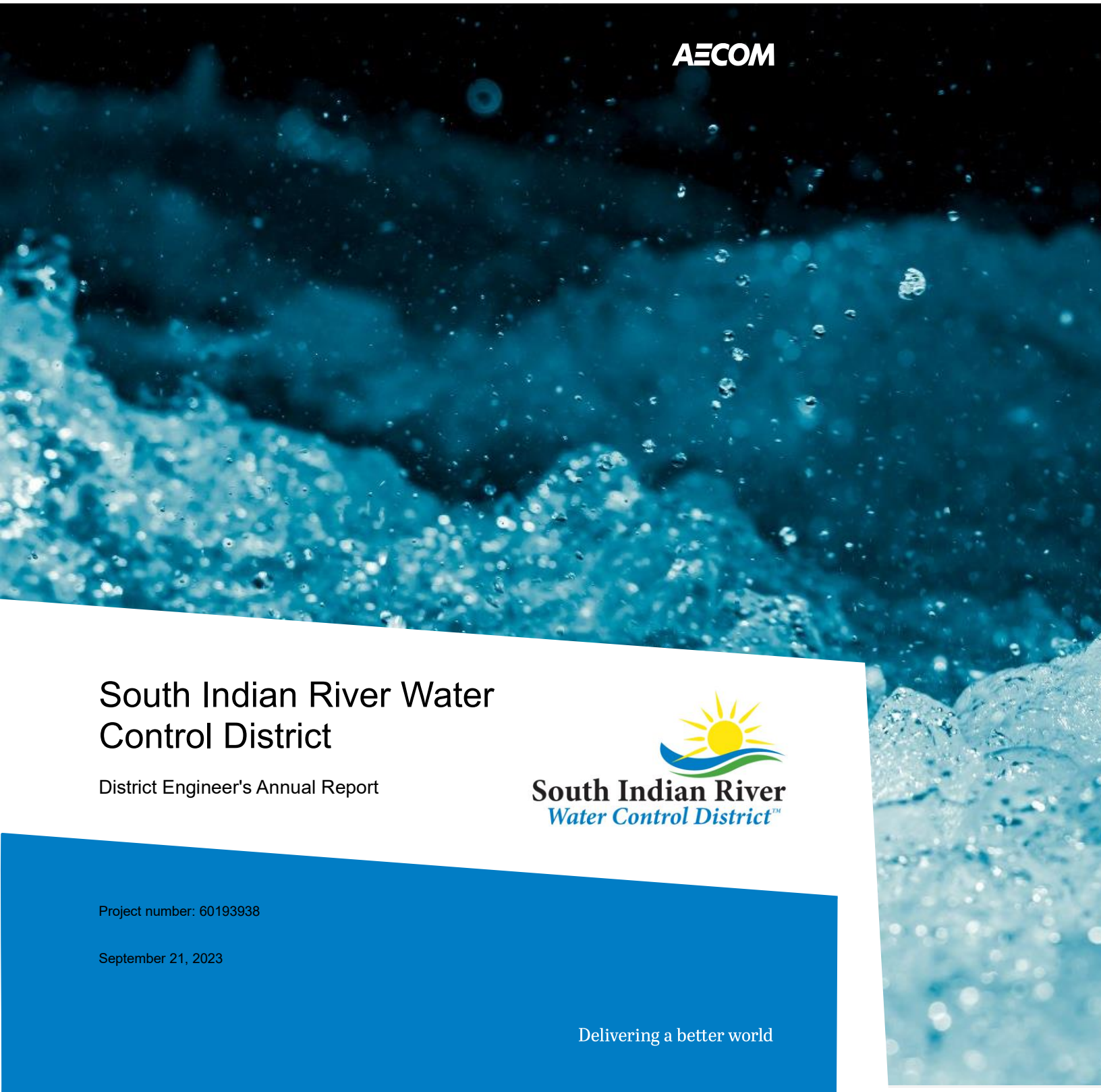

AECOM

South Indian River Water Control District

District Engineer's Annual Report

South Indian River Water Control District™

Project number: 60193938

September 21, 2023

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Quality information

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1. Introduction

South Indian River Water Control District (SIRWCD or the District) is positioned as a strategic entity in the planning and management of water resources for Northern Palm Beach County. *Figure 1* shows SIRWCD's location in relation to naturally sensitive conservation areas. Approximately 12,500 acres of SIRWCD ultimately discharges to the Northwest and Southwest Forks of the Loxahatchee River, which allows SIRWCD to be a major stakeholder to the region. The District and its landowners share in the continued responsibility of being good stewards in maintaining compatibility with these natural systems. SIRWCD continues serving its landowners with drainage improvements, ongoing operation and maintenance, as well as implementing capital improvement projects and landowner-initiated improvements, that not only improve the quality of life in SIRWCD but reduce impacts to the surrounding natural systems. Additionally, SIRWCD was successful in securing a grant this past year to assist with funding capital improvement projects.

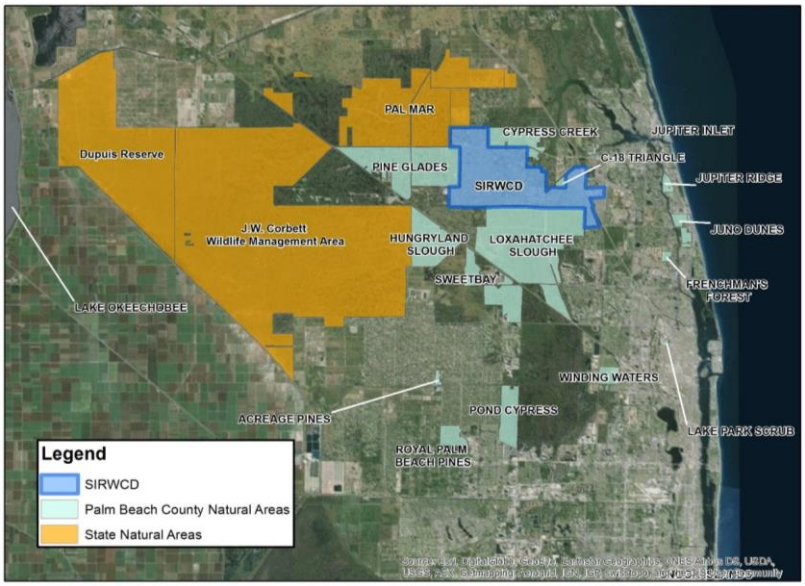

Figure 1. District Location

With approximately 90% of the District developed, operation and maintenance activities are the main focus. The District continues activities 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. The District also continues to operate and maintain roadways and a park, as well as plan new capital and landowner-initiated improvements. The staff investigates whether improvements should be made to other existing infrastructure, such as canals, bridges, or drainage structures, and throughout the year, landowner initiated roadway improvement petitions for the application of Palm Beach County Standard Asphalt were received and reviewed by District staff.

In addition to operating and maintaining its public infrastructure for the benefit of its landowners, the District is involved in several intergovernmental activities due to its location within Palm Beach County and the Loxahatchee River watershed.

Due to the District's location, the potential impacts from development, such as stormwater runoff and water quality, 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 regarding 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 desirable level of service. A separate report prepared by the District's Manager of Operations discussing operation and maintenance of District facilities is included as an appendix to this document.

