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STRATEGIC PLAN 2019–2023

Updated February 2019

Southwest Florida Water Management District

Message from the Chair

Snow shoveling is a rite of passage for those growing up in the south suburbs of Chicago. That doesn't mean you have to like it, but it is a reality. Therefore, it should come as no surprise that upon graduating from Stetson University College of Law in St. Petersburg, I was pretty sure I wanted to stay here in sunny Florida. Some second job interviews in Chicago with twenty-five degrees below zero wind chill convinced me that Florida was where I needed to be. Thirty-three years later, I couldn't be happier with the way things have turned out, both personally and professionally. Florida is my home.

It was a great honor to be asked by the Governor to serve on the Governing Board of the Southwest Florida Water Management District. However, at that time, my working knowledge of water and water management was limited to basically turning a faucet on and water appearing, and turning the faucet off and water stopped. The good news was with such limited knowledge, I had no pre-conceived ideas nor any specific interest or bias other than giving back to the community and protecting the interest of the taxpayers.

Learning about water and water management has been an enjoyable and highly educational experience. My approach to this task has been consistent: Listen, gather facts and information. Be transparent and open. Get all sides of the story and gather as much information as you can. Once you've had the opportunity to analyze the information and process the opinions. Then you're able to provide a prospective of immediate as well as long term value. We must consider not only quantity but also quality. Do not allow the decisions to become personal. Make the best decision based on the facts and best interests of the constituents both on a short-term and long-term basis.

It's easy to understand how important water is: how it affects natural resources, the economy, tourism, recreation, agriculture, development, and enjoyment of life itself. What isn't as obvious, at least until you've had to make the difficult decisions, is how challenging water management can be in the short term and over the long term. Water affects everyone and everything in so many ways. There are multiple interests

Jeffrey M. Adams, Chair

sometimes with competing needs and desires on about any and all water issues.

Nothing about water management is easy. Everyone needs water and you have to make sure water remains plentiful. The water management decisions we make to address today's challenges must also ensure there's water for tomorrow, resources are protected, and we are not creating long-term flooding problems. In fact, that's the District's mission: To protect water resources, minimize flood risks, and ensure the public's water needs are met. A simple statement but yet an important complex challenge.

The District manages water resources over 16 counties with more than 5 million people. Our water resource challenges, like our water resources, are constantly evolving. With so much at stake, and taxpayer funding, it's critical we use our time, money and people wisely. The purpose of this Strategic Plan is to take this massive undertaking and provide clarity and direction. The Plan identifies who we are, what we do, how we do it, and looks out over a five-year planning horizon to highlight our priorities and determine where we should be focusing our resources to maximize those benefits to the public and environment.

The Plan prioritizes water resource issues in each of our four planning regions. For example, in our Northern Planning Region, we've prioritized improving our five first-magnitude springs, developing plans and implementing projects to improve water quality and natural systems. One of the critical initiatives helps to fund projects that move residents off traditional septic systems to sewer systems, thereby reducing the pollution into the springs. In the Tampa Bay Region we've identified a series of flood protection projects in various watersheds to provide residents with flooding relief.

The District's ability to fund these projects and many others is due to our fiscal stewardship of the taxpayer's dollars. The District is continually looking for ways to reduce costs, improve effectiveness and maximize the taxpayer investment in our mission. We continue to utilize developing technology to obtain and deliver better value to our residents by increasing efficiencies in all areas.

Our innovative Cooperative Funding Initiative has been sharing the costs of water resource projects since 1988. The District has invested nearly $1.6 billion which were matched with similar contributions from our funding partners for a total investment of approximately $3.2 billion. Over the last five years this program has averaged $53 million per year in projects.

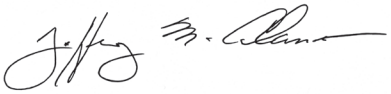
Working with our partners over the years, we have accomplished great things. The Tampa Bay Region has one of the most diversified water supply systems in the world. The District is a national leader in recycling water, beneficially reusing 54 percent of its reclaimed water compared to a national average of 7 percent. The District's Tampa Bypass Canal is capable of moving up to 17 billion gallons of water a day to provide flood protection for the cities of Tampa and Temple Terrace. We successfully utilized the Tampa Bypass Canal for this purpose before and during Hurricane Irma. Through our Surface Water Improvement and Management (SWIM) Program, we have restored thousands of acres of environmentally sensitive lands.

As we collectively move forward, I hope to help the Board and District maximize our ability to meet our mission. The best path is to collect the data and follow the science. Then one must evaluate and analyze where the facts lead. Finally, making informed decisions which serve in the best interest of

the District today and into the future. One of the things I've learned as a Board member is the quality and professionalism of the District staff. The District is staffed with knowledgeable and caring individuals who work with the stakeholders on a daily basis. That's critical because no single person or organization can manage the water resources alone. It takes a collaboration among all of us, working together toward a common goal.

Sports has been an important part of my life. Sports teaches us how to work with others as teammates. It teaches us how to compete, to work towards goals and compete fairly. While it not only teaches us to win, but also how to lose. You don't have to like losing, but in life, you don't win all the time. Sports also teaches us that just because someone is wearing a different jersey (or has a different interest or opinion) doesn't make them bad or wrong. Likewise, those with different ideas, perceptions or opinions aren't always wrong or without value. Sports teaches us to be humble as the game itself can be very humbling. Sports teaches us that when teamwork is combined with hard work, anything can be accomplished.

My fellow Board members and District staff all share a passion for making a difference, for leaving this world a better place than they found it. I'm confident when it comes to managing the water resources, this team will never be out-worked or out-hustled.



Jeffrey M. Adams
Governing Board Chair

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The Governing Board establishes policies for the District. Board members are unpaid citizen volunteers appointed by the Governor and confirmed by the Florida Senate.

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Overview

The Southwest Florida Water Management District (District) is a science-based organization responsible for managing and protecting water resources in west-central Florida. The District's job is to ensure there are adequate water supplies to meet the needs of current and future users while protecting and restoring water and related natural resources. (See Mission Statement.)

The District encompasses all or part of 16 counties, from Levy County in the north to Charlotte County in the south. It extends from the Gulf of Mexico east to the highlands of central Florida. The District contains 98 local governments spread over approximately 10,000 square miles, with a total population estimated to be 5.3 million in 2018. For planning purposes, the District is divided into four regions: Northern, Tampa Bay, Heartland and Southern. (See District Planning Regions map.)

GOVERNING BOARD

A 13-member board governs the District. The Governing Board establishes policies and sets the budget for the District. Appointed by the Governor and confirmed by the Senate, Governing Board members are unpaid volunteers representing varied backgrounds and interests. Board members, who must live in the District, serve four-year terms.

BUDGET

The District's primary funding source is ad valorem taxes, although revenues are also derived from state and federal appropriations, permit fees, interest earnings and other sources. The taxing capabilities of the District are established by the Legislature within the limits set by the Florida Constitution. The limit for the District is one mill, or one dollar per thousand dollars of assessed value. The Governing Board millage rate for fiscal year 2018-19 is 0.2955 mill. More information about budgeting is included in this document's Core Business Processes section.

CORE MISSION

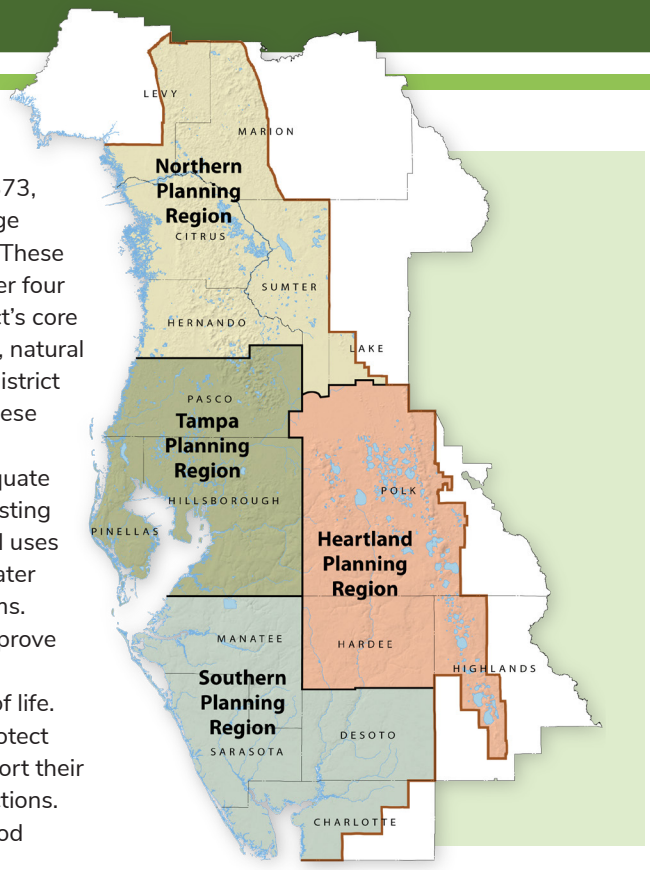
Florida Statutes, primarily Chapter 373, authorize the District to direct a range of initiatives, programs and actions. These responsibilities can be grouped under four general areas which form the District's core mission: water supply, water quality, natural systems and flood protection. The District has established a goal for each of these areas of responsibility:

Water Supply Goal: Ensure an adequate supply of water to provide for all existing and future reasonable and beneficial uses while protecting and maintaining water resources and related natural systems.

