, Repealed _____.

40E-20.351 Transfer of General Water Use Permits.

~~A permittee must comply with the requirements of Rule 40E-1.6107, F.A.C., in order to obtain a permit transfer to a new permittee. If the permit transfer is in conjunction with an application for permit modification, the permit shall be transferred at the time of permit modification if all applicable permit transfer criteria are met.~~

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.223, 373.229, 373.239 FS. History–New 12-1-82, Amended 4-20-94, 8-14-02, Repealed _____.

40E-20.381 Limiting Conditions.

~~Staff shall impose on any permit granted under this chapter such reasonable standard and special conditions as are necessary to assure that the permitted use or withdrawal will be consistent with the overall objectives of the District, will not be harmful to the water resources of the District, is reasonable beneficial, will not interfere with any presently existing legal uses, and is consistent with the public interest. Standard permit conditions in Section 5.1 of the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District” incorporated by reference in subsection 40E-20.091(1), F.A.C., shall be in the permit. Special permit conditions, including those specified in Section 5.2 of the “Basis of Review for Water Use Permit Applications within the South Florida Water Management District”, shall be in the permit.~~

Rulemaking Authority 373.044, 373.113, 373.118 FS. Law Implemented 373.042, 373.0421, 373.103(4), 373.118, 373.219, 373.223 FS. History–New 9-3-81, Formerly 16K-2.031(2), 16K-2.032(2), Amended 2-24-85, 7-26-87, 4-20-94, 7-11-96, 4-9-97, 12-10-97, 11-4-01, 8-14-02, 4-

23-07, 2-13-08, Repealed.

DRAFT

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SFWMD Chapter 40E-24, F.A.C., Mandatory Year-Round Landscape Irrigation Conservation Measures

40E-24.011 Policy and Purpose.

(1) This chapter comprises the Mandatory Year-Round Landscape Irrigation Conservation Measures within the boundaries of the South Florida Water Management District (District). These mandatory conservation measures are intended to provide a framework for consistent implementation to ensure the long-term sustainability of the water resources of the region, increase water use efficiency and prevent and curtail wasteful water use practices through regulatory means for landscape irrigation by all users. Water savings achieved by public and private water supply utilities through conservation may be used to extend the availability of all water sources to meet future demands and defer the need for additional capital investment in alternative water supplies, subject to compliance with Chapters 40E-2 and ~~40E-20~~, F.A.C. Local governments are encouraged to implement these conservation measures through the adoption of ordinances that would include these measures, variance and enforcement provisions. These measures are in addition to Chapters 40E-2 and ~~40E-20~~, F.A.C., provisions and non-regulatory measures, such as education and incentive programs, which are also utilized by the District to promote water conservation. These conservation measures prohibit landscape irrigation during those periods of the day when irrigation efficiency significantly decreases, and limit landscape irrigation water use to two days per week except as specified herein. Users are encouraged to apply no more than 3/4-inch to 1-inch of water per week on their lawns and landscapes and only as needed to supplement rainfall. However, provisions have been made in this chapter to allow landscape irrigation three days per week in designated counties to address utility operational, health, and safety and landscape concerns.

(2) through (4) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.042, 373.0421, 373.171, 373.219, 373.223, 373.227 FS. History—New 6-12-03, Amended 3-15-10, _____.

40E-24.101 Definitions.

When used in this chapter:

(1) through (2) No change.

(3) “Consumptive Use Permit (CUP)” means a permit issued pursuant to Chapter 40E-2 or ~~40E-20~~, F.A.C., authorizing the consumptive use of water.

(4) through (13) No change.

(14) “User” means any person, individual, firm, association, organization, partnership, business trust, corporation, company, agent, employee or other legal entity whether natural or artificial, the United States of America, and the State and all political subdivisions, regions, districts, municipalities, and public agencies thereof, which directly or indirectly takes water from the water resource, including uses from private or public utility systems, uses under water use permits issued pursuant to Chapter 40E-2 or ~~40E-20~~, F.A.C., or uses from individual wells or pumps.

(15) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.042, 373.0421, 373.171, 373.219, 373.223, 373.227 FS. History—New 6-12-03, Amended 3-15-10, _____.

40E-24.201 Year-Round Landscape Irrigation Conservation Measures.

(1) The year-round landscape irrigation conservation measures contained in this chapter are applicable to all users as defined in subsection 40E-24.101(14), F.A.C., including permitted and exempt users under Chapter 40E-2, F.A.C., unless indicated otherwise herein. These conservation measures apply to all water sources, except that the use of reclaimed water, which may or may not be supplemented from another source, is allowed anytime. In addition to the requirements of this section, all permitted users under Chapters 40E-2 and ~~40E-20~~, F.A.C., are required to maintain compliance with all CUP conditions and terms, including those

SFWMD Chapter 40E-24, F.A.C., Mandatory Year-Round Landscape irrigation Conservation Measures

designed to require the implementation of water conservation practices.

(2) through (7) No change.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.042, 373.0421, 373.171, 373.219, 373.223, 373.227 FS. History—New 6-12-03, Amended 3-15-10, _____.



South Florida Water Management District Report of Planting and Harvest of Seasonal Crops



Online reporting is available at www.sfwmd.gov/ePermitting

PERMIT INFORMATION

WATER USE PERMIT NUMBER: _____ PERMITTEE/COMPLIANCE CONTACT NAME: _____

PROJECT NAME: _____ PHONE NUMBER: _____ E-MAIL: _____

CROP INFORMATION (attach additional sheets if necessary)

Year: _____

Please enter the total acres of each crop type being irrigated by month.

| Crop Name | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tomatoes, peppers, potatoes | | | | | | | | | | | | |
| Corn | | | | | | | | | | | | |
| Peas, beans | | | | | | | | | | | | |
| Melons | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | |
| Fallow acres with irrigation flow | | | | | | | | | | | | |

SUBMITTER INFORMATION

NAME OF PERSON SUBMITTING DATA: _____ DATE: _____

PHONE NUMBER: _____ EMAIL ADDRESS: _____

I certify that to the best of my knowledge and belief all of the information on this form is correct. I understand that making any material false statement on this form or in any attachments to it may result in revocation, in whole or in part, of the permit.

For assistance, please contact: wucompliance@sfwmd.gov
Please mail form to: Regulatory Support/Regulation Division
South Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

Comments:



South Florida Water Management District Water Quality Report Form

Online reporting is available at www.sfwmd.gov/ePermitting



Water Use Permit #: _____ Permitee Name: _____

Project Name: _____ Compliance Contact Name: _____

| Well/Pump/Station District ID | Well/Pump/Station Name | Sample Collection Date & Time | Water Level (feet NGVD) | Chloride (mg/l) | Conductivity (umhos/cm) | Turbidity (ntu) | Other (Specify) |
|-------------------------------|------------------------|-------------------------------|-------------------------|-----------------|-------------------------|-----------------|-----------------|
| | | | Result (value) | Result (value) | Result (value) | Result (value) | Result (value) |
| | | | | | | | |
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I certify that to the best of my knowledge and belief all of the information on this form is correct. I understand that making any material false statement on this form or in any attachments to it may result in revocation, in whole or in part, of the permit.

Name of Person Submitting Data: _____ Date: _____ Phone Number: _____

Email Address: _____

Mail form to: Regulatory Support/Regulation Division, South Florida Water Management District
P.O. Box 24680, West Palm Beach, Florida 33416-4680
For assistance, please contact: wucompliance@sfwmd.gov
Incorporated by reference in rule 40E-2.091, (F.A.C.)
Form 1377

Comments:

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



WATER USE PERMIT APPLICATION

South Florida Water Management District
P.O. Box 24680, West Palm Beach, Florida 33416-4680
(561) 686-8800 www.sfwmd.gov/ePermitting



SECTION I – CONTACT INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

If necessary, attach additional sheets if there are multiple applicants, owners, agents, etc.

1. **APPLICANT** (Complete legal name in which permit should be issued)

NAME: _____

If applicant is a business, provide a contact person: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

Applicant is: Owner Lessee* Other (explain) _____

*Attach copy of current lease, or written authorization from property owner

2. **OWNER** (If different than applicant)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

3. **AGENT OR CONSULTANT**

NAME: _____ COMPANY NAME (if applicable): _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

4. **COMPLIANCE CONTACT** (Person responsible for sending compliance reports to the District)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION II – APPLICATION INFORMATION

Refer to the Applicant’s Handbook for permit application guidance, located online at www.sfwmd.gov. If any fields are not applicable for the proposed use, write N/A in the field.

1. **TYPE OF APPLICATION:** New Modification Renewal
 If this application is for a modification, please describe the modification request and the reason the modification is necessary. _____

2. **REQUESTED PERMIT DURATION:** 20 years ____ years (up to 20 years)
 I qualify for a duration greater than 20 years, per Florida Statute 373.236

3. **PROJECT NAME:** _____ **COUNTY:** _____
PHYSICAL ADDRESS: _____

4. **RELATED PERMITS** (for projects other than Public Supply)
 ENVIRONMENTAL RESOURCE PERMIT (ERP) PERMIT/APPLICATION NO(S): _____
 RIGHT OF WAY (ROW) Permit/Application No(s): _____
 DIVERSION AND IMPOUNDMENT (D&I) Permit/Application No(s): _____

SECTION III – USE CATEGORY

Please check all applicable water use categories associated with this permit application and complete the associated supplemental form(s) indicated. Refer to District rules 40E-21.651 for water use type definitions.

| Water Use Category | Supplemental Form |
|---|-------------------|
| <input type="checkbox"/> Agricultural (e.g., crops, livestock, nursery, aquaculture, pasture) | Form A |
| <input type="checkbox"/> Commercial / Industrial (e.g., service business, food and beverage production, cooling and heating, commercial attraction, manufacturing, chemical processing, power generation, aquifer remediation, mining) | Form B |
| <input type="checkbox"/> Landscape / Recreation (e.g., irrigation of parks, cemeteries, landscaped areas, golf courses, athletic fields, playgrounds) | Form C |
| <input type="checkbox"/> Dewatering (e.g., water use or removal associated with construction or excavation) | Form D |
| <input type="checkbox"/> Public Supply (e.g., public or privately owned water utility) | Form E |
| <input type="checkbox"/> Diversion and Impoundment (diversion or extraction of water). Independent Secondary users should use the applicable supplemental form based on type of water use. | Form F |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION IV – SOURCES OF WATER

SUMMARY OF GROUNDWATER (WELL) FACILITIES

| | | | | | | |
|---|--|--|--|--|--|--|
| Well Name or Number | | | | | | |
| Map Designation | | | | | | |
| Existing or Proposed | | | | | | |
| Date of Proposed Construction | | | | | | |
| Date Installed if Existing | | | | | | |
| Diameter (in) | | | | | | |
| Total Depth (ft) | | | | | | |
| Cased Depth (ft) | | | | | | |
| Screened Interval (ft) | | | | | | |
| Pumped or Flowing | | | | | | |
| Pump Type (see Instructions) | | | | | | |
| Pump Intake Depth (ft bls) | | | | | | |
| Pump or Flow Capacity (GPM) | | | | | | |
| Working Valve if Artesian (yes, no or not applicable) | | | | | | |
| Status (see Instructions) | | | | | | |
| Purpose (see Instructions) | | | | | | |
| Elevation of the Wellhead (ft NGVD - see Instructions) | | | | | | |
| Water Use Accounting Method (see Instructions) | | | | | | |
| Date Last Calibrated (ATTACH calibration report) | | | | | | |
| Planar Coordinates (if known - see instructions) | | | | | | |
| Section / Township / Range | | | | | | |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

Instruction for Completing Groundwater (Wells) Section

Well Name or Number: The Applicant’s designation of the well. How do you refer to it?

Map Designation: This is how the well is labeled on the map submitted with the application. This may be the same as Well Name or Number, but does not necessarily have to be.

Existing or Proposed: If the well is proposed, enter the date of expected operation. If it is an existing well, enter the date it was installed if you know it.

Diameter: Outside diameter of the well casing.

Total Depth: Total length in feet between the land surface and the bottom of the well.

Cased Depth: The length in feet from the land surface to the bottom of the well casing.

Screened Interval: The distance in feet below land surface to the top and bottom of the well screen, if the well is so equipped.

Pumped or Flowing: Does the well produce water as a result of natural artesian flow, or is it pumped?

Pump Type: This is the type of pump that has been installed for the well (typical choices are as follows):

- | | | | |
|------------------|----------------|------------|-----------------|
| Centrifugal | Diesel turbine | Axial flow | Windmill |
| Submersible | Jet | Suction | Other (specify) |
| Electric turbine | Hydraulic | Portable | |

Pump Intake Depth: Location of the pump depth in feet below land surface. The pump may be on the surface or down inside the well.

Pump or Flow Capacity: The amount of water the pump can produce in gallons per minute (GPM).

Working Valve: If the well is artesian, does it have a working valve to control the flow?

- Status:**
- Primary
 - Secondary (i.e. a production well that is rotated)
 - Standby (i.e. used for freeze protection or emergency)
 - Monitor
 - Injection (i.e. A/C, pool heat exchange, etc.; sometimes used only periodically)
 - Recharge (i.e. same as above)

Purpose: What will the water be used for (typical choices are as follows):

- | | | | |
|------------|-----------------|---------------------|----------------------------------|
| Dairy | Irrigation | Air Conditioning | Swimming Pool Heating |
| Monitor | Aquaculture | Freeze Protection | Irrigation/Lake Recharge |
| Livestock | Bottled Water | Mining/Dewatering | Aquifer Storage and Recovery |
| Industrial | Other (specify) | Public Water Supply | Aquifer Remediation and Recovery |

Elevation of the Wellhead: This is the elevation of the top of the finished well at the ground surface.

Planar coordinates: The Florida State Plane System (Planar Coordinates) should be submitted if you have a land survey which identifies the location of the well in terms of those measurements. If you do not know what these are, it is not necessary to include them.

Section / Township / Range: The section, township and range in which the pump is located.

SUMMARY OF SURFACE WATER (PUMP) FACILITES

| | | | | | | |
|---|--|--|--|--|--|--|
| Pump Name or Number | | | | | | |
| Map Designation | | | | | | |
| Surface Water Source | | | | | | |
| Local Drainage District (if applicable) | | | | | | |
| Existing or Proposed | | | | | | |
| Date of Proposed Installation | | | | | | |
| Date Installed if Existing | | | | | | |
| Pump type (for list see Instructions) | | | | | | |
| Pump Capacity (GPM) | | | | | | |
| Pump Horsepower | | | | | | |
| Pump Diameter (inches) | | | | | | |
| Pump Intake Elevation (feet NGVD) | | | | | | |
| Status (see Instructions) | | | | | | |
| Purpose (see Instructions) | | | | | | |
| Two way pump? (yes / no) | | | | | | |
| Water Use Accounting Method (see Instructions) | | | | | | |
| Date Last Calibrated (ATTACH calibration report) | | | | | | |
| Planar Coordinates (if known - see instructions) | | | | | | |
| Section / Township / Range | | | | | | |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

Instructions for Completing Surface Water (Pumps) Section

Pump Name or Number: The Applicant’s designation of the pump. How do you would refer to it?