2. Capital Improvements

Section 7

Section 7 is 611 acres in area and located south of Canal 3, west of Canal 14, north of Canal 5 and east of Jupiter Farms Road. Stormwater sheet flows from the surrounding properties into approximately 13.5 miles of existing shallow and vegetated ditches along the 8 miles of roadways within Section 7. Due to the lack of storage and conveyance, there is frequent flooding in the area and releases of large amounts of sediment, particulate matter, and nutrients downstream, which ultimately discharges into the impaired Northwest Fork of the Loxahatchee River. As part of the Jupiter Farms Reengineering program, District staff applied for a grant through the Loxahatchee River Preservation Initiative (LRPI) for the Section 7 Drainage Improvement Project. The LRPI selected the project during the 2021 grant cycle. On June 23, 2021, the Florida Department of Environmental Protection (FDEP) notified the District of the award of $353,650 for the project.

The objective of this project is to improve the level of service for flood protection, provide stormwater attenuation and water quality treatment. By increasing the storage volume in the ditches and installing

flashboard riser structures, additional detention time is added for the settling of sediments which carry nutrients into the stormwater system.

In addition, exotic vegetation removal will improve the quality of water discharged to Canals 3, 4, 5 and 14 by removing nuisance vegetation that has infested parts of the canal system. Vegetation removal improves water quality in many ways by reducing the amount of decaying, oxygen-consuming organic matter. Oxygen deficits are detrimental to fish and other aquatic species. During large storm events, an over-abundance of vegetation deposited in the canal can restrict conveyance and create bank erosion problems. Not only does this result in additional canal maintenance, but it also creates adverse water quality impacts by releasing large amounts of sediment, particulate matter, and nutrients downstream, which ultimately discharge into the Loxahatchee River.

Figure 2. Section 7 Outfall

Figure 3. Section 7 Riser/ Culvert Structure

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Construction of the proposed improvements including installation of twelve riser/culvert outfall structures serving Section 7 was completed at the end of March 2023. Easement clearing and vegetation removal has also been completed. Swales and drainage easements were re-graded as necessary to convey runoff to the new structures. Additionally, some new roadway culverts were installed. *Figure 2* and *Figure 3* show the Section 7 riser/culvert outfall structures that have been recently constructed.

Canal C Realignment/Storage

As part of the maintenance program, the District Manager and Engineer identified Canal C (*see Figure 4)* as a project to improve maintenance access to both sides of the canal providing the ability to reduce unwanted vegetation in areas that are currently not easily accessible, provide additional stormwater conveyance capacity with a proposed widened and deepened canal section, and provide additional storage for water quality treatment and flood protection.

Figure 3. Canal C

In addition, exotic vegetation removal improves the quality of water discharged from Canal C by removing nuisance vegetation thereby reducing the amount of decaying, oxygen-consuming organic matter. The District applied for a grant through the LRPI for the Canal C Realignment. LRPI selected the project during the 2022 grant cycle. On June 8, 2022, the Florida Department of Environmental Protection (FDEP) contacted SIRWCD of the award of $312,500 for the project. The FDEP Grant Agreement was executed May 18, 2023. On June 23, 2023, the District received notification from FDEP that a State 404 Program permit would not be required for the project. The contract documents are being finalized to advertise for bids in September.

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Proposed Landowner Initiated Roadway Project

Under the current Enhanced Stabilization Policy adopted on April 20, 2017, landowners are allowed to obtain petition forms from the District office for new requests for roadway stabilization starting on the first business day in February of each year and must return the petition by the last business day in April of the same year. Enhanced stabilization projects require a petition by landowners having signatures from more than 50% of the lots abutting the road segment or lots within the benefitted area, as determined by the District Engineer.

Figure 4. 153rd Ct N between 69th Dr N and 69th Trl N

As a result of landowners' petitions and the District Engineer's recommendation, the Board of Supervisors of the District authorized a referendum with respect to the 153rd Court North Roadway Improvement Project between 69th Drive North and 69th Trail North. The referendum balloting concluded on February 24, 2023, with a result of all affected landowners voting in favor of the Project. In May 2023, the District authorized the preparation of a draft Twentieth Plan of Improvements and the necessary engineering investigations in support thereof. The proposed roadway section to be paved with asphalt is 153rd Court N between 69th Drive N and 69th Trail N (seen in *Figure 5).* The segment is approximately 0.10 mile in length with a preliminary cost estimate of $96,300 which includes legal, engineering, survey and contingency. The construction of the Twentieth Plan of Improvements is self-funded by the landowners. Currently, staff is working on a survey to be used as a base for preparation of construction plans to be used for bidding purposes.

Commented [BK4]: Update - Engineer's Rpt for 20the POI and Resolution

3. Resource Regulations

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 September 8, 2016. SIRWCD is a co-permittee along with 34 municipalities, the Department of Transportation, Palm Beach County, and four special districts. 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 discussions on the FDEP Biennial Water Quality Watershed Assessment, public education, the Annual Reports and Joint Report, and required refresher training videos on spill prevention, illicit discharges and sediment and erosion control. The Cycle 4/Year 6 Annual Report was submitted to FDEP in March of 2023.

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. This year, there were no modifications to this plan. The facilities report will be updated to reflect the improvements completed under our capital improvement program.

20-Year Stormwater Needs Analysis

Sections 403.9301 and 403.9302, Florida Statutes, (Chapter 2021-194, Laws of Florida), direct municipalities, counties, and independent special districts that provide a stormwater management system or program, to develop a 20-year needs analysis every five years.

For the first cycle of reports, special districts were required to submit their reports in a spreadsheet template to their respective counties by June 30, 2022. Staff submitted the Stormwater Needs Analysis to Palm Beach County who then compiled the local reports (including their own) and submitted them to the Office of Economic and Demographic Research (EDR) and the secretary of the Department of Environmental Protection by July 31, 2022. EDR compiled the data collected and published an analysis of the stormwater submissions in the 2023 edition of the Annual Assessments of Florida's Water Resources and Conservation Lands.

The conclusion in the State's Annual Assessment Report was that "in the next 20 years, Florida's local governments will face a monumental challenge in managing stormwater." Local governments that submitted stormwater management needs analyses will need $34.48 billion for O&M and $28.13 billion for project expenditures over the next 20 years. Adjusting those needs for Florida's full population, shows

an estimated total of $66.68 billion will be needed. Since there is a significant portion of that sum that has no identified funding source, local governments have to begin planning on how to close that funding gap.

The next reporting cycle will begin in 2027.

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 Office of Economic and Demographic Research (EDR)
- 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 (LRD)
- Town of Jupiter
- Loxahatchee River Preserve Initiative (LRPI)
- 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 (LRMCC)
- Solid Waste Authority of Palm Beach County (SWA)
- Numerous Citizen Interest Groups and Committees

4. Intergovernmental Coordination

Loxahatchee River Management Coordinating Council (LRMCC)

The LRMCC 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 Management Plan, to identify and resolve intergovernmental coordination problems and to enhance communications. The Council is also responsible for the development of the Loxahatchee River Management Plan, which contains the principal goals to preserve and enhance the river's unique natural values, restore the river's historic hydrology and reverse the deleterious impacts of saltwater intrusion on the River's ecosystems. *Figure 6* shows a map of the Loxahatchee River.

