

**PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS**

WORKSHOP SUMMARY

Meeting Date: January 23, 2007

Consent
 Workshop

Regular
 Public Hearing

Department: Administration

I. EXECUTIVE BRIEF

Title: Update of Water Resources Projects

Summary: A presentation will be made at this workshop that provides the Commission with an update of various water resource projects within Palm Beach County.

Background and Policy Issues:

There are currently a number of water resource related projects and issues that are being worked on by County staff and many of these projects and issues require coordination with other Government Agencies. As such, these projects and issues have been discussed with many other Agencies in preparation for this Workshop. For discussion purposes during this Workshop, the projects have been grouped within the County into four quadrants: Southeast, Northeast, Southwest, and Northwest. The origin of the quadrants is located at roughly Twenty Mile Bend and Southern Blvd. The intent of this presentation is to update the County Commission on some of the more critical water resource projects and issues within the four quadrants of the County as mentioned above.

Attachments:

- 1. Text
- 2. Exhibits 1 & 2

Recommended by:

Kenneth S. Jodd, Jr. 1/17/07
Department Director Date

Approved By:

[Signature] 1/17/07
County Administrator Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact: N/A

Fiscal Years 20____ 20____ 20____ 20____ 20____

Capital
Expenditures
Operating Costs
External Revenues
Program Income (County)
In-Kind Match (County)

NET FISCAL IMPACT

No. ADDITIONAL FTE
POSITIONS (Cumulative)

Is Item Included In Current Budget? Yes ____ No ____
Budget Account No.: Fund ____ Department ____ Unit ____
Object ____ Reporting Category ____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

No Fiscal Impact

C. Departmental Fiscal Review:

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Dev. and Control Comments:

Elizabeth Green N/A
OFMB 1/16/07 Contract Dev. and Control

B. Legal Sufficiency:

N/A
Assistant County Attorney

C. Other Department Review:

Department Director

(THIS SUMMARY IS NOT TO BE USED AS A BASIS FOR PAYMENT.)

**WATER
RESOURCES
UPDATE**

**Presented to:
Palm Beach County
Board of County Commissioners**

January 23, 2007

Water Resources Update January 23, 2007 Workshop

There are currently a number of water resource related projects and issues that are being worked on by County staff and many of these projects and issues require coordination with other Government Agencies. As such, these projects and issues listed below have been discussed with many other Agencies in preparation for this Workshop. For discussion purposes of this Workshop, the projects have been grouped within the County into four quadrants: Southeast, Northeast, Southwest, and Northwest. The origin of the map is located at roughly Twenty Mile Bend and Southern Blvd. The intent of this presentation is to update the County Commission on some of the more critical water resource projects and issues within the four quadrants of the County as mentioned above.

Southeast Quadrant

1. Stub Canal Study

There has historically experienced mild to severe flooding within the Stub Canal Basin, an approximately seven square mile area in east central Palm Beach County. The Basin is generally bounded by Military Trail on the west, I-95 on the east, Palm Beach Lakes Blvd. on the north, and the C-51 Canal on the south. This Basin has facilities that fall within the jurisdiction of no less than nine different governmental entities. Because the flooding problems crossed so many jurisdictional boundaries, it was very difficult for any one Agency to develop a solution. So, at the request of the South Florida Water Management District (SFWMD), a Task Force was established, a consultant was hired, and a study of the area commenced. The group has met for the last two years developing strategies that could be developed by the different Agencies to improve the flooding situation within the Basin. The group has worked cooperatively to develop viable alternatives while dismissing those that are not. It is hoped that by this summer a comprehensive plan will have been developed that is ready to be implemented. The implementation plan will need to be discussed with all Agencies and a funding source established.

2. Lake Worth Lagoon

The S-155A Structure at S.R. 7 and Southern Blvd. has not been rendered operational due to damage sustained from Hurricanes Frances and Jeanne within the Stormwater Treatment Areas near Twenty Mile Bend. This structure would have split the C-51 Basin roughly in half, meaning less flow into the Lake Worth Lagoon. It is uncertain at this time when the structure will be made operational. Additionally, DEP has ended the water quality monitoring of Lake Worth Lagoon, leaving the County and the SFWMD to share the expense.

