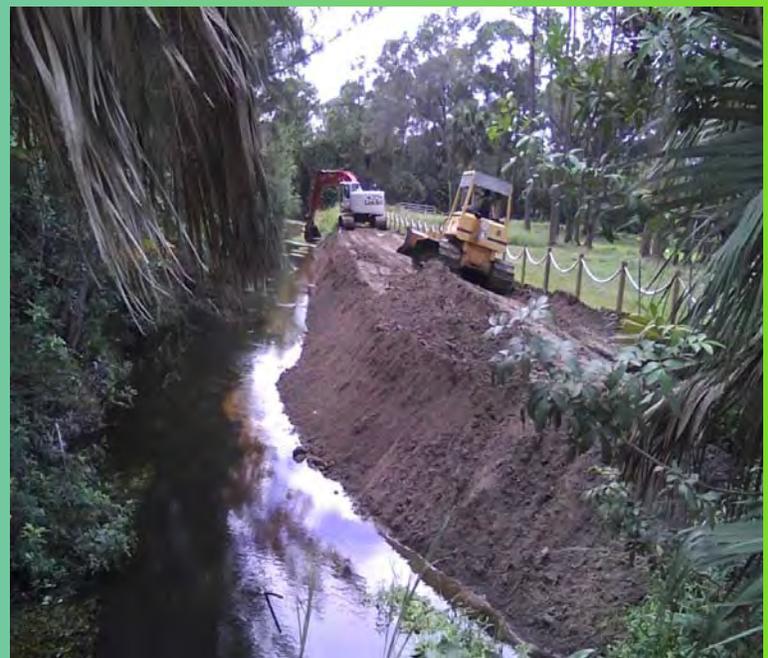
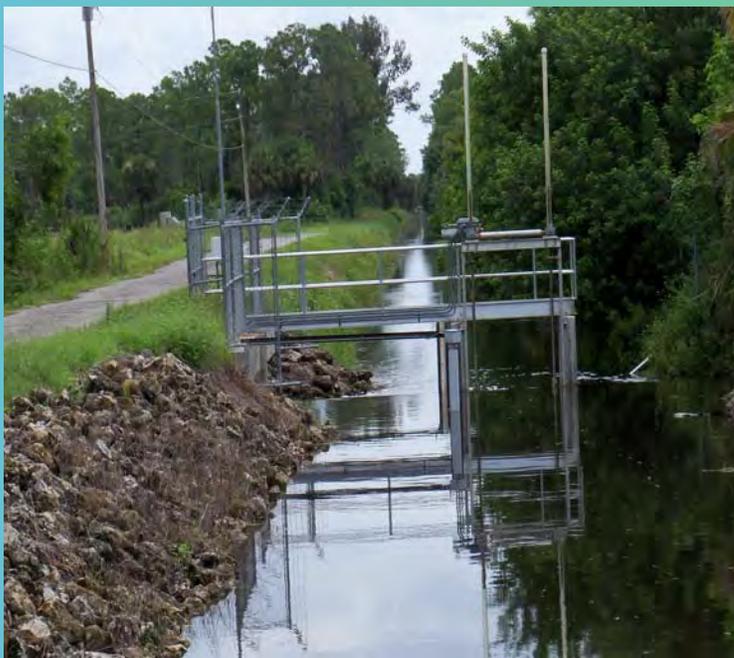


**South Indian River Water Control District  
District Engineer's  
Annual Report**



**South Indian River  
Water Control District™**



## Table of Contents

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List of Figures.....	ii
List of Tables.....	ii
Introduction.....	1
Capital Improvements.....	3
Seventeenth Plan of Improvements.....	3
Proposed Plan of Improvements.....	5
Resource Regulations.....	7
National Pollutant Discharge Elimination System (NPDES).....	7
Numeric Nutrient Criteria (NNC).....	7
Waters of the United States (WOTUS) Proposed Rule.....	9
Public Facilities Report/Water Control Plan.....	9
Government Agencies.....	9
Intergovernmental Coordination.....	11
Loxahatchee River Management Coordinating Council.....	11
South Florida Water Management District (SFWMD) Everglades Restoration Strategies.....	12
Loxahatchee River Watershed Restoration Program (Part 1) – (fka North Palm Beach County Project – Part 1 (Comprehensive Everglades Restoration Plan (CERP)).....	13
Review of G-160 Impact Analysis Study.....	14
Florida Association of Special Districts.....	15
Operation and Maintenance.....	16
Canal 2 (Hatcher Bridge) and Canal 12 and Canal 1 Bank Improvements.....	16
Canal Clearing and Maintenance.....	17
Policies and Procedures Manual.....	17
Roadways.....	18
Aquatic Weed Control Program.....	18
Water Quality Monitoring.....	19
Rainfall.....	20
General Operation and Maintenance.....	27
General Comments.....	27
Appendix A.....	29

## List of Figures

---

Figure 1. North Palm Beach County 1940 Aerial .....	1
Figure 2. 73rd Terrace N.....	3
Figure 3. 17th Plan of Improvements.....	4
Figure 4. Proposed Plan of Improvements.....	6
Figure 5. Loxahatchee River .....	11
Figure 6. Final State Proposal of Key Projects and Components .....	12
Figure 7. CERP Project Area.....	13
Figure 8. G-160 Structure .....	14
Figure 9. Canal 2 Improvement .....	16
Figure 10. Canal 12 and 1 Improvement .....	16
Figure 11: Canal Maintenance.....	17
Figure 12: Canal 1 Improvements .....	17
Figure 13: Canal 2 .....	18
Figure 14: Loxahatchee River District Water Quality Sampling Locations .....	19
Figure 15: SIRWCD Water Quality Sampling Locations .....	20
Figure 16: SIRWCD 2013-2014 Rainfall Analysis.....	25
Figure 17: 2013-2014 Cumulative Rainfall Comparison .....	26
Figure 18: Canal Maintenance.....	27

## List of Tables

---

Table 1: SIRWCD Rainfall Data.....	21
Table 2: Loxahatchee River Environmental Control District (LRECD) Rainfall.....	22
Table 3: Town of Jupiter Water Department (TOJ) Rainfall .....	23
Table 4: SFWMD Palm Beach County-Wide Rainfall Averages.....	24
Table 5: 2013-2014 North County Rainfall Average .....	24
Table 6: SIRWCD 2013-2014 Rainfall Analysis .....	25
Table 7: 2013-2014 Annual Cumulative Rainfall Comparison .....	26



# South Indian River Water Control District™

## District Engineer's Annual Report

### September 2014

#### Introduction

South Indian River Water Control District (SIRWCD or District) was originally formed in 1923 pursuant to Chapter 298, Florida Statutes. The initial works of the District were comprised of primary drainage canals, mainly used for agricultural purposes. Originally, the District's main purpose was to provide drainage infrastructure to its landowners, but since its formation, the District not only operates and maintains drainage but also roadways and a park. Today, it continues its role to serve the landowners with operation and maintenance duties on its infrastructure and implementing capital improvement projects and landowner initiated improvements to the District.

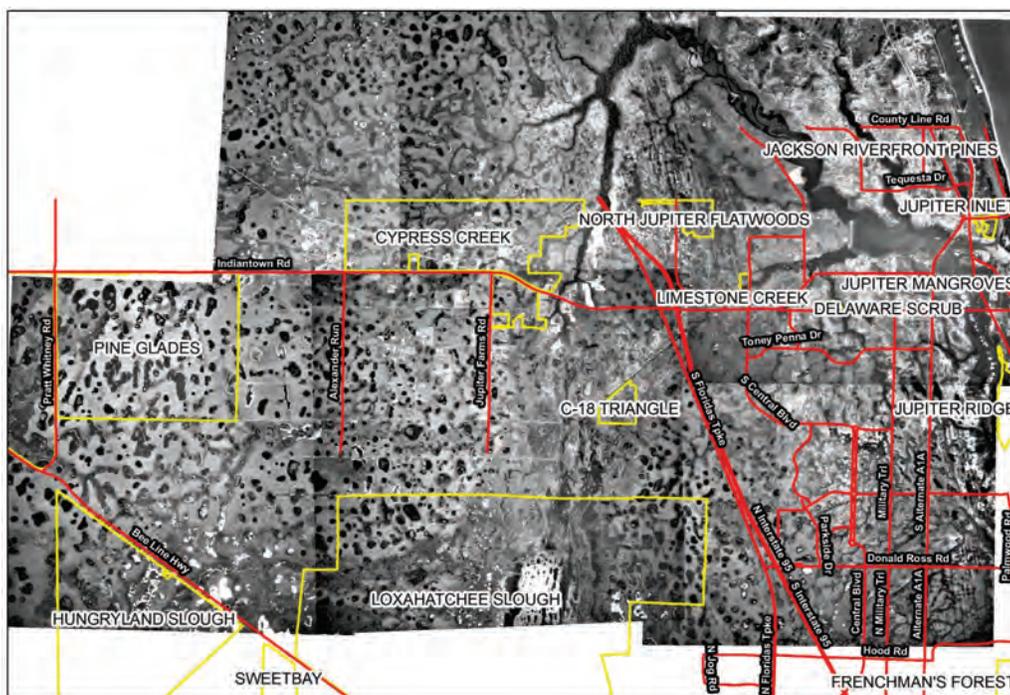


Figure 1. North Palm Beach County 1940 Aerial

From an operation and maintenance standpoint, the District continues to work with the landowners at improving conditions affecting water management and roadways. District staff also continues to assist the Board of Supervisors with operation and maintenance involving site specific drainage improvements that impact landowners, canal and culvert maintenance, and replacement or renewal of facilities that affect the works of the District.

Annually, the District examines the need to implement capital improvement projects that could enhance the works of the District. Capital improvements may occur on existing infrastructure such as roads, canals, and drainage structures. Roadway improvements are usually initiated where the traffic volumes for a specific roadway necessitate the improvements or the improvements are undertaken as a result of landowner initiatives. Landowner initiated roadway petitions for the application of Palm Beach County Standard Asphalt or Open Graded Emulsified Mix (OGEM) are received and analyzed by Staff on a regular basis.

In addition to its duties to its landowners, the District coordinates with several entities due to its position as a strategic entity for the planning and management of water resources within the North Palm Beach County area. Approximately 12,500 acres of SIRWCD discharge into the Loxahatchee River Basin, and therefore, as plans are being developed and implemented, the District is an element in any water management plan for the Loxahatchee River Basin.

Over the past several of years, water quality has become a major focus within the state of Florida. With the development of the Numeric Nutrient Criteria (NNC) and Total Maximum Daily Loads (TMDL), the potential impacts from development are being monitored by agencies and/or individuals that have a focused interest on maintaining a healthy ecosystem within the Loxahatchee River Basin and, specifically, the Northwest Fork of the Loxahatchee River. The Board of Supervisors and staff actively engage in the many external dealings that are influencing the District from a water supply, flood control, water quality, and ecosystem management perspective. The Board of Supervisors and staff are focused on making sure that the goals and expectations of these external activities do not conflict with the District's best interests with regard to the functioning of SIRWCD's system and the ability to deliver an appropriate level of service.