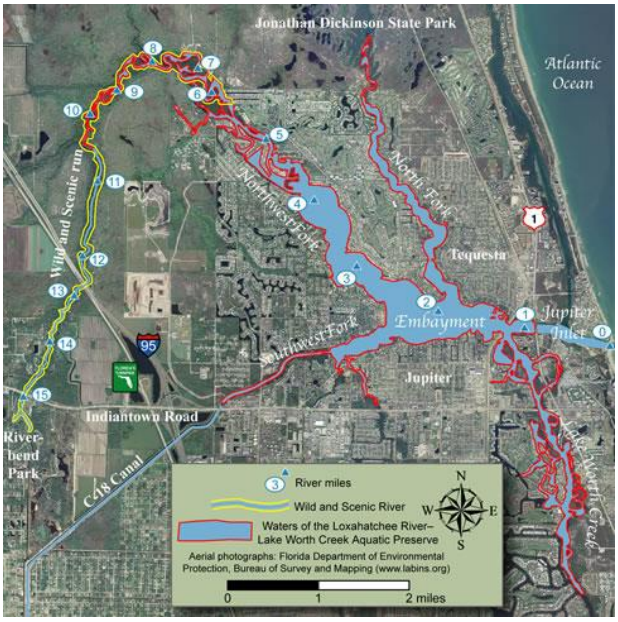

Figure 5. Loxahatchee River

LRMCC also continually assesses the implementation of the plan's objectives. These objectives are:

- Preserve and enhance the river's unique natural and cultural values
- Restore the river's historical hydrologic regime and reverse deleterious saltwater intrusion

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 LRMCC also have several mutual issues and interests.

The LRMCC met in March and June of 2023. At the March meeting an update on the Loxahatchee River Wild and Scenic Management Plan was provided. The top three objectives are:

- Improve storage within the basin on publicly owned lands with the intent to deliver base flows to the River during dry season to meet MFL and restoration flows.
- Identify and reduce point sources of pollution to the watershed affecting the NW Fork of the Loxahatchee River
- Identify management actions to reduce and minimize impacts to the watershed through the use of the FDEP Pollution Reduction Plan.

At the June meeting, project updates included the Cypress Creek Floodplain Restoration Project and the Loxahatchee River Wild and Scenic Management Plan Update. Planning has begun for the 6th Loxahatchee River Watershed Science Symposium in the fall of 2024.

Loxahatchee River Pollutant Reduction Plan

LRMCC began work on developing a Reasonable Assurance Plan (RAP) to replace the Total Maximum Daily Load (TMDL) that was prepared for the Loxahatchee River. The RAP is a stakeholder driven plan that examines the impairments and prepares solutions to aid in restoring the Loxahatchee River from impairment. After reviewing the pollutant loading model and applying the potential projects, FDEP determined that the RAP should be changed to a Pollutant Reduction Plan, which is considered a 4E Plan. This plan shows that the reductions do not meet all the TMDL requirements, but it shows that the stakeholders are working on meeting the reduction requirements.

The initial projects show that the Total Phosphorus reductions should be met, but Total Nitrogen is behind. The group prepared additional projects to determine if they could meet the Total Nitrogen reduction. On May 19, 2020, FDEP issued its notification on the impaired waters rule, Waterbody identification numbers that were included in the Pollutant Reduction Plan were delisted due to the approval of the Plan by FDEP. SIRWCD is a stakeholder and supports the nutrient reduction and improvements to the Loxahatchee River's water quality.

The goal of a Pollutant Reduction Plan as defined under category 4E from FDEP is to implement appropriate restoration activities and, if necessary, additional study so that by the next assessment cycle either a Reasonable Assurance Plan can be approved, or the water body meets the set standards. A Pollutant Reduction Plan contains some of the following items:

- description of the impaired waterbody and pollutants
- water quality-based targets and goals resulting with an improvement of the waterbody
- proposed management activities with estimated pollutant load reductions expected to occur from the activities.

Every five years, a pollutant reduction plan update will be completed. The next update is scheduled for February 2025. The update will include results of water quality data assessments, updated annual pollutant loads, any progress in achieving reductions, any monitoring changes, the status of project implementation, estimated load reductions, percentage of load reduction targets achieved, and additional management activities needed, if any, to meet the water quality criteria.

Loxahatchee River Preservation Initiative

The Loxahatchee River Preservation Initiative (LRPI) is the outgrowth of a watershed management effort that the FDEP spearheaded in 1996. This multi-agency and stakeholder based advisory group was organized primarily for the purpose of soliciting, ranking and submitting to the Florida Legislature a list of projects focused on the preservation and restoration of the water quality and habitats of the

Loxahatchee River and its watershed *(Figure 7).* Agencies and stakeholders are given an avenue to apply for funding on several key projects that are critical to preserving the long-term health of the Loxahatchee and have not been implemented due to lack of resources and other regional priorities taking precedence.

SIRWCD participates as a member of the LRPI due to its location within the Loxahatchee River watershed. SIRWCD applied for grant funding in the amount of $312,500 for Canal C improvements. The grant funding was approved during the 2022 legislative session and SIRWCD was notified in early June 2022 that the funding was approved in the FY22-23 budget. The LRPI grant is administered by FDEP.

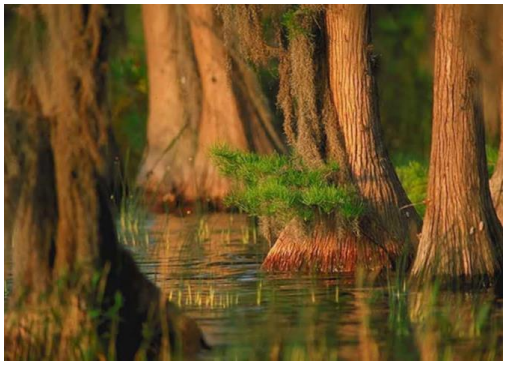

Figure 6. Loxahatchee Slough

Loxahatchee River Watershed Restoration Project (LRWRP)

In December 2014, SFWMD and the Army Corp of Engineers (ACOE) kicked off the Loxahatchee River Watershed Restoration Project (formerly known as North Palm Beach County – Part 1), which is part of the Comprehensive Everglades Restoration Plan (CERP). The renewed purpose of the project is to restore and sustain the overall quantity, quality, timing, and distribution of freshwaters to the federally designated "National Wild and Scenic" Northwest Fork of the Loxahatchee River for current and future

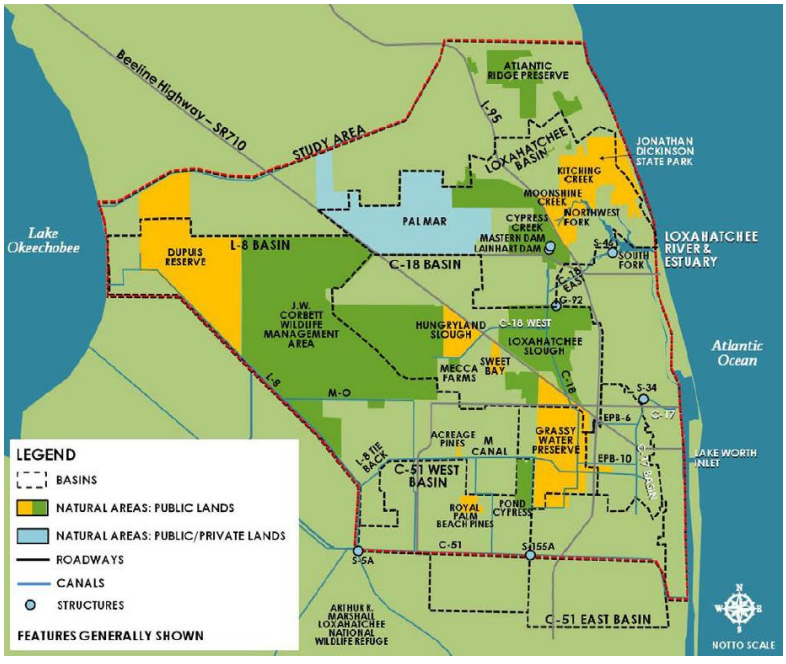

Figure 7. LRWRP Study Area

generations. This project also seeks to restore, sustain, and reconnect the area's wetlands and watersheds that form the historic headwaters for the river and its tributaries. *Figure 8* indicates the study area.