3. C-51 Dredging

The SFWMD, City of West Palm Beach, and Palm Beach County have partnered to accomplish a two year pilot dredging project within the C-51 Canal just south of Forest Hill Blvd. adjacent to the City of West Palm Beach's Municipal Golf Course. This partnership is almost completed with the Two Million Dollar cost sharing commitment by the parties nearly used up. This project has been a success and Staff are working on how best to extend the Partnership efforts including obtaining additional funding from the state and/or potentially developing an Agreement to have the SFWMD take over the maintenance of the project as additional reaches of the C-51 Canal have the mucky sediment removed. The removal of this sediment has significant environmental benefits to Lake Worth Lagoon.

4. Delray/ Boynton Reef

Delray/Boynton had been seeking a permit extension for the existing ocean outfall of treated effluent from their plant. ERM objected to the renewal of the existing outfall permit because of the nutrients that are possibly damaging the reefs in the area. The South Central Regional Wastewater Treatment and Disposal Board (SCWTP) wrote a letter to ERM in response to their concern about the possible damage the outfall to the offshore reef from the outfall. SCWTP has decided to move toward abandonment of their ocean outfall and is pursuing deep injection well for wastewater disposal. They have also established a goal of achieving 100% reclaimed water.

Northeast Quadrant

1. Sector Plan

The Plan amendments establishing a Sector Planning process for the Central Western Communities were challenged and are currently under negotiations with the State. In the mean time, DRI's for two of the major properties in the area are being reviewed by regional and local agencies. Whatever the outcome of these processes, the Sector Plan area presents an opportunity to enhance current water management features for the Northern PBC Plan, including the flow-ways and cleansing marshes, as well as an opportunity for addressing drainage and water supply issues in the sector from a regional perspective.

2. NPBC Plan Flow-way #2

As part of the North Palm Beach County Plan, a flow-way from the reservoir at the Palm Beach Aggregates site near Twenty Mile Bend is planned to be constructed to convey water from the reservoir to the Loxahatchee River. One of the main goals of the North Palm Beach County Plan is to provide additional water to the river. The site plan for the Scripps project on the Mecca Property had a flow-way capable of conveying up to 1000 cfs running through the property. This flow-way was to be a part of the North County Plan Flow-way #2 (see Exhibit 1 for location). Given that the Scripps project has moved to another location, the planning effort of what to do with the Mecca property needs to incorporate the planned flow-way and be made available to the SFWMD in order for the North County Plan to function as planned.

3. Northlake Blvd. Bridge

As part of the North Palm Beach County Plan, a flow-way from the reservoir at the Palm Beach Aggregates site near Twenty Mile Bend is planned to be constructed through portions of the City of West Palm Beach's Water Catchment Area (WCA). This flow-way, known as Flow-way #1, will utilize the existing "M" Canal through the majority of the WCA to convey water from the reservoir to the Loxahatchee River. The combination of this flow-way plus Flow-way #2 mentioned above provides operational flexibility for the SFWMD in moving water to the Loxahatchee River during both dry and wet periods. As part of the construction of this flow-way, a widening of the bridge at Northlake Blvd. (see Exhibit 1 for location) is planned that will provide flow capacity into the Loxahatchee Slough and ultimately into the Loxahatchee River. Additionally, this bridge will provide recreational opportunities for canoes to move through the WCA and the Loxahatchee Slough. A partnership has been formed between the County, the SFWMD and City of West Palm Beach to fund the widening of this bridge. Unfortunately, recent skyrocketing construction costs have increased the cost of the bridge from the original estimate of \$1.8 Million to close to \$3.5 Million. This has placed a strain on the budget of all three partners. In an effort to procure additional funds this project was included in a recent application for CBIR Funds.