Each year, it is appropriately restated and recognized in the engineering report that the SIRWCD Board of Supervisors, through its policies and procedures, is responsible for formulating direction regarding District operations and intergovernmental issues. This is accomplished through a respected structure in which the District is managed through its Board of Supervisors and supporting staff. The Board of Supervisors establishes policy and provides direction to staff concerning budget, priorities, relationship with other public entities, and landowner issues. Staff is responsible for implementing Board policy. Accordingly, staff responds pursuant to the Board's direction. Engineering tasks continue to be formulated to respond to the Board of Supervisors by implementing their policies and directives, as well as supporting the General Manager in resolving various landowner issues. The relationship between the Board of Supervisors and District staff has been extremely effective in both the delivery of services to the residents and landowners within the District, and prospective management in response to requirements that are imposed upon the District by other governmental entities.

With regard to the current status of the District, to the best of my knowledge and belief, the District is in compliance with all regulatory requirements that affect works of the District and their operation, and the works of the District continue to be operated and maintained in a manner that achieves the available level of service. A separate report prepared by the District's Operations Manager discussing operation and maintenance of District facilities is included as an appendix to this document.

We continue to respond to the Board of Supervisors by implementing their policies and directives, as well as working with the General Manager in resolving various landowner issues.

# Capital Improvements

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## Seventeenth Plan of Improvements

Based on a landowner initiative, a referendum was prepared by SIRWCD and verified by the Palm Beach County Supervisor of Elections to implement the application of Open Graded Emulsified Mix (OGEM) and asphalt on the petitioner's roadway surfaces as a roadway improvement project. The applications were divided into two units of development RI-17A and RI-17B. RI-17A consists of the application of OGEM on approximately 0.4 miles of roadway within Jupiter Farms and RI-17B consists of the application of Palm Beach County Standard asphalt on approximately 1.5 miles within Palm Beach Country Estates. These roads are listed as follows and are shown in *Figure 3*.



**Figure 2. 73rd Terrace N**

### Unit of Development RI-17A (0.4 miles)

- 127<sup>th</sup> Drive N. between 187<sup>th</sup> Place N. and Old Indiantown Grade
- 90<sup>th</sup> Trail N. between 165<sup>th</sup> Place N. and 166<sup>th</sup> Way N.

### Unit of Development RI-17B (1.5 miles)

- 73<sup>rd</sup> Terrace N. between 155<sup>th</sup> Place N. and 159<sup>th</sup> Court N.
- 79<sup>th</sup> Terrace N. between 155<sup>th</sup> Place N. and 162<sup>nd</sup> Court N.
- 75<sup>th</sup> Way N. between 163<sup>rd</sup> Court N. and 165<sup>th</sup> Street N.
- 77<sup>th</sup> Trail N. between 165<sup>th</sup> Street N. and 167<sup>th</sup> Court N.

For Unit 17A, construction began in November 2013 and ended in December 2013. The project was completed for less than the original engineer's estimate at \$76,567. For Unit 17B, construction began in January 2014 and ended in May 2014. The project was completed for less than the original engineer's estimate at \$424,780.

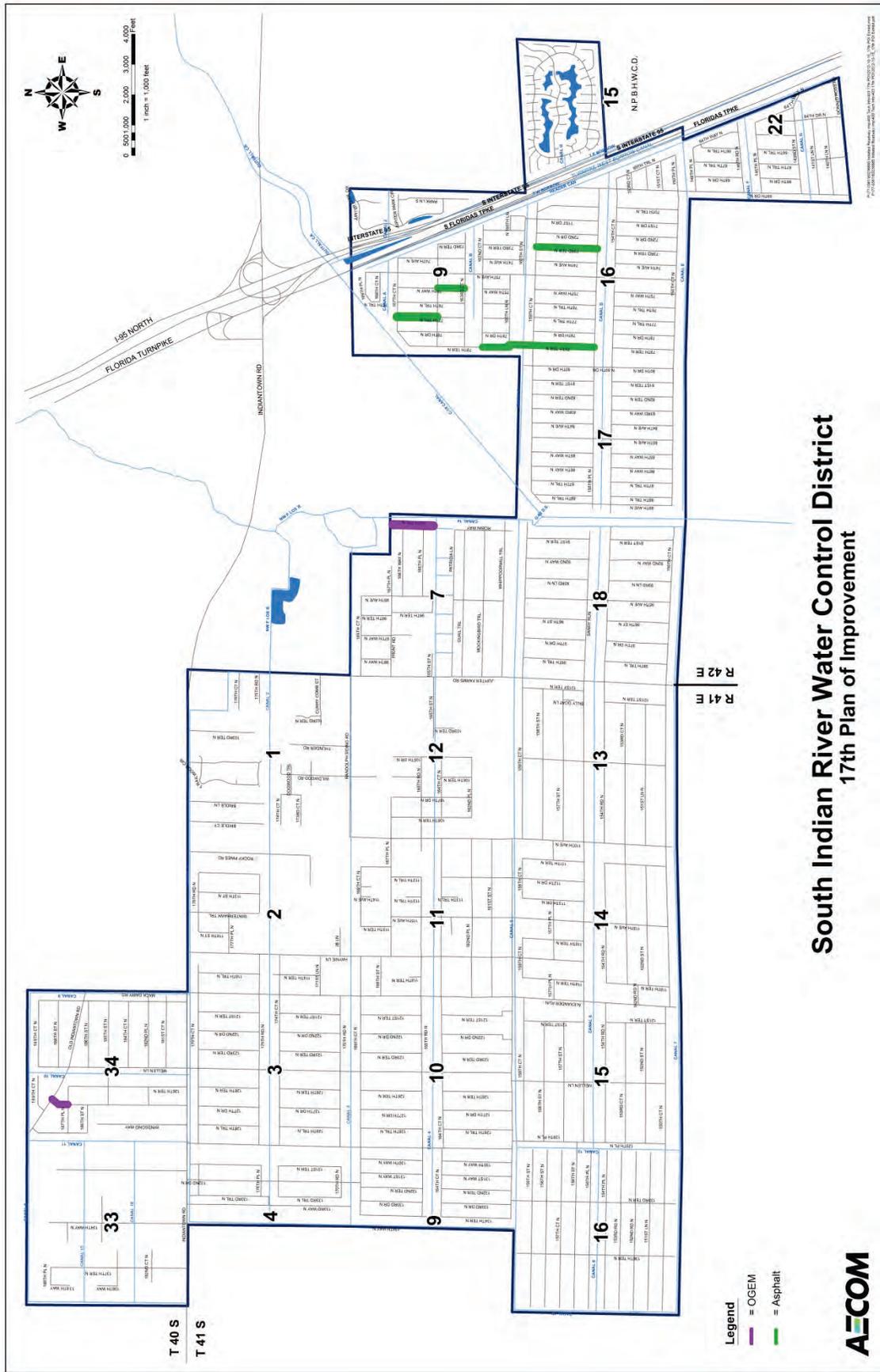


Figure 3. 17th Plan of Improvements

## Proposed Plan of Improvements

The District has received petitions from landowners to apply asphalt on certain roadways within the District. Landowners on the following roadways are petitioning to distribute a referendum for applying OGEM in Jupiter Farms (approximately 0.5 miles) and applying asphalt in Palm Beach Country Estates (approximately 6.4 miles) as shown on *Figure 4*:

### OGEM

- 164th Court N. between Mellen Lane and Alexander Run

### Asphalt

- 67<sup>th</sup> Trail N. between 146<sup>th</sup> Road N. and 149<sup>th</sup> Place N.
- 68<sup>th</sup> Drive N. between 146<sup>th</sup> Road N. and 149<sup>th</sup> Place N.
- 71<sup>st</sup> Drive N. between 160<sup>th</sup> Street N. and 155<sup>th</sup> Place N.
- 74<sup>th</sup> Avenue N. between 155<sup>th</sup> Place N. and 159<sup>th</sup> Court N.
- 76<sup>th</sup> Trail N. between 155<sup>th</sup> Place N. and 159<sup>th</sup> Court N.
- 77<sup>th</sup> Trail N. between 150<sup>th</sup> Court N. and 154<sup>th</sup> Court N.
- 78<sup>th</sup> Drive N. between 150<sup>th</sup> Court N. and 154<sup>th</sup> Court N.
- 81<sup>st</sup> Terrace N. between 150<sup>th</sup> Court N. and 154<sup>th</sup> Road N.
- 85<sup>th</sup> Way N. between 155<sup>th</sup> Place N. and 159<sup>th</sup> Court N.
- 88<sup>th</sup> Trail N. between 155<sup>th</sup> Place N. and 159<sup>th</sup> Court N.
- 154<sup>th</sup> Court N. between 75<sup>th</sup> Avenue N. to C-18 Canal
- 159<sup>th</sup> between 75<sup>th</sup> Avenue to East End
- 163<sup>rd</sup> Court N. between 75<sup>th</sup> Avenue N. and 79<sup>th</sup> Terrace N.
- 163<sup>rd</sup> Court N. between 75<sup>th</sup> Avenue N. to East End

The District continues to accept petitions for this next plan of improvements until October 31, 2014. The next step will be to issue a referendum to the affected landowners.



## Resource Regulations

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### National Pollutant Discharge Elimination System (NPDES)

The current Palm Beach County Municipal NPDES Permit was issued by the Florida Department of Environmental Protection (FDEP) on March 2, 2011. SIRWCD is a co-permittee along with 34 municipalities, the Department of Transportation, Palm Beach County, and four special districts. In order to complete the permit-related activities that are performed collectively by the co-permittees, an NPDES Steering Committee was formed. The Steering Committee meets on a regular basis to evaluate the program, to provide training and resources to the co-permittees, and to assist with the preparation of the annual reports. Staff continues to attend the Committee Meetings as a Steering Committee Board member. This past year the meetings included a discussion of Numeric Nutrient Criteria for South Florida canals and estuaries, public education, Year 3 water quality monitoring and pollutant loading results, the Annual Reports and Joint Report. A training video session was also conducted to satisfy permit requirements.



### Numeric Nutrient Criteria (NNC)

On January 14, 2010, EPA proposed a rule entitled “Water Quality Standards for the State of Florida’s Lakes and Flowing Waters.” With this rule, the EPA has proposed water quality standards in the State of Florida that would set a series of numeric limits on the amount of phosphorus and nitrogen, also known as “nutrients,” that would be allowed in Florida’s lakes, rivers, streams, springs and canals.



After several public hearings, on April 22, 2011, the Florida Department of Environmental Protection (FDEP) submitted a petition to EPA requesting EPA to withdraw its January 2009 determination that NNC are necessary in Florida, repeal Federal rulemaking completed in November 2010 to establish such criteria for inland lakes and streams, and refrain from proposing or promulgating any further NNC. The petition outlined FDEP's plans to undertake its own rulemaking for nutrient criteria for state waters. The projected rulemaking schedule called for a Notice of Rule Development in June 2011, a rule development and public outreach process through the summer and early fall of 2011, and adoption of a final rule was anticipated in January 2012, to be followed by a legislative ratification process under Florida law. EPA supported FDEP's commitment to recommence its rulemaking efforts for both inland and estuarine waters. EPA recognized that states have the primary role in establishing and implementing water quality standards for their waters.