Water Quality Goal: Protect and improve water quality to sustain the water, environment, economy and quality of life.

Natural Systems Goal: Preserve, protect and restore natural systems to support their natural hydrologic and ecologic functions.

Flood Protection Goal: Minimize flood damage to protect people, property, infrastructure and investment.



Mission Statement

To protect water resources, minimize flood risks and ensure the public's water needs are met.

STRATEGIC INITIATIVES

The District is implementing a wide array of programs and projects to meet these four goals. These activities are grouped under 11 Strategic Initiatives:

- Regional Water Supply Planning
- Alternative Water Supplies
- Reclaimed Water
- Conservation
- Assessment and Planning
- Water Quality Maintenance and Improvement
- Minimum Flows and Levels (MFLs) Establishment and Monitoring
- Conservation and Restoration
- Floodplain Management
- Flood Protection Maintenance and Improvement
- Emergency Flood Response

REGIONAL PRIORITIES

While the Strategic Initiatives identify activities implemented throughout the District, the water resource needs vary from one planning region to another. The top water resource priorities for each region, along with measurable objectives, are identified in the Regional Priorities section of this document.

CORE BUSINESS PROCESSES

In addition to adhering to its adopted values, the District must excel in seven core business processes to successfully achieve its Strategic Initiatives:

- Water Resources Planning
- Innovative Projects
- Financial Sustainability
- Regulation
- Land Management and Structure Operations
- Knowledge Management
- Engagement

Strategic Initiatives

Water Supply

1. Regional Water Supply Planning

Goal Statement: Identify, communicate and promote consensus on the strategies and resources necessary to meet future reasonable and beneficial water supply needs.

The District's regional water supply planning effort provides the framework for future water supply management decisions within the District, and is a statutory requirement where current water sources are not adequate to supply existing and future uses while sustaining natural resources (F.S., 373.709(1)). This is a collaborative, transparent effort involving local governments, utilities, the agricultural community, business representatives, environmental organizations and other stakeholders.

STRATEGIES

- Develop accurate and reliable demand projections
- Identify sufficient regional water supply sources to meet projected demands
- Encourage the development and use of regional water supply authorities to plan and coordinate water supply solutions
- Incorporate adaptive management processes in water supply planning
- Coordinate with other water management districts on water supply and regulation approaches
- Proactively coordinate with water supply utilities
- Demonstrate the District's financial commitment to assist in the development of regional water supply needs

2. Alternative Water Supplies

Goal Statement: Increase development of alternative sources of water to ensure groundwater and surface water sustainability.

Alternative water supply (AWS) refers to any nontraditional source of water that reduces the region's dependency on fresh groundwater. From 1990 through September 2017, the District has helped to develop approximately 363 million gallons daily (mgd) of alternative water supplies, including reuse and conservation benefits and new potable water sources.

STRATEGIES

- Develop alternative water supply sources that include surface water capture, desalination and brackish groundwater systems
- Continue to promote partnerships with agriculture through District programs such as the Facilitating Agricultural Resource Management Systems (FARMS) Program
- Partner with regional entities to provide alternative water supplies
- Continue to leverage District funds to facilitate the development of alternative water supplies
- Continue to support research and development of aquifer storage and recovery technology
- Promote conjunctive use of surface and groundwater resources through regulation and funding incentives

3. Reclaimed Water

Goal Statement: Maximize beneficial use of reclaimed water to offset potable water supplies and restore water levels and natural systems.

Reclaimed water is wastewater that has received at least secondary treatment and disinfection and is used for a beneficial purpose, such as irrigation, manufacturing processes or power generation. By offsetting demand for groundwater and surface water, this alternative water supply reduces stress on environmental systems, provides economic benefits by delaying costly water system expansions and reduces the need to discharge wastewater effluent to surface waters. More than 191 mgd of reclaimed water is being beneficially reused in the District, accounting for more than 16 percent of overall water use. In addition, the District's Governing Board recently identified indirect/direct potable reuse as a priority for the District to achieve its goal of 75 percent reuse of available wastewater by 2040.

STRATEGIES

- Increase availability by increasing storage capacity
- Increase availability by promoting interconnects between reclaimed water utilities
- Leverage District funds to maximize efficient and beneficial use of reclaimed water
- Improve efficiency through measures such as metering and volume-based pricing
- Continue to support reclaimed water research, monitoring and public education
- Partner with cooperators for the development of indirect/direct potable reuse projects, with priority for regional entities
- Promote the beneficial use of reclaimed water and the offset of traditional water supplies through the existing regulatory framework
- Promote the use of reclaimed water for recharge and environmental enhancement projects

4. Conservation

Goal Statement: Enhance efficiencies in all water-use sectors to ensure beneficial use.

Conservation is achieved through education, financial incentives and various regulatory and non-regulatory programs. Per capita water usage in the District has regularly ranked as the lowest in the state.

STRATEGIES

- Promote water conservation through public engagement programs
- Support research and implementation of conservation techniques and practices
- Promote water-conserving rate structures
- Utilize financial incentives to further encourage effective conservation practices
- Utilize regulatory programs to establish effective conservation practices
- Continue to promote partnerships with agriculture through District programs such as the FARMS Program

Water Quality

1. Assessment and Planning

Goal Statement: Collect and analyze data to determine local and regional water quality status and trends to support resource management decisions and restoration initiatives.

Those who manage Florida's water resources must have access to accurate and timely data. Good decisions require reliable information.

STRATEGIES

- Continue to develop and maintain long-term water quality monitoring networks to collect, analyze and distribute accurate water quality information
  - Coastal Groundwater Quality and Water Use Permit Monitoring Networks
  - Springs and Aquifer Nutrient Monitoring Networks
  - Surface Water Quality Monitoring Networks
- Continue to support the District's internal data governance process
- Continue to promote partnerships through District water quality programs

2. Maintenance and Improvement

Goal Statement: Develop and implement programs, projects and regulations to maintain and improve water quality.

The District develops and implements projects, programs and regulations to maintain and improve water quality. Examples of these efforts include partnerships for best management practices (BMPs) implementation such as the FARMS Program, focused on the agriculture community, and the Watershed Management Program (WMP), addressing watershed improvements; and the Surface Water Improvement and Management (SWIM) and Springs initiatives Programs that implement nitrogen removal and other water quality improvement projects.

The District also acquires and manages land for water resources conservation/protection purposes through its land resources program and regulates stormwater management through the environmental resource permitting process. Additionally, data and information are shared with counties, cities and the state for projects to improve water quality.

STRATEGIES

- Use cooperative funding to support local government efforts to improve District priority water bodies
- Continue to review and track Florida Department of Environmental Protection (DEP) Total Maximum Daily Load (TMDL) and Basin Management Action Plans (BMAP) processes for District priority water bodies
- Promote Florida-Friendly Landscaping™ principles and other behaviors that protect water quality
- Participate in the development and implementation of the statewide stormwater management criteria to enhance an active environmental resource permitting (ERP) program
- Utilize regulatory programs to promote water quality protection and improvement
- Continue to promote partnerships through District water quality programs such as the SWIM and the FARMS programs
- Support cooperative funding and implementation of prioritized septic and package plant retrofit projects within the Northern region

Rainbow River cleanup in Dunnellon.

Three Sisters Springs Wetland Treatment Project in Crystal River.

Natural Systems

1. MFLs Establishment and Monitoring

Goal Statement: Establish and monitor MFLs, and, where necessary, develop and implement recovery/prevention strategies to recover water bodies and prevent significant harm.

Minimum flows and water levels for aquifers, surface watercourses, and other surface water bodies identify the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. Rivers, streams and springs require minimum flows, while minimum levels are set for lakes, wetlands and aquifers. MFLs are used for permitting or planning decisions concerning how much water may be safely withdrawn from a water body.

Through fiscal year 2018, the District has set 210 MFLs on rivers, lakes, aquifers and wetlands. The District's process for establishing MFLs includes an annual update of water bodies prioritized for MFLs development, extensive data collection, analysis and reporting, public review, independent scientific peer review and rule adoption. The District routinely assesses potential water supply/resource concerns and evaluates water use permit applications to ensure violations of established MFLs do not occur. In addition, water bodies with established MFLs are monitored and assessed to determine the need for recovery or implementation of strategies to prevent flows or levels from falling below established MFLs. As of 2017, approximately two-thirds of established MFLs were being met. To address priority water bodies where MFLs have not been met, the District is implementing three regional recovery strategies associated with Water Use Caution Areas (Northern Tampa Bay, Southern and Dover/Plant City) and two water body-specific plans, and included these strategies in its regional water supply planning process.

