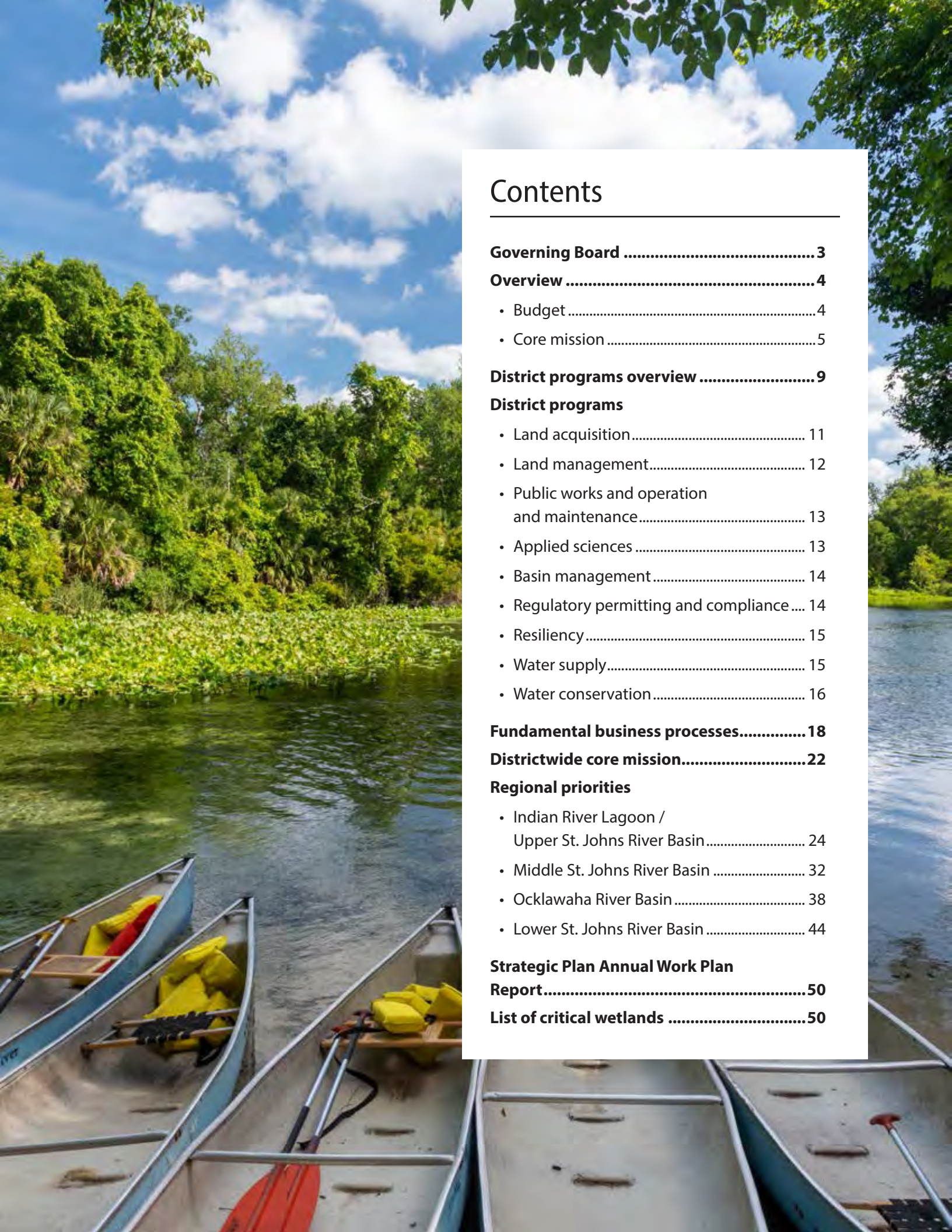
St. Johns River Water Management District

2024–2028 Strategic Plan

February 2024



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Message from the Chair

It was an honor to be appointed by Governor DeSantis to serve on the Governing Board and to be elected by my peers to continue to serve as Chair. As Chair, and a fifth generation Floridian, I want to assure that the St. Johns River Water Management District fulfills its mission to protect our natural resources and support Florida's growth by ensuring the sustainable use of Florida's water for the benefit of the people of the District and the state. This mission offers complex challenges. Florida is one of, if not the, fastest growing states in the country. There is little indication that our growth rate will slow down soon. With growth comes challenges. And, with proper planning, we can rise to meet these challenges.