On September 29, 2011, FDEP published a draft of the proposed rule in the Florida Administrative Code (F.A.C.) titled Chapter 62-302 regarding nutrient standards. The rule was then presented to the Florida Environmental Regulation Commission (ERC), the Florida Legislature, and the Governor, who signed House Bill (HB) 7051, ratifying the proposed rule. There was a challenge on the rule that was filed by Earthjustice, however an administrative law judge upheld the state's proposed new water quality rules on June 7, 2012.

On November 30, 2012, EPA announced its approval of FDEP's NNC. However, EPA also proposed additional regulations that would apply EPA's criteria to those waters not covered by FDEP's NNC, such as urban storm water conveyances, open ocean waters, and many estuaries where FDEP Total Maximum Daily Loads (TMDLs) have already been adopted. Since EPA developed NNC on waters not covered by FDEP's NNC, EPA and FDEP entered into an agreement on March 15, 2013, known as "Path Forward", to develop a plan for FDEP to develop NNC for the remaining waterbodies before EPA's consent decree deadline of September 30, 2013.

Since the agreement, FDEP adopted a NNC Implementation Document on April 23, 2013; adopted criteria for additional estuaries such as the Loxahatchee River Estuary on June 20, 2013; and have developed a report titled, *"Status of Efforts to Establish Numeric Interpretations of the Narrative Nutrient Criterion for Florida Estuaries and Current Nutrient Conditions of Unimpaired Waters"* to the Governor as required by the "Path Forward" agreement with EPA and Chapter 2013-71, Laws of Florida on August 1, 2013.

On September 24th, a hearing was held in court on EPA's motion to approve the Florida regulations. On January 7, 2014, the US District Court granted EPA's motion to modify the Consent Decree between EPA and various environmental organizations. The action allows EPA's approval of FDEP's plan for NNC regulations in Florida to move ahead, and denies the environmental parties' motion to enforce the original Consent Decree. Earthjustice filed a motion on March 6, 2014 to appeal Judge Hinkles' order for allowing EPA to modify the consent decree to conform it to the "Path Forward" agreement between the FDEP and EPA. On April 2, 2014, EPA filed to withdraw their proposed rule on NNC in Florida and on June 20, 2014, Earthjustice and other environmental groups filed their initial appeal of Judge Robert Hinkle's Order allowing EPA to accept FDEP's plan for NNC in Florida.

Neither EPA nor FDEP have NNC for South Florida waterbodies, especially the canals. FDEP drafted the "South Florida Canal Aquatic Life Study" and presented the study to stakeholders on November 1, 2012. This study proposes to perform a comprehensive assessment of South Florida canals and the aquatic life associated with those canals. The objectives of the study are:

1. Assess aquatic life in South Florida canals;
2. Determine interrelationships between aquatic life in canals and other variables that affect aquatic life;
3. Evaluate the differences in conditions for South Florida canals; and
4. Collect information that can be used to guide management decisions.

Eventually, this study will be used to determine if NNC are necessary for these waterbodies.

## Waters of the United States (WOTUS) Proposed Rule

On April 21, 2014, the EPA and the Army Corps of Engineers proposed draft rules revising the definitions of Water of the United States or “WOTUS”. The stated intent of the changes is to clarify what is and what is not a WOTUS. However, the new regulations will result in significant impacts on the NPDES program and municipal separate storm sewer system (MS4) permit holders because most ditches, stormwater conveyances, certain flood control devices, and retention ponds in floodplains will be considered to be “WOTUS” and subject to permit conditions and numeric nutrient criteria. Comments on the proposed rules will be received by EPA through October 20, 2014.

## Public Facilities Report/Water Control Plan

Chapter 189 of the Florida Statutes, the Uniform Special District Accountability Act, requires the preparation and submission of a Public Facilities Report to governmental jurisdictions in which the District resides such as Palm Beach County, the Town of Jupiter, and South Florida Water Management District. Special Districts are required to submit an update to this report every five years and, at a minimum, the report must contain information as to the status of the District’s public facilities and changes or revisions to those facilities that have occurred in the past year.

Since 1991, when the District filed its first Public Facilities Report, data collection has been an on-going process to provide for better and more accurate mapping of the works of the District. The Public Facilities Report is continually modified as each Plan of Improvement is added to the District’s facilities. The next modification will include the Seventeenth Plan of Improvements, and proposed capital improvements for next year. In accordance with Chapter 298.225 Florida Statutes, the Water Control Plan is amended consistent with the preparation of any proposed Plan of Improvements during the last year.

## Government Agencies

A summary of regulatory agencies and cooperative associations affecting SIRWCD is listed in the Annual Report each year. The following list is offered to inform the landowners of the number of regulatory agencies and cooperative associations with which the District conducts business and their potential impact on the District’s capital improvements, operations, and maintenance.

- United States Environmental Protection Agency (EPA)
- United States Army Corps of Engineers (ACOE)
- United States Fish and Wildlife Service
- Florida Department of Environmental Protection (FDEP)
- Florida Department of Economic Opportunity (DEO)
- Florida Department of Transportation (FDOT)
- Florida Fish and Wildlife Conservation Commission
- South Florida Water Management District (SFWMD)
- Palm Beach County
- Loxahatchee River Environmental Control District
- Town of Jupiter
- Northern Palm Beach County Improvement District (NPBCID)
- City of West Palm Beach
- Indian Trail Improvement District
- Jupiter Inlet District
- City of Palm Beach Gardens
- Martin County
- United States Geological Survey (USGS)

- Loxahatchee River Ecosystem Management Area Committee
- Loxahatchee River Management Coordinating Council
- Solid Waste Authority of Palm Beach County (SWA)
- Numerous Citizen Interest Groups and Committees

## Intergovernmental Coordination

### Loxahatchee River Management Coordinating Council

SIRWCD continues to participate as an active member of the Loxahatchee River Management Coordinating Council. This Council was established by Chapter 83-358, F.S. The Council is comprised of federal, state, and regional agencies and local representatives. It advises the FDEP and SFWMD on matters that affect administration of the Loxahatchee River, to identify and resolve inter-governmental coordination problems and to enhance communications.

SIRWCD participates as a member of the Coordinating Council due to the fact that the Northwest Fork of the Loxahatchee River is the primary stormwater outfall for the entire portion of SIRWCD lying west of the SFWMD C-18 Canal, and the area east of the SFWMD C-18 discharges into the middle of the Loxahatchee River. SIRWCD and the Coordinating Council also have several mutual issues and interests.

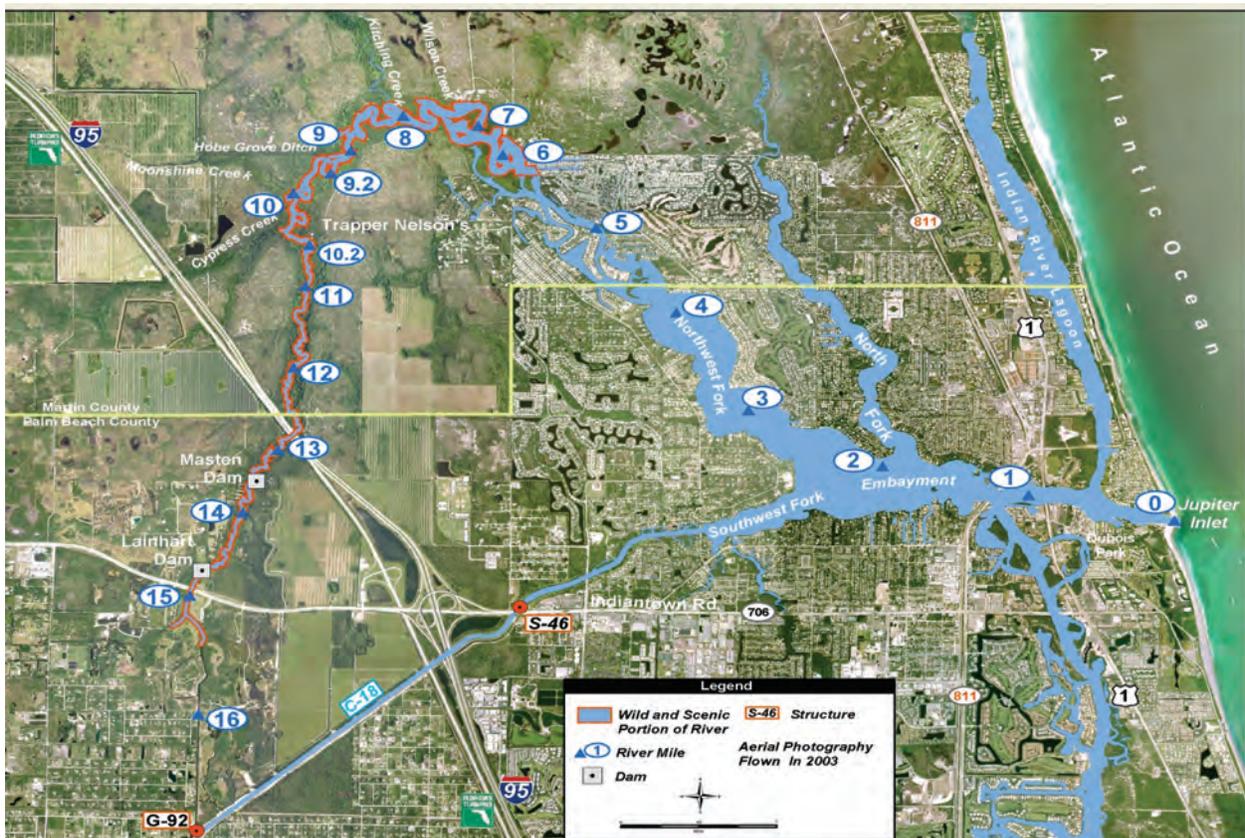


Figure 5. Loxahatchee River

## South Florida Water Management District (SFWMD) Everglades Restoration Strategies

SFWMD’s “Everglades Restoration Strategies program has been developed in order to address water quality–based effluent limits for Stormwater Treatment Areas to meet NPDES permitting requirements by EPA. As part of the program’s Technical Plan, both STA expansions and Flow Equalization Basins (FEB) upstream of STA’s are proposed. The plan includes designation of the L-8 Reservoir as a 45,000 ac-ft FEB for STA’s 1W and 1E. As a “replacement feature”, the plan proposes to acquire and construct replacement storage to capture flows from the western C-18 Basin and discharge those flows down via “Flow-way 2” (C-18 West Canal through C-18 and Loxahatchee Slough) to the Northwest Fork of the Loxahatchee River to meet Minimum Flows and Levels. The SFWMD approved acquisition of the 1800-acre Mecca Farms property in October 2013.

To date, the SFWMD has not made available the modeling assumptions or results in support of the Plan. AECOM will be participating in a Technical Advisory Committee as the Plan moves forward. *Figure 6* illustrates the proposed key projects and components of this plan.