4. G-160/Lox Slough/ C-18 Project Culverts

As part of the North Palm Beach County Plan, the G-160 control structure (see Exhibit 1 for location) was constructed within the SFWMD C-18 Canal north of PGA Blvd. This structure was constructed as part of the plan to help re-hydrate the Loxahatchee Slough. The structure has been completed for close to two years but has been operated under an interim protocol mainly for the following reasons:

- An operational schedule acceptable to all parties (primarily the developed areas surrounding the Slough) that have concerns about potential flood impacts that improper operation of this structure could create has not been fully completed
- Improvements to the road base of the portion of PGA Boulevard that runs through the Slough have not been completed to allow for full restoration of the Slough
- To provide for a slow transition to the fully-restored hydro-period which will allow wetland and upland plants to adapt to the new water levels and reduce adverse impacts for changing the levels to quickly

This District has been actively working with the surrounding communities to address their concerns and is close to implementing the next phase of interim operations which will further improve the levels in the Slough. In this interim period, the District has maintained the levels in the Slough by leaving the riser boards at levels that help the Slough (unless requested by the County to lower these levels to perform mitigation efforts). In addition, the District has replaced a number of Project Culverts which were inadvertently draining water from the Loxahatchee Slough into the C-18 Canal.

5. L-8 Wildlife Corridor

The L-8 Wildlife Corridor (see Exhibit 1 for location) is the linkage between the Northeast Everglades Natural Area (NENA) to the North and the Southeast Everglades Natural Area (SENA) to the south. The corridor, currently owned by the SFWMD, is adjacent to the Palm Beach Aggregates rock pits on Southern Blvd. at Twenty Mile Bend. Although the SFWMD is to convey the corridor to the County, the SFWMD and County are not currently in agreement regarding the vehicle and the timing for the conveyance of the corridor property.

Southwest Quadrant

1. . SENA Project

The South County Greenways and Trails Plan covers the area of Palm Beach County south of Southern Blvd. and east of Conservation Area 1. The southern portion of the County has relatively fewer acres of natural area than the northern portion of Palm Beach County. The water resource related component of this Plan will likely be limited to the Agricultural Reserve west of U.S. 441 with potential trail development

2. EAA Mining

There has been a recent increase of the number of applications for mining within the EAA. The Board of County Commission has asked for a study of the impacts of mining within the EAA. Staff will be bringing a more thorough update to the Commission in the near future concerning the costs and time schedule for a study of the mining impacts.

Northwest Quadrant

1. Lake Okeechobee Regulation Schedule

The Army Corps of Engineers has worked closely with the SFWMD and stakeholders to develop a revised water schedule for Lake Okeechobee. This new schedule is in response to the concerns expressed by many stakeholders concerning the ecological health of the lake and estuaries due to high water levels and high discharges out of the lake. After studying several options, the Corps developed the Tentatively Selected Plan (TSP) that reduces lake levels by 1-1.5 feet with some improvement in the discharges to the estuaries. After several public meetings, the TSP has been "tweaked" to add additional options that include a St. Lucie River base flow and some off lake storage. The TSP is expected to be finalized later this year. Although the health of the lake will be improved, lower water levels within the lake also provide serious water supply challenges.

2. Herbert Hoover Dike Analysis

The Army Corps of Engineers has the responsibility of the maintenance of the Herbert Hoover Dike around the perimeter of Lake Okeechobee. Over the years, and especially after the recent hurricanes, the dike has experienced severe erosion. The Corps has continually done remedial repairs of all erosion damage done to the dike as a result of storm events. However, after the dike failures around New Orleans following Hurricane Katrina, there was concern about the integrity of the Herbert Hoover Dike during a hurricane, especially seepage related erosion. The SFWMD commissioned an independent review of the Corps documents concerning the structural integrity of the Herbert Hoover Dike. The report expressed concern that under the right conditions, the Herbert Hoover Dike could fail resulting in property damage, injury and possibly loss of life. As a result of this review some improvements were made to the design that would provide a stronger dike. However, it was pointed out in the report that the dike was being rehabilitated to levee standards and not dam standards and Congressional authorization should be sought to rehabilitate the dike to the more stringent dam standards. The Corps has identified the weakest areas of the dike (roughly from Port Mayaca to Clewiston) and has developed a plan that would rehabilitate to levee standards those identified weak areas first with the reconstruction being completed by the end of 2010. The Corps has also commissioned a study to evaluate whether the dike should meet dam standards or can remain rehabilitated to levee standards. That report is expected out in April.