With the support of Governor DeSantis, the Secretary of the Department of Environmental Protection, and the Legislature; the District continues to implement a budget that effectively allocates staff resources and funding in support of the District's four core missions: water supply, water quality, natural systems and flood protection. In addition, the District will continue its emphasis on implementing projects directly in support of Executive Orders 19-12 and 23-06, "Achieving More Now For Florida's Environment" and "Achieving Even More Now For Florida's Environment," respectively, and supporting the District's four core missions while ensuring effective and efficient use of taxpayers' dollars. We will also continue to work diligently to implement cost efficiencies throughout the agency.

By joining with local governments, the agricultural community, and business leaders, we can achieve more together for the benefit of Florida's environment and residents while ensuring water supply and water quality meet the demanding requirements of a growing state. Since 2014, the District has achieved impressive milestones, including providing approximately 134 million gallons per day (mgd) of alternative water supply, conserving 24 mgd of water, and protecting 5,112 acres from flooding. In addition, since November 2020, the District's Abandoned Artesian Well Plugging Program has plugged 297 wells and saved approximately 50 mgd.

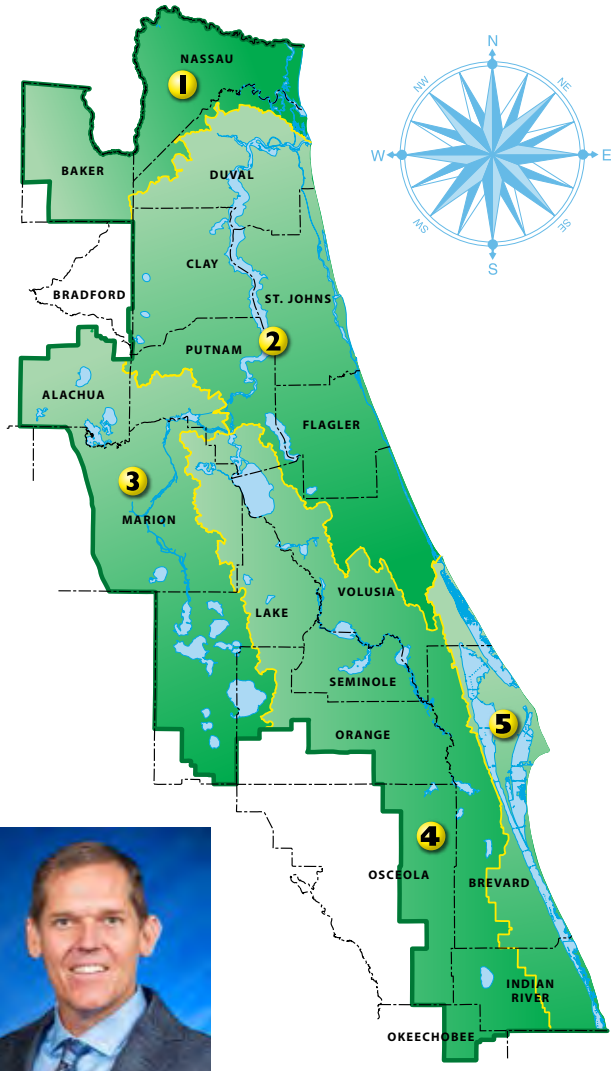
These important partnerships continue to advance the use of alternative water supplies and water conservation technology, promote innovative programs to protect our natural systems, and help support flood protection and other resiliency initiatives in our District's coastal and inland communities. We continue to build relationships with our local and regional partners, sharing challenges and identifying resources to collectively address common issues. This collaborative spirit reflects a commitment to proactive water management, ensuring the resilience of communities in the face of evolving environmental challenges.

Rob Bradley, Chair

I am proud to present the 2024 Strategic Plan on behalf of my fellow Governing Board members and the District's executive leadership and staff. We are thankful to the dedicated and skilled staff at the District who will expertly carry out the work needed to reach the goals my fellow Governing Board members and I have set for the coming years.

Governing Board

A nine-member Governing Board sets the policies for operation of the St. Johns River Water Management District. Board members are appointed by Florida's Governor to staggered four-year terms and serve without pay. The Florida Senate must confirm all appointments to the water management district boards.



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Vice Chair
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Treasurer
At large

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Secretary
Area 4

Ryan Atwood
Area 3

Doug Bournique
Area 5

Douglas Burnett
At large

Ron Howse
At large

Janet Price
Area 1

Overview

The St. Johns River Water Management District (District) is a science-based organization responsible for managing and protecting water resources in northeast 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 quality and related natural resources.

The District has authority over 12,283 square miles, which is approximately 21 percent of the state's land area, and encompasses all or part* of 18 counties in northeast and east-central Florida, as further illustrated in Figure 1.