Map Designation: This is how the pump is labeled on the map submitted with the application. This may be the same as Pump Name or Number, but does not necessarily have to be.

Surface Water Source: This is the name of the water body from which the pump withdraws water (e.g. SFWMD C-51, Lake Worth Drainage District Canal E-3, Un-named canal, onsite lake).

Local Drainage District: If the project is located in a local drainage or “298” district, such as Lake Worth Drainage District, Indian Trails Water Control District, etc., please identify it.

Existing or Proposed: If the pump is proposed enter the date of expected operation. If it is an existing pump, enter the date it was installed if you know it.

Pump Type: Typical choices are:

- | | | | | | |
|-------------|------------------|-----------|-----------------|------|-------------|
| Centrifugal | Diesel | Turbine | Axial | Flow | Submersible |
| Suction | Electric turbine | Hydraulic | Other (specify) | | |

Pump Capacity: The amount of water the pump can produce in gallons per minute (GPM).

Pump Horsepower: Horsepower rating of the pump.

Pump Diameter: Size of the intake opening of the pump, in inches.

Pump Intake Elevation: The elevation from which the pump can produce water without cavitating.

- Status:**
- Primary
 - Secondary (i.e. a production pump that is rotated)
 - Standby (i.e. used for freeze protection or emergency)

Purpose: What will the water be used for (typical choices are as follows):

- | | | | |
|----------------------------------|-------------------|------------------------------|-----------------------|
| Dairy | Irrigation | Air Conditioning | Swimming Pool Heating |
| Aquaculture | Freeze Protection | Irrigation/Lake Recharge | Mining/Dewatering |
| Livestock | Industrial | Aquifer Storage and Recovery | |
| Aquifer Remediation and Recovery | Other (specify) | | |

Two way pump: Can the pump be used for both intake of irrigation water and discharge of storm water?

Flow Measurement Method: Describe how the amount of water produced by the pump will be measured a per Section 4.1.1. of the Applicant’s Handbook.

Date Last Calibrated: When was the flow measurement method last calibrated? ATTACH the calibration report.

Planar coordinates: The Florida State Plane System (Planar Coordinates) should be submitted if you have a land survey which identifies the location of the pump in terms of those measurements. If you do not know what these are, it is not necessary to include them.

Section / Township / Range: The section, township and range in which the pump is located.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SUMMARY OF SURFACE WATER (CULVERT) FACILITIES

| | | | | | | |
|---|--|--|--|--|--|--|
| Culvert Name or Number | | | | | | |
| Map Designation | | | | | | |
| Surface Water Source | | | | | | |
| Local Drainage District (if applicable) | | | | | | |
| Existing or Proposed | | | | | | |
| Date of Proposed Construction | | | | | | |
| Date installed if Existing | | | | | | |
| Culvert type (for list see Instructions) | | | | | | |
| Culvert length (Feet) | | | | | | |
| Culvert Cross-section | | | | | | |
| Culvert Diameter (inches) | | | | | | |
| Culvert Height (inches) | | | | | | |
| Culvert Width (inches) | | | | | | |
| Invert Elevation (Feet NGVD) | | | | | | |
| Type of Control Device (for list see Instructions) | | | | | | |
| Status (see Instructions) | | | | | | |
| Purpose (see Instructions) | | | | | | |
| Two way culvert? (yes / no) | | | | | | |
| Water Use Accounting Method (see Instructions) | | | | | | |
| Date Last Calibrated (if known) | | | | | | |
| Planar Coordinates (if known - see instructions) | | | | | | |
| Section / Township / Range | | | | | | |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

Instructions for Completing Surface Water (Pumps) Section

Culvert Name or Number: The Applicant’s designation of the culvert. How do you refer to it?

Map Designation: This is how the culvert is labeled on the map submitted with the application. This may be the same as Culvert Name or Number, but does not necessarily have to be.

Surface Water Source: This is the name of the water body from which the culvert withdraws water (e.g. SFWMD C-51, Lake Worth Drainage District Canal E-3, Un-named canal, onsite lake).

Local Drainage District: If the project is located in a local drainage or “298” district, such as Lake Worth Drainage District, Indian Trails Water Control District, etc., please identify it.

Existing or Proposed: If the culvert is proposed enter the date of expected operation. If existing, enter the date it was installed (if known).

Culvert Type: Corrugated; Metal pipe; Reinforced concrete pipe; Steel pipe

Culvert Length: Distance between the ends of the culvert in feet.

Culvert Cross-section: Is the culvert round, elliptical, rectangular, or other?

Culvert Diameter: If the culvert is round, the inside diameter of the culvert, in inches.

Culvert Height: If the culvert is not round, the inside height of the culvert, in inches.

Culvert Width: If the culvert is not round, the inside width of the culvert, in inches.

Invert Elevation: The lowest elevation, referenced to NGVD, at which water will flow through the culvert.

Type of Control Device: What controls the flow of water through the culvert (typical choices are): Control gate; Flap gate; Flashboard riser; Gated riser; Screw gate; Slide gate; Valve; Other (specify)

Status: Primary; Secondary (i.e. a production pump that is rotated); Standby (i.e. used for freeze protection/emergency)

Purpose: What will the water be used for (typical choices are as follows):
Dairy Irrigation Aquaculture Freeze Protection Mining/Dewatering
Livestock Industrial Irrigation/Lake Recharge Other (specify)

Two way culvert: Can the culvert be used for both intake of irrigation water and discharge of storm water?

Flow Measurement Method: Describe how the amount of water produced by the pump will be measured a per Section 4.1.1. of the Applicant’s Handbook.

Date Last Calibrated: When was the flow measurement method last calibrated? *ATTACH the calibration report.*

Planar coordinates: The Florida State Plane System (Planar Coordinates) should be submitted if you have a land survey which identifies the location of the culvert in terms of those measurements. If you do not know what these are, it is not necessary to include them.

Section / Township / Range: The section, township and range in which the culvert is located.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION V – EVALUATION OF RECLAIMED WATER FEASIBILITY

The applicant is required to evaluate the feasibility of utilizing reclaimed water. The feasibility analysis must be completed as outlined in the Applicant’s Handbook, subsection 2.2.4.

- Feasibility analysis attached
- Not applicable (i.e. no lines in area, crop type restriction, already using reclaimed)

Explanation: _____

SECTION VI – SUMMARY OF REQUESTED WATER USE

Total the requested water use from each supplemental form (Agricultural, Irrigation, Commercial / Industrial, Public Water Supply, etc.) in the table below. If the multiple sources add up to more than 100%, please attach an operating plan with a detailed explanation.

| Requested Amounts and Source(s) of Water | | | | |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Source 1 Name ¹ | Source 2 Name | Source 3 Name | Source 4 Name | Total Requested Water Use |
| (MGY ² /MGM ³) | (MGY ² /MGM ³) | (MGY ² /MGM ³) | (MGY ² /MGM ³) | (MGY ² /MGM ³) |
| / | / | / | / | / |

¹ Provide the name of the water source. Examples include the Upper Floridan aquifer and the Biscayne aquifer.
² MGY = Million gallons per year of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5).
³ MGM = Maximum million gallons per month of water to be withdrawn in any single month under the 1-in-10 year drought condition.

SECTION VII – AQUIFER STORAGE AND RECOVERY *(complete if applicable)*

| ASR Facility Name | Source of Stored Water ¹ | Storage Aquifer Name | Recovery Water Destination | Estimated Demand Average/Maximum (MGD) | Estimated Injected Average/Maximum (MGD) |
|-------------------|-------------------------------------|----------------------|----------------------------|--|--|
| | | | | / | / |
| | | | | / | / |
| | | | | / | / |
| | | | | / | / |

¹ Aquifer Name, surface water body, water treatment plant name.

Please describe any projected increases or decreases (from historical average) in the amounts stored or recovered.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION VIII – IMPACT EVALUATION

When determining whether the permit applicant has provided reasonable assurances that the conditions for issuance are met, the District will consider the projected impact of the proposed withdrawal, along with impacts from any existing legal uses and other pending applications for a water use permit. To provide these assurances, studies and/or impact evaluations may be required. Please refer to the Applicant’s Handbook (subsection 3.3) for criteria regarding impact evaluations and attach your analysis, if applicable.

- Impact evaluation attached
- Not applicable

SECTION IX – APPLICANT CERTIFICATION

I certify that to the best of my knowledge and belief all of the information provided on this form and in any attachment to it is correct. I understand that for any material false statement in an application to continue, initiate, or modify a use, or for any material false statement in any report or statement of fact required of the permittee may result in revocation, in whole or in part, of the permit. [Section 373.243(1), Florida Statutes]. With advance notice, I agree to provide District staff with proper identification entry to the project site for the purpose of performing analyses of the site for determining whether the conditions for issuance will be met. Further, if a permit is granted, I agree that, with advance notice, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications.

If applicable) I authorize _____ to act as my agent for permit application coordination.

| | | |
|--|-----------------------|------|
| APPLICANT’S NAME <i>(print or type)</i> | APPLICANT’S SIGNATURE | DATE |
|--|-----------------------|------|

| | | |
|---|------------------------------|------|
| AUTHORIZED AGENT’S NAME <i>(print or type)</i> | AUTHORIZED AGENT’S SIGNATURE | DATE |
|---|------------------------------|------|

SECTION X – APPLICANT CHECKLIST

Please make sure to include the following with the permit application submittal:

- Proof of Property Control (i.e. Deed, Lease) as per the Applicant’s Handbook, subsection 2.1.1 (may be obtained via the applicable county Property Appraiser’s website)
- Application Fee (www.sfwmd.gov)
- Location/Site Map (refer to supplemental application forms for specific requirements)
- Supplemental Form(s) and associated supporting information (i.e. maps, calculations)
- Water Conservation Plan (if applicable)
- Diversion and Impoundment (D&I) Independent Secondary User – Letter from the D&I that demonstrates legal access, and that the use will not cause the D&I to exceed its permit allocation.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

WATER USE PERMIT APPLICATION

Agricultural Use Supplemental Form A



South Florida Water Management District
P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

SECTION A1 – PARCEL/SITE INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Owned/Leased | Section(s), Township, Range (S_/T_/S/R_/E) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|--------------------|---|--|
| | | | |
| | | | |
| | | | |
| TOTAL ACRES OWNED/LEASED | | | |

Submit a map showing (if available, provide items A through E in a District-approved electronic format, e.g. ESRI shapefile, Autocad, DXF, KMZ, or compatible GIS file):

- A. The project boundaries of the property owned or controlled by the permittee/applicant;
- B. The area on the property that is being or will be irrigated;
- C. All existing and proposed withdrawal point locations. Label all wells, pumps and culverts so they match the IDs provided in the Application form (Section IV - Sources of Water);
- D. A north arrow and map scale; and
- E. Labeled landmarks such as roads and political boundaries.

SECTION A2 – WATER USE INFORMATION

1. **CROPS** (includes annual/perennial crops, pasture, hay and sod. If crop types are rotated annually, list the crops with the higher irrigation requirements)

| Crop Name | Plant/Crop Type | Earliest Planting Month | Total # Planting Months | # Acres Irrigated in Ground | # Acres Irrigated in Containers | Soil Type ¹ | Rainfall Station Name ² | Irrigation System ³ |
|-----------|-----------------|-------------------------|-------------------------|-----------------------------|---------------------------------|------------------------|------------------------------------|--------------------------------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ / ² refer to Blaney Net Depth of Application Area Maps located @ www.sfwmd.gov. ³ Drip, Micro jet, overhead, nursery container, etc.

If any of the crops listed above are rotated or double- or triple-cropped, describe the rotation or multiple crop cycle.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

2. LIVESTOCK

| Livestock Type | # of Livestock | Demand Per Head (Gallons) | Livestock Type | # of Livestock | Demand Per Head (Gallons) |
|----------------|----------------|---------------------------|----------------|----------------|---------------------------|
| Beef Cattle | | 12 | Horses | | 12 |
| Chickens | | 0.1 | Sheep | | 2 |
| Dairy Cattle | | 150 | Turkeys | | 1 |
| Hogs | | 2 | Other _____ | | _____ |
| Other _____ | | _____ | Other _____ | | _____ |

3. AQUACULTURE

A. Type(s) of aquaculture operation. _____

B. Tank information: Group by volume (length x width x depth from normal water elevation to pond/tank bottom) in cubic feet. Pond information: Provide the following information for ponds utilized by this operation. Please indicate whether each pond is lined or unlined.

| Tank Groups | Volume (cubic-ft) | Number of Tanks | | Pond | Volume (cubic-ft) | Average Water Table Elevation Datum _____ | Invert Elevation Datum _____ |
|-------------|-------------------|-----------------|--|------|-------------------|---|------------------------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

C. How many times per year are the ponds/tanks emptied? _____

D. What percentage of water is filtered/treated and recycled? _____

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION A3 – REQUESTED WATER USE

- Complete the requested water use table below. Provide projected water amounts for each applicable use type and the water source(s) associated with the use type.

If this application is for multiple sites, submit additional pages to provide the information below for each site.

| Agriculture Use Type | Requested Amounts and Source(s) of Water (MGY ² /MGM ³) | | |
|----------------------|--|---------------|---------------|
| | Source 1 Name ¹ | Source 2 Name | Source 3 Name |
| Crops | / | / | / |
| Livestock | / | / | / |
| Aquaculture | / | / | / |
| Total | / | / | / |

¹ Provide the name of the water source. Examples include the Upper Floridan aquifer and the Biscayne aquifer.
² MGY = Million gallons per year of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5).
³ MGM = Maximum million gallons per month of water to be withdrawn in any single month under the 1-in-10 year drought condition.

- Please indicate the amount of frost/freeze protection requested in million gallons per day (MGD), and the type of system used (i.e. flood, micro jet, sprinkler) if applicable

- Please provide a description of the methodology used to calculate the requested water amounts for each use type in the table above (e.g., Modified Blaney-Criddle method, historical use, water budget calculations, other similar facilities, etc.). Attach additional sheets, if necessary. The Modified Blaney-Criddle calculation spreadsheet can be located at www.sfwmd.gov.