3. Storage North of Lake Okeechobee

There has been a lot of discussion in the last several years about the health of Lake Okeechobee and the effect the high water levels have had on its health. A good portion of the lake falls within Palm Beach County, so the health of the lake is of importance to the residents of the County. One of the proposed solutions to the problem of high water within the lake has been to provide more storage north of the lake before it enters Lake Okeechobee. The Continuity Equation (derived from the physics law of conservation) says that the flow into a system is equal to the flow out of the system plus the change in storage of the system and the mathematical equation is $Q_{in} = Q_{out} + \text{Storage}$. Storage north of the lake helps reduce the amount of flow into the system or the Q_{in} portion of the equation. This, in turn, allows either the flow out to be reduced or the amount of storage within in the lake to be reduced. This helps improve the health of either the lake or the estuaries. The SFWMD has developed several programs that would create more storage north of the lake and County staff has supported those efforts.

4. Lake Region Water Treatment Plant

The Lake Region Water Treatment Plant, a proposed 10 million gallon per day water treatment facility, will replace the aging plants currently owned and operated by the cities of Belle Glade, Pahokee, and South Bay in western Palm Beach County. The Lake Region Water Treatment Plant will take water from the brackish Floridan Aquifer, a deep groundwater source, and treat it using reverse osmosis to produce potable water that will meet existing and future drinking water standards. The total project cost is \$58,000,000. Palm Beach County has committed \$12.5 Million, the South Florida Water Management District has committed \$11.2 Million, the State of Florida has committed \$6.7 Million, and the federal government has committed \$0.8 Million to the project to date, representing a total of \$31.2 Million or approximately 54% of the total project cost.

The purpose of this water plant is to provide citizens and businesses on the southern end of Lake Okeechobee with a dependable source of high quality drinking water. The reverse osmosis process will eliminate the drinking water quality problems that have been associated with the treatment of water withdrawn from Lake Okeechobee. In the past, the cities of Belle Glade, Pahokee, and South Bay have been under Department of Health Consent Orders for various drinking water violations, having the potential to threaten public health. This has been a particular problem during drought and hurricane periods when Lake Okeechobee water quality deteriorates significantly. Neither droughts nor hurricane conditions will affect this new alternative water supply source. While the elimination of Lake Okeechobee as a water supply source eliminates competition for water supply with the Comprehensive Everglades Restoration Program, this plant establishes a dependable source of drinking water for the City's of Belle Glade, Pahokee, and South Bay, even during dry periods and hurricanes.

5. NENA Project

The NENA Project has nearly the same footprint as the North Palm Beach County Part 1 CERP project, and includes roughly 145,000 acres of natural areas managed by various government and private entities. A conceptual plan was created for interconnecting the natural areas to provide resource protection and resource based recreation. That plan identified interagency coordination of land acquisition, trail development, educational programming and marketing to create a destination equal to that of better known national parks. All of the larger County natural areas in NENA lie within one of the proposed flow-ways or are part of plans to restore flows to the Loxahatchee River, a prominent NENA feature.