The District includes the watersheds of the St. Johns, Ocklawaha, and Econlockhatchee rivers, the northern two thirds of the Indian River Lagoon, and the Florida portion of the St. Marys River Basin. The District is also home to eight of Florida's 30 "Outstanding Florida Springs" (OFS) — Silver Springs, Silver Glen Springs, Alexander Springs, Blue Spring, DeLeon Springs, Wekiwa Springs, Rock Springs, and Gemini Springs. In 2022, an estimated 5.9 million people resided within the District's boundaries, a population that is projected to reach approximately 6.8 million by 2040.

Budget

Water management districts are funded by ad valorem (property) taxes using taxing authority provided by a constitutional amendment passed by Floridians in 1976. The District also receives revenue 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 Governing Board-approved millage rate for fiscal year (FY) 2023–24 is 0.1793 mils. More information about budgeting is included in the District's final budget documents.

Counties in the St. Johns River Water Management District

Alachua*	Baker*	Bradford*
Brevard	Clay	Duval
Flagler	Indian River	Lake*
Marion*	Nassau	Okeechobee*
Orange*	Osceola*	Putnam*
St. Johns	Seminole	Volusia

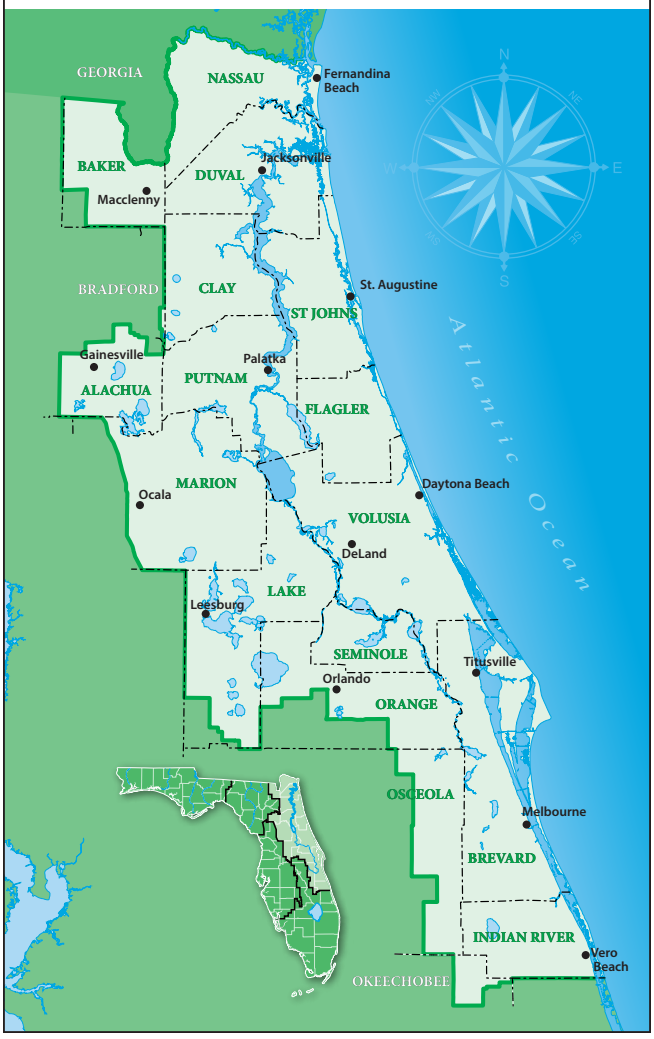
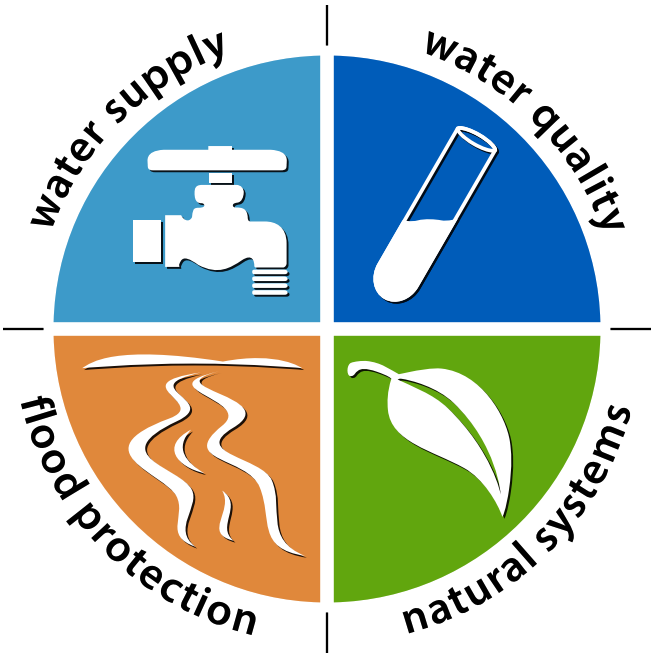


Figure 1 — St. Johns River Water Management District

Core mission

The mission of the St. Johns River Water Management District is "to protect our natural resources and support Florida's growth by ensuring the sustainable use of Florida's water for the benefit of the people of the District and the state." To facilitate implementation of the mission statement, the District has identified four specific core missions: water supply, water quality, flood protection and natural system. The District's ongoing program work and regional priorities help accomplish one, or often times, more than one, of the District's core missions.