SECTION A4 – WATER CONSERVATION

Please refer to District specific water conservation requirements, in the Applicant’s Handbook, Section 2.3.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



WATER USE PERMIT APPLICATION

Commercial / Industrial Use Supplemental Form B



South Florida Water Management District
 P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

SECTION B1 – PARCEL/SITE INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Owned/ Leased | Section(s), Township, Range (S_/T_S/R_E) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|---------------------------|--|--|
| | | | |
| | | | |
| | | | |
| TOTAL ACRES OWNED/LEASED | | | |

Submit a map showing (if available, provide items A through D in a District-approved electronic format, e.g. ESRI shapefile, Autocad, DXF, KMZ, or compatible GIS file):

- A. The project boundaries of the property owned or controlled by the permittee/applicant;
- B. All existing and proposed withdrawal point locations. Label all wells, pumps and culverts so they match the IDs provided in the Application form (Section IV - Sources of Water);
- C. A north arrow and map scale; and
- D. Labeled landmarks such as roads and political boundaries.

SECTION B2 – WATER USE INFORMATION

- Check the categories below that most closely describe the type of activity associated with this permit application.

| | |
|---|--|
| <input type="checkbox"/> Manufacturing / Processing | <input type="checkbox"/> Commercial / Specialty |
| <input type="checkbox"/> Food Processing | <input type="checkbox"/> Power Plant |
| <input type="checkbox"/> Beverage Processing | <input type="checkbox"/> Zoo / Attraction / Aquarium |
| <input type="checkbox"/> Aquifer Remediation | <input type="checkbox"/> Rock Washing |
| <input type="checkbox"/> Mining | <input type="checkbox"/> Other (describe) _____ |

2. Provide a detailed description of the type of business and/or operation.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION B3 – WATER BALANCE

WATER BALANCE

Provide a water balance that shows the following information. The tables below may be used to assist in developing the water balance. The water balance may show the annual average and peak month quantities (in gallons per day) for sources, uses, losses and recycled water in a schematic diagram that portrays all steps in the process including those listed in Section B2. The total of all sources must equal the total of all uses, and the losses plus recycled water must equal the total of all sources. The water balance must include:

- A. All water sources (groundwater, surface water, rainfall, recycled water, reclaimed water, etc.);
- B. The amount of water entering and leaving each step in the process; and
- C. All water losses (e.g., evaporation, product water content, steam losses, etc.).

WATER BALANCE WORKSHEET TABLES

WATER SOURCES

Sources include wells, surface water, recycled water, public supply utilities, reclaimed water from public supply utilities, captured excess storm water (rainfall), etc. Sources total must equal uses total.

| List Sources: | Annual Average (gpd) | Peak Month (gpd) |
|-----------------------|-------------------------|---------------------|
| | | |
| | | |
| | | |
| SOURCES TOTAL: | | |

RECYCLED WATER SOURCES

Recycled sources include recycled water sources (see “Water Sources”, above) and all reused water such as settling ponds, cooling ponds or water that is a byproduct of the industry.

| List Recycled Sources: | Annual Average (gpd) | Peak Month (gpd) |
|------------------------|-------------------------|---------------------|
| | | |
| | | |
| | | |
| RECYCLED TOTAL: | | |

WATER USES

Uses are water quantities entering and leaving each step in the process. These are uses listed in the two preceding tables dealing with water demand. Uses total must equal sources total.

| List Uses: | Annual Average (gpd) | Peak Month (gpd) |
|--------------------|-------------------------|---------------------|
| | | |
| | | |
| | | |
| USES TOTAL: | | |

WATER LOSSES

Losses represent water lost through evaporation (from ponds or cooling towers), product content, pond infiltration, spray disposal, steam losses, waste entrainment, sewage or wastewater, off-site disposal, etc.

| List Losses: | Annual Average (gpd) | Peak Month (gpd) |
|----------------------|----------------------|------------------|
| | | |
| | | |
| | | |
| LOSSES TOTAL: | | |

SECTION B4 – REQUESTED WATER USE

- Complete the requested water use table below. Provide projected water amount for each applicable use type and the water source(s) associated with the use type.

| Commercial/Industrial Use Type | Requested Amounts and Sources of Water (MGY ² /MGM ³) | | |
|--------------------------------|--|------------------------|------------------------|
| | Source 1 Name ¹ _____ | Source 2 Name _____ | Source 3 Name _____ |
| Manufacturing / Processing | / | / | / |
| Food Processing | / | / | / |
| Beverage Processing | / | / | / |
| Aquifer Remediation | / | / | / |
| Mining | / | / | / |
| Commercial / Specialty | / | / | / |
| Power Plant | | | |
| Zoo / Attraction / Aquarium | / | / | / |
| Rock Washing | / | / | / |
| Other _____ | / | / | / |
| Total | / | / | / |

¹ Provide the name of the water source. Examples include the Upper Floridan aquifer and the Biscayne Aquifer
² MGY = Million gallons per year of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5).
³ MGM = Maximum million gallons per month of water to be withdrawn in any single month under the 1-in-10 year drought condition.

- Provide a description of the methodology used to calculate the requested amounts for each commercial or industrial use listed in the table above. Attach additional sheets, if necessary.

SECTION B5 – WATER CONSERVATION

Please refer to District specific water conservation requirements, in the Applicant’s Handbook, Section 2.3.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



WATER USE PERMIT APPLICATION

Landscape / Recreation Use Supplemental Form C



South Florida Water Management District
 P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

SECTION C1 – PARCEL/SITE INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Owned/ Leased | Section(s), Township, Range (S_/T_/S/R_/E) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|---------------------------|--|--|
| | | | |
| | | | |
| | | | |
| TOTAL ACRES OWNED/LEASED | | | |

Submit a map showing (if available, provide items A through E in a District-approved electronic format, e.g. ESRI shapefile Autocad, DXF, KMZ, or compatible GIS file):

- A. The project boundaries of the property owned or controlled by the permittee/applicant;
- B. The area on the property that is being or will be irrigated, if applicable;
- C. All existing and proposed withdrawal point locations. Label all wells, pumps and culverts so they match the IDs provided in the Application form (Section IV - Sources of Water);
- D. A north arrow and map scale, and
- E. Labeled landmarks such as roads and political boundaries.

SECTION C2 – WATER USE INFORMATION

1. IRRIGATED LANDSCAPE / GOLF COURSE AREAS

| Water Use Type ¹ | # Acres Irrigated | Soil Type ² | Rainfall Station Name ³ | Irrigation System ⁴ |
|-----------------------------|----------------------|------------------------|---------------------------------------|--------------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

¹ Turf, shrubs, non-turf planting beds, common areas, cemetery, athletic fields, tennis courts, parks, medians, golf course, etc.

^{2/3} Refer to Blaney Net Depth of Application Area Maps located @ www.sfwmd.gov

⁴ Drip, Micro jet, overhead, etc.

1. WATER-BASED RECREATION

Describe the type of water-based recreation. Examples: swimming pools, spas, and waterslides.

SECTION C3 – REQUESTED WATER USE

1. Complete the requested water use table below. Provide projected water amount for each applicable use type and the water source(s) associated with the use type.
2. The allocations for irrigation withdrawals are based on the supplemental irrigation requirements for the turf types and acreages listed.

| Landscape/Recreation Use Type | Requested Amounts and Sources of Water (MGY ² /MGM ³) | | |
|-------------------------------|--|------------------------|------------------------|
| | Source 1 Name ¹ _____ | Source 2 Name _____ | Source 3 Name _____ |
| Golf Course | / | / | / |
| Irrigated Landscape | / | / | / |
| Water Based Recreation | / | / | / |
| Total | / | / | / |

¹ Provide the name of the water source. Examples include the Upper Floridan aquifer and the Biscayne aquifer.

² MGY =Million gallons per year of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5)

³ MGM = Maximum million gallons per month of water to be withdrawn in any single month under the 1-in-10 year drought condition.

3. Please provide a description of the methodology used to calculate the requested amounts for each use type in the table above (e.g., Modified Blaney-Criddle method, historical use, water budget calculations, other similar facilities, etc.). Attach additional sheets, if necessary. The Modified Blaney-Criddle calculation spreadsheet can be located at www.sfwmd.gov.

SECTION C4 – WATER CONSERVATION

Please indicate the amount of reclaimed water, if applicable, that will be used to meet irrigation needs on an average daily and maximum monthly basis, and include a copy of the reclaimed water agreement.

Please refer to District specific water conservation requirements, in the Applicant's Handbook, Section 2.3.



WATER USE PERMIT APPLICATION

Dewatering Use Supplemental Form D



South Florida Water Management District
 P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

SECTION D1 – PARCEL/SITE INFORMATION

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Owned/ Leased | Section(s), Township, Range (S_/T_/S/R_E) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|---------------------------|---|--|
| | | | |
| | | | |
| | | | |
| TOTAL ACRES OWNED/LEASED | | | |

Submit a map showing (if available, provide items A through G in a District-approved electronic format, e.g. ESRI shapefile, Autocad, DXF, KMZ, or compatible GIS file):

- A. The project boundaries of the property owned or controlled by the permittee/applicant;
- B. The area on the property that is being or will be dewatered;
- C. All existing and proposed withdrawal point locations. Label all wells, pumps and culverts so they match the IDs provided in the Application form (Section IV - Sources of Water);
- D. A north arrow and map scale;
- E. Labeled landmarks such as roads and political boundaries;
- F. Show the dewatering operation including the discharge routing, any pre-mitigation measures, such as hydraulic recharge/intercept ditches, on-site storage areas, off-site discharge points, wetlands, existing legal users, contamination sites, and/or saline water; and
- G. Provide locations of any groundwater augmentation points.

Type of dewatering permit requested:

- Standard Individual (up to one year) Standard Individual (greater than one year) Master Individual

A Standard permit would represent projects that are defined and a Master permit would represent projects with phases, undefined activities or no contractor at the time of permit application.

Refer to the Applicant’s Handbook, Section 2.3.2(B).

SECTION D2 – WATER USE INFORMATION

1. DEWATERING

- A. Indicate method(s) of dewatering;
- B. Explain how water from dewatering activities or from ground or surface water withdrawal points is to be used, transferred, discharged or stored on site for each phase of the project;
- C. List methods that will be implemented to mitigate turbidity and prevent hydrologic impacts;
- D. Identify all wetlands on or adjacent to the project which may be impacted;
- E. Identify all existing legal users on or adjacent to the project which may be impacted;
- F. Locate and describe all sources of groundwater contamination or pollution;
- G. Locate and describe the location of the nearest saline water;
- H. Provide a contingency plan which describes how storm water will be managed during dewatering operations (include volume calculations and area of influence);
- I. Identify the areal extent of the drawdown of the aquifer;
- J. Provide the proposed timeline and duration for progression of the dewatering activities either on the map or in narrative format;
- K. Identify the length, width and cross sections with elevation and datum information for all dewatered areas, proposed storage areas and pre-mitigation constructions; and
- L. Provide the maximum depth of dewatering and excavation.

2. DISCHARGE

Is off-site discharge proposed as part of this operation? Yes No

If the site is in a Water Reservation Area, no offsite discharge is allowed in excess of the reserved amount.

If off-site discharge is proposed as part of this operation, please demonstrate that it is not technically feasible to retain water onsite and provide the following information:

- A. Documentation of authorization that allows the applicant to discharge directly into the receiving water body and/or adjacent lands, and a demonstration that the receiving water body or adjacent lands are capable of accepting the dewatering discharge;
- B. An operations plan which demonstrates that the discharge to the receiving water body will meet all applicable State Water Quality standards prior to discharge; and that the discharge to protected wetlands will not contain turbidity levels in violation of State Water Quality standards prior to discharge;
- C. A monitoring plan which includes, at a minimum, proposed sampling locations and daily turbidity measurements of the discharge and background conditions in the receiving body and/or wetland; and
- D. A contingency plan which includes procedures for ceasing dewatering operations and correcting the situation until monitoring demonstrates water quality standards are met.

SECTION D3 – WATER BALANCE

WATER BALANCE – Provide a water balance that demonstrates where and in what quantities water is generated to accomplish the dewatering, including any associated losses, and where and in what quantity water is stored, recharged, disposed, or reused. The tables below may be used to assist in developing that water balance. If processing of materials is associated with the dewatering, a separate water balance describing these activities is required.

Dewatering:

| Phase/Description | Pump Capacity (gal/min) | Operation Period (gal/day) | Max Daily Pumpage (gal/day)* | Max Pumpage Duration (days)* | Average Daily Pumpage (gal/day)* | Average Pumpage Duration (days)* | Total Pumpage (million gallons) |
|-------------------|-------------------------|----------------------------|------------------------------|------------------------------|----------------------------------|----------------------------------|---------------------------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL: | | | | | | | |

* Dewatering operations can include a high volume startup period followed by lower volume maintenance pumping.

Discharge:

| Discharge Location | Description | Annual Average (gpd) | Peak Month (gpd) |
|--------------------|-------------|----------------------|------------------|
| | | | |
| | | | |
| | | | |
| | | | |

Extent:

| Phase/Description | Average Land Surface (ft. NAVD/NGVD) ¹ | Water Table Elevation (ft. NAVD/NGVD) ¹ | Lowest Excavated Elevation (ft. NAVD/NGVD) ¹ | Depth of Dewatering Elevation (ft. NAVD/NGVD) ¹ | Areal Extent of Drawdown ² (feet) |
|-------------------|---|--|---|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

¹Please indicate how data is represented by circling NAVD or NGVD.

²Can be calculated using an analytical or numerical model (i.e. Theis or Modflow) or empirical formula (i.e. Sichardt). Please provide input and output files for models and calculations for formulas.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION D4 – REQUESTED WATER USE

1. Complete the requested water use table below. Provide projected water amount for each applicable use type and the water source(s) associated with the use type. Typical dewatering water demands are listed below.

| Dewatering Use Type | Requested Amounts and Sources of Water (MGY ² /MGM ³) | | |
|---------------------|--|------------------------|------------------------|
| | Source 1 Name ¹ _____ | Source 2 Name _____ | Source 3 Name _____ |
| Dewatering | / | / | / |
| Discharge from site | / | / | / |
| Other _____ | / | / | / |
| Total | / | / | / |

¹ Provide the name of the water source. Examples include the water table aquifer, mining pit, canal/ditch, pond, etc.
² MGY = Million gallons per year of water to be withdrawn over a 12-month time period (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5).
³ MGM = Maximum million gallons per month of water to be withdrawn in any single month.