Planning efforts for the project were put on hold in 2011 and were restarted on January 12, 2015. The project was re-scoped under ACOE's New Planning Paradigm and existing plan formulation data and analysis is being used in the development of a final plan, known as a Project Implementation Report (PIR) and Environmental Impact Statement, to prepare for congressional authorization.

The SFWMD and the ACOE conducted an alternative formulation and analysis process for the plan formation. This consisted of evaluating alternative plan selections for determining the best project scenarios. A calibration report was produced to illustrate the existing watershed conditions while alternative project analyses were being conducted. As a result of these evaluations and updated modeling, Alternative 5R was selected for the tentatively selected plan (TSP). This plan consists of 10 components and is shown in ***Error! Reference source not found.***. On August 1, 2018, the Project Delivery Team (PDT) was notified that the ACOE Headquarters concurred with the PDT's recommendation for Alternative 5R. The ACOE prepared a draft Project Implementation Report (PIR) and Environmental Impact Statement. The draft report was released on March 22, 2019. Two public meetings were held in April 2019 to solicit public comment. SIRWCD submitted comments on May 6, 2019, concerning the plan. The Final PIR and Environmental Impact Statement (EIS) was published. On March 9, 2020, staff submitted a letter with comments as well as a letter from the Board re-stating the need for analysis. The Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers (USACE) signed the PIR which is a key ecosystem restoration report on April 8, 2020. Congress passed the Water Resources Development Act of 2020 (WRDA2020) and on December 27, 2020, the President signed it. The WRDA2020 included authorization of the Loxahatchee River Watershed Restoration Project.

Tasks which are underway include the following:

- The Project Partnership Agreement (PPA) between SFWMD and the USACE is planned to be executed by March 2024.
- Flow-way 3
    - The Flow-way 3 design contract was executed in November 2022. Most of the survey and geotechnical work in Flow-way 3 is now complete.
    - The first two Flow-way 3 project features that will move to design and construction are Kitching Creek and Gulfstream East.
    - Kitching Creek (item 1 on Alt 5R map)
        - Survey and Geotech – started early 2023
        - Modeling - 2023 to 2024
        - Design – 2024 to 2026
        - Construction – start mid 2026
    - Gulfstream East (item 2 on Alt 5R map)
        - Survey and Geotech – started late 2022
        - Modeling – 2023 to 2024
        - Design – 2025 to 2026
        - Construction – start late 2026
        - Invasive vegetation removal was initiated in June 2023.
- Flow-way 2 (item 6 on Alt 5R map)
    - The Flow-way 2 preliminary design contract was executed in July 2023. The contract includes survey, geotech, modeling, and preliminary design of the C-18W Impoundment and the M-O connector canal;
    - Survey and Geotech – started July 2023

  - Modeling – 2023 to 2024
  - Design – 2024 to 2027
  - Construction – 2027
  - A separate design and construction schedule will be developed for the ASR wells

- Flow-way 1
  - SFWMD plans to execute a design contract for Flow-way 1 in 2024
  - G-160 & G-161 have been in operation for the last 15 years or so. The two new project features (M-1 canal pump station and Grassy Waters Preserve Triangle) will be designed under the Flow-way 1 design contract. The design contract will also include modeling to determine if any modifications are needed for the existing G-160 and G-161 structures.

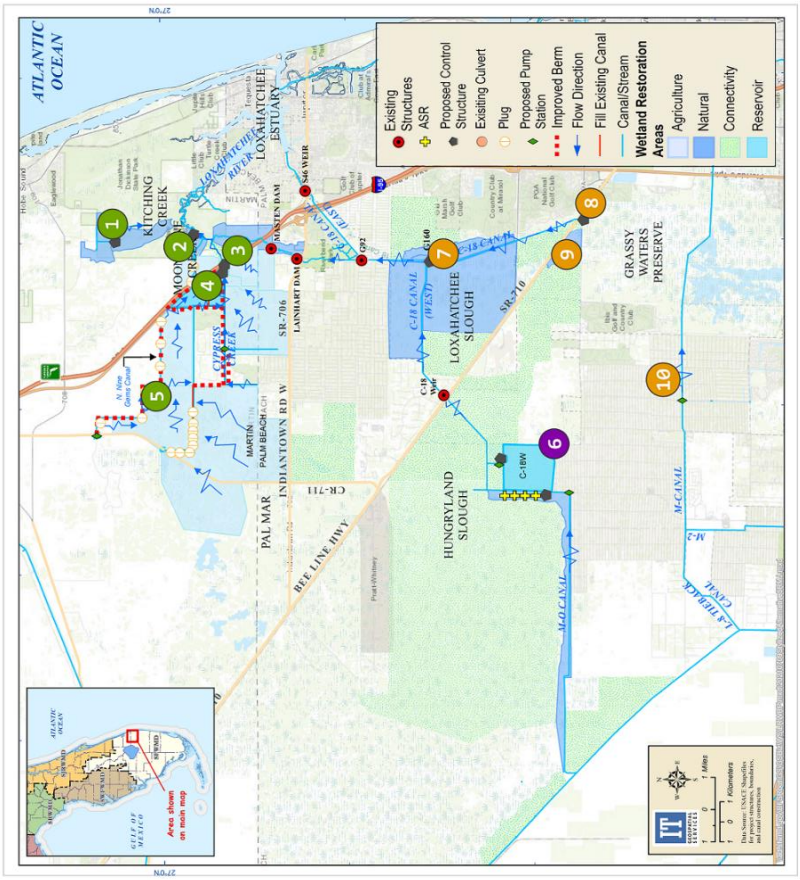

Figure 9. Alternative 5R

5. Operation and Maintenance

Storm Debris Removal Contract

In 2019 SIRWCD took the proactive measure to solicit a debris removal contract as a result from lessons learned during the 2017 hurricane season. By having this contract in place, SIRWCD can avoid solicitating contractors after the storm and can immediately begin debris removal. The storm debris removal contract was awarded to three (3) contractors with a contract duration of three (3) years with the ability to renew the contract for up to five (5) years at one (1) year increments. SIRWCD has passed the contracts' standard duration of three (3) years and last year renewed all three (3) contracts for an additional year. This year, only two of the three contracts were renewed at the same rates, as one of the contractors was no longer in business. This debris removal contract will ensure SIRWCD can act swiftly to restore its canals and remove any blockage after a major storm event. In early 2024, the District will go out for bids again.