STRATEGIES

- Update the MFLs priority list and schedule annually
- Establish water body-specific MFLs through:
  - Data collection
  - Data analysis and reporting
  - Independent scientific peer review and public review
  - Rule adoption
- Continue to incorporate MFLs in District water use permit application review processes and compliance monitoring
- Monitor and report hydrologic conditions to support status assessments for water bodies with established MFLs
- Continue to review and refine scientific methodologies used in establishing MFLs
- Develop, adopt and implement recovery and prevention strategies
- Incorporate MFLs recovery and prevention strategies into the Regional Water Supply Plan (RWSP) development process

2. Conservation and Restoration

Goal Statement: Restoration and management of natural ecosystem for the benefit of water and water-related resources.

The Conservation and Restoration Strategic Initiative preserves, protects and restores natural systems to support natural hydrologic and ecologic functions. The major components of this initiative include land acquisition and management, ecosystem monitoring and restoration, education and regulation. To date 41,824 acres of habitat have been restored through District programs and partnerships with state and local governments.

Acquisition and management of land are critical to the District's conservation and restoration objectives. Once acquired, altered land is restored, if necessary, and managed to maintain ecological and hydrological functions. The District monitors its lands to ensure continued compliance with its mission and initiatives.

Restoration initiatives, such as the SWIM Program, are overseen by the District to restore natural systems associated with priority water bodies.

The District also regularly tracks land and water resource alterations through its aerial land use/land cover, wetland and seagrass mapping efforts. Through reviews such as local government plan amendments and large-scale development proposals, Florida Coastal Management applications and related activities, staff is able to offer feedback to better link land and water resources. In addition, the District's ERP program helps protect water resources.

STRATEGIES

- Evaluate acquisition opportunities, placing priority on water resource benefits, inholdings, additions, core conservation areas, realistic landowner expectations and leveraging partnership dollars
- Promote innovative restoration projects and partnerships
- Regulate to avoid impacts or minimize and mitigate unavoidable impacts
- Partner to continue wetland, lake and river monitoring and analysis
- Provide technical assistance to state, regional and local governments for linking land and water
- Utilize management tools to enhance maintenance of conservation lands

The District's P-11 Water Conservation Structure on Lake Hancock in Polk County.

Flood Protection

1. Floodplain Management

Goal Statement: Collect and analyze data to determine local and regional floodplain information, flood protection status and trends to support floodplain management decisions and initiatives.

The District's WMP identifies, prioritizes and addresses flood-related water resource issues within a watershed. Information developed through the WMP is used by local governments, the District and state and federal governments in regulatory and advisory floodplain management programs.

STRATEGIES

- Implement the WMP, collect and analyze data and develop and distribute accurate floodplain information
- Continue to promote partnerships at the local, state and federal level
- Increase public awareness of floodplains and flood risk
- Provide system-based data to support the operation of District flood control and water conservation structures
- Document levels after flood events to ensure up-to-date modeling and historic records

2. Maintenance and Improvement

Goal Statement: Develop and implement programs, projects and regulations to maintain and improve flood protection, and operate District flood control and conservation structures to minimize flood damage while preserving the water resource.

The District's ERP program uses WMP information and regulations to protect floodplain and historic basin storage and ensure that new development does not increase flood levels or the rate of stormwater runoff onto neighboring properties.

Strategic property acquisition allows land to fulfill natural functions of storing and accommodating excess water and reduces the risk of flood damage by preserving floodplains. The District also maintains and operates four major canal and conveyance systems and 88 flood control and water conservation structures as an important flood protection strategy. Extensive areas of the District depend upon the maintenance and operation of these facilities.

The District's WMP identifies flood risk and efficient alternatives to reduce the risk of flood damages. The District's Cooperative Funding Initiative encourages implementation of selected intermediate and regional system improvement projects to reduce flood risk. Implementation of local system improvements is primarily the responsibility of the local government.

STRATEGIES

- Implement the ERP program using WMP floodplain information to maintain current levels of flood protection
- Identify floodplain management and flood protection value associated with land acquisition opportunities
- Use cooperative funding to support local government efforts to reduce the risk of flood damages by improving intermediate and regional flood protection systems
- Operate, maintain and upgrade District flood control and water conservation structures and associated facilities

3. Emergency Flood Response

Goal Statement: Provide effective and efficient assistance to state and local governments and the public to minimize flood damage during and after major storm events, including operation of District flood control and water conservation structures.

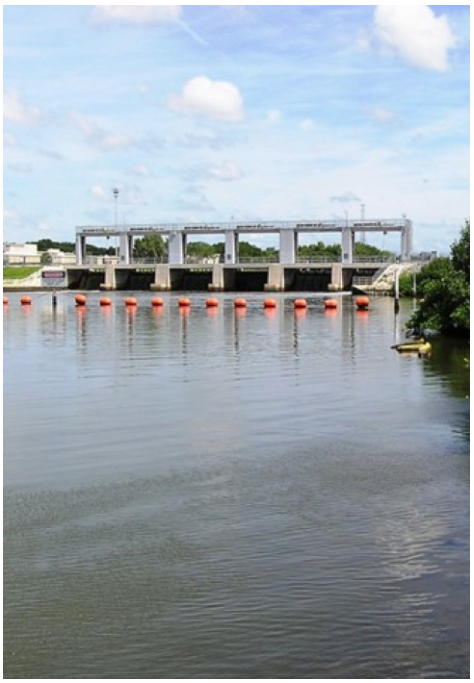
Through its emergency flood response initiative, the District prepares for, responds to, recovers from and mitigates the impacts of critical flooding incidents. To ensure adequate preparation, the District has developed an emergency operations program and maintains a Comprehensive Emergency Management Plan (CEMP), which provides guidelines for pre-incident preparation, post-incident response and recovery, deployment and annual exercises. The District's Emergency Operations Center (EOC) and Emergency Operations Organization (EOO) are critical to incident response.

All water management districts are members of the State Emergency Response Team and serve as support agencies to the state. The District provides emergency assistance to local governments and the public. District regulatory flood investigation teams assist local governments with emergency construction authorizations, and help to determine and implement solutions to flooding problems for major conveyance systems.

The enhancement and modernization of District water management facilities includes the automation and upgrading of mission-critical water conservation and flood control structures with remote operation and equipping structures with digital video monitoring.

STRATEGIES

- Continue to promote an effective and efficient incident management system
- Establish redundant control systems for all mission-critical infrastructure
- Use technology to the fullest extent to ensure optimal response capabilities
- Train staff in NIMS/ICS structure
- Exercise the District's CEMP, high hazard structure Emergency Action Plans, and Flood Event Guidelines
- Provide emergency assistance to local governments and agencies



The District's S-160 Structure on the Tampa Bypass Canal in Hillsborough County.

Northern Region — Springs

PRIORITY:

Improve Chassahowitzka River, Crystal River/Kings Bay, Homosassa River, Rainbow River and Weeki Wachee River

OBJECTIVES:

- Implement water quality and natural systems projects identified in the five SWIM plans
- Assist with septic to sewer conversion within the five first-magnitude spring areas
- Monitor status and trends associated with targets in each SWIM plan to assess the health of the spring systems
- Continue support of the Springs Coast Steering Committee (SCSC)

NARRATIVE:

Among the most precious water resources in the District are the more than 150 documented springs, and the rivers, bays, and estuaries that are fed by them. The five largest spring groups within the District are concentrated in the Northern region along the Florida Springs Coast. These five first-magnitude (flow rates of 100 cubic feet per second or greater) groups form the headwaters of the Chassahowitzka River, Crystal River/Kings Bay, Homosassa River, Rainbow River and Weeki Wachee River. All five systems are listed as District SWIM priority water bodies, and by the state as Outstanding Florida Waterways and Outstanding Florida Springs.

The Crystal River/Kings Bay, Homosassa River, Chassahowitzka River and Weeki Wachee River flow directly into the Gulf of Mexico, which is home to one of the largest seagrass habitats in the world. Along with seagrass, the nearshore coastal waters of the Florida Springs Coast include many species of attached algae, sponges, corals and hard bottom habitat supporting numerous ecologically and economically important species such as bay scallop, grouper, tarpon and manatee.

The rivers, bays and springs have experienced ecological changes caused by both natural and human impacts. Issues facing these coastal resources include sea-level rise, reduced water clarity, altered aquatic vegetation, nutrient enrichment and decreased flows.

In 2014, the District together with local, regional and state partners formed the SCSC. The SCSC's mission is to build consensus and partnerships to improve and manage each of the five first-magnitude spring systems through effective development and implementation of SWIM plans. Led by District staff, all first-magnitude spring groups now have approved SWIM plans.