2. Please provide a description of the methodology used to calculate the requested water amounts for each use type in the table above. Attach additional sheets, if necessary.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

WATER USE PERMIT APPLICATION

Public Supply Use Supplemental Form E



South Florida Water Management District
P.O. Box 24680, West Palm Beach, Florida 33416-4680
(561) 686-8800

www.sfwmd.gov/ePermitting

SECTION E1 – SITE INFORMATION (Location/Site Maps)

Submit a map showing (if available, provide items A through F in a District-approved electronic format, e.g. ESRI shapefile, Autocad, DXF, KMZ, or compatible GIS file):

- A. The Distribution Area boundary(ies) where service is currently being provided and where the utility is proposing to provide service during the permit duration;
- B. The Authorized Water Service Area or Franchise Area boundary in which the utility is legally authorized to provide potable water service;
- C. All existing and proposed withdrawal locations and monitor wells. Label all wells, pumps and culverts so they match the IDs provided in the Application form (Section IV - Sources of Water);
- D. Locations of interconnections with other utilities;
- E. A north arrow and map scale; and
- F. Labeled landmarks such as major roads and political boundaries.

SECTION E2 – WATER DEMAND COMPONENTS, POPULATION AND PER CAPITA USE

Historical data must be provided for the previous five years (including the most recent calendar year) and projected use at a minimum of five-year intervals for the requested permit duration.

Past Treated Water Use

| Year | Population | Unit | Residential Treated Use (mgd) | | Industrial / Commercial Treated Use ¹ (mgd) | Treated Landscape and Recreation Irrigation Average Day ² (mgd) | Other Treated Metered Uses ³ (mgd) | Unaccounted Treated Uses ⁴ (mgd) | Large User's Agreement Treated Deliveries ⁵ (mgd) | Total Treated Water ⁶ (mgd) | Treat Per Capit | |
|----------|------------|------|-------------------------------|--------------|--|--|---|---|--|--|-----------------|--|
| | | | Single Family | Multi-Family | | | | | | | | |
| Historic | | U | | | | | | | | | | |
| | | P | | | | | | | | | | |
| | | UxP | | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

Projected Treated Water Use

| Year | Population | Unit | Residential Treated Use (mgd) | | Industrial / Commercial Treated Use ¹ (mgd) | Treated Landscape and Recreation Irrigation Average Day ² (mgd) | Other Treated Metered Uses ³ (mgd) | Unaccounted Treated Uses ⁴ (mgd) | Large User's Agreement Treated Delivered ⁵ (mgd) | Total Treated Water ⁶ (mgd) | Treat Per Capit (gpcc) | |
|-----------|------------|------|-------------------------------|--------------|--|--|---|---|---|--|------------------------|--|
| | | | Single Family | Multi-Family | | | | | | | | |
| Projected | | U | | | | | | | | | | |
| | | P | | | | | | | | | | |
| | | UxP | | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |
| | | | U | | | | | | | | | |
| | | | P | | | | | | | | | |
| | | | UxP | | | | | | | | | |
| | | U | | | | | | | | | | |
| | | P | | | | | | | | | | |
| | | UxP | | | | | | | | | | |

U = Number of units P = Per-unit water demand UxP = Total water demand

¹ Bulk industrial and commercial use including businesses, manufacturing facilities, and institutions such as schools and hospitals, including irrigation uses associated with these facilities whose irrigation source is provided by the utility.

² Use for irrigation of common areas such as parks, athletic fields, cemeteries, medians, and rights-of-way.

³ Examples of "Other" could include supplementation of a reclaimed water system, or other uses not listed above.

⁴ Water losses due to leaks, unmetered use, firefighting, etc.

⁵ Water delivered to others through interconnections.

⁶ The annual average day treated water demand; should represent the sum of the columns to the left.

Please explain the type of unit as defined in your service area / billing system:

Please describe the treatment method by plant, percent of product (usable water), the percent of reject (unusable) water, and the manner in which reject water will be disposed.

Raw Water Use

| | Year | Population | Total Treated Water Use (from above in mgd) | Treatment Losses ¹ (mgd) | Large User's Agreement Raw Delivered ² (mgd) | Large User's Agreement Raw Received ³ (mgd) | Total Raw Water Use ⁴ (mgd) | Raw Per Capita Use (gpcd) | Maximum Monthly Use (mgd) | Ratio Max : Average ⁵ |
|-----------|------|------------|---|-------------------------------------|---|--|--|---------------------------|---------------------------|----------------------------------|
| Historic | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Projected | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

¹ System losses for water that must undergo a treatment process, reject water from treatment systems such as reverse osmosis returned to head of plant.
² Water delivered from others through interconnections.
³ Water received from others through interconnections.
⁴ The annual average day raw water demand; should represent the sum of the columns to the left except for raw received, which should be subtracted.
⁵ The maximum monthly to average monthly peaking ratio, as calculated pursuant to Section 2.3.2.2.F.4 of the Applicant's Handbook.

1. Attach a description of the methodology used to develop projections for each column in the Projected Water Demands table above. Include supporting calculations and describe any deviations from District-approved methods as described in the Applicant's Handbook.
2. Attach additional information supporting raw per capita daily water use greater than 200 gallons per capita per day.
3. For those utilities which provide water to other entities through large user's agreements or other similar contracts, the quantity of water delivered to each end user (both average and peak day) and the duration of the water service delivery shall be identified. For those utilities which purchase supplemental water from another utility, the volume of water historically purchased (or contracted to be purchased for proposed uses) for both an average and maximum daily basis and the duration of the contract shall be provided.

SECTION E3 – REUSE FEASIBILITY

Please refer to District specific requirements, in the Applicant's Handbook, Section 2.2.

SECTION E4 – HISTORICAL AND REQUESTED WATER USE

1. **Historical and Projected Water Supply Sources** - Provide the historical and projected water supply from each source. Sources include any bulk water purchases or transfers. The sum of all sources should equal the Annual Average Daily Raw Water Demand.

| | Year | Requested Amounts and Source(s) of Water (MGY ² /MGM ³) | | | | |
|-------------------------|------|--|--|---|---|---|
| | | Annual Average Daily Raw Water Demand (mgd) Section E2 Raw Water | Source 1 Name ¹ _____ MGY ² /MGM ³ | Source 2 Name _____ MGY ² /MGM ³ | Source 3 Name _____ MGY ² /MGM ³ | Source 4 Name _____ MGY ² /MGM ³ |
| Historical Water Supply | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |
| Projected Water Supply | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |
| | | | / | / | / | / |

¹ Provide the name of the water source. Examples include the Upper Floridan aquifer and the Biscayne aquifer.
² MGY = Million gallons per year of water to be withdrawn over a 12-month time period. (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5).
³ MGM = Maximum million gallons per month of water to be withdrawn in any single month.

2. **Wellfield Operation Schedule** - Attach or provide a description of the typical wellfield operation schedule, including source and/or facility specific allocations if applicable. Identify which wells are primary, secondary (peaking), stand-by, and describe the well rotation schedule.

SECTION E5 – WATER CONSERVATION

Please attach a copy of the conservation plan as described in Subsection 2.3.2 of the Applicant's Handbook, and include a copy of any water conservation ordinances related to the plan.

Indicate whether the conservation program is a Standard Conservation Plan or a Goal-based Plan.
 Standard Conservation Plan Goal-based Plan

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



WATER USE PERMIT APPLICATION

Diversion and Impoundment Use Supplemental Form F



South Florida Water Management District
 P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

Diversion and Impoundment – Projects that divert surface water through a pump or operable water control structure, or divert a combination of surface and groundwater to a conveyance canal network system which the applicant has legal control to operate and maintain for the purposes of providing for the reasonable-beneficial demands of secondary users and consumptive and non-consumptive uses.

SECTION F1 – PARCEL/SITE INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Served | Section (s), Township, Range (S_T_S/R_E) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|-----------------|--|--|
| | | | |
| | | | |
| | | | |
| TOTAL ACRES OWNED/LEASED | | | |

Submit a map showing (if available, provide items A through C in a District-approved electronic format, e.g. ESRI shapefile, Autocad, DXF, KMZ, or compatible GIS file):

- A. The project boundaries of the property owned or controlled by the permittee/applicant;
- B. A north arrow and map scale;
- C. Labeled landmarks such as canals, roads and political boundaries; and
- D. The location of all secondary users of the system, including irrigated acreage and land use type.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION F2 – WATER USE INFORMATION

Please describe the operation by attaching the following information, as applicable (refer to the Applicant’s Handbook, Section 2.3.2.C):

- The extent (length, cross sections and depth) of the canal network used to deliver the associated water
- Land use classifications within the serviced area
- Surface water demands directly withdrawn for the system
- Seepage Losses
- Water necessary to maintain groundwater elevations for the purpose of aquifer recharge and saltwater intrusion prevention
- Evaporation losses from the canal surfaces
- Established control elevations during one and 10 year drought events
- Copies of executed agreements with dependent secondary users
- Historic use (permit renewal with no changes)
- Canal locations with established wet and dry season control elevations

SECTION F3 – REQUESTED WATER USE

Complete the requested water use table below. Provide projected water amount for each use type and the associated water source(s).

| Use Type | Source of Water (MGY ² /MGM ³) | | |
|---------------------------|---|------------------------|------------------------|
| | Source 1 Name ¹ _____ | Source 2 Name _____ | Source 3 Name _____ |
| Secondary Users Total | / | / | / |
| Maintenance Demands Total | / | / | / |
| Total | / | / | / |

¹ Provide the name of the water source. Examples include C 51, LWDD E-1

² MGY = Million gallons per year of water to be withdrawn over a 12-month time period under a 1-in-10 year drought condition (i.e. 1,500,000 gallons each day/1,000,000 = 1.5 x 365 = 547.5)

³ MGM = Maximum million gallons per month of water to be withdrawn in any single month under the 1-in-10 year drought condition.

SECTION F4 – WATER CONSERVATION

Please refer to District specific water conservation requirements, in the Applicant’s Handbook, Section 2.0.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



South Florida Water Management District Flow Meter Accuracy Calibration Report Form



Online reporting is available at www.sfwmd.gov/ePermitting

PERMIT INFORMATION

WATER USE PERMIT NUMBER: _____ PERMITTEE NAME: _____
PROJECT NAME: _____ COMPLIANCE CONTACT: _____

WELL/PUMP/STATION INFORMATION

DISTRICT ID: _____ NAME: _____
METER MANUFACTURER: _____ SERIAL NUMBER: _____

ACCURACY TESTING

DATE OF TEST: _____

STATION METER

TESTING METER

Initial meter reading @ start of test: _____ Initial meter reading @ start of test: _____

Final meter reading @ end of test: _____ Final meter reading @ end of test: _____

Total gallons: _____ Total gallons: _____

DURATION OF TEST*: _____

*Should be at least 5 minutes.

PERCENT ACCURACY [(total gallons station meter/total gallons test meter)*100]: _____

PERCENT ERROR (percent accuracy-100): _____

TEST METER INFORMATION

METER MANUFACTURER: _____ SERIAL NUMBER: _____

DATE OF LAST CALIBRATION (test meter): _____

ATTACH DIAGRAM OR PHOTO OF TEST METER INSTALLATION POSITION (optional)

Reference the SFWMD Calibration Handbook located online at www.sfwmd.gov – Select: Permits / Consumptive Water Use Permits / Compliance / Calibration Handbook.

TESTER INFORMATION

NAME OF PERSON PERFORMING TEST: _____

PHONE NUMBER: _____ EMAIL ADDRESS: _____

I certify that to the best of my knowledge and belief all of the information on this form is correct. I understand that making any material false statement on this form or in any attachments to it may result in revocation, in whole or in part, of the permit.

Please mail form to:
Regulatory Support/Regulation Division
South Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

For assistance, please contact: wucompliance@sfwmd.gov

Incorporated by reference in rule 40E-2.091 (F.A.C.)
Form 1387

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



South Florida Water Management District Alternative Method Calibration Report Form



Online reporting is available at www.sfwmd.gov/ePermitting

PERMIT INFORMATION

WATER USE PERMIT NUMBER: _____ PERMITTEE NAME: _____

PROJECT NAME: _____ COMPLIANCE CONTACT: _____

WELL/PUMP/STATION INFORMATION

DISTRICT ID: _____ NAME: _____

TIME CRITERIA – SELECT ONE

ELECTRIC CONSUMPTION – show calculations for converting kWh to hours run.

PUMP HOUR METHOD – no supporting information required.

LOG BOOK – no supporting information required.

FLOW RATE CHECK – SELECT ONE

PUMP CURVE – describe how you determined flow rate and provide a copy of the pump curve.

CARPENTER SQUARE – describe how you determined flow rate and provide calculations.

SPRINKLER APPLICATION RATE – describe how you determined flow rate and provide calculations.

BUCKET METHOD – describe how you determined flow rate and provide calculations.

STRAP-ON or INSERTION TURBINE METER – provide the following:

METER MANUFACTURER: _____ SERIAL # ON TEST METER: _____

DATE OF LAST CALIBRATION: _____

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

OTHER – describe how you determined flow rate.

CALCULATED FLOW RATE

FLOW RATE (gpm): _____ DATE OF TEST: _____

TESTER INFORMATION

NAME OF PERSON PERFORMING TEST: _____

PHONE NUMBER: _____ EMAIL ADDRESS: _____

I certify that to the best of my knowledge and belief all of the information on this form is correct. I understand that making any material false statement on this form or in any attachments to it may result in revocation, in whole or in part, of the permit.

For assistance, please contact: wucompliance@sfwmd.gov

Please mail form to:
Regulatory Support/Regulation Division
South Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)



South Florida Water Management District Crop (Freeze) Protection Form



Online reporting is available at www.sfwmd.gov/ePermitting

PERMIT INFORMATION

WATER USE PERMIT NUMBER: _____ PERMITTEE NAME: _____

PROJECT NAME: _____ COMPLIANCE CONTACT: _____

CROP PROTECTION INFORMATION
(attach additional sheets if necessary)

REPORTING MONTH/YEAR: _____

Please enter the beginning and ending meter readings or the starting and ending time water was pumped for crop protection, as specified by condition in your permit. Use one form for each month that the withdrawal point(s) were used for crop protection.

| Date | District Well/Pump/Station ID Number | Well/Pump/Station Capacity (gpm) | Start Time or Begin Meter Reading | End Time or End Meter Reading | Gallons Pumped |
|----------------------------|--------------------------------------|----------------------------------|-----------------------------------|-------------------------------|----------------|
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Total Gallons Used: | | | | | |

SUBMITTER INFORMATION

NAME OF PERSON SUBMITTING DATA: _____ DATE: _____

PHONE NUMBER: _____ EMAIL ADDRESS: _____

I certify that to the best of my knowledge and belief all of the information on this form is correct. I understand that making any material false statement on this form or in any attachments to it may result in revocation, in whole or in part, of the permit.

Freeze protection data may be submitted using the Pumpage Report form.