Canal Clearing and Maintenance

Figure 8. Canal Mower

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. *Figure 10* shows equipment that is used to mow the canal banks. This past year, the District contracted to remove non-native trees and vegetation from Canal 14 between 150th and 154th in Jupiter Farms as shown in *Figure 11.*

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.

Figure 11. Canal 14 Vegetation Removal

Secondary Ditch Reclamation

Over the years, landowners have been filling in their swales and ditches that are used for our secondary drainage system or some do not realize that they have an outfall swale on their property. The District has been examining the outfall swales throughout the District to determine the need for vegetation removal, regrading and/or outfall pipe replacements. The District has also been conducting title searches to determine whether the outfall swales are under a drainage easement so the maintenance can be conducted. Several outfalls have been reclaimed this year. The District plans on continuing this service. In addition, the section by section evaluation allows the District to evaluate the needs at a more local level for swale capacity. *Figure 122* shows an example of reclaiming an existing outfall easement.

Figure 9. Reclaimed Outfall Easement

Roadways

Figure 13. Palm Beach Country Estates Apron Repair

There are approximately 189 miles of roads within SIRWCD. These roads give access to each subdivided parcel of land. Currently there are 96 miles of improved roads (paved and OGEM) and 92 miles of unpaved roads in SIRWCD. The improved roads include roads that are operated and maintained by Palm Beach County, the Town of Jupiter, and private entities or owners, which consist of approximately 42 miles of roadway. The District continues to maintain its roads through its grading operation and its road rehabilitation program for its paved roads. This year, Ranger Construction completed an asphalt overlay on Haynie Lane and North Florida Emulsion micro-surfaced various intersections throughout the District. *Figure 13* shows apron repair within Palm Beach Country Estates. The District continuously monitors District owned roads for any needed repairs or replacements.

Aquatic Weed Control Program

SIRWCD implements an Aquatic Weed Control Program 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 Loxahatchee River Management Plan, and other intergovernmental coordinating activities.

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 including deletions, additions, and amendments are made to maintain consistency with Florida Statutes and other codes and rules. The entire manual is being updated to include all new policies that have been added throughout the year. The manual is also being reformatted to provide better guidance on District polices.

A new permit fee schedule went into effect October 1, 2022. The new fee schedule brings SIRWCD permitting fees in line with other permitting agencies. The new fee structure allows the District to pass costs accrued through the permit review and inspection process on to the permittee prior to issuance of a permit. The fees for filing roadway petitions were also increased this year to help cover administrative costs.

Water Quality Monitoring

With 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. The Loxahatchee River Environmental Control District (LRD) has also been obtaining water quality samples in recent years. The existing locations sampled by LRD are depicted on *Figure 4*. LRD posts the results of these locations on their website.

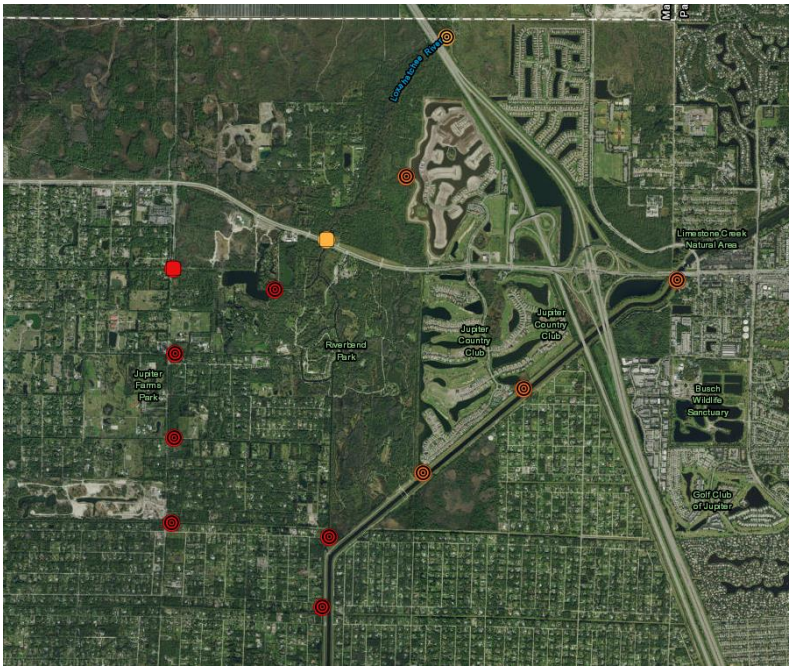

Figure 14. LRD Sampling Locations

Due to the water quality legislation, the Board of Supervisors instructed staff to implement a water quality monitoring program that augments and expands the current LRD program. 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. Staff monitors these locations on a monthly basis. Samples are only taken when the District discharges outside its boundaries.

As a requirement of the NPDES MS4 Permit, SIRWCD is required to update its Water Quality Assessment Program annually. The purpose of this assessment program is to provide information for SIRWCD to determine the overall effectiveness of its Stormwater Management Program (SWMP) in reducing stormwater pollutant loadings from its MS4 to receiving water bodies. The water quality information is being used to monitor the District's discharge and will be used in future analysis as needed for the NPDES permit and the RAP.

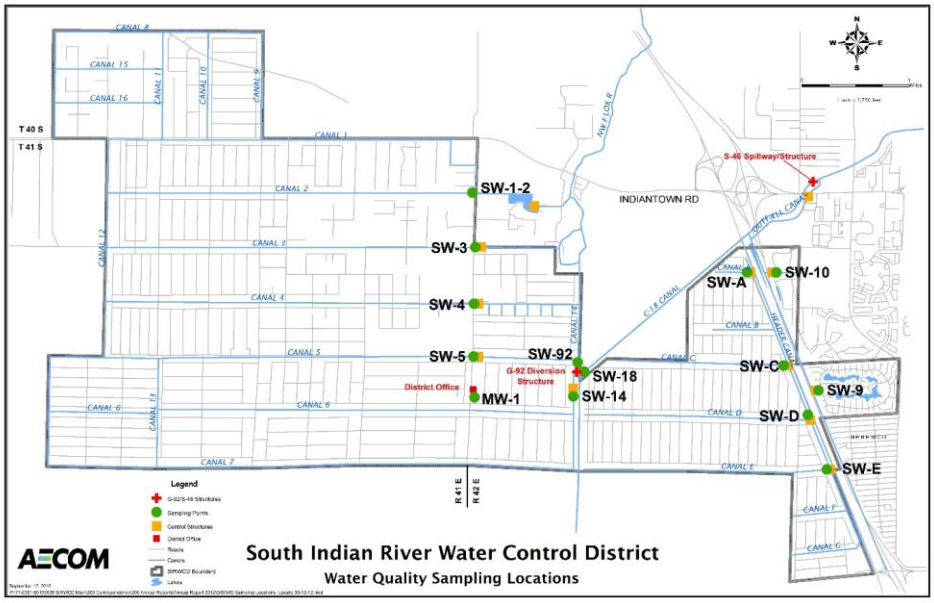

Figure 10. SIRWCD Sampling Locations

Rainfall

The SIRWCD work center monitors and records the total rainfall the District receives throughout the year. For the twelve-month period from September 2022 through August 2023, the District received 59.84 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 66.12 inches including this year's data. The 2022-2023 year rainfall was approximately 6.28 inches lower than the historical rainfall average within the District. Historical rainfall data obtained by LRD, the Town of Jupiter Water Department (TOJ), and the SFWMD are shown below in *Tables 2, 3*, and 4, respectively.