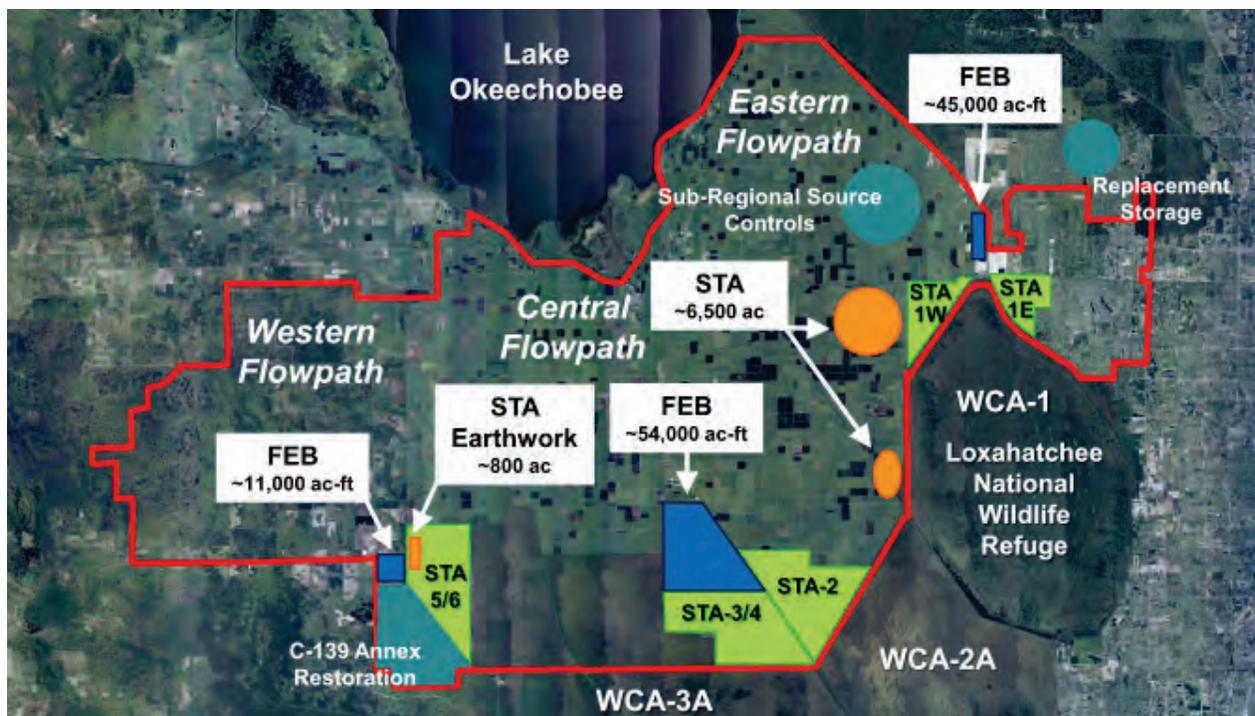


Figure 6. Final State Proposal of Key Projects and Components

## Loxahatchee River Watershed Restoration Program (Part 1) – (fka North Palm Beach County Project – Part 1 (Comprehensive Everglades Restoration Plan (CERP)))

SFWMD plans to continue the Corps' planning process and recently held an internal team kick-off meeting. They are in the process of forming a list of Project Delivery Team members and letters to stakeholders, including SIRWCD, will be mailed in the near future. It is anticipated that a charrette will be held in the November or December timeframe to begin work on developing the Project Implementation Report.

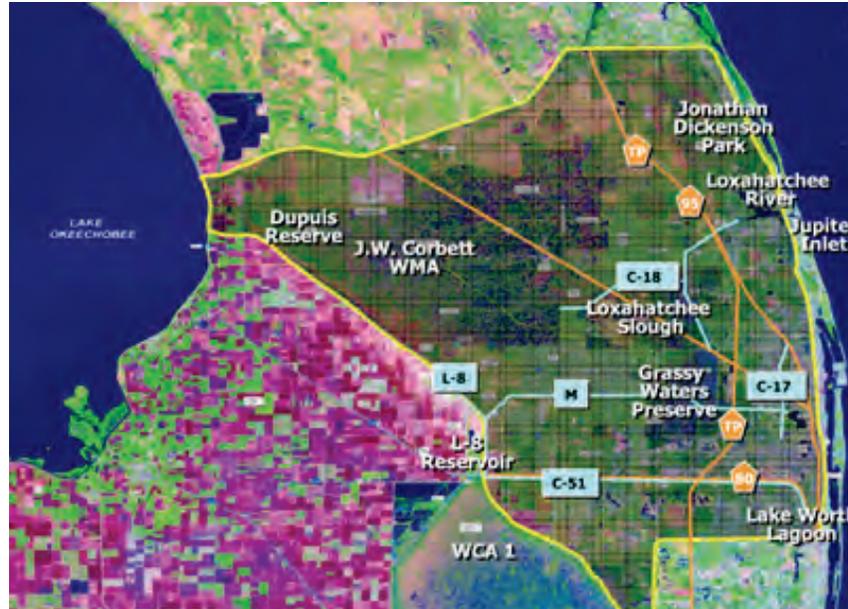


Figure 7. CERP Project Area

In addition, components of the Northern Palm Beach County Comprehensive Water Management Plan (NPBCCWMP) continue to move forward. Accepted by the SFWMD Governing Board on May 2002, the NPBCCWMP proposed improvements to store and convey water that would otherwise be lost to tide in the wet season and provide supplemental supplies in the dry season, thus meeting environmental needs, and the projected 2020 urban and agricultural demands.

Activities on components located outside of the Loxahatchee River Basin that are integral to the NPBCCWMP include:

1. SFWMD has proceeded with a Design-Build Contract for construction of a new permanent L-8 Reservoir 450 cfs outflow pump station, slope protection, and a new 2000 – 3000 cfs inflow structure from the L-8 Canal. Although high chlorides have been an issue with the water discharged from the 45,000 acre-foot L-8 reservoir in the past, especially because the M-Canal and the City of West Palm Beach's Grassy Waters Preserve are designated Class I waters and must meet drinking water standards, the theory is that once dredging is completed, and the pits are "exercised" with fresh water being stored and released from the pits, the chloride levels will decrease. The current design-build contract includes provisions for delivery of the reservoir with water that meets drinking water standards for chlorides.

The soil cement slope protection on the L-8 Reservoir is almost complete with only the sod remaining. The G-358 inflow spillway is approximately 70% complete. The G-539 pump station is approximately 60% complete. Earthwork and installation of riprap for the connections between cells is ongoing and 50% complete. Substantial completion is scheduled for April 2015.

2. The City of West Palm Beach (City) has nearly completed the construction of a new 300+/- cfs Control No. 2 pump station. The Control No. 2 pump station lifts water from the SFWMD's L-8 Tie-back Canal to the City's M-Canal where it flows eastward to the City's water supply lakes. The previous pump station capacity was limited to 165 cfs. Under the current Murray Logan contract, the new pump station is complete and operating and the old pump station has been demolished. Only a few punchlist items remain to be completed for the contract closeout.

## Review of G-160 Impact Analysis Study

In January 2004, the SFWMD completed construction of the G-160 (Figure 8) or Loxahatchee Slough structure in the east leg of the C-18 Canal, immediately south of the C-18 Canal's confluence with the west leg. The purpose of the G-160 structure is to provide for restoration of a more natural hydroperiod for wetland areas located upstream of the structure, while maintaining flood protection for adjacent developed areas and providing base flow augmentation to help restore freshwater flows in the Northwest Fork of the Loxahatchee River. During the process of conducting an Impact Analysis Study and subsequent discussions between the interested parties, the structure remained open until execution of an interlocal agreement between SIRWCD, the City of Palm Beach Gardens, and Northern Palm Beach County Improvement District (NPBCID) in August 2005. The agreement addresses a future planned course of action regarding the phased operation schedule for the structure and a study of potential mitigation measures to protect existing facilities. The original agreement authorized operation of the G-160 structure in a limited range from 15.0 feet to 15.5 feet NGVD.



Figure 8. G-160 Structure

In February of 2009, FDEP issued a letter to SFWMD requiring permit compliance by incremental increases in control elevation of the G-160 structure, with monitoring, to begin by June 1, 2009. SFWMD initiated the incremental operating schedule on June 1, 2009, with a wet season G-160 headwater stage of 16.5 feet NGVD (e.g., open 16.7 feet, close 16.3 feet) and a dry season G-160 headwater stage of 15.5 feet NGVD. In conjunction with this incremental operating schedule, SFWMD coordinated with NPBCID, the City of Palm Beach Gardens, and SIRWCD staff to establish a plan to monitor the impacts of the increased G-160 levels on communities adjacent to the east side of the Loxahatchee Slough. Regular meetings with SFWMD and the interested parties have been held since June 2009 to discuss implementation of the monitoring program. The monitoring wells were completed in March, 2010 and water level data has been collected since July 12, 2010. SFWMD is working on finalizing a report of the compiled data through March 2013.

SFWMD has expressed interest in the potential for reconnecting Project Culvert PC-10 to allow water to return to the C-18 canal through the culvert located at the west end of SIRWCD Canal E. SFWMD would like to explore an opportunity to capture excess water from end of wet season or dry season storm events to contribute flows to the Loxahatchee River. An initial meeting was held at SFWMD on July 30, 2013 to discuss the possibility; however, there have been no further communications on this during the past year.

## Florida Association of Special Districts

*Serving the Special Needs of Your Community*



SIRWCD's Board of Supervisors and staff are active participants in the Florida Association of Special Districts (FASD). FASD is the recognized, collective voice of special purpose government across the State of Florida. This diverse network of both Independent and Dependent Special Districts have come together to provide resources uniquely developed to meet the needs of Florida's Special Districts. The purpose of the FASD is to keep the public informed of the benefits of Special Districts, update members with information useful to themselves and their community, review all government activities as they affect the interest of Special Districts, and to forward requests and comments to the Florida Legislature. FASD provides primary education and training to satisfy the educational requirements of Ch. 189, Florida Statutes. The purpose of the education program is to ensure that elected boards and district managers comply with Florida Statutes governing special districts.

The FASD holds regular meetings throughout the year where information from other water control districts, improvement districts, community development districts, and special taxing districts can be shared with regard to policies, procedures, operation, and maintenance issues. In addition, members of the Association are "watchdogs" for codes, ordinances, rules, and/or legislation that can either help or hinder the activities of Special Districts. To this end, a significant effort is put forward during the annual legislative session. FASD members continue to benefit from each other's experiences.

The FASD will continue to follow this order and represent the interests of its members and provide information on pertinent legal requirements, sunshine laws, economic challenges, environmental, emergency management, and homeland security issues.

## Operation and Maintenance

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### Canal 2 (Hatcher Bridge) and Canal 12 and Canal 1 Bank Improvements

In order to aid in flood control and minimize erosion, the District worked with Palm Beach County Environmental Resource Management Department on bank restoration under the Hatcher Bridge located in Canal 2. The Hatcher Bridge is Palm Beach County's connection from Riverbend Park to the new restoration area. *Figure 9* shows the completion of the project.

In addition to Canal 2, the corner of Canal 12 and Canal 1 was repaired with rip rap due to correct erosion caused by the discharge pipe from the Pine Glades Area. *Figure 10* shows the construction completion of that location.



Figure 9. Canal 2 Improvement



Figure 10. Canal 12 and 1 Improvement

## Canal Clearing and Maintenance



**Figure 11: Canal Maintenance**



**Figure 12: Canal 1 Improvements**

The District's canal network consists of over 60 miles of canals which are continuously in need of being maintained, restored, and enhanced. The canal clearing and maintenance program's objective is to keep the canal sections easily accessible and, to the best extent possible, free from trees and other vegetation that may potentially enter the canal during a major storm event and thereby create a restriction that would aggravate flooding.