Please mail form to:
Regulatory Support/Regulation Division
South Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

For assistance, please contact: wucompliance@sfwmd.gov

Incorporated by reference in rule 40E-2.091 (F.A.C.)
Form 1389

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

NOTICE OF INTENT TO USE A WATER USE NOTICED GENERAL PERMIT



South Florida Water Management District
 P.O. Box 24680, West Palm Beach, Florida 33416-4680 (561) 686-8800
www.sfwmd.gov/ePermitting

Instructions: This form is to be used for projects that qualify for a Noticed General Permit in accordance with Rule 40E-2.071, F.A.C. Noticed General Permits are provided for certain activities that have been determined to have minimal impacts to the water resources of the state when conducted in compliance with the terms and conditions of the general permit. Dewatering and Diversion and Impoundment projects are not eligible for a Noticed General Permit.

To qualify for a Noticed General Permit, the project must meet all of the following Allocation, Facility and Source criteria. If your project does not satisfy all of these requirements, please complete a form for an Individual Permit.

ALLOCATION:

- The cumulative average daily water use is less than 100,000 gallons per day (GPD) on an annual basis;
- Does not exceed an annual average allocation greater than or equal to 300,000 GPD for *irrigation purposes* within the South Dade County Water Use Basin as depicted in Figure 21-11, Chapter 40E-21, F.A.C.;
- Does not exceed an annual average allocation greater than or equal to 10,000 GPD within the Lower Tamiami, Sandstone and Mid-Hawthorn aquifers as depicted in Figures 2-1, 2-2 and 2-3, Chapter 40E-2, F.A.C.;

FACILITY:

- Are from facilities having a cumulative withdrawal capacity of less than 1,000,000 GPD;
- Are from groundwater wells less than eight (8) inches in diameter;
- Are from surface water facilities which have a cumulative intake diameter less than six (6) inches;
- Are consistent with requirements of any applicable mandatory reuse zones, and

Note: *Projects in the South Dade County Water Use Basin are exempt from the facility criteria indicated above.*

SOURCE:

- Does not use surface water from the C-23, C-24, C-25, L-1, L-2 or L-3 Canal Systems;
- Does not use surface water within the Lake Istokpoga/Indian Prairie Canal System as identified in Figures 21-20 and 21-21, Chapter 40E-21, F.A.C.;
- Does not use surface or groundwater within the Picayune Strand or Fakahatchee Estuary, groundwater indirectly from the Picayune Strand or Fakahatchee Estuary or any canal identified in Figure 3-6 of the Applicant's Handbook, or surface water indirectly from any canal identified in Figure 3-6 of the Applicant's Handbook;
- Does not use surface water from the Lower East Coast Everglades Waterbodies or the North Palm Beach County/Loxahatchee River Watershed Waterbodies identified in Figures 3-1 and 3-2 of the Applicant's Handbook and the integrated conveyance system.
- Does not use surface water from the Nearshore Central Biscayne Bay Reservation canal reaches as identified in Figure 3-1, Chapter 40E-10, F.A.C.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SECTION I – CONTACT INFORMATION

WATER USE PERMIT # (if application is for renewal or modification): _____

If necessary, attach additional sheets if there are multiple applicants, owners, agents, etc.

1. **APPLICANT** (Complete legal name in which permit should be issued)

NAME: _____

If applicant is a business, provide a contact person: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

Applicant is: Owner Lessee* Agent/Consultant Other (explain) _____

*Date lease expires (mm/dd/yyyy) _____ Is lease automatically renewable No Yes

2. **OWNER** (If different than applicant)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

3. **AGENT OR CONSULTANT**

NAME: _____ COMPANY NAME (if applicable): _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: (_____) _____ CELL PHONE: (_____) _____

EMAIL ADDRESS: _____

SECTION II – APPLICATION INFORMATION

Refer to the Applicant's Handbook for permit application guidance, located online at www.sfwmd.gov. If any fields are not applicable for the proposed use, write N/A in the field.

1. **TYPE OF APPLICATION:** New Modification Renewal

If this application is for a modification, please describe the modification request and the reason the modification is necessary. _____

2. **PROJECT NAME:** _____ **COUNTY:** _____

PHYSICAL ADDRESS: _____

3. **RELATED PERMITS** (for projects other than Public Supply)

ENVIRONMENTAL RESOURCE PERMIT (ERP) PERMIT/APPLICATION No(s): _____

RIGHT OF WAY (ROW) PERMIT/APPLICATION No(s): _____

SECTION III – USE CATEGORY

Please check all applicable water use categories associated with this project.

- Agricultural** **Commercial / Industrial** **Landscape / Recreation** **Public Supply**

SECTION IV – PARCEL/SITE INFORMATION

| Parcel/Site Name (each non-contiguous parcel or field) | Acres Owned/ Leased | Section(s), Township, Range (S_/T_/R_) | County Parcel Identification Number (or attach digital GIS Shape file) |
|---|---------------------------|--|---|
| | | | |
| | | | |
| | | | |
| TOTAL | | | |

SECTION V – WATER USE INFORMATION

1. **CROPS** (includes annual/perennial crops, pasture, hay and sod. If crop types are rotated annually, list the crops with the higher irrigation requirements)

| Crop Name | Plant/Crop Type | Earliest Planting Month | Total # Planting Months | # Irrigated Acreage | Soil Type ¹ | Rainfall Station Name ² | Irrigation System ³ |
|-----------|-----------------|-------------------------------|-------------------------------|------------------------|---------------------------|--|-----------------------------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

^{1/2} refer to Blaney Net Depth of Application Area Maps located @ www.sfwmd.gov. ³ Drip, Micro jet, overhead, nursery container, etc.

2. **IRRIGATED LANDSCAPE / GOLF COURSE AREAS**

| Water Use Type ¹ | # Acres Irrigated | Soil Type ² | Rainfall Station Name ³ | Irrigation System ⁴ |
|-----------------------------|----------------------|------------------------|---------------------------------------|--------------------------------|
| | | | | |
| | | | | |
| | | | | |

¹ Turf, shrubs, non-turf planting beds, common areas, cemetery, athletic fields, tennis courts, parks, medians, golf course, etc.
^{2/3} Refer to Blaney Net Depth of Application Area Maps located @ www.sfwmd.gov (Topics>>Permits >> CONSUMPTIVE WATER USE PERMITS>>[left-hand side of the page under Related Links])
⁴ Drip, Micro jet, overhead, etc.

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

3. LIVESTOCK

| Livestock Type | # of Livestock | Demand Per Head (Gallons) | Livestock Type | # of Livestock | Demand Per Head (Gallons) |
|----------------|----------------|---------------------------|----------------|----------------|---------------------------|
| Beef Cattle | | 12 | Horses | | 12 |
| Chickens | | 0.1 | Sheep | | 2 |
| Dairy Cattle | | 150 | Turkeys | | 1 |
| Hogs | | 2 | Other _____ | | _____ |

4. PUBLIC SUPPLY

| Water Use Type ¹ | Population Served | Per Capita Use (GPD ² /Per Person) | Average Daily Use in GPD ² (Population served x Per Capita Use) | Max Month Peaking Factor (Generally between 1.3 and 1.7) | Max Monthly Use in GPM ³ (Average Daily Use x Max Month Peaking Factor x 30.4) |
|-----------------------------|-------------------|---|--|--|---|
| | | | | | |
| | | | | | |
| | | | | | |

¹ Indicate what the water will be used for (i.e. employee usage, campground facilities, restrooms, motel, etc.)

² Display data in Gallons per day

³ Display data in Gallons per month

5. OTHER WATER USE (Please provide a description on how the water will be used)

SECTION V – SOURCES OF WATER

SUMMARY OF GROUNDWATER (WELL) FACILITIES

| Well Name or Number | Pump or Flow Capacity (GPM) ¹ | Pump Type ² | Casing Diameter ³ (inches) | Total Depth ⁴ (feet) | Casing Depth ⁵ (feet) | Status ⁶ (include date if proposed) |
|---------------------|--|------------------------|---------------------------------------|---------------------------------|----------------------------------|--|
| | | | | | | |
| | | | | | | |
| | | | | | | |

¹ The amount of water the pump can produce in gallons per minute (GPM)

² The type of pump installed for the well (i.e. Centrifugal, Submersible, Electric turbine, Diesel turbine, Jet, Hydraulic)

³ The outside diameter of the well casing

⁴ The total length in feet between the land surface and the bottom of the well

⁵ The length in feet from the land surface to the bottom of the well casing

⁶ Primary, Secondary, Standby, Monitor

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

SUMMARY OF SURFACE WATER (PUMP / CULVERT) FACILITIES

| Pump/Culvert Name or Number | Pump Capacity ¹ (GPM) | Pump Intake Diameter / Culvert Diameter ² (inches) | Pump/Culvert Type ³ | Status ⁴ (include date if proposed) |
|-----------------------------|----------------------------------|---|--------------------------------|--|
| | | | | |
| | | | | |
| | | | | |

¹The amount of water the pump can produce in gallons per minute (GPM).
²Size of the intake opening of the pump, in inches or if the culvert is round, the inside diameter of the culvert in inches.
³The type of pump installed for the well (i.e. Centrifugal, Submersible, Electric turbine, Diesel turbine, Jet, Hydraulic).
⁴Primary, Secondary, Standby, Monitor.

SECTION VI – APPLICANT CHECKLIST

Please make sure to include the following items with the permit application submittal:

- Proof of Property Control (i.e. Deed, Lease) as per the Applicant’s Handbook, subsection 2.1.1 (may be obtained via the applicable county Property Appraiser’s website). *Lessee must provide date of lease expiration and if automatically renewable as requested in Section I.*
- Location/Site Map (to include the location of all existing facilities)
- Application Fee of \$350.00 if submitted using this form, or \$100.00 if submitted online @ www.sfwmd.gov/ePermitting.

SECTION VII– APPLICANT CERTIFICATION

I hereby certify that the surface water pumps or groundwater wells associated with the water use of this project are located on property I own/lease or that I have the legal right to access, use, and maintain the surface water pumps and groundwater wells. Upon the District’s request, I shall provide written documentation demonstrating my legal control of the withdrawal facilities at any time during the application process or the permitted duration.

I certify that to the best of my knowledge and belief all of the information provided on this form and in any attachment to it is correct. I understand that for any material false statement in an application to continue, initiate, or modify a use, or for any material false statement in any report or statement of fact required of the permittee may result in revocation, in whole or in part, of the permit. [Section 373.243(1), Florida Statutes]. With advance notice, I agree to provide District staff with proper identification entry to the project site for the purpose of performing analyses of the site for determining whether the conditions for issuance will be met. Further, if a permit is granted, I agree that, with advance notice, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications.

(If applicable) I authorize _____ to act as my agent for permit application coordination.

 APPLICANT’S NAME APPLICANT’S SIGNATURE DATE

 AUTHORIZED AGENT’S NAME AUTHORIZED AGENT’S SIGNATURE DATE

Attachment: CUPcon (1706 : Adopt Proposed Rules for CUP Consistency)

M E M O R A N D U M

TO: Governing Board Members

FROM: Doug Bergstrom, Director, Administrative Services Division

DATE: January 9, 2014

SUBJECT: Monthly Financial Statement – November 2013

The attached financial status report is provided for your review. This report provides a high level snapshot of District financial activity and includes revenue collections by source and expenditures by program. Also attached is a summary in the State Program format in compliance with Chapter 373.536(4)(e) F.S., requiring each District to provide a monthly financial statement in the form and manner prescribed by the Department of Financial Services to the District's Governing Board and make such monthly financial statement available for public access on its website. This unaudited financial statement is provided as of November 30, 2013, with 16.7% of the fiscal year completed.

Schedule of Sources and Uses – This financial statement compares revenues received and encumbrances/expenditures made against the District's FY2014 \$717.6 million consumable budget. Encumbrances represent orders for goods and services which have not yet been received.

- With the fiscal year 16.7% complete, 19.3% of the District's budgeted operating revenue (excludes fund balance) has been collected. The primary source of operating revenue received to date is taxes. Ad Valorem taxes comprise 64.0% of the budgeted operating revenues and drive collections based on the annual cycle of the property tax bill. The remaining revenue source is fund balance which represents the amount of prior year residual revenue that is budgeted in the current year and has already been received. Total FY2014 sources collected were 53.0% of budget or \$380.0 million.
- 15.4% of budgeted Ad Valorem tax revenue and 8.3% of Agricultural Privilege tax revenue have been collected to date. Ad Valorem and Agricultural Privilege tax collections peak November through January driven by the mailing of property tax bills in October and the 4.0% maximum discount available when paid in full by November 30. These taxes are budgeted at a discounted rate of 95.0% to allow for the discounts property owners may take advantage of through early payment options. Historical ad valorem trends for the past five years through November average a collection rate of 9.8%.
- There is \$9.1 million in budgeted intergovernmental revenue in ad valorem funds, which includes \$4.4 million in Alligator Alley toll revenue, \$2.8 million in WMLTF for moving water south, \$1.6 million in USACE reimbursements, and \$304K in DEP reimbursements for aquatic plant control activities. Actual revenues earned as of the end of November amount to \$2.0 million.

- There is \$92.0 million in budgeted intergovernmental revenue in dedicated funds, comprised of \$74.8 million in SOETF reimbursements, \$5.0 million in reimbursements from the Florida Fish and Wildlife Conservation Commission (FWC) for aquatic/invasive plant control and \$15K for Model Lands, \$6.9 million in WMLTF reimbursements for debt service expenses related to bonds and \$4.0 million for the Corbett Levee, reimbursement of federal revenues of \$538K for St. Lucie Watershed Water Farming and \$375K for Tropical Storm Isaac repairs, \$240K from Indian River Lagoon and Everglades License Tag proceeds, and \$175K reimbursement from FDEP for water quality studies. FY14 actual revenue to date amounts to \$26.2 million. Reimbursement requests are submitted to the state based on actual expenses incurred and are typically received later in the fiscal year.
- The District budgeted \$2.9 million in investment earnings in ad valorem funds for FY14. Total revenue to date is \$1.0 million or 35.0% of budgeted Investment Earnings; \$761K or 26.5% of investment earnings in ad valorem funds and \$245K in dedicated funds.
- Lease revenue represents amounts collected from leases of real property owned by the District. The timing of revenue received is based on the fee schedules within the agreements – monthly, semi-annual, or annual payments – and these varying timing issues impact the collection rate. The District has received \$711K which represents 23.4% of the current year budgeted lease revenue of \$3.0 million. The use of lease revenue collected for lands purchased with State or Federal funds is restricted based on the guidelines in the acquisition or grant.
- There is \$3.9 million in budgeted permit fee revenue, which includes water use permits (\$549K), right of way permits (\$68K), Environmental Resource Permit (ERP) application fees (\$1.5 million), and wetland mitigation fees for C-139 Annex Restoration (\$1.8 million). FY14 revenue amounts received include \$173K from water use permits, \$528K from ERP Application Fees, \$3.0 million in unbudgeted revenues from Lake Belt Mitigation fees, and \$13K from other applications and fees.
- Budgeted revenue in the Other category includes \$210K in civil penalties and enforcement fees and \$251K in miscellaneous revenues such as cash discounts, insurance reimbursements, refunds for prior year expenditures, and sale of recycled oil and scrap metal. Fiscal year collections amount to \$1.2 million at the end of the second month of the fiscal year, representing 260.4% of the budgeted \$461K. \$1.1 million of the amount received was a refund of prior year expenditure from Florida League of Cities.
- Sale of District Property represents the sale of real property and land. This is budgeted conservatively at \$250K due to the uncertainty involved. FY14 revenues received total \$155K.
- Self-insurance premiums represent the District's contribution and the contribution from active and retired District employees to the self-funded health benefits program. Also included is the District's contribution to the workers compensation, auto and general liability self-insurance program. Contributions of \$3.8 million received through November equate to 13.1% of the \$28.8 million budget.