Each SWIM plan is a road map, a living document with adaptive management at its core. These plans identify management actions, projects that address the issues facing each system, and specific quantifiable objectives to assess overall progress and help guide the SCSC. In an August 2017 workshop, the District's Governing Board prioritized combining District funds with state and local funds for projects that would connect domestic septic systems to central sewer to benefit springs. The Board also identified the need to protect the District's investment by ensuring controls are in place to prevent additional pollution from new septic systems.

In addition to the management plan development and implementation, the FARMS Program is working with producers to implement BMPs to reduce groundwater use and nutrient loading in springsheds. To date, the Governing Board has approved seven projects within the region, with an estimated offset of 0.1 mgd and an estimated nitrogen load reduction of 1,400 lbs per year.

Quantifiable objectives are established for each first-magnitude spring system for the following surface water quality and biological indicators.

Chassahowitzka River

- Water clarity
- Nitrate concentration
- Minimum flows
- Coverage of desirable submerged aquatic vegetation
- Coverage of invasive aquatic vegetation

Weeki Wachee River in Hernando County.

Crystal River/Kings Bay

- Water clarity
- Nitrate concentration
- Phosphorus
- Chlorophyll
- Coverage of desirable and invasive aquatic vegetation and natural shoreline
- Enhancement of disturbed shoreline
- Minimum flows

Homosassa River

- Water clarity
- Minimum flows
- Coverage of desirable benthic habitat
- Coverage of invasive aquatic vegetation
- No net loss of shoreline in natural condition

Rainbow River

- Water clarity
- Nitrate concentration
- Submerged aquatic vegetation coverage
- Minimum flows

Weeki Wachee River

- Water clarity
- Nitrate concentration
- Minimum flows
- Coverage of desirable submerged aquatic vegetation
- Coverage of invasive aquatic vegetation

Northern Region — Water Supply

PRIORITY:
Ensure long-term sustainable water supply

OBJECTIVES:

- Increase conservation
  - Achieve and maintain 150-gallon daily compliance per capita with all public supply utilities by December 31, 2019
  - Reduce 2011 regional average per capita water use by 10 percent by 2020
  - Achieve 75 percent utilization of all wastewater flows and a 75 percent resource benefit by 2040. (As of 2017, the Northern region had 20 mgd of wastewater flow and 13 mgd of reuse for a utilization rate of 65 percent.)
  - Improve the quality of water delivered to rapid infiltration basins (RIBs) in springsheds
  - Utilize high quality reclaimed water for aquifer recharge to support groundwater resources
- Partner with the Withlacoochee Regional Water Supply Authority to promote regional water supply planning and development

NARRATIVE:

The District's 2015 Regional Water Supply Plan shows that demand for water in the Northern region through 2035 and beyond could be met with fresh groundwater if the region's considerable potential for reuse and conservation were realized.

Public supply use, which accounts for about 50 percent of the water use in the Northern region, has significant potential for water savings. In 2011, compliance per capita public supply water use in the Northern region averaged 139 gallons per capita per day (gpcd). Usage increased slightly to 136 gpcd in 2016, representing a 2 percent reduction from 2011; however, this is still significantly higher than the other three planning regions. In 2016, there were five utilities in the Northern region with compliance per capita figures higher than 150 gpcd, which will be the maximum allowed starting on December 31, 2019.

The District's goals are to ensure that all utilities fall below the maximum compliance per capita usage and to further reduce the regional average per capita usage by 10 percent by 2020. The District's plan to assist public supply utilities is to minimize the need for additional groundwater supplies by maximizing the use of available reclaimed water and implementing comprehensive water conservation measures and best management practices.

The District promotes regional approaches to water supply planning and development. The benefits of regional systems include economies of scale, better ability to manage environmental impacts, improved system reliability, operational flexibility and emergency backup capability. Larger, regional systems are also able to take advantage of conjunctive use, wherein both groundwater and alternative sources are available and can be managed to mimic natural hydrologic cycles.

In the Northern region, the District is partnering with the Withlacoochee Regional Water Supply Authority to promote regional water supply planning and development. This most recently includes cooperatively funding regional water conservation efforts and an update to the Authority's Master Water Supply Plan.

Tampa Bay Region — MFLs Recovery

PRIORITY:

Implement MFLs Recovery Strategies

OBJECTIVES:

- Northern Tampa Bay Water Use Caution Area (NTBWUCA) Recovery Strategy
  - Recover MFLs for rivers, lakes, wetlands and other water bodies
  - By 2018, complete an assessment to determine whether Tampa Bay Water's reduction to 90 mgd of groundwater withdrawal from the Central Wellfield System provides necessary recovery for impacted rivers, lakes and wetlands
  - Complete the construction of Morris Bridge Sink projects for the lower Hillsborough River recovery
  - Conduct a second five-year assessment of the adopted MFLs for the lower Hillsborough River
  - Achieve 75 percent utilization of all wastewater flows and a 75 percent resource benefit by 2040. (As of 2017, the Tampa Bay Region had 231 mgd of wastewater flow and 115 mgd of reuse for a utilization rate of 50 percent)
  - Increase reuse for recharge and MFLs
  - Reduce the 2011 regional average per capita water use by 2.5 percent by 2020
- Dover/Plant City Water Use Caution Area (DPCWUCA) Recovery Strategy
  - Ensure compliance with the DPCWUCA area minimum aquifer level of 10 ft NGVD for the Upper Floridan aquifer at the District's DV-1 Suwannee monitor well
  - Reduce January 2010 groundwater withdrawal quantities for frost/freeze protection by 20 percent by January 2020
  - Establish automatic flow meter reporting equipment on 960 agricultural withdrawal points
- Southern Water Use Caution Area (SWUCA) Recovery Strategy
  - Achieve a net reduction up to 50 mgd in groundwater in the SWUCA by 2025, with 40 mgd achieved through FARMS
  - Recover the SWUCA saltwater intrusion minimum aquifer level of 13.1 ft for the Upper Floridan aquifer to slow the rate of saltwater intrusion in the Most Impacted Area (MIA) of the SWUCA
  - Ensure that there are sufficient water supplies for all existing and projected reasonable-beneficial uses

NARRATIVE:

The District sets MFLs on priority water bodies. An MFL is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. If the existing flow or level of a water body is below, or is projected to fall below, the applicable minimum flow or level within 20 years, a recovery or prevention strategy must be implemented.

Additionally, the District can designate a water use caution area (WUCA) when the Governing Board determines that regional action is necessary to address cumulative water withdrawals which are causing or may cause adverse impacts to the water and related natural resources or the public interest. WUCA rules enhance the protection and recovery of the water resources.

In the Tampa Bay region, the District has identified recovery strategies associated with MFLs in the Northern Tampa Bay, Dover/Plant City and Southern WUCAs.

The **NTBWUCA** was established to address adverse impacts to water resources from groundwater pumping. The NTBWUCA encompasses all of Pinellas and Pasco counties, and those portions of Hillsborough County north of Highway 60. The first phase of the District's recovery strategy for restoring water resources called for reducing pumping from Tampa Bay Water's regional wellfields and providing financial incentives for construction of alternative water supply projects. In the NTBWUCA, these efforts have produced to date more than 140 mgd of new alternative water sources and allowed for groundwater withdrawals to be reduced by more than 60 mgd.

Significant hydrologic recovery has resulted from these reductions. However, more information is needed to fully evaluate the effects of the reductions on MFLs recovery. Therefore, the District initiated a second phase of the recovery strategy through adoption of a comprehensive plan that includes continued monitoring and evaluation of environmental mitigation for withdrawal impacts and continued water conservation activities by Tampa Bay Water's member governments. The draft results of the recovery assessment will be completed by 2018, with the final assessment to be completed by 2020. Tampa Bay Water's Consolidated Permit renewal in 2021 will be based on these results.

As of 2017, approximately one-third of the 129 adopted MFLs In the NTBWUCA are not being met. The Hillsborough River is one of the water resources impacted in the NTBWUCA. The recovery strategy for the lower Hillsborough River calls for the augmentation of the river from a variety of sources, including Sulphur Springs, Blue Sink, Morris Bridge Sink and the Tampa Bypass Canal. As summarized in the first

Tampa Bay Region — MFLs Recovery

of three required five-year assessments for recovery of the lower Hillsborough River, completed in March 2015, the District has, since December 2007, transferred 11 cubic feet per second of water from the Tampa Bypass Canal to the Hillsborough River Reservoir and pumped 75 percent of this volume over the City of Tampa dam when necessary. To further support recovery of the lower river, the City of Tampa has been supplying up to 18 cubic feet per second of flow from Sulphur Springs to the base of the City of Tampa dam. A project to develop additional augmentation quantities for the lower Hillsborough River from Blue Sink was completed in September 2017. The District is also helping fund the City of Tampa's augmentation project to evaluate the use of reclaimed water to augment water supplies. A recharge/recovery system is being investigated to store and recover reclaimed water in the Floridan aquifer system for subsequent delivery to the Hillsborough River Reservoir.