The 2022-2023 monthly rainfall data from SIRWCD, LRD, 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 2022 to August 2023 was 57.15 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 116* compare the rainfall data from 2022-2023 SIRWCD, the 30-year SFWMD average, and the 2021-2022 North County average. The cumulative rainfall for 2022-2023 SIRWCD, the 30-year SFWMD average, and the North County average are shown in *Table 7* and *Figure 7.*

Table 1. SIRWCD Rainfall Data

SOUTH INDIAN RIVER WATER CONTROL DISTRICT (SIRWCD)

Historical Rainfall Data (inches)													
Years	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**TOTAL**
1987-1988	8.08	6.03	12.92	1.25	4.00	2.60	3.20	2.50	9.30	13.25	14.20	10.75	**88.08**
1988-1989	1.00	1.35	1.70	1.75	0.40	0.25	4.10	5.50	1.90	6.95	7.90	6.75	**39.55**
1989-1990	3.80	3.75	1.40	2.15	1.10	1.80	6.20	2.20	4.85	5.85	4.85	9.40	**47.35**
1990-1991	11.35	3.05	2.65	2.55	7.75	4.20	4.25	7.35	5.50	15.90	9.80	5.72	**80.07**
1991-1992	9.95	4.35	4.85	0.55	0.75	6.25	4.70	3.00	2.45	16.85	2.80	11.95	**68.45**
1992-1993	9.00	0.75	9.85	0.75	12.60	4.15	10.75	2.10	7.18	7.30	4.75	3.73	**72.91**
1993-1994	8.15	12.00	2.57	0.47	2.09	4.12	1.67	2.50	2.65	7.23	4.91	9.77	**58.13**
1994-1995	7.55	7.15	7.87	7.51	2.32	1.83	2.68	3.57	1.43	10.08	10.73	14.80	**77.52**
1995-1996	4.78	25.90	0.71	1.22	1.39	1.00	11.94	2.01	10.62	7.39	9.74	8.31	**85.01**
1996-1997	7.41	6.60	4.37	0.98	4.11	6.41	2.51	7.24	5.45	14.60	6.18	12.39	**78.25**
1997-1998	10.26	1.78	3.53	5.45	6.54	7.84	4.78	5.71	1.91	1.88	8.74	7.13	**65.55**
1998-1999	10.81	4.03	10.86	1.26	9.76	0.68	0.37	0.87	2.59	16.38	7.21	15.22	**80.04**
1999-2000	9.79	17.41	0.76	5.39	1.23	1.55	3.27	4.16	0.89	3.21	7.33	2.49	**57.48**
2000-2001	6.45	12.06	1.03	3.15	1.10	0.03	5.56	0.65	5.92	9.78	8.28	11.81	**65.82**
2001-2002	14.26	6.65	3.17	2.73	1.25	6.41	1.29	5.31	2.03	10.56	9.71	5.63	**69.00**
2002-2003	3.67	2.40	3.13	2.95	0.17	1.61	7.62	6.22	10.70	5.81	2.62	9.41	**56.31**
2003-2004	4.65	6.45	5.81	3.38	2.09	2.07	0.81	2.11	3.11	3.95	8.66	7.70	**50.79**
2004-2005	25.72	1.44	1.39	1.04	1.50	1.44	9.44	2.05	6.80	12.69	4.07	7.00	**74.58**
2005-2006	13.21	11.80	3.08	0.74	0.43	2.97	0.67	2.67	2.39	8.59	6.06	12.04	**64.65**
2006-2007	4.56	2.22	1.58	3.58	0.28	1.40	0.74	3.37	5.09	10.72	12.93	9.44	**55.91**
2007-2008	12.38	7.55	1.92	4.43	0.95	4.07	4.15	2.32	4.78	8.14	5.40	9.07	**65.16**
2008-2009	4.98	4.62	1.47	2.08	0.05	0.74	4.89	1.39	11.15	6.30	8.87	6.68	**53.22**
2009-2010	3.82	1.92	2.92	7.32	1.86	2.15	9.46	4.98	6.50	7.06	5.71	9.99	**63.69**
2010-2011	9.20	1.20	1.59	0.44	3.21	0.39	2.33	1.02	3.91	7.10	7.63	7.70	**45.72**
2011-2012	9.72	11.30	1.59	2.00	0.75	6.62	4.50	1.18	6.93	5.97	4.30	15.66	**70.52**
2012-2013	3.87	4.59	0.51	3.66	1.22	2.40	1.18	3.60	8.72	9.65	10.74	9.35	**59.49**
2013-2014	9.40	0.81	6.98	1.49	11.65	2.84	4.43	1.62	6.14	11.80	9.37	5.90	**72.43**
2014-2015	7.23	4.25	1.58	1.27	1.41	10.97	3.06	4.36	2.67	4.63	7.26	8.69	**57.38**
2015-2016	9.50	0.98	3.62	10.04	7.91	3.51	6.40	1.67	5.65	6.47	2.21	10.42	**68.38**
2016-2017	4.25	4.71	0.21	2.48	2.25	3.19	1.32	6.64	4.22	11.26	11.04	2.48	**54.05**
2017-2018	12.42	18.46	7.20	1.23	3.81	0.49	0.52	5.74	17.71	17.00	11.45	9.10	**105.13**
2018-2019	6.84	1.41	4.05	0.70	7.18	2.92	3.85	5.78	5.17	5.60	9.92	15.60	**69.02**
2019-2020	5.75	5.52	4.18	13.59	2.60	3.80	0.00	2.96	11.79	11.38	10.38	4.51	**76.46**
2020-2021	9.85	9.55	7.53	4.42	0.32	0.84	1.40	1.18	1.25	7.65	7.09	7.15	**58.23**
2021-2022	10.23	4.83	7.62	2.44	2.63	2.17	3.93	3.16	3.58	8.90	6.76	3.59	**59.84**
2022-2023	17.24	1.44	7.05	6.15	0.40	1.02	0.50	8.97	5.48	11.81	7.60	11.14	**78.80**
AVG	**8.64**	**6.12**	**3.98**	**3.13**	**3.03**	**2.96**	**3.85**	**3.55**	**5.51**	**9.16**	**7.70**	**8.85**	**66.47**

Table 2. Loxahatchee River District (LRD) Rainfall

LOXAHATCHEE RIVER ENVIRONMENTAL CONTROL DISTRICT (LRECD)