The canal clearing and maintenance program provides services that include clearing, grading and shaping of the canals as well as restoring, replacing or enhancing structural improvements. The program is an ongoing effort and the District has continued to work to maintain and achieve the desired goals.

This year, the District completed some major clearing on Canal 3 and Canal 6. Due to the location of the canal rights-of-way in relation to landowner's property lines, the District requested and received cooperation from the landowners in order to clear canals to improve drainage. Just recently the District improved its maintenance capability by expanding the canal bank along Canal 1 to gain access to Canal 2 and proposes to install a culvert on the south end of Alexander Run at Canal 7. These improvements will help in transporting equipment to the canal rights-of-way for maintenance. *Figure 12* shows the construction activity occurring at Canal 1.

The Board has authorized an on-going swale maintenance program which allows the District Engineer and General Manager to identify areas within SIRWCD that could be improved for conveyance and storage. District staff will continue to work toward the desired goals of the District in the swale maintenance program.

## Policies and Procedures Manual

In accordance with the provisions of the Florida Statutes, the District maintains a Policies and Procedures Manual that is available to the public. The Manual presents and discusses items including: District organization, agenda formulation and execution, processing of permits that affect works of the District, the budget process, etc. Periodic revisions with deletions, additions, and amendments to

maintain consistency with Florida Statutes and other codes and rules enable the District to function properly.

## Roadways

There are approximately 189 miles of roads within SIRWCD. These roads give access to each subdivided parcel of land. Currently there are 51.5 miles of roads paved to Palm Beach County standards, 34.5 miles of roads which are surfaced with OGEM material, and 10 miles of OGEM roads which have been overlaid. Approximately 93 miles of roads within SIRWCD are currently unpaved.

## Aquatic Weed Control Program

SIRWCD implements an Aquatic Weed Control Program in order to maintain the primary canals throughout the District. This Program is an ongoing process aimed at reducing and managing the amount of weeds in the canal network to allow unobstructed drainage following rain events. The Aquatic Weed Control Program is necessary to prevent canals from becoming overgrown and to provide a clean channel through the canal system to the outfall.

The program controls emergent vegetation growth through the use of herbicides approved in permits obtained from the State of Florida as well as mechanical removal of dead or accumulated vegetation that may present a potential for impeding the flow of storm water through the primary canal system.

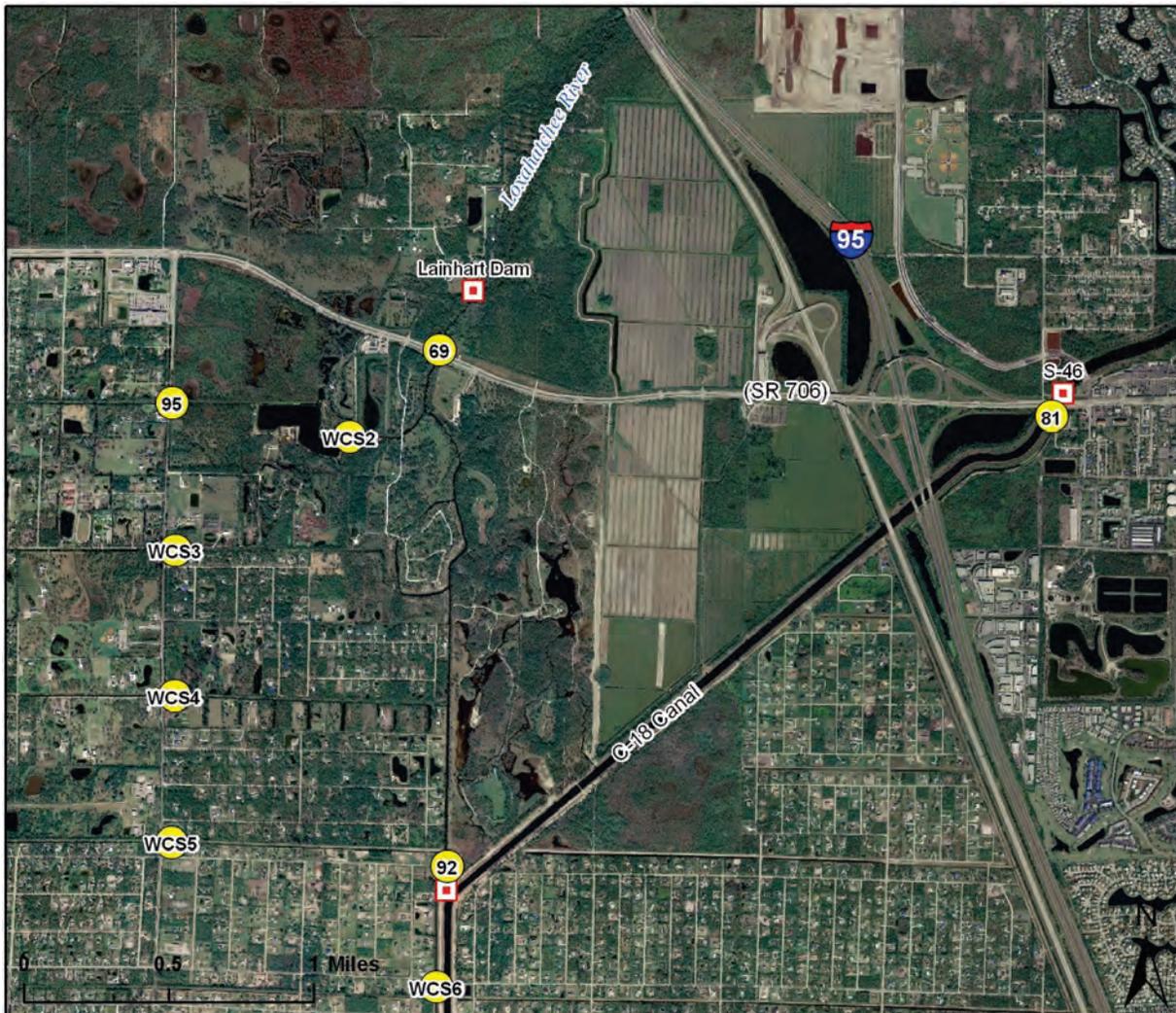
In the future, greater emphasis may be needed for this program as a result of NPDES water quality programs, the FDEP and EPA proposed storm water criteria, the Ecosystem Management Area Plan, and other intergovernmental coordinating activities.



**Figure 13: Canal 2**

## Water Quality Monitoring

Due to the many ecological and regulatory pressures being exerted over the Loxahatchee River Basin area, it was recommended that the District sample and monitor water quality within and adjacent to its boundaries. SIRWCD had historically taken samples through a co-operative agreement with the United States Geological Survey (USGS), but due to reduced funding by the federal government, the program was abandoned. The Loxahatchee River District (LRD) has been obtaining water quality samples in recent years. The existing sampling locations done by LRD are depicted on *Figure 14*. Due to the new water quality legislation being proposed, the Board of Supervisors had instructed staff to implement a water quality monitoring program that augments and expands the current LRD program.



**Figure 14: Loxahatchee River District Water Quality Sampling Locations**

In July 2011, SIRWCD entered into a contract with a water sampling and testing firm. The samples are tested to analyze the surface water and groundwater for various metal, organic and inorganic contaminants as well as water quality criteria. *Figure 15* illustrates the sampling locations for this program. The Lateral Control Structures constructed as part of the 9<sup>th</sup> Plan of Improvements have

provided the District with a significant amount of water level monitoring data that is very valuable to the District to better manage the system for flood protection and environmental benefits.

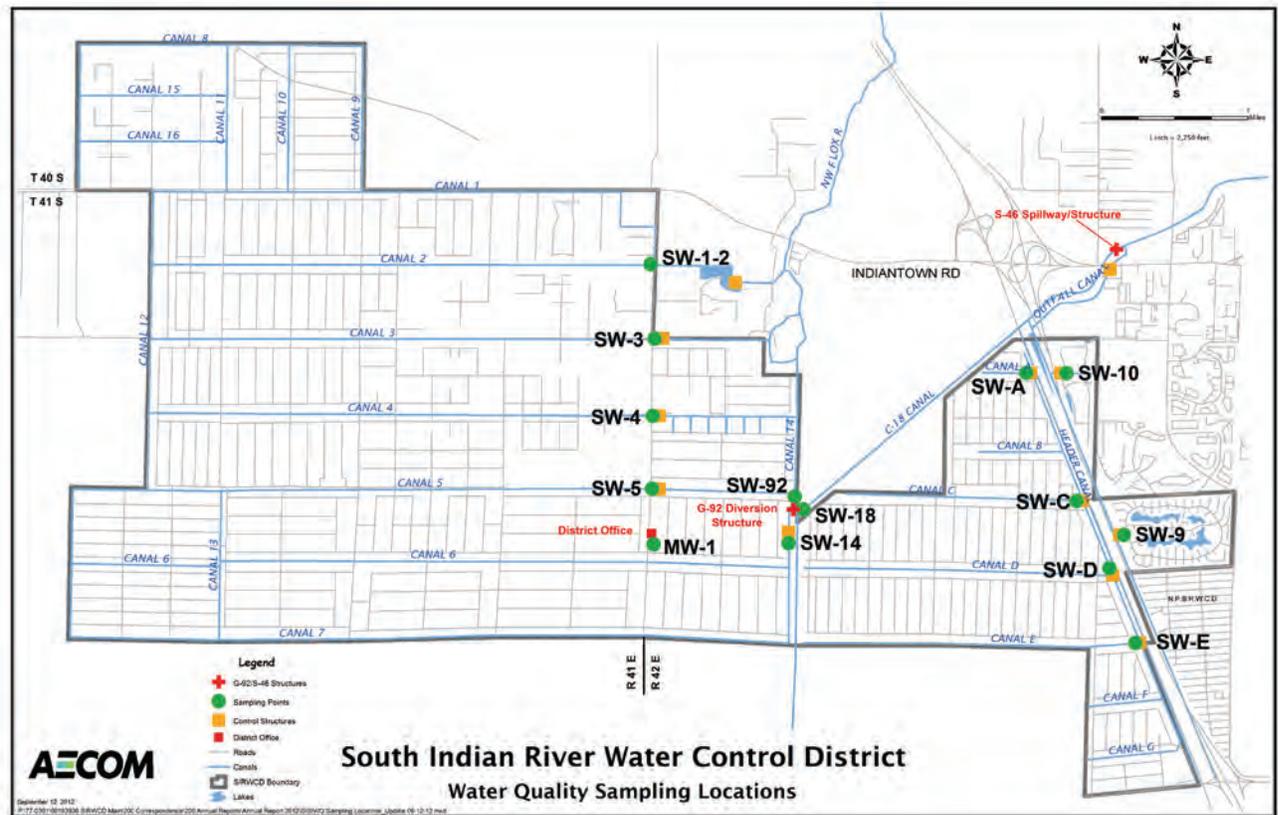


Figure 15: SIRWCD Water Quality Sampling Locations

## Rainfall

The SIRWCD work center monitors and records the total rainfall the District receives throughout the year. For the twelve month period from September 2013 through August 2014, the District received 72.43 inches of rainfall. The District’s historical monthly rainfall data dating back to 1987 as well as the calculated monthly average rainfall is illustrated in *Table 1*. The average annual rainfall for SIRWCD is 65.40 inches. The 2013-2014 year rainfall was higher than the historical rainfall average within the District. Historical rainfall data obtained by the Loxahatchee River District (LRD), the Town of Jupiter Water Department (TOJ), and the SFWMD is shown below in *Tables 2, 3, and 4*, respectively.