The **DPCWUCA** was established to address impacts from groundwater pumping for frost/freeze protection. To protect crops from freeze events, a best management practice for many farmers with agricultural commodities including strawberries, blueberries, citrus and nurseries is to pump groundwater for irrigation when temperatures drop to near freezing. Substantial irrigation use during these times strains the aquifer system which lowers groundwater levels and can also impact residential wells and contribute to sinkhole development. During the historic January 2010 11-day freeze event, many residential wells were impacted and sinkholes were reported. As a result, the District has developed and adopted a comprehensive management plan to significantly reduce and monitor in real-time groundwater pumping during future freeze events that may cause impacts to existing legal users.

The recovery strategy's objective is to reduce groundwater withdrawals used for frost/freeze protection by 20 percent from January 2010 withdrawal quantities by January 2020. This reduction is intended to lessen the potential that drawdown during a future frost/freeze event would lower the aquifer level at District Well DV-1 Suwannee below 10 feet NGVD (1929). Non-regulatory mechanisms include assistance in offsetting groundwater withdrawals for frost/freeze protection through FARMS. Tailwater recovery, chemical protectants, row covers and wind machines are examples of BMPs eligible for cost-share within the program.

The strategy's regulatory measures address groundwater withdrawal impacts, alternative water supplies, frost/freeze protection methods and resource recovery. In combination, these rules along with the non-regulatory mechanisms are intended to result in recovery of the minimum aquifer level.

Progress toward achieving the minimum aquifer level will be continuously evaluated. This evaluation will include an assessment of the reduction in groundwater withdrawals used for frost/freeze protection in the DPCWUCA and the resulting reduced impact on the minimum aquifer level. If by January 2020 a 20 percent reduction in groundwater withdrawals used for frost/freeze protection or the minimum aquifer level has not been achieved, the recovery strategy will be reassessed.

The **SWUCA** encompasses southern Hillsborough County. In the eight-county SWUCA, an area covering approximately 5,100 square miles, depressed aquifer levels have caused saltwater intrusion along the coast, contributed to reduced flows in the upper Peace River and lowered lake levels in areas of Polk and Highlands counties.

Groundwater withdrawals were identified as the primary cause of the depressed aquifer levels throughout the groundwater basin, with drawdowns in some areas exceeding 50 feet.

The District has adopted MFLs for 46 priority water bodies in the SWUCA. As of 2017, approximately half of these MFLs are not being met. The District adopted the SWUCA Recovery Strategy to recover flows and levels to established MFLs, including reducing the rate of saltwater intrusion by achieving the proposed minimum aquifer level, restoring minimum flows in the upper Peace River and restoring minimum levels to the priority lakes in the Highlands Ridge area.

Some of the primary Recovery Strategy elements for the SWUCA include:

- Updating the Regional Water Supply Plan to identify how to address growing regional water needs while minimizing impacts to the water resources and natural systems. The District approved the updated plan in November 2015.
- Providing financial incentives for conservation, creation of alternative supplies and regional interconnections.
- Monitoring, reporting and cumulative impact analysis. The cumulative impact analysis evaluates changes in permitted and used groundwater quantities and water resource development projects benefiting the Upper Floridan aquifer in and around the MIA.

Weather station in Hillsborough County.

Tampa Bay Region — Improve Water Bodies

PRIORITY:

Improve Tampa Bay and Lakes Seminole, Tarpon and Thonotosassa

OBJECTIVES:

- Implement natural system projects that restore critical shoreline, coastal upland and intertidal habitats In Tampa Bay
- Implement projects for water quality, critical shoreline, wetlands and/or submerged habitats in Tampa Bay and Lakes Seminole, Tarpon and Thonotosassa
- Initiate updates to the Lake Tarpon and Lake Thonotosassa SWIM Plans

NARRATIVE:

Tampa Bay is designated as an "Estuary of National Significance" and a SWIM priority water body. The 373-square-mile bay is Florida's largest open-water estuary. Its 2,200-square-mile watershed contains more than 2 million residents.

Three main challenges exist in the Tampa Bay watershed. Coastal uplands and wetlands have been altered and lost. Nonnative animal and plant species have spread, and water quality has been degraded from pollutants and nutrient loading.

The District is working with other government agencies on a comprehensive conservation and management plan, implementation of water quality improvement projects and restoration of the balance between coastal upland, wetland and intertidal habitats.

Success indicators include coverage of seagrasses identified by the Tampa Bay Estuary Program. The program has met its goal of recovering seagrasses to the acreage observed in the 1950s. In addition, the bay's nitrogen loading is on the decline, and the District SWIM Program and local cooperators restored 5,806 acres of coastal habitats as of August 2018. The District and its partners have provided water quality projects treating more than 118 square miles of contributing area to Tampa Bay.

Lake Seminole is a 684-acre freshwater lake in west-central Pinellas County that was created in the 1940s by the impoundment of an arm of Long Bayou, a brackish water segment of Boca Ciega Bay. The Lake Seminole watershed encompasses approximately 3,500 acres, of which almost 90 percent is developed. Water quality concerns in Lake Seminole began in the 1960s as urbanization of the watershed increased. Conditions in the lake worsened in the 1980s and 90s.

Lake Seminole, although not a SWIM priority water body, has been a water body of regional significance since 1992, when the District authorized funding for a diagnostic feasibility study of the watershed. Subsequently, in 2004, Pinellas County adopted the Lake Seminole Watershed Management Plan to identify and implement projects to reduce nutrient concentrations in the lake and to meet targeted water quality goals.

These projects included retrofitting stormwater outflows from five of the highest nutrient loading sub-basins with alum treatment systems, treating and redirecting a portion of flows in the Lake Seminole Bypass Canal into Lake Seminole and removing organic muck sediments. The District has been partnering with the county on these projects. Five alum treatment system projects, including the Seminole Bypass Canal system, have been completed and are in operation. The County is performing BMP monitoring in accordance with the grant requirements. The project to remove organic muck sediments was authorized by the Pinellas County Board of County Commissioners in July of 2017.

Lake Seminole was included on the DEP's draft verified list in 2006 for nutrients and trophic state index. The primary pollutants associated with this impairment are nutrients, which have resulted in hyper-eutrophic conditions and poor water quality. Due to its impaired status, Pinellas County developed a Reasonable Assurance (RA) Plan in 2007 which was submitted to DEP. This RA Plan established the trophic state index and chlorophyll-a as the success indicators for Lake Seminole. Control of excessive nutrients entering the lake and the fate of the nutrients that do reach the lake (e.g., internal nutrient recycling) would help in achieving the targets, which is consistent with implementation of the Lake Seminole Watershed Management Plan.

Lake Tarpon is the largest freshwater lake in the Tampa Bay area with 2,532 acres of surface area. The lake is designated as an Outstanding Florida Water, a Fish Management Area and a SWIM priority water body.

The main challenge for Lake Tarpon has been high chlorophyll levels thought to be fueled by nutrient enrichment. This has resulted in less than desirable water quality and habitat quality declines.
Results from a project the District conducted with Pinellas County indicate that Lake Tarpon is meeting the numeric nutrient criteria for total nitrogen and phosphorus and that nutrient loading to the lake is not correlated with the elevated chlorophyll values observed.
The County is implementing one of the project recommendations by conducting an evaluation of the sedimentation history (a paleolimnology study) to determine whether the lake has historically had elevated chlorophyll values. If this is the case, the numeric nutrient criterion established by the DEP for chlorophyll may not be appropriate for Lake Tarpon. Both the cooperatively-funded project with Pinellas County and the sediment evaluation will be used by the District to update the Lake Tarpon SWIM Plan, which is expected to begin by the end of 2018.

Success indicators included for Lake Tarpon are the numeric nutrient criteria established by DEP for total nitrogen, total phosphorus and chlorophyll.

Lake Thonotosassa, the largest natural lake in Hillsborough County with a surface area of greater than 800 acres, is popular for recreational use as it is one of the few natural lakes in the area with public access. The lake discharges into the Hillsborough River which is used for the City of Tampa's municipal water supply. The lake is designated as a District priority water body through its implementation of the state SWIM Program.

Tampa Bay Region — Improve Water Bodies

Four main challenges exist in this watershed. Nutrient loadings from the watershed have caused extreme nutrient enrichment resulting in algal blooms. Habitat quality and species diversity have declined. Nonnative plant species are more abundant, while availability of desirable sport fish has declined.

The District completed a nutrient source tracking project with Hillsborough County to identify nutrient sources in the watershed. Areas with high nutrient loadings were prioritized for projects, such as stormwater improvement projects, maintenance/control of exotic plants, enhancement of wetland and aquatic habitats and public education and awareness of stormwater pollution prevention. As part of this implementation, the District FARMS and SWIM programs will coordinate with the Florida Department of Agriculture and Consumer Services to work with farms and ranches in the watershed to implement BMPs specific to the commodity group. Success indicators include meeting numeric nutrient criteria established by the DEP for total nitrogen, chlorophyll and total phosphorus.