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**
2014-2015	8.29	4.93	2.02	0.92	0.00	6.47	2.22	5.25	2.72	5.39	8.61	9.25	**56.07**
2015-2016	10.15	0.95	4.34	9.14	7.85	3.77	7.01	1.01	9.99	6.32	3.79	8.70	**73.02**
2016-2017	5.58	3.61	0.19	1.94	1.67	3.88	1.04	5.60	3.37	11.45	10.94	2.88	**52.15**
2017-2018	9.68	13.00	5.18	1.27	3.75	0.26	0.12	5.25	14.72	13.29	7.21	6.01	**79.74**
2018-2019	3.13	2.04	2.75	0.46	8.63	2.93	3.01	3.82	6.06	8.41	6.34	16.18	**63.76**
2019-2020	4.65	3.62	2.95	10.52	1.83	2.45	0.06	3.11	10.86	12.92	7.87	4.59	**65.43**
2020-2021	7.17	11.11	4.96	3.44	0.31	0.71	1.31	4.58	1.85	9.56	4.49	10.14	**59.63**
2021-2022	5.54	5.56	7.41	1.81	3.05	2.01	2.47	4.39	2.06	8.82	5.51	2.94	**51.57**
2022-2023	2.94	8,72	7.24	3.65	0.35	1.10	0.43	7.25	5.45	7.75	6.59	10.05	**52.80**
AVG	**8.45**	**5.45**	**4.48**	**3.48**	**3.05**	**2.86**	**3.90**	**3.23**	**5.36**	**8.24**	**6.04**	**7.93**	**62.36**

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**
2014-2015	8.64	6.28	3.34	1.86	1.42	7.84	1.61	4.34	2.28	4.08	7.32	6.08	**55.09**
2015-2016	9.94	0.86	3.75	8.89	12.01	3.46	7.30	1.03	8.29	3.54	3.75	5.54	**68.36**
2016-2017	5.50	3.36	0.06	2.21	5.70	3.19	0.70	6.17	2.33	11.37	6.67	2.04	**49.30**
2017-2018	8.99	9.70	5.56	1.05	3.73	0.64	0.63	5.26	16.47	11.57	8.97	3.31	**75.88**
2018-2019	3.24	2.10	2.61	0.72	6.72	1.89	2.99	4.48	6.77	9.56	7.04	14.57	**62.69**
2019-2020	4.37	3.72	2.73	10.04	2.13	2.73	0.03	2.37	14.06	10.45	9.12	5.27	**67.02**
2020-2021	6.97	15.37	5.54	3.79	0.35	0.79	1.10	4.07	1.72	9.62	6.18	12.43	**67.93**
2021-2022	6.51	5.32	7.95	2.49	3.16	2.35	3.02	7.14	1.90	10.58	6.06	3.57	**60.05**
2022-2023	9.96	4.70	7.62	4.06	0.44	1.66	0.40	9.49	6.92	8.19	6.22		**59.66**
AVG	**8.94**	**5.78**	**4.69**	**3.49**	**3.45**	**2.92**	**4.14**	**3.45**	**5.12**	**8.43**	**6.21**	**7.99**	**64.45**

Table 4. SFWMD Palm Beach County-Wide Rainfall Averages

SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)
PALM BEACH COUNTY-WIDE AVERAGES

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
30 Year Avg. (1981-2010)	8.49	5.56	4.15	2.92	2.96	2.88	4.12	3.23	4.66	8.20	6.54	8.06	**61.77**
1995-1996	6.26	15.06	1.10	1.52	1.54	0.53	7.09	2.49	8.01	8.46	4.63	4.75	**61.44**
1996-1997	7.17	6.78	2.26	1.77	3.87	4.73	3.37	5.47	3.74	12.67	5.64	10.10	**67.57**
1997-1998	7.52	1.44	3.93	5.02	5.23	6.93	4.33	2.32	1.71	2.51	7.29	4.85	**53.08**
1998-1999	13.93	2.91	9.85	2.99	7.26	1.50	0.50	2.72	2.58	15.41	3.22	8.20	**71.07**
1999-2000	8.94	12.66	3.16	1.69	1.28	0.78	3.58	4.72	1.08	3.59	6.74	4.36	**52.58**
2000-2001	5.02	7.39	2.60	1.83	0.78	0.26	5.57	0.40	4.44	6.57	9.41	7.95	**52.22**
2001-2002	15.14	5.77	2.02	2.16	0.51	5.11	1.20	2.60	1.80	12.59	7.97	5.05	**61.92**
2002-2003	4.04	2.35	2.75	2.88	0.48	1.17	4.42	3.85	8.45	6.35	3.85	8.92	**49.51**
2003-2004	5.51	1.27	4.77	2.69	2.54	2.69	0.78	2.38	2.22	3.14	5.03	7.70	**40.72**
2004-2005	17.71	2.94	0.75	0.85	1.23	1.09	5.87	1.72	5.72	12.45	4.84	2.80	**57.97**
2005-2006	7.30	7.22	4.49	1.44	0.67	2.80	1.31	2.38	4.09	4.48	6.03	7.32	**49.53**
2006-2007	6.68	1.48	2.27	5.47	0.74	1.31	0.51	2.64	3.35	12.41	8.73	6.05	**51.64**
2007-2008	8.11	8.77	0.68	1.76	1.87	4.56	5.48	2.92	3.12	7.03	6.52	11.04	**61.86**
2008-2009	6.77	5.37	0.76	1.24	0.17	0.34	3.46	1.48	10.12	8.44	6.57	5.76	**50.48**
2009-2010	6.90	1.31	2.93	5.84	1.66	3.34	7.72	5.62	3.91	4.85	4.82	9.25	**58.15**
2010-2011	7.89	0.93	1.17	1.02	2.24	0.58	2.36	1.24	2.46	4.79	5.41	9.84	**39.93**
2011-2012	7.06	9.35	1.28	1.05	0.30	2.99	2.42	4.90	8.48	7.49	5.45	16.30	**67.07**
2012-2013	6.68	6.47	0.69	1.64	1.07	2.71	1.17	4.45	11.06	9.91	9.50	4.38	**59.73**
2013-2014	8.15	0.81	3.82	1.39	7.02	1.73	2.54	1.72	3.60	7.79	8.55	7.34	**54.46**
2014-2015	9.10	4.39	1.66	1.20	0.74	4.37	1.20	4.27	1.57	4.41	5.50	7.21	**45.62**
2015-2016	7.49	1.66	3.09	6.52	9.09	2.83	4.23	1.03	6.52	6.46	3.14	8.61	**60.67**
2016-2017	6.10	5.04	0.30	1.65	1.66	2.37	1.49	3.66	4.20	13.14	5.60	6.20	**51.41**
2017-2018	10.00	12.30	4.39	1.02	2.80	0.47	0.53	6.01	15.29	8.13	6.15	5.82	**72.91**
2018-2019	4.90	2.03	2.50	1.26	5.44	3.49	2.70	1.99	6.27	8.21	4.82	9.02	**52.63**
2019-2020	3.58	3.97	2.47	10.46	1.97	2.34	0.01	2.00	11.90	12.41	7.29	5.22	**63.62**
2020-2021	8.25	14.38	7.05	3.70	0.34	0.78	1.47	3.83	1.74	9.03	5.88	10.72	**67.17**
2021-2022	6.07	5.45	3.40	6.00	2.91	2.12	3.03	3.40	1.94	8.35	7.03	4.24	**53.94**
2022-2023	9.03	3.46	6.34	3.45	0.28	1.52	0.53	7.98	6.28	7.67	6.33	8.42	**61.29**

Monthly Averages are based on information provided by the South Florida Water Management District. These are weighted averages based on data from recording stations located throughout Palm Beach County. The 30 Year Average is an unofficial average of rainfall in eastern Palm Beach County for the period of 1981-2010.