The 2013-2014 monthly rainfall data from SIRWCD, LRECD, and TOJ have been averaged to determine the rainfall for an area referred to as North County. The average total year rainfall in North County from September 2013 to August 2014 was 74.72 inches. The North County Averages can be found in *Table 5*.

The SFWMD data represents the historical averages of numerous rainfall measuring stations throughout Palm Beach County. *Table 6* and *Figure 16* compare the rainfall data from 2013-2014 SIRWCD, the 30 year SFWMD average, and the 2013-2014 North County average. The cumulative

rainfall for 2013-2014 SIRWCD, the 30 year SFWMD average, and the North County average are shown in *Table 7* and *Figure 17*.

**Table 1: SIRWCD Rainfall Data**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
<b>1987-1988</b>	8.08	6.03	12.92	1.25	4.00	2.60	3.20	2.50	9.30	13.25	14.20	10.75	<b>88.08</b>
<b>1988-1989</b>	1.00	1.35	1.70	1.75	0.40	0.25	4.10	5.50	1.90	6.95	7.90	6.75	<b>39.55</b>
<b>1989-1990</b>	3.80	3.75	1.40	2.15	1.10	1.80	6.20	2.20	4.85	5.85	4.85	9.40	<b>47.35</b>
<b>1990-1991</b>	11.35	3.05	2.65	2.55	7.75	4.20	4.25	7.35	5.50	15.90	9.80	5.72	<b>80.07</b>
<b>1991-1992</b>	9.95	4.35	4.85	0.55	0.75	6.25	4.70	3.00	2.45	16.85	2.80	11.95	<b>68.45</b>
<b>1992-1993</b>	9.00	0.75	9.85	0.75	12.60	4.15	10.75	2.10	7.18	7.30	4.75	3.73	<b>72.91</b>
<b>1993-1994</b>	8.15	12.00	2.57	0.47	2.09	4.12	1.67	2.50	2.65	7.23	4.91	9.77	<b>58.13</b>
<b>1994-1995</b>	7.55	7.15	7.87	7.51	2.32	1.83	2.68	3.57	1.43	10.08	10.73	14.80	<b>77.52</b>
<b>1995-1996</b>	4.78	25.90	0.71	1.22	1.39	1.00	11.94	2.01	10.62	7.39	9.74	8.31	<b>85.01</b>
<b>1996-1997</b>	7.41	6.60	4.37	0.98	4.11	6.41	2.51	7.24	5.45	14.60	6.18	12.39	<b>78.25</b>
<b>1997-1998</b>	10.26	1.78	3.53	5.45	6.54	7.84	4.78	5.71	1.91	1.88	8.74	7.13	<b>65.55</b>
<b>1998-1999</b>	10.81	4.03	10.86	1.26	9.76	0.68	0.37	0.87	2.59	16.38	7.21	15.22	<b>80.04</b>
<b>1999-2000</b>	9.79	17.41	0.76	5.39	1.23	1.55	3.27	4.16	0.89	3.21	7.33	2.49	<b>57.48</b>
<b>2000-2001</b>	6.45	12.06	1.03	3.15	1.10	0.03	5.56	0.65	5.92	9.78	8.28	11.81	<b>65.82</b>
<b>2001-2002</b>	14.26	6.65	3.17	2.73	1.25	6.41	1.29	5.31	2.03	10.56	9.71	5.63	<b>69.00</b>
<b>2002-2003</b>	3.67	2.40	3.13	2.95	0.17	1.61	7.62	6.22	10.70	5.81	2.62	9.41	<b>56.31</b>
<b>2003-2004</b>	4.65	6.45	5.81	3.38	2.09	2.07	0.81	2.11	3.11	3.95	8.66	7.70	<b>50.79</b>
<b>2004-2005</b>	25.72	1.44	1.39	1.04	1.50	1.44	9.44	2.05	6.80	12.69	4.07	7.00	<b>74.58</b>
<b>2005-2006</b>	13.21	11.80	3.08	0.74	0.43	2.97	0.67	2.67	2.39	8.59	6.06	12.04	<b>64.65</b>
<b>2006-2007</b>	4.56	2.22	1.58	3.58	0.28	1.40	0.74	3.37	5.09	10.72	12.93	9.44	<b>55.91</b>
<b>2007-2008</b>	12.38	7.55	1.92	4.43	0.95	4.07	4.15	2.32	4.78	8.14	5.40	9.07	<b>65.16</b>
<b>2008-2009</b>	4.98	4.62	1.47	2.08	0.05	0.74	4.89	1.39	11.15	6.30	8.87	6.68	<b>53.22</b>
<b>2009-2010</b>	3.82	1.92	2.92	7.32	1.86	2.15	9.46	4.98	6.50	7.06	5.71	9.99	<b>63.69</b>
<b>2010-2011</b>	9.20	1.20	1.59	0.44	3.21	0.39	2.33	1.02	3.91	7.10	7.63	7.70	<b>45.72</b>
<b>2011-2012</b>	9.72	11.30	1.59	2.00	0.75	6.62	4.50	1.18	6.93	5.97	4.30	15.66	<b>70.52</b>
<b>2012-2013</b>	3.87	4.59	0.51	3.66	1.22	2.40	1.18	3.60	8.72	9.65	10.74	9.35	<b>59.49</b>
<b>2013-2014</b>	9.40	0.81	6.98	1.49	11.65	2.84	4.43	1.62	6.14	11.80	9.37	5.90	<b>72.43</b>
<b>AVG</b>	<b>8.44</b>	<b>6.27</b>	<b>3.71</b>	<b>2.60</b>	<b>2.98</b>	<b>2.88</b>	<b>4.35</b>	<b>3.23</b>	<b>5.22</b>	<b>9.07</b>	<b>7.54</b>	<b>9.10</b>	<b>65.40</b>

**Table 2: Loxahatchee River Environmental Control District (LRECD) Rainfall**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
1974-1975	5.01	6.07	1.81	1.66	0.46	2.80	1.63	1.92	8.20	10.19	6.78	1.46	47.99
1975-1976	5.67	3.83	1.10	2.15	0.90	6.30	0.36	1.89	10.57	4.70	1.59	5.20	44.26
1976-1977	8.91	4.12	3.69	2.71	4.48	1.54	1.77	2.00	8.60	3.06	2.33	5.97	49.18
1977-1978	13.39	1.13	1.14	6.21	4.80	2.60	3.40	0.25	4.15	11.95	13.15	10.71	72.88
1978-1979	9.45	3.40	7.30	13.62	5.10	0.47	1.16	3.81	5.45	4.32	3.36	5.61	63.05
1979-1980	18.96	5.22	4.16	1.49	3.84	2.58	1.79	2.88	5.40	4.83	7.94	4.22	63.31
1980-1981	6.42	6.16	4.72	3.04	0.63	3.65	1.00	0.92	3.35	4.67	3.59	16.71	54.86
1981-1982	8.61	2.73	3.87	0.58	1.88	9.38	18.16	7.71	11.38	12.65	3.85	8.79	89.59
1982-1983	8.02	2.83	21.95	2.11	6.19	7.13	5.26	4.05	3.14	9.02	4.04	8.19	81.93
1983-1984	16.40	6.98	4.86	7.59	1.12	2.77	5.22	3.05	7.92	5.01	6.57	3.61	71.10
1984-1985	11.55	2.19	9.52	1.35	1.13	0.29	1.88	3.73	2.53	4.98	5.06	4.37	48.58
1985-1986	11.74	6.51	1.21	4.31	5.51	1.81	14.00	0.25	1.17	11.40	7.30	5.93	71.14
1986-1987	5.39	6.75	6.13	6.97	2.62	3.11	6.88	0.30	6.93	7.64	4.09	3.88	60.69
1987-1988	7.09	3.94	12.25	0.19	4.18	4.91	3.39	1.84	8.24	7.09	7.95	7.41	68.48
1988-1989	2.02	2.79	6.32	1.32	1.22	0.37	3.84	4.73	2.82	3.33	6.75	5.70	41.21
1989-1990	2.36	3.16	1.41	2.18	1.68	1.38	6.36	1.49	3.84	2.51	4.29	3.16	33.82
1990-1991	8.25	3.02	0.97	1.83	7.45	2.75	2.99	2.92	6.71	7.68	5.57	3.80	53.94
1991-1992	5.88	4.28	2.72	0.47	1.74	3.30	3.74	3.67	1.46	15.44	2.16	9.27	54.13
1992-1993	10.54	1.63	9.17	1.02	12.75	4.57	9.73	2.22	3.32	8.50	2.99	2.22	68.66
1993-1994	8.59	11.29	5.66	0.81	3.38	4.20	1.97	3.74	3.41	8.31	4.87	10.06	66.29
1994-1995	7.48	5.60	10.27	7.30	2.54	1.49	2.81	3.40	0.80	9.56	8.98	13.02	73.25
1995-1996	5.44	23.64	1.42	1.89	1.33	1.30	11.00	1.51	8.57	6.63	5.96	6.77	75.46
1996-1997	4.81	5.04	4.77	7.77	3.53	2.44	2.50	9.19	6.08	19.35	8.42	18.52	92.42
1997-1998	9.37	2.24	2.92	4.76	6.84	6.51	4.93	3.18	2.46	3.93	8.41	7.78	63.33
1998-1999	12.00	4.60	8.61	2.04	9.33	0.63	0.30	0.92	4.11	13.62	6.24	10.70	73.10
1999-2000	12.25	18.04	0.41	2.19	1.11	1.02	2.18	5.40	2.05	1.63	4.81	3.93	55.02
2000-2001	10.17	12.88	2.05	4.08	1.19	0.40	6.99	0.92	5.41	9.12	10.96	12.02	76.19
2001-2002	18.95	5.81	2.48	2.94	0.76	6.71	1.47	3.62	1.36	10.11	9.58	7.58	71.37
2002-2003	6.02	3.20	3.22	3.60	0.19	1.60	8.64	4.90	10.74	4.91	1.77	7.56	56.35
2003-2004	5.91	2.50	6.06	3.19	1.77	2.25	0.64	1.62	3.20	3.18	6.38	8.35	45.05
2004-2005	22.28	1.30	1.05	1.02	1.38	2.50	5.18	2.09	5.23	10.57	1.85	8.12	62.57
2005-2006	4.54	11.25	4.38	1.43	0.44	3.15	0.49	3.13	1.64	8.43	5.81	11.25	55.94
2006-2007	5.04	2.14	1.92	3.80	0.45	1.77	1.06	2.88	4.07	12.36	8.19	4.06	47.74
2007-2008	12.27	6.83	3.13	3.41	1.08	3.94	4.41	2.48	4.56	7.70	5.99	11.15	66.95
2008-2009	6.36	6.34	1.82	6.34	0.41	1.20	4.86	1.87	10.17	8.07	8.65	6.90	62.99
2009-2010	3.51	0.79	4.72	6.89	1.57	3.02	9.08	5.34	2.79	10.37	5.42	11.70	65.20
2010-2011	8.36	1.49	2.21	1.11	3.62	0.66	3.27	2.89	3.48	5.00	4.74	9.70	46.53
2011-2012	8.07	8.73	2.22	0.98	3.62	5.89	2.67	1.66	7.97	6.81	3.85	16.44	68.91
2012-2013	7.60	5.61	1.88	8.45	1.77	2.27	1.23	5.42	8.00	11.65	5.49	7.60	66.97
2013-2014	12.18	0.81	6.88	2.69	7.83	2.13	5.15	2.19	4.46	9.41	8.90	8.50	71.13
AVG	8.92	5.42	4.56	3.44	3.05	2.92	4.33	2.95	5.14	7.99	5.87	7.95	62.54