The Rock Ponds project involves the restoration of approximately 1,043 acres of various coastal habitats. This project, which is the largest habitat restoration effort for Tampa Bay to date, was completed in cooperation with Hillsborough County.

Tampa Bay Region — Flood Protection

PRIORITY:

Improve flood protection in Anclote, Hillsborough and Pithlachascotee rivers, Lake Tarpon, and Pinellas County coastal watersheds

OBJECTIVES:

- Implement BMPs to reduce the impact of existing intermediate and regional system flooding in priority areas
  - Pithlachascotee River (Pasco County)
  - Anclote River (Pinellas/Pasco County)
  - Curlew Creek and Smith Bayou (Pinellas County)
  - City of St. Petersburg (Pinellas County)
- Develop watershed management plans for priority areas to better support floodplain management decisions and initiatives
  - Curlew Creek and Smith Bayou (Pinellas County)
  - Lake Tarpon (Pinellas County)
  - Anclote River (Pinellas/Pasco Counties)
  - Hammock Creek (Pasco County)
  - Lower Peninsula (Hillsborough County)
  - City of St. Petersburg (Pinellas County)
  - City of Tarpon Springs (Pinellas County)
  - City of Oldsmar (Pinellas County)
- Update watershed management plans and develop alternative analyses to improve flood protection
  - Hillsborough River/Tampa Bypass Canal (Hillsborough County)
  - Pemberton Baker (Hillsborough County)
  - Alafia River (Hillsborough County)
  - Stevenson Creek (Pinellas County)
  - City of Seminole (Pinellas County)
  - City of Safety Harbor (Pinellas County)
  - City of Dunedin (Pinellas County)

NARRATIVE:

In recent years, the Tampa Bay region has experienced significant rainfall events resulting in local, intermediate and regional drainage system flooding. Flooding events in 2012, 2014, and 2015 have tested the existing stormwater infrastructure and have submerged areas that previously did not flood. In June 2012, Tropical Storm Debby produced 12 to 16 inches of rain over a 24-hour period in portions of western Pasco and Hernando counties. Flooding was most prevalent in the Peck Sink and Anclote River watersheds. In late July and early August of 2015, western portions of Pasco County experienced a 500-year storm event, receiving 12 to 30 inches of rain in a 20-day period. During this same period, northwest Hillsborough County experienced similar rainfall totals and flooding. In 2016, Hurricane Hermine produced 15 inches of rain in Pinellas County and the coastal portions of Pasco County over a four-day period. These events speak to the importance of watershed management.

The District's WMP identifies, prioritizes and addresses flood-related water resource issues within a watershed. Information developed through the WMP is used by local governments, the District, and state and federal governments in regulatory and advisory floodplain management programs. The District takes a watershed approach to managing water and water-related resources within its boundaries. By doing so, the characteristics of each watershed can be evaluated to reflect the interconnected nature of Florida's water resources. The WMP provides a method to evaluate the capacity of a watershed to protect, enhance and restore water quality and natural systems while achieving flood protection.

The District has been working with cities and counties to develop a list of projects and a plan to implement projects over both the short and long-term. These projects are listed, updated and maintained in the District's WMP Five-Year Plan.

The District's ERP program protects floodplain and historic basin storage and ensures that new development does not increase flood levels or the rate of stormwater runoff onto neighboring properties. Information developed from the WMP is used by regulatory staff and industry consultants to identify flood-prone areas and to ensure that a proposed project design provides the required level of protection. Coordination among these groups begins during the pre-application process to identify minimum flood protection requirements, and continues as needed through the permit application review process. During flood events, District staff coordinate internally with regulatory and operations staff and externally with local governments to investigate flooding complaints and facilitate emergency measures needed to alleviate flood risks that pose an immediate threat to public health and safety.

In the Tampa Bay region, chronic flooding occurs primarily in areas that were developed prior to 1984, when the District's stormwater permitting rules went into effect. While much of this flooding is concentrated in highly developed urban areas, there are rural developments with no master stormwater system that also experience frequent flooding. District regulatory staff coordinate with the residents and local governments to provide guidance on permitting options for temporary and permanent flood relief measures. Some of these relief options can be co-funded through the District's Cooperative Funding Initiative.

Heartland Region — SWUCA Recovery

PRIORITY:
Implement SWUCA Recovery Strategy

OBJECTIVES:

- Achieve a net reduction of up to 50 mgd of groundwater use in the SWUCA by 2025 with 40 mgd of offsets achieved through the FARMS Program
- Recover the SWUCA saltwater intrusion minimum aquifer level of 13.1 ft NGVD for the Upper Floridan aquifer to slow the rate of saltwater intrusion in the MIA
- Recover 87 to 89 percent of the minimum flows for three segments of the upper Peace River through implementation of the Lake Hancock Lake Level Modification project
- Recover minimum levels at seven Polk County lakes and nine Highlands County lakes by 2025
- Ensure a sustainable water supply
  - Achieve and maintain daily 150-gallon compliance per capita with all public supply utilities by December 31, 2019
  - Reduce 2011 regional average water use per capita by 5 percent by 2020
  - Assist Polk Regional Water Cooperative (PRWC) in the development of 30 mgd of alternative supply sources
  - Increase percentage of total water use supplied by alternative sources
  - Maximize the water conservation potential for the region
  - Maximize interconnects among public supply utilities
  - Complete the Lower Floridan aquifer study in Polk County to assess its viability as an alternative water supply source and to gain a better understanding of the Lower Floridan aquifer characteristics and groundwater quality
  - Update the Regional Water Supply Plan for the Central Florida Water Initiative by 2020
  - Achieve 75 percent utilization of all wastewater flows and a 75 percent resource benefit by 2040. (As of 2017, the Heartland region had 36 mgd of wastewater flow and 21 mgd of reuse for a utilization rate of 58 percent)

NARRATIVE:

Most of the District's Heartland region falls within the eight-county SWUCA, which encompasses approximately 5,100 square miles. In the SWUCA, depressed aquifer levels have caused saltwater intrusion along the coast, contributed to reduced flows in the upper Peace River and lowered lake levels in areas of Polk and Highlands counties.

Groundwater withdrawals were identified as the primary cause of the depressed aquifer levels throughout the groundwater basin, with drawdowns in some areas exceeding 50 feet.

The District Governing Board has approved the adoption of MFLs for 46 priority water bodies in the SWUCA. An MFL is the limit at which withdrawals would be significantly harmful to the water resources or ecology of the area. As of 2017, approximately half of these MFLs were not being met. The District adopted the SWUCA Recovery Strategy to recover flows and levels to established MFLs, including reducing the rate of saltwater intrusion by achieving the proposed minimum aquifer level, restoring minimum flows to the upper Peace River and restoring minimum levels to priority lakes in the Ridge area, which extends roughly 90 miles along the center of the state in Polk and Highlands counties.

Some of the primary Recovery Strategy elements for the SWUCA include:

- Updating the Regional Water Supply Plan to identify how to address growing regional water needs while minimizing impacts to the water resources and natural systems. The District approved the updated plan in November 2015.
- Providing financial and regulatory incentives for conservation, construction of alternative supplies and regional interconnections. District funding sources include the Cooperative Funding and Water Supply and Resource Development initiatives.
- Monitoring, reporting and cumulative impact analysis. The Recovery Strategy includes the continuous monitoring of trends in resource conditions and permitted and actual water use. The cumulative impact analysis evaluates changes in permitted and used groundwater quantities and water resource development projects benefitting the Upper Floridan aquifer in and around the MIA.
- Developing and implementing water resource projects to aid in reestablishing minimum flows to rivers, recover levels in Ridge lakes and enhance recharge. A project focus area is to increase the wet-weather storage in the upper Peace River watershed.

The District has been successful in multiple efforts associated with its SWUCA goals. Partnering with the Peace River Manasota Regional Water Supply Authority, the District has assisted in developing a sustainable water supply to meet the needs of a four-county region in the south. The District's cooperatively-funded FARMS Program has helped the agricultural community reduce its use of groundwater from the Upper Floridan aquifer. The FARMS Program combined with other conservation efforts have helped

Regional Priorities and Objectives

Surface water pump station at Windmill Farms, Hardee County.

to reduce Upper Floridan groundwater withdrawals by more than 50 mgd, one of the targets established by the SWUCA Recovery Plan. The District's Lake Hancock Lake Level Modification Project became fully operational in 2014 to help meet the minimum flows for the upper Peace River.

Other successes to date include completion of TECO's Southwest Polk Power Station Reclaimed Water Interconnect project. This project is anticipated to provide a near-term resource benefit of 10 mgd and long-term benefit of 17 mgd.

Challenges remain in reducing the rate of saltwater intrusion along the coast and meeting minimum levels for Ridge lakes in Highlands and Polk counties. While the southern portion of Polk County is included in the SWUCA, all of Polk County is part of a designated Central Florida Water Initiative (CFWI) region that is reaching sustainable groundwater withdrawal limits, facing increased demands on water resources and inconsistencies among regulatory programs.