Expenditure and Encumbrance Status:

As of November 30, 2013, with 16.7% of the year complete, the District has expended **\$73.1 million or 11.1%** and has encumbered **\$176.0 million or 26.8%** of its non-reserve budget. The District has obligated (encumbrances plus expenditures) **\$249.1 million or 37.9%** of its non-reserve budget.

Summary of Expenditures and Encumbrances by Program – This financial statement illustrates the effort to date for each of the District's program areas. Provided below is a discussion of the primary uses of funds by program.

- The **Comprehensive Everglades Restoration Plan Program** has obligated 32.9% and expended 1.3% of their \$159.1 million budget. Principal expenditures include personnel services (\$883K), contractual services (\$828K), operating (\$68K), and capital outlay (\$270K). Capital outlay encumbrances (\$43.4 million) and contractual services encumbrances (\$7.0 million) include the following projects: Southern CREW, Biscayne Bay Coastal Wetlands, C-111 Spreader Canal, L-8 Flow Equalization Basin, Loxahatchee River Watershed Restoration Replacement Project - Mecca, C-44 Reservoir/STA Project, Loxahatchee Impoundment Landscape Assessment, Picayune Strand, WCA3 Decompartmentalization and Sheetflow Equalization, CERP Monitoring and Assessment, Modified Water Deliveries & South Dade C-111 Project, and CERP Data Management.
- The **Coastal Watersheds Program** has obligated 40.7% and expended 4.3% of their total \$21.8 million budget. Principal expenditures include personnel services (\$553K), contractual services (\$354K), and capital outlay (\$15K). Contractual services encumbrances primarily consist of interagency agreements (\$6.6 million) including: St. Lucie River and Indian River Lagoon Initiatives, NEEP Rio St. Lucie project, Loxahatchee River Preservation Initiative, Lakes Park Restoration, Spanish Creek/Four Corners, Mirror Lakes/Halfway Pond Rehydration, Big Cypress Basin Stormwater Projects, Collier County Canal System Maintenance, Everglades City Water Management System Master Plan, Village of El Portal Stormwater project, and Miami Gardens NW 178th Dr. Stormwater Retrofit; remaining contractual encumbrances (\$1.2 million) include: St. Lucie River Regulatory Source Control, St. Lucie River Watershed WaSh Model Upgrade, water quality monitoring in Indian River Lagoon, St. Lucie River, Loxahatchee River, Lake Trafford, Florida Bay and Coastal Wetlands project, Biscayne Bay Water Quality and Submerged Aquatic Monitoring, public process to develop a restoration vision of the Caloosahatchee River and Estuary, Hydro Model for Naples and Rookery Bay, Naples Bay Salinity Data Collection, Big Cypress Basin Real-time Hydrologic Monitoring and Modeling System, and Collier County Water Quality Monitoring. Capital outlay encumbrances (\$101K) are for the Lake Hicpochee Hydrologic Enhancement project.
- The **District Everglades Program** has obligated 41.3% and expended 4.4% of their total \$104.6 million budget. Principal expenditures include personnel services (\$2.9 million), contractual services (\$247K), operating (\$940K), and capital outlay (\$519K). Contractual services encumbrances (\$3.1 million) primarily include the operations monitoring, maintenance, and repair of Stormwater Treatment Areas (STA), L-40 and STA 1E Exterior Levee Certification, STA Structure Inspection Program, Restoration

Strategies Science Plan projects, Diesel Oxidation Catalyst project and the Everglades Regulation Source Control. Operating encumbrances (\$560K) are in support of the overall operations and the maintenance of vegetation and exotic plant control of the STA's. Capital outlay encumbrances (\$35.0 million) include work on Everglades Agricultural Area A1 Flow Equalization Basin, STA 1W Expansion, Restoration Strategies Science Plan projects and completion of the Compartment B Cell 8 repairs.

- The **Kissimmee Watershed Program** has obligated 53.3% and expended 1.3% of their total \$27.2 million budget. Principal expenditures include personnel services (\$286K) and contractual services (\$67K). Contractual services and operating encumbrances (\$714K) primarily consist of Kissimmee River Restoration Evaluation (\$283K), Kissimmee Basin Modeling and Operating System (\$111K), the Oak Creek project (\$74K), Rolling Meadows project (\$8K), hydrologic monitoring (\$198K), and land acquisition costs and environmental risk assessments (\$40K). Capital outlay encumbrances (\$13.4 million) are primarily for the Kissimmee River Restoration land acquisition cases.
- The **Lake Okeechobee Program** has obligated 45.0% and expended 4.1% of their total \$23.7 million budget. Principal expenditures include personnel services (\$646K), contractual services (\$267K), and operating (\$57K). Contractual services and operating encumbrances (\$9.7 million) are primarily for the following: Dispersed Water Management and Florida Ranchland Environmental Services Projects (\$8.9 million), computer hardware, software, and equipment (\$566K), Northshore Navigation Canal project (\$95K), Lake Okeechobee Watershed Pre-Drainage Characterization study (\$76K), Lakeside Ranch project (\$8K), and water quality assessments and reporting (\$23K).
- The **Land Stewardship Program** has obligated 29.2% and expended 8.5% of their total \$20.4 million budget. Principal expenditures include personnel services (\$682K), contractual services (\$204K), operating (\$766K), and capital outlay (\$81K). Contractual services and operating encumbrances (\$4.2 million) include the maintenance of vegetation and exotic plant control, provision of law enforcement services, and management of District owned lands and facilities. Capital outlay encumbrances (\$47K) are for work on the C-139 Annex Mitigation project.
- The **Mission Support Program** has obligated 30.7% and expended 18.2% of their total \$46.3 million budget. Principal expenditures include personnel services (\$3.7 million), contractual services (\$1.0 million), and operating (\$3.6 million). Contractual services encumbrances (\$2.8 million) include annual audit, and legal and technical support services, IT consulting services and hardware / software, and systems maintenance for the fiscal year, and facilities maintenance and repair services. Operating encumbrances (\$1.9 million) include utilities, and space rental. Capital outlay encumbrances (\$1.0 million) include design, construction and inspection work to upgrade the chiller system to provide redundant cooling capacity for the IT data center, located within the Emergency Operations Center.
- The **Modeling and Science Support Program** has obligated 32.1% and expended 18.1% of their total \$13.0 million budget. Principal expenditures include personnel services (\$1.7 million), contractual services (\$425K), and operating (\$179K). Contractual

services and operating encumbrances (\$1.8 million) include technical and peer reviews, model maintenance and enhancements, computer hardware and software, organic analysis, and sediment/water quality sampling. Capital outlay encumbrances (\$55K) are for replacement field equipment.

- The **Operations and Maintenance Program** has obligated 33.5% and expended 9.9% of their total \$155.2 million budget. Principal expenditures include personnel services (\$8.9 million), contractual services (\$1.8 million), operating (\$4.4 million) and capital outlay (\$315K). Encumbrances for contractual services and capital outlay (\$34.5 million) primarily relate to the O&M capital program for maintenance and repair of existing water management system canals and water control structures including, Miami B-47 Building Replacement, Diesel Oxidation Catalyst Installation, G-16 Canal Dredging and Bank Stabilization, S-21 Cathodic Protection, S-5A Hardening and Service Bridge Refurbishment, S-235 Automation, BCB Field Station Design/Build, North Shore Trash Rake Project, S-13 Repower and Automation, G-94 A-D Refurbishment and Repairs, S-150 Replacement and Automation, Central and Southern Flood Control Structure Inspections, and Operations Decision Support System software. Operating encumbrances (\$2.0 million) are primarily associated with field station daily operations and maintenance including vegetation and exotic plant control for the Central and Southern Flood Control system.
- The **Regulation Program** has obligated 23.6% and expended 16.7% of their total \$23.2 million budget. Principal expenditures include personnel services (\$2.8 million), contractual services (\$309K), operating (\$648K), and capital outlay (\$74K). Contractual services and operating encumbrances (\$1.3 million) include application development, permit scanning contractors/support, computer hardware and software, and advertising services. Capital outlay encumbrances (\$263K) consist primarily of the ePermitting enhancement project which saves time and expenses with online filing/searching of permits.
- The **Water Supply Program** has obligated 37.4% and expended 12.0% of their total \$21.0 million budget. Principal expenditures include personnel services (\$918K), contractual services (\$87K), operating (\$1.5 million), and capital outlay (\$18K). Contractual services and operating encumbrances (\$5.3 million) include the Caloosahatchee Rule Making (\$72K), Central Florida Water Initiative (\$151K), WaterSIP grants (\$250K), Lower Floridan Aquifer (\$75K), interagency agreements for Alternative Water Supply projects (\$926K), Big Cypress Basin (\$3.2 million), Mobile Irrigation Lab (\$55K), and hydrologic data gathering and analysis (\$524K). Capital outlay encumbrances (\$20K) consist primarily of the Lower Floridan Aquifer project.
- **Debt Service** expenses amount to 70.9% (\$29.8 million) of the total \$42.1 million budget. Debt service principal and interest payments include Land Acquisition Bonds issued through the Water Management Lands Trust Fund and Certificates of Participation. Scheduled debt service payments are structured into a single principal payment and partial payment of interest in October and the balance of interest in April.
- **Reserves** of \$60.0 million are designated as economic stabilization reserves, including \$10.0 million for O&M capital projects.

Governing Board Members
January 9, 2014
Page 6

We hope these reports and the associated narrative will aid in understanding the District's financial condition as well as expenditure performance against the approved budget. If you have any questions, please feel free to call Mike Smykowski at (561) 682-6295.

DB/MS
Attachment

South Florida Water Management District Statement of Sources and Uses of Funds (Unaudited)

For the month ended: November 30, 2013. Percent of fiscal year completed: 17%

| SOURCES | ACTUALS | | | |
|--|-----------------------|-----------------------|-----------------------------------|-----------------------------|
| | ANNUAL BUDGET | THROUGH 11/30/2013 | VARIANCE (UNDER) / OVER BUDGET | ACTUALS AS A % OF BUDGET |
| Ad Valorem Property Taxes | \$ 266,557,178 | \$ 41,052,268 | \$ (225,504,910) | 15.4% |
| Agricultural Privilege Taxes | 11,300,000 | 940,362 | (10,359,638) | 8.3% |
| Intergovernmental - Ad Valorem Funds | 9,136,087 | 2,044,656 | (7,091,431) | 22.4% |
| Intergovernmental - Non Ad Valorem Funds | 92,026,091 | 26,174,129 | (65,851,962) | 28.4% |
| Intergovernmental Total | 101,162,178 | 28,218,784 | (72,943,394) | 27.9% |
| Investment Earnings - Ad Valorem Funds | 2,870,000 | 760,184 | (2,109,816) | 26.5% |
| Investment Earnings - Non Ad Valorem Funds | - | 244,855 | 244,855 | - |
| Investment Earnings Total | 2,870,000 | 1,005,040 | (1,864,960) | 35.0% |
| Leases | 3,041,656 | 710,666 | (2,330,990) | 23.4% |
| Permit Fees/Miscellaneous Fees | 2,110,999 | 714,195 | (1,396,804) | 33.8% |
| Mitigation Fees - Lake Belt & Wetlands | 1,801,117 | 2,988,638 | 1,187,521 | 165.9% |
| Licenses, Permits and Fees Total | 3,912,116 | 3,702,833 | (209,283) | 94.7% |
| Other | 461,200 | 1,200,790 | 739,590 | 260.4% |
| Sale of District Property | 250,000 | 154,490 | (95,510) | 61.8% |
| Self Insurance Premiums | 28,799,913 | 3,773,493 | (25,026,420) | 13.1% |
| SUB-TOTAL OPERATING REVENUES | 418,354,241 | 80,758,727 | (337,595,514) | 19.3% |
| Fund Balance | 299,242,283 | 299,242,283 | - | 100.0% |
| TOTAL SOURCES | \$ 717,596,524 | \$ 380,001,010 | \$ (337,595,514) | 53.0% |

| USES | ANNUAL BUDGET | EXPENDITURES | ENCUMBRANCES ¹ | REPORTED AVAILABLE BUDGET | % | % | % |
|------------------------------------|-----------------------|----------------------|---------------------------|---------------------------------|--------------|--------------|--------------|
| | | | | | | | |
| CERP | \$ 159,138,834 | \$ 2,050,460 | \$ 50,341,329 | \$ 106,747,044 | 1.3% | 31.6% | 32.9% |
| Coastal Watersheds | 21,766,021 | 927,867 | 7,923,266 | 12,914,888 | 4.3% | 36.4% | 40.7% |
| District Everglades | 104,624,323 | 4,598,572 | 38,648,341 | 61,377,410 | 4.4% | 36.9% | 41.3% |
| Kissimmee Watershed | 27,245,316 | 359,175 | 14,153,040 | 12,733,101 | 1.3% | 51.9% | 53.3% |
| Lake Okeechobee | 23,658,211 | 969,912 | 9,667,239 | 13,021,060 | 4.1% | 40.9% | 45.0% |
| Land Stewardship | 20,411,543 | 1,737,073 | 4,229,586 | 14,444,884 | 8.5% | 20.7% | 29.2% |
| Mission Support | 46,254,776 | 8,405,575 | 5,773,045 | 32,076,156 | 18.2% | 12.5% | 30.7% |
| Modeling & Scientific Support | 13,017,567 | 2,356,197 | 1,819,865 | 8,841,505 | 18.1% | 14.0% | 32.1% |
| Operations & Maintenance | 155,199,031 | 15,424,840 | 36,563,484 | 103,210,708 | 9.9% | 23.6% | 33.5% |
| Regulation | 23,193,489 | 3,882,739 | 1,581,306 | 17,729,444 | 16.7% | 6.8% | 23.6% |
| Water Supply | 20,969,598 | 2,518,569 | 5,322,541 | 13,128,488 | 12.0% | 25.4% | 37.4% |
| Debt Service | 42,074,439 | 29,834,800 | - | 12,239,639 | 70.9% | 0.0% | 70.9% |
| SUB-TOTAL NON-RESERVES USES | 657,553,147 | 73,065,778 | 176,023,041 | 408,464,327 | 11.1% | 26.8% | 37.9% |
| Reserves | 60,043,377 | - | - | 60,043,377 | 0.0% | 0.0% | 0.0% |
| TOTAL USES | \$ 717,596,524 | \$ 73,065,778 | \$ 176,023,041 | \$ 468,507,705 | 10.2% | 24.5% | 34.7% |