Table 5. 2022-2023 North County Rainfall Average

Historical Rainfall Data (inches)													
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	TOTAL
SIRWCD Avg.	8.64	6.12	3.98	3.13	3.03	2.96	3.85	3.55	5.51	9.16	7.70	8.78	**66.41**
LRD Avg.	8.45	5.45	4.48	3.48	3.05	2.86	3.90	3.23	5.36	8.24	6.04	7.89	**62.43**
TOJ Avg.	8.94	5.78	4.69	3.49	3.45	2.92	4.14	3.45	5.12	8.43	6.21	7.99	**64.62**
N. County Avg.	**8.68**	**5.78**	**4.38**	**3.37**	**3.18**	**2.91**	**3.96**	**3.41**	**5.33**	**8.61**	**6.65**	**8.22**	**64.48**

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, 2023.

Table 6. SIRWCD 2022-2023 Rainfall Analysis

SIRWCD 2022-2023 RAINFALL ANALYSIS

Historical Rainfall Data (inches)													
	Sep	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**TOTAL**
SIRWCD 2022-2023	17.24	1.44	7.05	6.15	0.40	1.02	0.50	8.97	5.48	11.81	7.60	11.14	**78.80**
30 Year Avg. (1981-2010)	8.49	5.56	4.15	2.92	2.96	2.88	4.12	3.23	4.66	8.20	6.54	8.06	**61.77**
N. County Avg.	8.68	5.78	4.38	3.37	3.18	2.91	3.96	3.41	5.33	8.61	6.65	8.24	**64.51**

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, 2023. Refer to *Figure 16* for a graphical representation of this data.

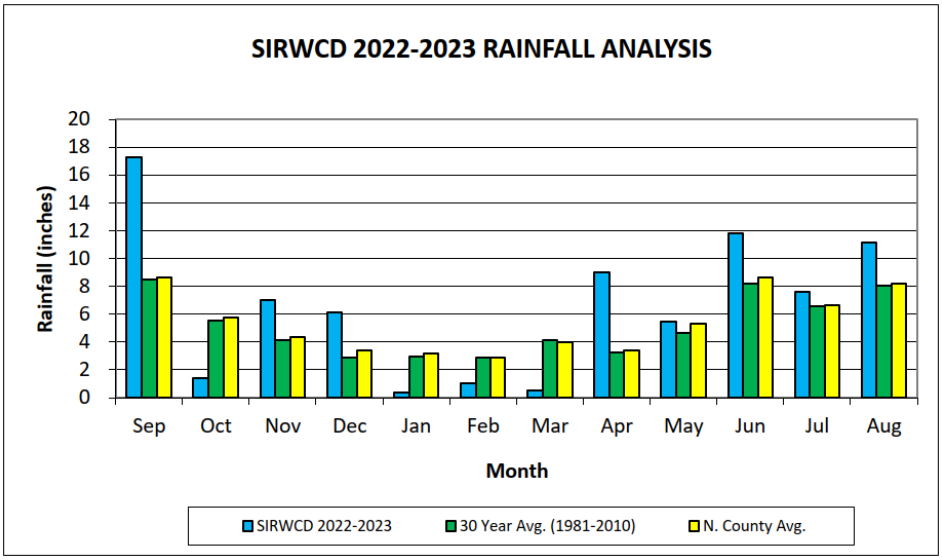

Figure 116. SIRWCD 2022-2023 Rainfall Analysis

Table 7. 2022-2023 Annual Cumulative Rainfall Comparison

Historical Rainfall Data (inches)												
	Sep	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**
SIRWCD 2022-2023	17.24	1.44	7.05	6.15	0.40	1.02	0.50	8.97	5.48	11.81	7.60	11.14
30 Year Avg. (1981-2010)	8.49	14.05	18.20	21.12	24.08	26.96	31.08	34.31	38.97	47.17	53.71	61.77
N. County Avg.	8.68	14.46	18.84	22.21	25.38	28.30	32.26	35.67	41.00	49.61	56.26	64.51

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.

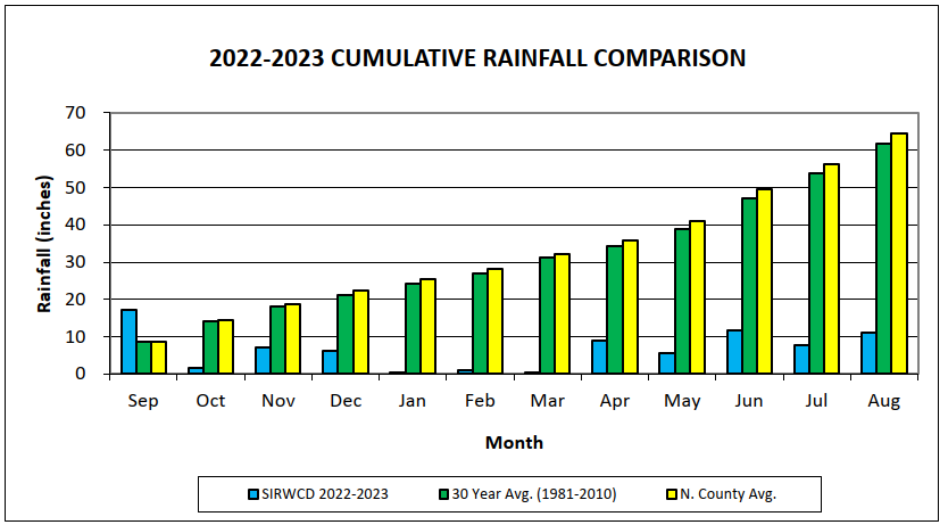

Figure 17. 2022-2023 Cumulative Rainfall Comparison

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, School District of Palm Beach County, Florida Department of Transportation, South Florida Water Management District, Town of Jupiter, the Loxahatchee River Environmental Control District, and others.

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. Unfortunately, many landowners have decided to fill in their ponds and the storage is being reduced. Due to these instances, the District has been working with Palm Beach County to enforce its rules concerning the filling of lots. Palm Beach County implemented their code through Policy and Procedure Memorandum PB-O-128 with an effective Date of July 8, 2022, and they have asked landowners to notify them of these types of activities. These issues 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 the District work must be implemented within the adopted budget utilizing existing manpower, equipment and other resources available to accomplish the tasks.

General Comments

SIRWCD is almost fully developed. It has a unique identity as a community that is virtually surrounded by premiere natural systems such as the Loxahatchee Slough and the Wild and Scenic Northwest Fork of the Loxahatchee River. These environmental assets guarantee limited growth in the area and offer special recreational opportunities. On the other hand, the District and its landowners have the responsibility of being good stewards in maintaining compatibility with these ecological systems. To that end, the District is exploring how it can improve its surface water management system while at the same time contributing to the enhancement of the Loxahatchee Slough and Loxahatchee River.

The goals and objectives of SIRWCD are not inconsistent with those being discussed for the Loxahatchee River Watershed Restoration Project Delivery Team, the Loxahatchee River Management Coordinating Council, Department of Environmental Protection, Corps of Engineers, and South Florida Water Management District. However, the necessary ingredient is that all these entities, including the District, must identify and implement action plans that merge the goals of each agency into a functional and affordable outcome.

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 appreciates the opportunity to continue serving as your 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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