The CFWI region covers five counties, including Polk, Orange, Osceola, Seminole and southern portions of Lake. The boundaries of the St. Johns River, South Florida and Southwest Florida water management districts meet in the CFWI area.

The District is collaborating with the other water management districts, the state and local governments and utilities to identify a sustainable water supply for the region. Key components in meeting the water resource challenges of the CFWI area have included the development of a shared groundwater model to determine regional resource availability and the publication of the initial CFWI Regional Water Supply Plan in 2015. Other ongoing efforts include coordination and planning for water resource data collection needs, development of a coordinated strategy for MFLs prevention and recovery within the CFWI area, establishment of consistent rules among the permitting agencies and development of a second RWSP in 2020.

As part of the CFWI Region, Polk County has a need to develop 30 mgd of water supply sources by 2035. The District assisted in the establishment of the PRWC in 2016 as a collaborative entity to address water supply needs among its member governments. The District is currently coordinating with the PRWC on the development of projects to meet the projected 2035 water supply demands. Such efforts include, but are not limited to, ongoing District investigation of the Lower Floridan aquifer as a potential alternative water supply source and provision of $40 million in initial funding to the PRWC to assist in implementation of identified projects. In 2017, co-funding agreements were executed that assigned $11.5 million of the initial funding for phase I of three projects. At its April 2018 meeting, the Governing Board approved an additional $5 million per year (FY2019–23) for Phase II implementation of the selected projects.

Heartland Region — Improve Water Bodies

PRIORITY:
Improve Winter Haven Chain of Lakes and Ridge Lakes

OBJECTIVES:
- Implement plans and projects for water quality, water-level, wetlands and/or submerged habitats in each priority water body
- Identify priority Ridge Lakes in need of further evaluation and data collection

NARRATIVE:

The **Winter Haven Chain of Lakes** is a system of 19 interconnected lakes in Polk County. Designated as a SWIM priority water body, the chain encompasses a 32-square-mile watershed and is made up of two major groups with five lakes in the northern chain and 14 in the southern chain. The lakes are interconnected through the construction of canals to promote recreational access.

Two main challenges exist in the Winter Haven Chain of Lakes watershed: nutrient loading from urban runoff and the loss of natural systems. The District is working with other government agencies to reduce non-point source pollutant loadings through pollutant reduction goals and stormwater management, to restore upland and aquatic habitats while preserving plant and wildlife populations and to implement ecologically and environmentally sound land-use practices.

Success will be measured by water quality improvements including reductions in non-point source loading of phosphorous, decreases in nonnative or undesirable species, and increases in native aquatic and upland vegetation. Additionally, it is envisioned that lakes with sufficient water quality data will be evaluated against the DEP's numeric nutrient criteria. More information is available in the SWIM plan for the Winter Haven Chain of Lakes.

As of 2018, water quality improvement projects have been implemented for eight lakes (Conine, Howard, May, Lulu, Hartridge, Jessie, Cannon, and Mariana). In addition, more than 30 low impact development (LID) best management projects have been installed within the downtown area of the City of Winter Haven.

Approximately 130 lakes lie within the **Ridge Lakes** area, which extends roughly 90 miles along the center of the state in Polk and Highlands counties. A high number of deep sinkhole basin lakes makes this region uniquely different from the other lake regions in the District, as well as throughout the state.

Declining water quality and lake levels are challenges for the lakes along the Ridge. Common water quality impacts include stormwater runoff, wastewater effluent, residential and fertilizer applications, agricultural runoff, groundwater pollution, shoreline habitat degradation and hydrologic alterations.

Through the District's Ridge Lakes Restoration Initiative, emphasis has been placed on protective lake management strategies. Stormwater treatment has been a high priority, as well as enhancement and restoration of natural systems and additional flood protection.

As of 2018, the District is initiating an evaluation of the Ridge Lakes to prioritize lakes for further evaluation to determine the projects and programs necessary to ensure that the Ridge Lakes meet the water quality objectives of the District. Success indicators will be measured by water quality improvements including reductions in non-point source loading of nutrients, decreases in nonnative or undesirable species and increases in native aquatic and upland vegetation. In addition, lakes with sufficient water quality data will be evaluated against the DEP's numeric nutrient criteria.

Lake Gwyn in Polk County.

Southern Region — SWUCA Recovery

PRIORITY:
Implement SWUCA Recovery Strategy

OBJECTIVES:

- Achieve a net reduction of up to 50 mgd of groundwater use in the SWUCA by 2025 with 40 mgd offset achieved through the FARMS Program
- Recover the SWUCA saltwater intrusion minimum aquifer level of 13.1 ft NGVD for the Upper Floridan aquifer to slow the rate of saltwater intrusion in the MIA
  - Ensure a sustainable water supply
  - Achieve and maintain 150-gallon daily compliance per capita with all public supply utilities by December 31, 2019
  - Reduce 2011 regional average per capita water use by 2.5 percent by 2020
  - Maximize water conservation
  - Maximize public supply interconnects
  - Achieve 75 percent utilization of all wastewater flows and a 75 percent resource benefit by 2040. (As of 2017, the Southern region had 71 mgd of wastewater flow and 42 mgd of reuse for a utilization rate of 59 percent)
  - Develop ASR options for potable and reclaimed water supply
  - Increase the percentage of total water use supplied by alternative sources
  - Continue assessing the viability of using excess runoff in Flatford Swamp for improving groundwater levels in the MIA
  - Assist the Peace River Manasota Regional Water Supply Authority in completing construction on the remaining planned phases of the Regional Integrated Loop System project by 2035

NARRATIVE:

The entire Southern Region of the District falls within the eight-county SWUCA. In the SWUCA, which encompasses approximately 5,100 square miles, depressed aquifer levels have caused saltwater intrusion along the coast, contributed to reduced flows in the upper Peace River and lowered lake levels in areas of Polk and Highlands counties.

Groundwater withdrawals were identified as the primary cause of the depressed aquifer levels throughout the groundwater basin, with drawdowns in some areas exceeding 50 feet.

The District has adopted MFLs for 46 priority water bodies in the SWUCA as of 2017. Approximately half of these MFLs are not being met. The District adopted the SWUCA Recovery Strategy to recover flows and levels to established MFLs, including reducing the rate of saltwater intrusion by achieving the proposed minimum aquifer level, restoring minimum flows to the upper Peace River and restoring minimum levels to the priority lakes in the Ridge area, which extends roughly 90 miles along the center of the state in Polk and Highlands counties.

Some of the primary Recovery Strategy elements for the SWUCA include:

- Updating the Regional Water Supply Plan to identify how to address growing regional water needs while minimizing impacts to the water resources and natural systems. The District approved the updated plan in November 2015.
- Providing financial incentives for conservation, development of alternative supplies and regional interconnections. District funding sources include the Cooperative Funding and Water Supply and Resource Development initiatives.
- Monitoring, reporting and cumulative impact analysis. The Recovery Strategy includes the continuous monitoring of trends in resource conditions and permitted and actual water use. The cumulative impact analysis evaluates changes in permitted and used groundwater quantities and water resource development projects benefiting the Upper Floridan aquifer in and around the Most Impacted Area.

The District has been successful in multiple efforts associated with its SWUCA goals. Partnering with the Peace River Manasota Regional Water Supply Authority, the District has assisted in developing a sustainable water supply to meet the needs of a four-county region. The District's cooperatively-funded FARMS Program has helped the agricultural community reduce its use of groundwater from the Upper Floridan aquifer. The FARMS Program combined with other conservation efforts have helped to reduce Upper Floridan groundwater withdrawals by more than 50 mgd, one of the targets established by the SWUCA Recovery Plan. The District's Lake Hancock Lake Level Modification project became fully operational in 2014 to help meet the minimum flows for the upper Peace River.

Much progress has been made in the region, but challenges remain to reduce the rate of saltwater intrusion along the coast and move toward meeting minimum levels.

Southern Region — Improve Water Bodies

PRIORITY:
Improve Charlotte Harbor, Sarasota Bay, Shell/Prairie/Joshua Creeks

OBJECTIVES:

- Implement plans and projects for water quality, wetlands, critical shoreline and/or submerged habitats in each priority water body
- Develop and update plans and implement projects that improve water quality and restore critical shoreline, coastal upland and intertidal habitats
- Assist local governments with implementation of BMPs to achieve water quality standards

NARRATIVE:

Charlotte Harbor is Florida's second largest open water estuary at 270 square miles. Generally considered one of the most productive estuarine ecosystems in southwest Florida, the harbor is designated an "Estuary of National Significance" and a SWIM priority water body.

Challenges for the 4,400-square-mile Charlotte Harbor watershed include alteration and loss of wetlands, an increase in nonnative plant species and water quality degradation from point and non-point source pollutants.