¹ Represents unexpended balances of open purchase orders

² Represents the sum of expenditures and encumbrances as a percentage of the annual budget

Attachment: Statement of Sources and Uses of Funds_NOV_FY14_Programmatic (1711) : Monthly

**South Florida Water Management District
Statement of Sources and Uses of Funds
For the Month ending November 30, 2013
(Unaudited)**

| | CURRENT BUDGET | ACTUALS THROUGH 11/30/2013 | VARIANCE (UNDER) / OVER BUDGET | ACTUALS AS A % OF BUDGET |
|----------------------------|-----------------------|---|---|-------------------------------------|
| Sources | | | | |
| Taxes ¹ | \$ 277,857,178 | \$ 41,992,631 | \$ (235,864,547) | 15.11% |
| Intergovernmental Revenues | 101,162,178 | 28,218,784 | (72,943,394) | 27.89% |
| Interest on Invested Funds | 2,870,000 | 1,005,040 | (1,864,960) | 35.0% |
| License and Permit Fees | 3,912,116 | 3,702,833 | (209,283) | 94.7% |
| Other ² | 32,552,769 | 5,839,440 | (26,713,329) | 17.9% |
| Fund Balance | 299,242,283 | 299,242,283 | - | 100.0% |
| Total Sources | \$ 717,596,524 | \$ 380,001,010 | \$ (337,595,514) | 53.0% |

¹ Includes Ad Valorem and Agricultural Privilege Taxes

² Includes Leases, Sale of District Property, and Self Insurance Premiums

| | CURRENT BUDGET | EXPENDITURES | ENCUMBRANCES³ | AVAILABLE BUDGET | % EXPENDED | % OBLIGATED⁴ |
|--|-----------------------|----------------------|---------------------------------|-----------------------------|-----------------------|--------------------------------|
| Uses | | | | | | |
| Water Resources Planning and Monitoring | \$ 52,907,020 | \$ 7,279,660 | \$ 12,650,223 | \$ 32,977,137 | 13.8% | 37.7% |
| Acquisition, Restoration and Public Works | 331,890,554 | 27,285,583 | 114,303,776 | 190,301,195 | 8.2% | 42.7% |
| Operation and Maintenance of Lands and Works | 267,513,468 | 26,528,498 | 44,818,692 | 196,166,278 | 9.9% | 26.7% |
| Regulation | 26,593,678 | 4,386,565 | 1,686,032 | 20,521,081 | 16.5% | 22.8% |
| Outreach | 2,630,816 | 424,888 | 61,932 | 2,143,996 | 16.2% | 18.5% |
| Management and Administration | 36,060,988 | 7,160,585 | 2,502,385 | 26,398,018 | 19.9% | 26.8% |
| Total Uses | \$ 717,596,524 | \$ 73,065,778 | \$ 176,023,041 | \$ 468,507,705 | 10.2% | 34.7% |

³ Encumbrances represent unexpended balances of open purchase orders and contracts.

⁴ Represents the sum of expenditures and encumbrances as a percentage of the current budget.

This unaudited financial statement is prepared as of November 30, 2013, and covers the interim period since the most recent audited financial statements.

South Florida Water Management District
 Summary of Uses - Statement of Sources and Uses of Funds (Unaudited)
 As of: November 30, 2013

| | Annual Budget | Expenditures | Encumbrances | Reported Available | % Expended | % Encumbered | % Obligated |
|----------------------------------|----------------------|-------------------|----------------------|----------------------|-------------|--------------|--------------|
| CERP | | | | | | | |
| Personnel Services | \$ 6,351,974 | \$ 882,639 | \$ - | \$ 5,469,335 | 13.9% | 0.0% | 13.9% |
| Contractual Services | 19,448,332 | 827,274 | 6,964,994 | 11,656,064 | 4.3% | 35.8% | 40.1% |
| Operating | 1,309,815 | 67,858 | 12,598 | 1,229,359 | 5.2% | 1.0% | 6.1% |
| Travel | 32,535 | 3,018 | 251 | 29,266 | 9.3% | 0.8% | 10.0% |
| Capital Outlay | 128,663,210 | 269,672 | 43,363,486 | 85,030,052 | 0.2% | 33.7% | 33.9% |
| CERP Indirect | 3,332,968 | - | - | 3,332,968 | 0.0% | 0.0% | 0.0% |
| Total CERP | 159,138,834 | 2,050,460 | 50,341,329 | 106,747,044 | 1.3% | 31.6% | 32.9% |
| Coastal Watersheds | | | | | | | |
| Personnel Services | 3,679,941 | 553,184 | | 3,126,757 | 15.0% | 0.0% | 15.0% |
| Contractual Services | 10,300,955 | 353,674 | 7,821,161 | 2,126,120 | 3.4% | 75.9% | 79.4% |
| Operating | 140,055 | 5,361 | 252 | 134,442 | 3.8% | 0.2% | 4.0% |
| Travel | 27,186 | 1,107 | 486 | 25,593 | 4.1% | 1.8% | 5.9% |
| Capital Outlay | 7,617,884 | 14,541 | 101,367 | 7,501,976 | 0.2% | 1.3% | 1.5% |
| Total Coastal Watersheds | 21,766,021 | 927,867 | 7,923,266 | 12,914,888 | 4.3% | 36.4% | 40.7% |
| District Everglades | | | | | | | |
| Personnel Services | 18,257,070 | 2,890,755 | - | 15,366,315 | 15.8% | 0.0% | 15.8% |
| Contractual Services | 9,925,372 | 247,442 | 3,085,350 | 6,592,580 | 2.5% | 31.1% | 33.6% |
| Operating | 9,486,035 | 940,165 | 559,868 | 7,986,002 | 9.9% | 5.9% | 15.8% |
| Travel | 32,185 | 1,644 | 237 | 30,304 | 5.1% | 0.7% | 5.8% |
| Capital Outlay | 66,923,661 | 518,565 | 35,002,886 | 31,402,210 | 0.8% | 52.3% | 53.1% |
| Total District Everglades | 104,624,323 | 4,598,572 | 38,648,341 | 61,377,410 | 4.4% | 36.9% | 41.3% |
| Kissimmee Watershed | | | | | | | |
| Personnel Services | 2,095,900 | 286,439 | - | 1,809,461 | 13.7% | 0.0% | 13.7% |
| Contractual Services | 7,835,667 | 66,968 | 697,705 | 7,070,995 | 0.9% | 8.9% | 9.8% |
| Operating | 455,681 | 3,351 | 16,600 | 435,730 | 0.7% | 3.6% | 4.4% |
| Travel | 22,405 | 1,666 | - | 20,739 | 7.4% | 0.0% | 7.4% |
| Capital Outlay | 16,835,662 | 750 | 13,438,735 | 3,396,177 | 0.0% | 79.8% | 79.8% |
| Total Kissimmee Watershed | \$ 27,245,316 | \$ 359,175 | \$ 14,153,040 | \$ 12,733,101 | 1.3% | 51.9% | 53.3% |

Attachment: Summary Statement of Sources and Uses of Funds_NOV_FY14_12162013 (1711 : Monthly

South Florida Water Management District
 Summary of Uses - Statement of Sources and Uses of Funds (Unaudited)
 As of: November 30, 2013

| | Annual Budget | Expenditures | Encumbrances | Reported Available | % Expended | % Encumbered | % Obligated |
|---|----------------------|---------------------|---------------------|---------------------|--------------|--------------|--------------|
| Lake Okeechobee | | | | | | | |
| Personnel Services | \$ 3,983,403 | \$ 645,676 | \$ - | \$ 3,337,727 | 16.2% | 0.0% | 16.2% |
| Contractual Services | 18,370,012 | 267,394 | 9,535,412 | 8,567,205 | 1.5% | 51.9% | 53.4% |
| Operating | 795,289 | 56,842 | 130,174 | 608,272 | 7.1% | 16.4% | 23.5% |
| Travel | 7,856 | - | - | 7,856 | 0.0% | 0.0% | 0.0% |
| Capital Outlay | 501,652 | - | 1,652 | 500,000 | 0.0% | 0.3% | 0.3% |
| Total Lake Okeechobee | 23,658,211 | 969,912 | 9,667,239 | 13,021,060 | 4.1% | 40.9% | 45.0% |
| Land Stewardship | | | | | | | |
| Personnel Services | 4,070,333 | 681,971 | - | 3,388,362 | 16.8% | 0.0% | 16.8% |
| Contractual Services | 12,070,627 | 203,946 | 3,946,484 | 7,920,196 | 1.7% | 32.7% | 34.4% |
| Operating | 2,489,951 | 765,627 | 236,221 | 1,488,104 | 30.7% | 9.5% | 40.2% |
| Travel | 15,610 | 4,693 | - | 10,917 | 30.1% | 0.0% | 30.1% |
| Capital Outlay | 1,765,022 | 80,836 | 46,881 | 1,637,306 | 4.6% | 2.7% | 7.2% |
| Total Land Stewardship | 20,411,543 | 1,737,073 | 4,229,586 | 14,444,884 | 8.5% | 20.7% | 29.2% |
| Mission Support | | | | | | | |
| Personnel Services | 22,081,997 | 3,700,381 | - | 18,381,616 | 16.8% | 0.0% | 16.8% |
| Contractual Services | 8,000,337 | 1,030,319 | 2,791,668 | 4,178,350 | 12.9% | 34.9% | 47.8% |
| Operating | 16,833,288 | 3,585,095 | 1,936,878 | 11,311,315 | 21.3% | 11.5% | 32.8% |
| Travel | 301,146 | 89,780 | 11,177 | 200,189 | 29.8% | 3.7% | 33.5% |
| Capital Outlay | 2,370,976 | - | 1,033,322 | 1,337,654 | 0.0% | 43.6% | 43.6% |
| CERP Indirect | (3,332,968) | - | - | (3,332,968) | 0.0% | 0.0% | 0.0% |
| Total Mission Support | 46,254,776 | 8,405,575 | 5,773,045 | 32,076,156 | 18.2% | 12.5% | 30.7% |
| Modeling & Science Support | | | | | | | |
| Personnel Services | 9,511,745 | 1,720,562 | - | 7,791,183 | 18.1% | 0.0% | 18.1% |
| Contractual Services | 2,680,450 | 425,227 | 1,479,447 | 775,777 | 15.9% | 55.2% | 71.1% |
| Operating | 633,754 | 178,853 | 285,126 | 169,775 | 28.2% | 45.0% | 73.2% |
| Travel | 42,818 | 3,505 | 159 | 39,154 | 8.2% | 0.4% | 8.6% |
| Capital Outlay | 148,800 | 28,050 | 55,133 | 65,616 | 18.9% | 37.1% | 55.9% |
| Total Modeling & Science Support | \$ 13,017,567 | \$ 2,356,197 | \$ 1,819,865 | \$ 8,841,505 | 18.1% | 14.0% | 32.1% |

Attachment: Summary Statement of Sources and Uses of Funds_NOV_FY14_12162013 (1711 : Monthly

South Florida Water Management District
 Summary of Uses - Statement of Sources and Uses of Funds (Unaudited)
 As of: November 30, 2013

| | Annual Budget | Expenditures | Encumbrances | Reported Available | % Expended | % Encumbered | % Obligated |
|---|-----------------------|----------------------|-----------------------|-----------------------|--------------|--------------|--------------|
| Operations & Maintenance | | | | | | | |
| Personnel Services | \$ 52,278,889 | \$ 8,855,475 | \$ - | \$ 43,423,414 | 16.9% | 0.0% | 16.9% |
| Contractual Services | 35,836,932 | 1,827,687 | 21,336,409 | 12,672,836 | 5.1% | 59.5% | 64.6% |
| Operating | 31,280,884 | 4,390,662 | 2,039,632 | 24,850,590 | 14.0% | 6.5% | 20.6% |
| Travel | 165,173 | 36,223 | 21,318 | 107,631 | 21.9% | 12.9% | 34.8% |
| Capital Outlay | 35,637,153 | 314,793 | 13,166,123 | 22,156,237 | 0.9% | 36.9% | 37.8% |
| Total Operations & Maintenance | 155,199,031 | 15,424,840 | 36,563,484 | 103,210,708 | 9.9% | 23.6% | 33.5% |
| Regulation | | | | | | | |
| Personnel Services | 17,242,570 | 2,849,510 | - | 14,393,060 | 16.5% | 0.0% | 16.5% |
| Contractual Services | 1,716,469 | 308,716 | 1,044,613 | 363,139 | 18.0% | 60.9% | 78.8% |
| Operating | 3,869,461 | 647,684 | 274,043 | 2,947,734 | 16.7% | 7.1% | 23.8% |
| Travel | 28,014 | 2,957 | - | 25,057 | 10.6% | 0.0% | 10.6% |
| Capital Outlay | 336,975 | 73,872 | 262,649 | 454 | 21.9% | 77.9% | 99.9% |
| Total Regulation | 23,193,489 | 3,882,739 | 1,581,306 | 17,729,444 | 16.7% | 6.8% | 23.6% |
| Water Supply | | | | | | | |
| Personnel Services | 5,594,857 | 918,420 | - | 4,676,437 | 16.4% | 0.0% | 16.4% |
| Contractual Services | 6,216,870 | 86,884 | 5,301,622 | 828,364 | 1.4% | 85.3% | 86.7% |
| Operating | 9,111,777 | 1,494,501 | 1,219 | 7,616,057 | 16.4% | 0.0% | 16.4% |
| Travel | 8,239 | 609 | - | 7,630 | 7.4% | 0.0% | 7.4% |
| Capital Outlay | 37,855 | 18,155 | 19,700 | - | 48.0% | 52.0% | 100.0% |
| Total Water Supply | 20,969,598 | 2,518,569 | 5,322,541 | 13,128,488 | 12.0% | 25.4% | 37.4% |
| Reserves | | | | | | | |
| Reserves | 60,043,377 | - | - | 60,043,377 | 0.00% | 0.00% | 0.00% |
| Total Reserves | 60,043,377 | - | - | 60,043,377 | 0.00% | 0.00% | 0.00% |
| Debt Service | | | | | | | |
| Debt Service | 42,074,439 | 29,834,800 | - | 12,239,639 | 70.9% | 0.0% | 70.9% |
| Total Debt Service | 42,074,439 | 29,834,800 | - | 12,239,639 | 70.9% | 0.0% | 70.9% |
| Grand Total | \$ 717,596,524 | \$ 73,065,778 | \$ 176,023,041 | \$ 468,507,705 | 10.2% | 24.5% | 34.7% |