General

1. Establishing Criteria for Non-Traditional Best Management Practices (BMPs)

SFWMD and other local government staff are working to establish criteria for non-traditional BMPs that can provide stormwater quality and flood storage credit through the SFWMD permit program. Examples of these BMPs include pervious pavements, stormwater reuse or recycling, green roofs, and underground storage. The primary focus of these BMPs will be for redevelopment and retrofit projects, but they can also be applied to new projects or in sensitive environmental areas as additional treatment. This effort will expand the options available to treat and store stormwater more cost effectively by reducing the extent of land needed. Establishing these criteria will also provide additional options to meet future Total Maximum Daily Load (TMDL) requirements. Palm Beach County staff has recently started working with SFWMD staff to determine which criteria would be beneficial for retrofit projects within our County.

2. Water Restrictions

Staff has been working with SFWMD staff to develop a more equitable methodology to determine how required reductions in water use by various utilities are reported. In the past, all utilities were required to reduce their consumption by 15% when a Phase I water shortage is declared by the SFWMD. This current reporting method does not account for measures already taken by a utility to permanently reduce their demand, such as utilizing reclaimed water for irrigation. Additionally, the L-40 Project, as an alternative water supply, could potentially reduce the demand on the surficial aquifer.

3. Conceptual Feasibility Study of a Sub-Regional LEC Water Supply Solution

Palm Beach County and the South Florida Water Management District (SFWMD) have coordinated the development of a water resource plan to manage the water from the L-8 Basin and the Acreage to help restore the Loxahatchee River, minimize flooding in the Acreage, and supplement water supply for Seacoast, Jupiter, and the City of West Palm Beach. Within the past four years, SFWMD planners have introduced two new concepts as part of the North County Plan that can potentially result in the availability of more water to meet all of the North County Plan's stated goals. These two concepts include the purchase of the Palm Beach Aggregates pits for development as a storage reservoir, and a flow-way that would connect the pits and the North Fork of the Loxahatchee River through a series of existing and proposed canals. Preliminary modeling of the flow-ways element of the Plan identified the availability of a significant excess of water, even during drought periods. Given the fact that this water is considered "new" water, not related to Comprehensive Everglades Restoration (CERP) that otherwise would go to tide and cannot be routed through the existing or planned STA's for use in CERP, it was recognized by regional utilities providers as an alternative stormwater reuse opportunity.

As a result, a consortium of utilities was organized to include Palm Beach County, Broward County, and the cities of Ft. Lauderdale, Hollywood, Plantation, Pompano Beach, and Sunrise to evaluate the conceptual feasibility of using the L-8 Reservoir water on a sub-regional basis to meet potable water needs. The SFWMD is also providing technical and regional policy support to the Consortium. The scope of the study that was approved by the County Commission in November is to verify the amount of water that could be available to a project from both the L-8 Basin and other sources (additional Broward County Reclaimed Water), how and where this water could be conveyed, how much benefit, if any, would be realized by a specific utility, and determine costs. Furthermore, the SFWMD has retained a facilitator to consider various institutional arrangements that might be necessary to fund, construct and operate such a facility system.