The success indicator is the harbor-wide seagrass target of 18,436 acres adopted by the Charlotte Harbor National Estuary Program (CHNEP) for the District's area of the harbor. More information is available in the District's SWIM Plan for the harbor. The District participates with other government agencies through the CHNEP to update and implement the comprehensive conservation and management plan, implement water quality and hydrologic alteration improvement projects and restore the balance between coastal upland, wetland and intertidal habitats.

As of 2018, the District and its cooperators have completed 16 natural systems projects which have restored approximately 4,536 acres of coastal habitats for Charlotte Harbor. The District and its partners have provided water quality projects treating more than 147 square miles of contributing area for the watershed. Construction of the District's Lake Hancock Outfall Treatment System has been completed. This project, when fully operational, will remove an estimated 85 tons of nitrogen annually discharged from Lake Hancock to the Peace River and, ultimately, Charlotte Harbor.

Sarasota Bay is designated as an "Estuary of National Significance" and a SWIM priority water body. Similar to Charlotte Harbor, challenges to this 150-square-mile watershed include changes to coastal uplands and loss of wetlands, an increase in nonnative plant species and water quality degradation from point and non-point source pollutants.

The success indicator for Sarasota Bay is the seagrass target of 9,779 acres adopted by the Sarasota Bay Estuary Program. Similar to efforts under way for Charlotte Harbor, the District is working with other government agencies on initiatives for Sarasota Bay. These include a comprehensive conservation and management plan, implementation of water quality improvement projects and restoration of the balance between coastal upland, wetland and intertidal habitats. As of 2017, the District and its partners have completed projects to provide water quality treatment for 59 square miles of watershed contributing to Sarasota Bay and restored more than 925 acres of coastal habitats.

Shell, Prairie and Joshua Creek (SPJC) watersheds are located in the southern region of the Peace River Basin. Combined, the SPJC watersheds comprise a surface area of 487 square miles, or approximately 20 percent of the Peace River Basin.

The City of Punta Gorda obtains its potable water supply from the Shell Creek in-stream reservoir. Prairie and Shell creeks (and associated tributaries) are designated as Class I waters, which means they are designated for use as potable water supplies. These creeks converge at, and sustain, the city's reservoir.

Groundwater withdrawals for agricultural irrigation created mineralized water quality issues in the SPJC watersheds. The FARMS Program was created in 2003 with the goal of improving the watershed's water quality. Through BMP implementation, the FARMS Program has partnered with producers to reduce groundwater use and capture runoff in tailwater recovery ponds and reuse the water for irrigation. This reduces the amount of mineralized groundwater used within the watershed and results in downstream water quality benefits. The District has and will continue to monitor surface water quality at key locations in the watershed to detect changing trends related to mineralization of surface waters.

A key success indicator is the reduction of total dissolved solids (TDS) in these surface waters. Through the implementation of FARMS Program projects and other initiatives, water quality concentrations for chloride, specific conductance and TDS measured at key surface water reference sites have significantly improved. Additionally, these FARMS Program projects have reduced approximately 10.5 mgd of groundwater use which contributes to SWUCA recovery.

Shell Creek in Charlotte County.

District staff educating environmental students on the importance of water quality monitoring.

Core Business Processes

Managing and protecting the water resources of a 16-county area requires a highly skilled, motivated work force with the right tools, support and good information to make informed decisions and provide high quality service to the residents of the District. All the various functions of this workforce have been evaluated and categorized into seven core business processes. To successfully achieve our Strategic Initiatives and Regional Priorities, the District must excel in each of these.

WATER RESOURCES PLANNING

Water Resources Planning encompasses surface water and groundwater resource evaluations and other comprehensive planning efforts in partnership with local, state, regional, federal and other stakeholders. These responsibilities include identifying, collecting, analyzing and disseminating relevant and accurate data and providing technical assistance.

Examples include the Southern Water Use Caution Area Recovery Strategy Five-Year Assessment, Minimum Flows and Levels studies, Regional Water Supply Planning, Strategic Plan update, Consolidated Annual Report and reviews of proposed comprehensive plan amendments and large-scale development, including developments of regional impact.

INNOVATIVE PROJECTS

The District initiates and supports creative, collaborative projects to produce measurable benefits to the environment, water resources and the regional community. The projects address the core mission goals for water supply, flood protection, water quality and natural systems.

To ensure tax dollars are used as efficiently and effectively as possible, the District created a Project Management Office. Comprising a team of project managers, this Office oversees District project processes to increase efficiency and maximize benefits.

FINANCIAL SUSTAINABILITY

The District's primary funding source is ad valorem taxes, which vary from year to year. In addition to paying for its operating costs, the District provides financial incentives through partnerships with public and private entities on projects that protect and restore the water resources of the region, such as promoting water conservation, developing alternative water supplies, enhancing natural systems and water quality and promoting flood management activities.

The District operates on a pay-as-you-go basis that allows it to make more funding available for projects. The District targets at least 50 percent of its budget each year for water resources projects.

REGULATION

Regulation involves multiple permit activities that promote a fair allocation of the water resources, protect wetlands, enforce well construction standards and ensure that new activities do not increase the risk of flooding or degrade water quality. The permitting process also monitors subsequent operational performance of permitted systems to protect the region's citizens and water resources.

The District is committed to protecting the water resources while also providing quality service in a timely, convenient and consistent manner to the regulated community. The District's Regulation Division is structured to eliminate duplication, increase efficiency and consistency and reduce costs. Centralizing the permitting review process in the District's Tampa office ensures that permit applicants throughout the District are treated consistently. Improved online permitting services make it easier and more convenient to submit a permit application and access permit data.

The District is also working with the other water management districts and the DEP to achieve statewide permitting consistency wherever possible while allowing for regional water resource differences.

LAND MANAGEMENT AND STRUCTURE OPERATIONS

Land Management and Structure Operations operate and maintain District lands and water control structures to restore and sustain natural systems and minimize flood damage.

In its 10,000-square-mile region, the District owns 450,000 acres of land that provide various water resource benefits. These lands are managed to restore and sustain those ecosystems, store flood waters, recharge the aquifer and treat water quality.

The District also operates 88 water control structures. Most of these structures are conservation structures that are operated to maintain water levels and provide limited flood relief. The larger flood control structures, like those associated with the Tampa Bypass Canal, are capable of quickly moving large quantities of water and are operated to provide maximum flood protection. Structure S-160 on the Tampa Bypass Canal is the largest flood control structure in the state.

KNOWLEDGE MANAGEMENT

As an information-based organization, high quality data are critical to making informed decisions that protect and enhance the water resources. Knowledge Management is the practice of systematically and actively collecting, managing, sharing and leveraging an organization's data, information and processes. As the region's knowledge leader for water resources information, the District collects a variety of regulatory, scientific and socio-economic and business data to support its Strategic Initiatives. While the focus of Knowledge Management activities is on meeting and supporting these initiatives, it is recognized that many public and private stakeholders also rely on this information to meet their business needs. Since FY2016, an emphasis has been placed on building awareness and expanding a culture of Knowledge Management throughout all business units within the agency, as well as improving the documentation, organization, review and storage of key business practices and related supporting documentation (governing documents).

Core Business Processes

During FY2018 and FY2019, the District will be organizing governing documents to facilitate knowledge sharing, ensure the alignment of division/bureau practices with the Governing Board's policies and executive director procedures and allow for timely retrieval and review of existing governing documents.

Information technology and water resource data collection activities at the District are managed by a governance procedure, with oversight by a governance committee that includes members of the District's Executive Team. The information technology and data governance process monitors, informs, and controls the efficient and effective use of information technology and data collection to ensure these initiatives and associated resource expenditures are in alignment with the strategic direction and priorities of the District. The focus for the future will be on expanding governance processes across all business practices at the District to further supplement the District's Knowledge Management initiatives.

The District promotes consistency of data collection activities by coordinating with local, regional and state entities through participation on statewide, regional councils and interagency workgroups. The District is also working with the other water management districts and state agencies to implement common replacement standards for equipment; to develop common standards for sharing financial, geospatial, scientific and permit information; and to establish frameworks for joint development of software applications.

Regulatory staff explaining stormwater management.

ENGAGEMENT

Engagement is a key to retaining a highly skilled and motivated work force, the cornerstone of any successful organization. Keeping staff informed and involved promotes good morale and increases productivity. Additionally, engagement extends beyond internal staff.

To manage water resources effectively over a large region, engaging external publics, including citizens, media, elected officials, advisory committees and other stakeholders is also critical. Outreach and education engage these various groups to foster behaviors, secure funding and assist in developing laws that conserve, protect and sustain Florida's precious water and related natural resources. Also, through its planning and outreach processes the District collaborates with stakeholders and advisory committees to help meet those goals. Input from stakeholders and advisory committees is used by the Governing Board to make water resource decisions.

Engagement helps to communicate those shared interests, forging relationships that support collaboration to benefit the region's water and related resources, economic stability and quality of life.

District staff analyzing samples in lab.

Prescribed burn conducted on District land.

Southwest Florida
Water Management District

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