**Table 3: Town of Jupiter Water Department (TOJ) Rainfall**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
1976-1977	4.65	4.62	3.20	0.80	3.33	1.70	0.70	2.09	3.00	5.20	5.80	8.25	43.34
1977-1978	14.06	2.90	2.97	7.70	4.80	2.60	3.40	0.25	4.15	11.95	13.15	10.71	78.64
1978-1979	9.45	3.40	7.30	16.39	5.05	0.22	1.34	3.98	6.14	4.31	2.63	5.49	65.70
1979-1980	16.86	5.98	4.54	1.58	5.00	2.67	1.91	2.50	6.12	3.61	9.69	5.22	65.68
1980-1981	6.65	6.33	4.83	2.00	0.62	3.11	1.12	0.46	4.60	6.16	3.27	15.65	54.80
1981-1982	7.20	2.56	1.75	0.36	1.70	6.54	14.70	8.24	14.14	13.25	2.82	6.97	80.23
1982-1983	7.94	2.16	22.49	2.59	6.26	8.10	5.11	4.29	3.38	9.40	3.25	8.30	83.27
1983-1984	15.21	8.29	3.94	7.20	0.79	3.49	6.50	2.97	9.04	2.30	6.13	3.65	69.51
1984-1985	10.23	2.40	13.80	0.17	1.13	0.29	1.88	6.66	1.95	4.66	4.65	4.49	52.31
1985-1986	15.65	5.15	0.73	4.02	5.38	2.23	14.00	0.28	1.19	13.60	5.44	5.25	72.92
1986-1987	4.24	6.75	6.13	6.49	1.86	5.17	7.58	0.34	3.57	7.18	3.68	3.28	56.27
1987-1988	9.07	8.12	13.58	0.31	3.86	5.94	3.51	1.48	7.10	7.98	8.79	8.60	78.34
1988-1989	2.41	2.53	2.40	1.11	1.04	0.53	4.46	3.90	2.60	3.07	5.69	4.87	34.61
1989-1990	2.47	3.21	1.24	2.54	1.35	1.40	5.95	1.94	5.07	2.32	4.07	4.60	36.16
1990-1991	8.81	2.90	1.43	1.83	10.86	3.15	3.32	2.59	6.65	8.28	6.29	3.06	59.17
1991-1992	6.38	5.42	3.02	1.31	1.74	4.16	3.81	3.58	1.50	15.44	2.61	10.40	59.37
1992-1993	9.35	1.66	9.90	0.95	18.13	3.64	5.22	1.97	2.62	8.45	2.79	3.11	67.79
1993-1994	9.89	11.59	6.06	0.94	4.15	4.47	2.26	4.99	4.85	10.02	6.67	10.09	75.98
1994-1995	10.11	7.20	11.83	8.13	3.00	1.76	3.25	4.50	0.56	9.62	10.56	13.22	83.74
1995-1996	5.94	22.32	1.39	2.36	1.04	1.64	13.61	2.04	9.45	9.13	6.56	7.27	82.75
1996-1997	6.05	7.81	5.48	1.71	3.95	2.31	4.25	7.16	4.97	14.56	7.96	14.48	80.69
1997-1998	9.02	2.80	2.99	5.14	6.43	7.73	5.39	3.03	3.35	4.00	6.48	6.53	62.89
1998-1999	13.46	5.60	9.95	1.91	10.83	0.83	0.26	1.01	3.64	14.35	7.93	9.77	79.54
1999-2000	14.92	18.09	0.73	2.59	1.06	1.22	3.28	6.27	1.50	1.10	4.61	1.75	57.12
2000-2001	9.50	12.44	1.54	2.79	1.24	0.32	5.81	0.99	4.24	9.70	9.72	11.99	70.28
2001-2002	18.47	6.27	3.11	2.64	0.70	7.68	1.24	5.05	0.76	13.32	9.36	6.96	75.56
2002-2003	5.75	3.46	3.59	3.66	0.23	1.76	9.22	5.50	10.09	4.07	1.90	9.83	59.06
2003-2004	5.70	2.05	6.14	3.67	1.77	2.46	0.85	1.60	2.78	2.83	3.89	8.00	41.74
2004-2005	27.63	1.28	1.09	1.11	1.50	1.53	7.93	2.27	4.46	11.96	2.43	8.63	71.82
2005-2006	6.89	10.51	5.08	1.70	0.56	2.75	0.46	3.55	1.63	8.00	4.07	10.69	55.89
2006-2007	5.43	2.21	1.35	7.62	0.50	2.40	0.77	3.17	3.80	15.62	9.45	3.79	56.11
2007-2008	10.21	8.21	1.56	2.42	1.10	4.21	4.59	3.07	3.78	9.03	6.08	13.60	67.86
2008-2009	6.25	5.55	1.51	1.90	0.23	1.65	6.12	1.87	10.40	9.81	8.34	5.60	59.23
2009-2010	2.22	1.22	2.25	6.90	1.61	2.25	7.90	4.26	2.56	7.59	3.30	10.72	52.78
2010-2011	8.48	0.63	1.42	0.43	1.89	0.53	2.56	1.19	3.65	4.48	7.64	11.03	43.93
2011-2012	9.04	8.20	2.41	1.09	1.44	5.13	4.18	1.86	9.35	7.11	6.45	21.36	77.62
2012-2013	7.60	7.43	2.77	10.15	1.48	2.56	1.44	4.54	5.33	13.35	5.25	7.89	69.79
2013-2014	12.64	1.05	5.58	2.85	9.07	2.33	6.97	2.53	6.02	10.59	11.31	9.66	80.60
AVG	9.36	5.80	4.77	3.40	3.33	2.96	4.65	3.10	4.74	8.35	6.07	8.28	64.82

**Table 4: SFWMD Palm Beach County-Wide Rainfall Averages**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
<b>30 Year Avg. (1981-2010)</b>	8.49	5.56	4.15	2.92	2.96	2.88	4.12	3.23	4.66	8.20	6.54	8.06	<b>61.77</b>
<b>1995-1996</b>	6.26	15.06	1.10	1.52	1.54	0.53	7.09	2.49	8.01	8.46	4.63	4.75	<b>61.44</b>
<b>1996-1997</b>	7.17	6.78	2.26	1.77	3.87	4.73	3.37	5.47	3.74	12.67	5.64	10.10	<b>67.57</b>
<b>1997-1998</b>	7.52	1.44	3.93	5.02	5.23	6.93	4.33	2.32	1.71	2.51	7.29	4.85	<b>53.08</b>
<b>1998-1999</b>	13.93	2.91	9.85	2.99	7.26	1.50	0.50	2.72	2.58	15.41	3.22	8.20	<b>71.07</b>
<b>1999-2000</b>	8.94	12.66	3.16	1.69	1.28	0.78	3.58	4.72	1.08	3.59	6.74	4.36	<b>52.58</b>
<b>2000-2001</b>	5.02	7.39	2.60	1.83	0.78	0.26	5.57	0.40	4.44	6.57	9.41	7.95	<b>52.22</b>
<b>2001-2002</b>	15.14	5.77	2.02	2.16	0.51	5.11	1.20	2.60	1.80	12.59	7.97	5.05	<b>61.92</b>
<b>2002-2003</b>	4.04	2.35	2.75	2.88	0.48	1.17	4.42	3.85	8.45	6.35	3.85	8.92	<b>49.51</b>
<b>2003-2004</b>	5.51	1.27	4.77	2.69	2.54	2.69	0.78	2.38	2.22	3.14	5.03	7.70	<b>40.72</b>
<b>2004-2005</b>	17.71	2.94	0.75	0.85	1.23	1.09	5.87	1.72	5.72	12.45	4.84	2.80	<b>57.97</b>
<b>2005-2006</b>	7.30	7.22	4.49	1.44	0.67	2.80	1.31	2.38	4.09	4.48	6.03	7.32	<b>49.53</b>
<b>2006-2007</b>	6.68	1.48	2.27	5.47	0.74	1.31	0.51	2.64	3.35	12.41	8.73	6.05	<b>51.64</b>
<b>2007-2008</b>	8.11	8.77	0.68	1.76	1.87	4.56	5.48	2.92	3.12	7.03	6.52	11.04	<b>61.86</b>
<b>2008-2009</b>	6.77	5.37	0.76	1.24	0.17	0.34	3.46	1.48	10.12	8.44	6.57	5.76	<b>50.48</b>
<b>2009-2010</b>	6.90	1.31	2.93	5.84	1.66	3.34	7.72	5.62	3.91	4.85	4.82	9.25	<b>58.15</b>
<b>2010-2011</b>	7.89	0.93	1.17	1.02	2.24	0.58	2.36	1.24	2.46	4.79	5.41	9.84	<b>39.93</b>
<b>2011-2012</b>	7.06	9.35	1.28	1.05	0.30	2.99	2.42	4.90	8.48	7.49	5.45	16.30	<b>67.07</b>
<b>2012-2013</b>	6.68	6.47	0.69	1.64	1.07	2.71	1.17	4.45	11.06	9.91	9.50	4.38	<b>59.73</b>
<b>2013-2014</b>	8.15	0.81	3.82	1.39	7.02	1.73	2.54	1.72	3.60	7.79	8.55	7.34	<b>54.46</b>

**Table 5: 2013-2014 North County Rainfall Average**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
<b>SIRWCD Avg.</b>	9.40	0.81	6.98	1.49	11.65	2.84	4.43	1.62	6.14	11.80	9.37	5.90	<b>72.43</b>
<b>LRD Avg.</b>	12.18	0.81	6.88	2.69	7.83	2.13	5.15	2.19	4.46	9.41	8.90	8.50	<b>71.13</b>
<b>TOJ Avg.</b>	12.64	1.05	5.58	2.85	9.07	2.33	6.97	2.53	6.02	10.59	11.31	9.66	<b>80.60</b>
<b>N. County Avg.</b>	<b>11.41</b>	<b>0.89</b>	<b>6.48</b>	<b>2.34</b>	<b>9.52</b>	<b>2.43</b>	<b>5.52</b>	<b>2.11</b>	<b>5.54</b>	<b>10.60</b>	<b>9.86</b>	<b>8.02</b>	<b>74.72</b>