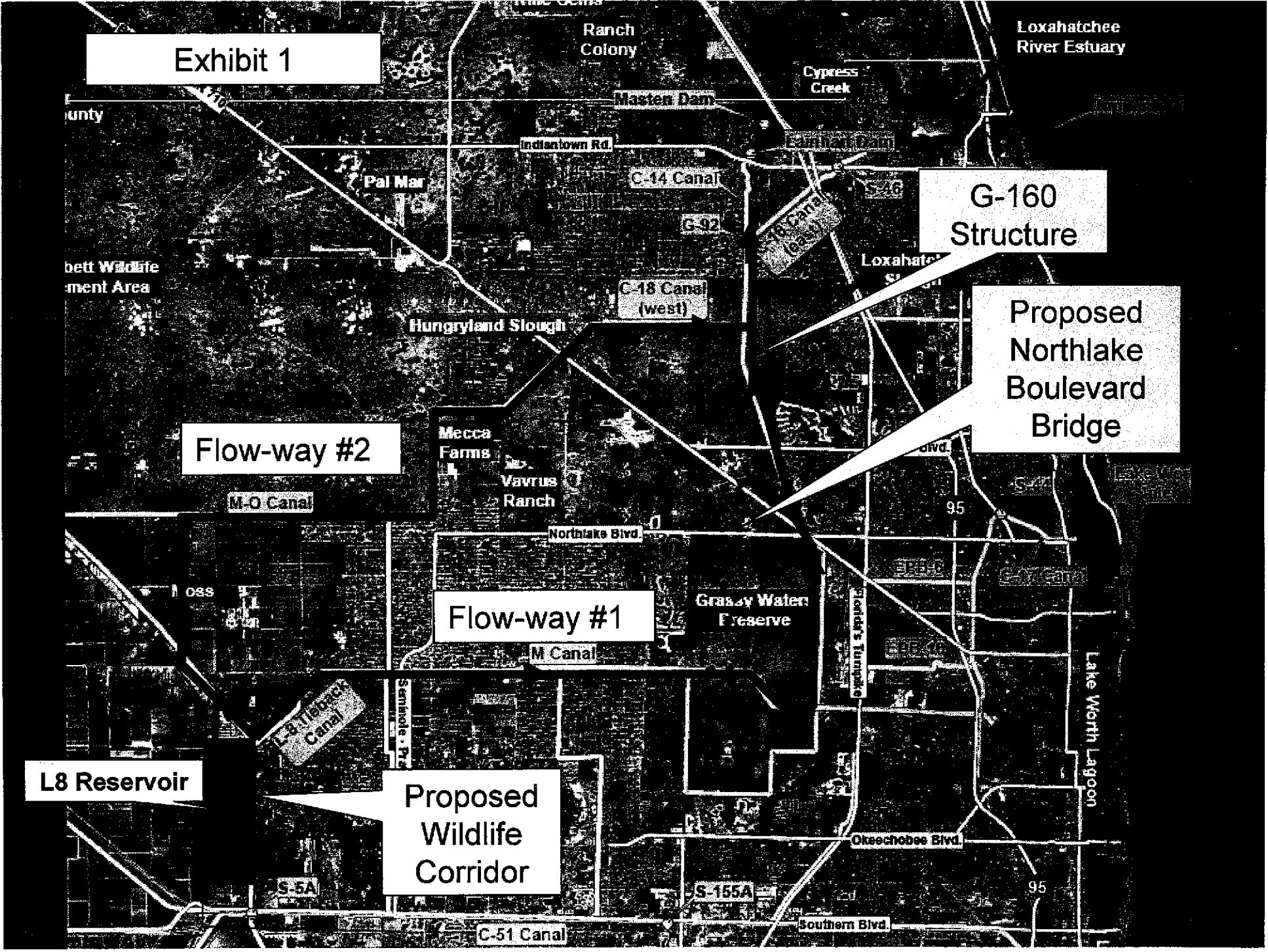


Exhibit 1

G-160 Structure

Proposed Northlake Boulevard Bridge

Flow-way #2

Flow-way #1

L8 Reservoir

Proposed Wildlife Corridor

Loxahatchee River Estuary

Ranch Colony

Cypress Creek

Master Dam

Indianatown Rd

Swan Dam

Pal Mar

C-14 Canal

G-92

Wetland Wildlife Management Area

C-18 Canal (west)