Attachment: Summary Statement of Sources and Uses of Funds_NOV_FY14_12162013 (1711 : Monthly

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INDIVIDUAL PERMITS ISSUED BY
AUTHORITY DELEGATED TO EXECUTIVE DIRECTOR
FROM December 1, 2013 TO December 31, 2013

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1. HALLANDALE BEACH PUBLIC WATER SUPPLY
 CITY OF HALLANDALE BEACH
 SEC 21-28 TWP 51S RGE 42E

APPL. NO. 060531-4
 PERMIT NO. 06-00138-W
 ACREAGE: N/A
 LAND USE: PUBLIC WATER SUPPLY

PERMIT TYPE: WATER USE MODIFICATION/RENEWAL
 WATER SOURCE: BISCAYNE AQUIFER
 ALLOCATION: 108.5 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: DECEMBER 19, 2013

2. MARKHAM PARK TARGET RANGE
 BROWARD COUNTY
 SEC 4,5,33 TWP 49,50S RGE 40E

APPL. NO. 130117-4
 PERMIT NO. 06-00311-S
 ACREAGE: 33.24
 LAND USE: RECREATIONAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)
 RECEIVING BODY: ON-SITE RETENTION
 LAST DATE FOR AGENCY ACTION: JANUARY 17, 2014

3. NEW U S FEDERAL OFFICE BUILDING
 UNITED STATES OF AMERICA
 SEC 22 TWP 51S RGE 40E

APPL. NO. 131021-12
 PERMIT NO. 06-06562-W
 ACREAGE: 20.00
 LAND USE: DEWATERING

PERMIT TYPE: WATER USE EXPIRED/PREVIOUSLY PERMITTED
 WATER SOURCE: WATER TABLE AQUIFER
 ALLOCATION: NOT REQUIRED
 LAST DATE FOR AGENCY ACTION: JANUARY 19, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. IMMOKALEE GROVE
M B N PROPERTY
SEC 8 TWP 48S RGE 29E

APPL. NO. 131003-15
PERMIT NO. 11-00068-W
ACREAGE: 100.00
LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE RENEWAL
WATER SOURCE: SANDSTONE AQUIFER
ALLOCATION: 17.27 MILLION GALLONS PER MONTH
LAST DATE FOR AGENCY ACTION: JANUARY 1, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. CATAN
MSS INTERNATIONAL
SEC 2, 3, 10, 11 TWP 43S RGE 31E

APPL. NO. 100129-6
PERMIT NO. 26-01156-W
ACREAGE: 110.15
LAND USE: DIV & IMP
SECONDARY USER
AGRICULTURAL

PERMIT TYPE: WATER USE EXISTING/UNPERMITTED
WATER SOURCE: MYRTLE SLOUGH CANAL
ALLOCATION: 18.41 MILLION GALLONS PER MONTH
LAST DATE FOR AGENCY ACTION: JANUARY 12, 2014

2. CITRUS GROVE
HENDRY COUNTY LAND LLC
SEC 27 TWP 48S RGE 31E

APPL. NO. 130103-3
PERMIT NO. 26-00269-W
ACREAGE: 125.00
LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE RENEWAL
WATER SOURCE: LOWER TAMIAMI AQUIFER
ALLOCATION: 20.74 MILLION GALLONS PER MONTH
LAST DATE FOR AGENCY ACTION: JANUARY 16, 2014

3. FELDA / TANNER GROVE
MORENO FARMS INC
SEC 17 TWP 45S RGE 29E

APPL. NO. 130311-6
PERMIT NO. 26-00454-W
ACREAGE: 117.00
LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE EXPIRED/PREVIOUSLY PERMITTED
WATER SOURCE: SANDSTONE AQUIFER
ALLOCATION: 19.42 MILLION GALLONS PER MONTH
LAST DATE FOR AGENCY ACTION: JANUARY 19, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. SUNSET FALLS
SUNSET FALLS L L C
SEC 5 TWP 46S RGE 24E

APPL. NO. 131031-17
PERMIT NO. 36-05751-P
ACREAGE: 109.63
LAND USE: RESIDENTIAL
COMMERCIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)
RECEIVING BODY:
LAST DATE FOR AGENCY ACTION: DECEMBER 30, 2013

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. MARTIN ARBORS
 O M B U RANCH TWO L L C
 SEC 5,6,30,31,32, TWP 38,39S RGE 40E

APPL. NO. 130917-3
 PERMIT NO. 43-00092-S-06
 ACREAGE: 1150.08
 LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)
 RECEIVING BODY: EXISTING DRAINAGE CANALS
 LAST DATE FOR AGENCY ACTION: DECEMBER 29, 2013

2. W L P TURF FARM
 W L P TURF FARM L L C
 SEC 22 TWP 39S RGE 38E

APPL. NO. 131021-10
 PERMIT NO. 43-01074-W
 ACREAGE: .00
 LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE EXPIRED/PREVIOUSLY PERMITTED
 WATER SOURCE: SURFICIAL AQUIFER SYSTEM,ON-SITE LAKES/PONDS
 ALLOCATION: 38.74 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: JANUARY 19, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. ISABIANCA ESTATES APPL. NO. 130722-7
 ISABIANCA INVESTMENTS L L C PERMIT NO. 13-05486-P
 SEC 15 TWP 54S RGE 39E ACREAGE: 2.39
 LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)
 RECEIVING BODY: ON-SITE RETENTION
 LAST DATE FOR AGENCY ACTION: DECEMBER 27, 2013

2. NEWLAND 137 APPL. NO. 131107-13
 NEWLAND 137 L L C PERMIT NO. 13-04448-P
 SEC 10 TWP 57S RGE 39E ACREAGE: 18.60
 LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)
 RECEIVING BODY: ONSITE RETENTION
 LAST DATE FOR AGENCY ACTION: JANUARY 6, 2014

3. SR 836/SR 973 (NW 87 AVE.) INTERCHANGE IMPROVEMENT APPL. NO. 130906-9
 MIAMI-DADE EXPRESSWAY AUTHORITY PERMIT NO. 13-01999-P
 SEC 54 TWP 53S RGE 40E ACREAGE: 105.40
 LAND USE: HIGHWAY

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)
 RECEIVING BODY: FONTAINEBLEAU CANAL AND NORTH LINE CANAL
 LAST DATE FOR AGENCY ACTION: JANUARY 11, 2014

4. SUNRISE GROWERS APPL. NO. 070302-35
 SUNRISE GROWERS INCORPORATED PERMIT NO. 13-03516-W
 SEC 13,33 TWP 55,57S RGE 38,38E ACREAGE: 345.00
 LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE PROPOSED
 WATER SOURCE: BISCAYNE AQUIFER
 ALLOCATION: 133.92 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: DECEMBER 31, 2013

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. CAL-MAINE FOODS OKEECHOBEE
CAL-MAINE FOODS INC
SEC 7,8,17 TWP 36S RGE 36E

APPL. NO. 131107-23
PERMIT NO. 47-00081-S
ACREAGE: 561.00
LAND USE: AGRICULTURAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)
RECEIVING BODY: WILLIAMSON DITCH
LAST DATE FOR AGENCY ACTION: JANUARY 6, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. GRANDE LAKES NORTH
 GRAND PLAZA L L C & JOHN YOUNG CENTRAL FLORIDA PAR
 SEC 8,9 TWP 24S RGE 29E

APPL. NO. 131209-1
 PERMIT NO. 48-00718-S-08
 ACREAGE: 318.84
 LAND USE: COMMERCIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)
 RECEIVING BODY: EXISTING SYSTEM.
 LAST DATE FOR AGENCY ACTION: FEBRUARY 7, 2014

2. LAKE NONA SOUTH
 LAKE NONA LAND COMPANY L L C
 SEC 18,19,24-27,30,31,35,36, TWP 24S RGE
 30,31E

APPL. NO. 131028-10
 PERMIT NO. 48-01053-W
 ACREAGE: 754.80
 LAND USE: LANDSCAPE

PERMIT TYPE: WATER USE MODIFICATION/RENEWAL
 WATER SOURCE: UPPER FLORIDAN AQUIFER, ON-SITE LAKE(S)/POND(S), CITY OF ORLANDO
 ALLOCATION: 125.74 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: JANUARY 26, 2014

3. LAKE NONA SOUTH WEST MASS GRADE PHASE 2 / WETLAND
 LAKE NONA LAND COMPANY L L C
 SEC 26, 27 TWP 24S RGE 30E

APPL. NO. 130822-7
 PERMIT NO. 48-00195-S
 ACREAGE: 277.60
 LAND USE: COMMERCIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)
 RECEIVING BODY: EXISTING LAKE NONA SOUTH MASTER STORM WATER MANAGEMENT SYSTEM
 LAST DATE FOR AGENCY ACTION: DECEMBER 29, 2013

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. BINKS FOREST GOLF CLUB
 BINKS EXCHANGE CO L L C
 SEC 6,7,31 TWP 43,44S RGE 41E

APPL. NO. 121102-1
 PERMIT NO. 50-01983-W
 ACREAGE: 171.80
 LAND USE: GOLF COURSE

PERMIT TYPE: WATER USE RENEWAL
 WATER SOURCE: ON-SITE LAKES
 ALLOCATION: 24.5 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: JANUARY 26, 2014

2. FRENCHMANS CREEK COUNTRY CLUB
 FRENCHMANS CREEK, INC.
 SEC 30 TWP 41S RGE 43E

APPL. NO. 130812-13
 PERMIT NO. 50-00091-W
 ACREAGE: 294.60
 LAND USE: GOLF COURSE
 LANDSCAPE

PERMIT TYPE: WATER USE MODIFICATION/RENEWAL
 WATER SOURCE: SURFICIAL AQUIFER SYSTEM, ON-SITE LAKES
 ALLOCATION: 42.2 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: DECEMBER 26, 2013

3. GLENEAGLES COUNTRY CLUB
 GLENEAGLES COUNTRY CLUB
 SEC 21,28 TWP 46S RGE 42E

APPL. NO. 130805-6
 PERMIT NO. 50-01214-W
 ACREAGE: 277.00
 LAND USE: LANDSCAPE

PERMIT TYPE: WATER USE MODIFICATION/RENEWAL
 WATER SOURCE: BISCAYNE AQUIFER, ON-SITE LAKES, PALM BEACH COUNTY SOUTHERN REGIONAL WATER RECLAMATION FACILITY
 ALLOCATION: 47.85 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: JANUARY 2, 2014

4. HIGH RIDGE COUNTRY CLUB
 HIGH RIDGE COUNTRY CLUB
 SEC 8 TWP 45S RGE 43E

APPL. NO. 130830-7
 PERMIT NO. 50-00697-W
 ACREAGE: 135.00
 LAND USE: GOLF COURSE

PERMIT TYPE: WATER USE RENEWAL
 WATER SOURCE: LWDD CANAL (E-4), ON-SITE LAKES/PONDS
 ALLOCATION: 27.6 MILLION GALLONS PER MONTH
 LAST DATE FOR AGENCY ACTION: FEBRUARY 2, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

5. PIONEER ROAD COMMERCIAL / RESIDENTIAL
 P E B B ENTERPRISES
 SEC 6 TWP 44S RGE 42E

APPL. NO. 130619-5
 PERMIT NO. 50-08137-P

ACREAGE: 23.53
 LAND USE: COMMERCIAL
 RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND
 CONSTRUCTION/OPERATION MODIFICATION)
 RECEIVING BODY: LWDD L-5 CANAL
 LAST DATE FOR AGENCY ACTION: JANUARY 12, 2014

6. ROYAL PALM POLO
 POLO REALTY, INC.
 SEC 34 TWP 46S RGE 42E

APPL. NO. 130725-3
 PERMIT NO. 50-10354-P

ACREAGE: 121.67
 LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)
 RECEIVING BODY: LWDD L-39 & L-40 CANALS
 LAST DATE FOR AGENCY ACTION: JANUARY 5, 2014

7. STONEWAL ESTATES PHASE 1 PLAT 3
 YVONNE CAMPBELL
 SEC 23,26 TWP 42S RGE 41E

APPL. NO. 131105-10
 PERMIT NO. 50-011111-S-04

ACREAGE: 93.20
 LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)
 RECEIVING BODY: MASTER SYSTEM
 LAST DATE FOR AGENCY ACTION: JANUARY 4, 2014

Attachment: IP issued by ED December 2013(2) (1714 : Executive Director's Report)

1. NOBEL OAKS ESTATES
AURELIO AND MARIA PEREIRA
SEC 4 TWP 36S RGE 40E

APPL. NO. 131115-4
PERMIT NO. 56-02976-P

ACREAGE: 9.62
LAND USE: RESIDENTIAL

PERMIT TYPE: ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)

RECEIVING BODY:

LAST DATE FOR AGENCY ACTION: JANUARY 14, 2014

2. WESCOTT I
WESCOTT GROVES, INC
SEC 8,9,16,17,20,21 TWP 35S RGE 37E

APPL. NO. 120518-4
PERMIT NO. 56-00082-W

ACREAGE: 2040.00
LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE MODIFICATION

WATER SOURCE: FLORIDAN AQUIFER SYSTEM, SURFICIAL AQUIFER SYSTEM, ON-SITE
RESERVOIR, ORANGE AVENUE CANAL

ALLOCATION: 338.84 MILLION GALLONS PER MONTH

LAST DATE FOR AGENCY ACTION: JANUARY 7, 2014

3. WILSON GROVES EAST
A C R ACQUISITIONS, L L C
SEC 29,32 TWP 37S RGE 39E

APPL. NO. 130715-26
PERMIT NO. 56-00048-W

ACREAGE: 1108.00
LAND USE: AGRICULTURAL

PERMIT TYPE: WATER USE MODIFICATION/RENEWAL

WATER SOURCE: SFWMD CANAL (C-23)

ALLOCATION: 186 MILLION GALLONS PER MONTH

LAST DATE FOR AGENCY ACTION: JANUARY 22, 2014