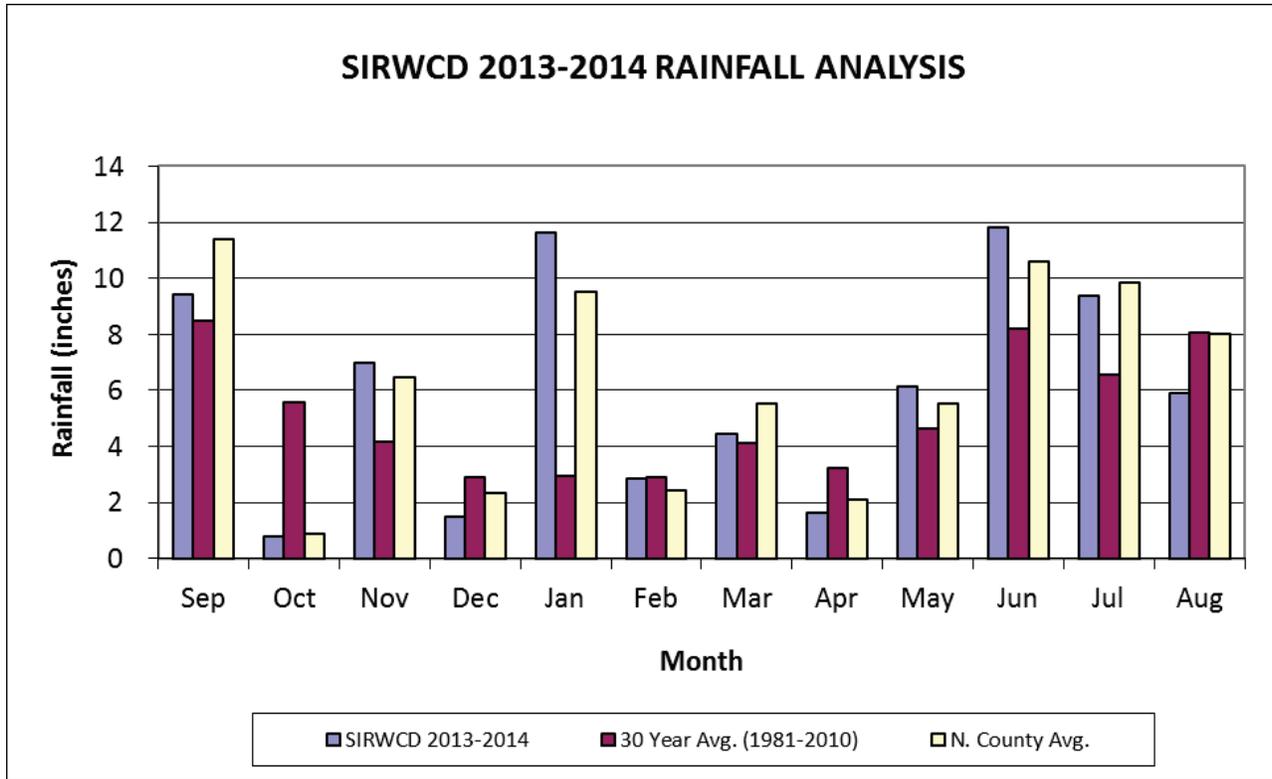
N. County Avg. is based on the average monthly rainfall data from SIRWCD, the Loxahatchee River Environmental Control District (LRECD), and the Town of Jupiter Water Department (TOJ) through August 31, 2014.

**Table 6: SIRWCD 2013-2014 Rainfall Analysis**

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
<b>SIRWCD 2013-2014</b>	9.40	0.81	6.98	1.49	11.65	2.84	4.43	1.62	6.14	11.80	9.37	5.90	<b>72.43</b>
<b>30 Year Avg. (1981-2010)</b>	8.49	5.56	4.15	2.92	2.96	2.88	4.12	3.23	4.66	8.20	6.54	8.06	<b>61.77</b>
<b>N. County Avg.</b>	11.41	0.89	6.48	2.34	9.52	2.43	5.52	2.11	5.54	10.60	9.86	8.02	<b>74.72</b>

N. County Avg. is based on the average monthly rainfall data from SIRWCD, the Loxahatchee River Environmental Control District (LRECD), and the Town of Jupiter Water Department (TOJ) through August 31, 2014. Refer to *Figure 16* for a graphical representation of this data.

**Figure 16: SIRWCD 2013-2014 Rainfall Analysis**

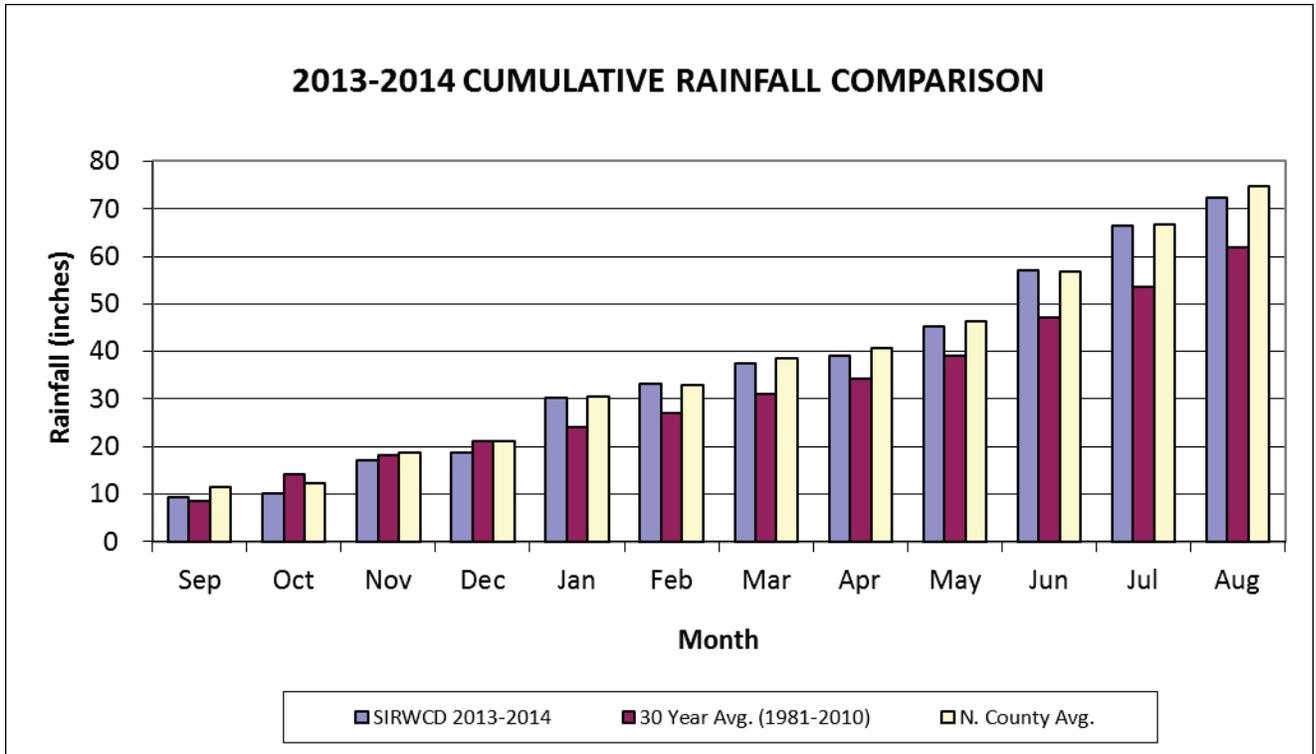


**Table 7: 2013-2014 Annual Cumulative Rainfall Comparison**

Historical Rainfall Data (inches)												
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
<b>SIRWCD 2013-2014</b>	9.40	10.21	17.19	18.68	30.33	33.17	37.60	39.22	45.36	57.16	66.53	72.43
<b>30 Year Avg. (1981-2010)</b>	8.49	14.05	18.20	21.12	24.08	26.96	31.08	34.31	38.97	47.17	53.71	61.77
<b>N. County Avg.</b>	11.41	12.30	18.78	21.12	30.64	33.07	38.59	40.70	46.24	56.84	66.70	74.72

The annual cumulative totals include the average monthly figures plus the prior monthly averages of the report year. Refer to *Figure 17* for a graphical representation of this data.

**Figure 17: 2013-2014 Cumulative Rainfall Comparison**



## General Operation and Maintenance

The District's Manager of Operations Annual Report is included in this document as Appendix A. It offers a summary of significant events and issues that have been identified by the Operations Manager. The Operations Manager and staff of the District are the agents for day to day activities. They are primarily focused on maintaining the primary and secondary elements of the surface water management system and the graded roadways throughout the District. Further, the Operations Manager facilitates interagency coordination with other public entities that operate and maintain assets within the District such as Palm Beach County Road and Bridge Division, Palm Beach County Parks and Recreation, Palm Beach County Fire Control, Palm Beach County School Board, Florida Department of Transportation, South Florida Water Management District, Town of Jupiter, the Loxahatchee River District, and others.



**Figure 18: Canal Maintenance**

Each year, a portion of this report is utilized to state that the District's surface water management system is designed, operated, and maintained for a mostly rural residential community with some commercial, industrial, and urban residential areas. Accordingly, certain low-lying areas within the District will experience ponding and storage of water during the wet season and following significant storms. Swales will have standing water, and many areas will be saturated for extended periods of time during the wet season. The continued development of low-lying areas in the District will result in a commensurate consumption of storage within the District's watershed. Where ponds are excavated on individual lots to supply the fill for house pads and related improvements, the consumption of available storage is not as severe because the pond serves as a compensating factor. These factors are regularly discussed by the Board of Supervisors and District staff at the monthly meetings, with individual landowners, in forums and meetings within the District, and within the District's newsletter and other publications distributed throughout the District. The District's Board of Supervisors and staff work to assure that the surface water management system functions to the extent of its permitted capacity while recognizing the regulatory requirements imposed on the District by other agencies. All of the District work must be implemented within the adopted budget and utilization of existing manpower, equipment and any other resources available to accomplish the tasks.

## General Comments

SIRWCD has an obligation to its landowners and to the surrounding area due to its strategic location within naturally sensitive conservation areas. Clearly, SIRWCD is no longer an entity that can just look within its boundaries with regard to its authorized activities. To the contrary, a major portion of SIRWCD's activities require participation in activities that look at infrastructure needs and ecosystem

management for the overall area and region. The District and its landowners will have to share in the continued responsibility of being good stewards in maintaining compatibility with these natural systems.

The goals and objectives of SIRWCD are consistent with those for the Northern Palm Beach County Comprehensive Water Management Plan, the Loxahatchee Basin Ecosystem Management Area, and the Comprehensive Everglades Restoration Plan. The District will continue to work with South Florida Water Management District and other agencies in developing and implementing compatible plans for the District and the Loxahatchee River Basin to serve its landowners and its surrounding community.

SIRWCD will continue to serve its landowners by providing support during emergency situations, maintaining and operating the surface water management system at optimal levels, and providing services that coincide with the system capabilities, board policies, and the community.

AECOM has appreciated the opportunity to continue serving as the South Indian River Water Control District Engineer, and we look forward to working with the Board of Supervisors, landowners, and staff in the coming year.

## Appendix A

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