Hungryland Slough

Mecca Farms

Vavrus Ranch

M-O Canal

Northlake Blvd

Grassy Water Preserve

M Canal

L-31 Lebrer Canal

Seminole Blvd

Gandy's Turnpike

Lake Worth Lagoon

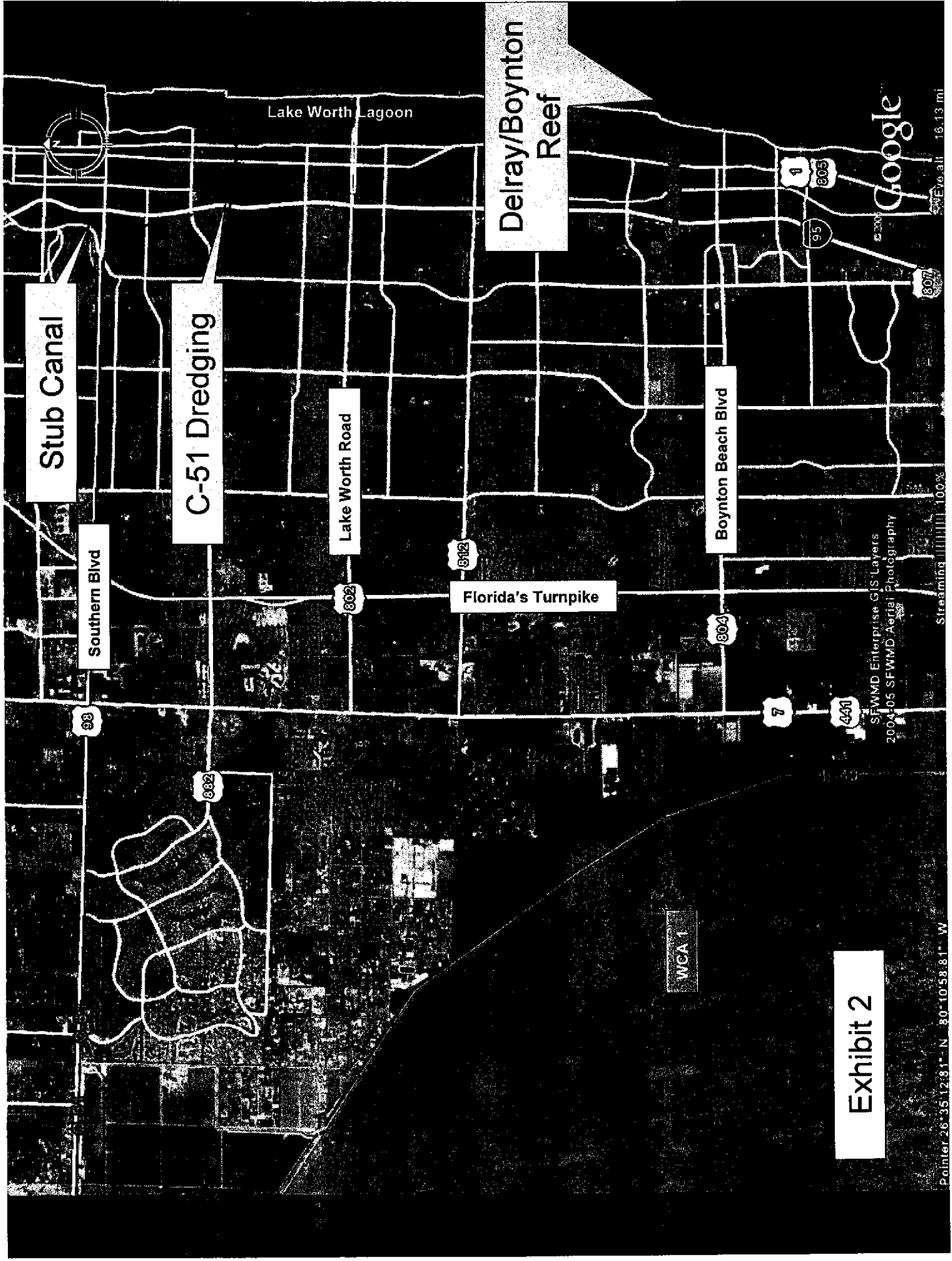
Okeechobee Blvd

S-5A

S-155A

C-51 Canal

Southern Blvd



Stub Canal

C-51 Dredging

Southern Blvd

Lake Worth Road

Florida's Turnpike

Boynton Beach Blvd

Delray/Boynton Reef

WCA 1

Exhibit 2

Google

16.13 mi

Streaming 100%

SFWMD Enterprise GIS Layers
2004-05 SFWMD Aerial Photography

Pointer: 26°35'12.91" N, 80°10'58.81" W