The District has identified goals for this five-year strategic planning period focused on its core missions as follows:

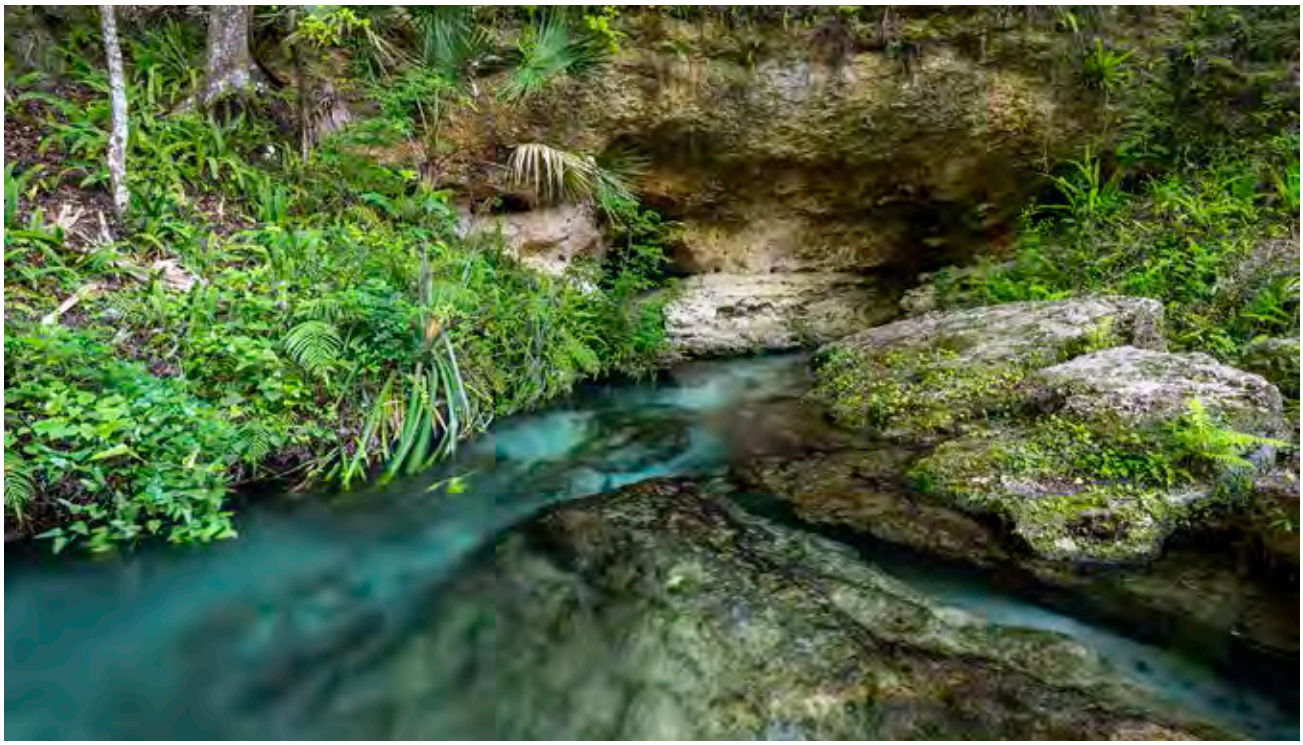


Water supply goals

- Develop and implement regional water supply plans
- Develop and implement minimum flows and levels (MFLs) and prevention and recovery strategies
- Promote water conservation
- Develop alternative water supply and water resource development projects

Water quality goals

- Protect and improve water quality in surface and groundwater by reducing nutrients
- Collect and analyze data to support resource management decisions and restoration initiatives
- Implement innovative and cost-effective water quality restoration projects



Natural systems goals

- Acquire and/or manage conservation land, especially floodplain wetlands, for natural resources
- Manage invasive exotic and nuisance species in a protective and sustainable manner
- Provide access and recreational opportunities on District properties
- Preserve, protect and restore natural systems to support their natural hydrologic and ecological functions

Flood protection goals

- Operate structural water management systems to meet flood protection, water resource and water supply needs
- Strategically acquire and restore floodplain wetlands to improve resilience
- Gather real-time data and develop tools to help plan for and minimize flood damage and to protect people, property and infrastructure

District programs overview

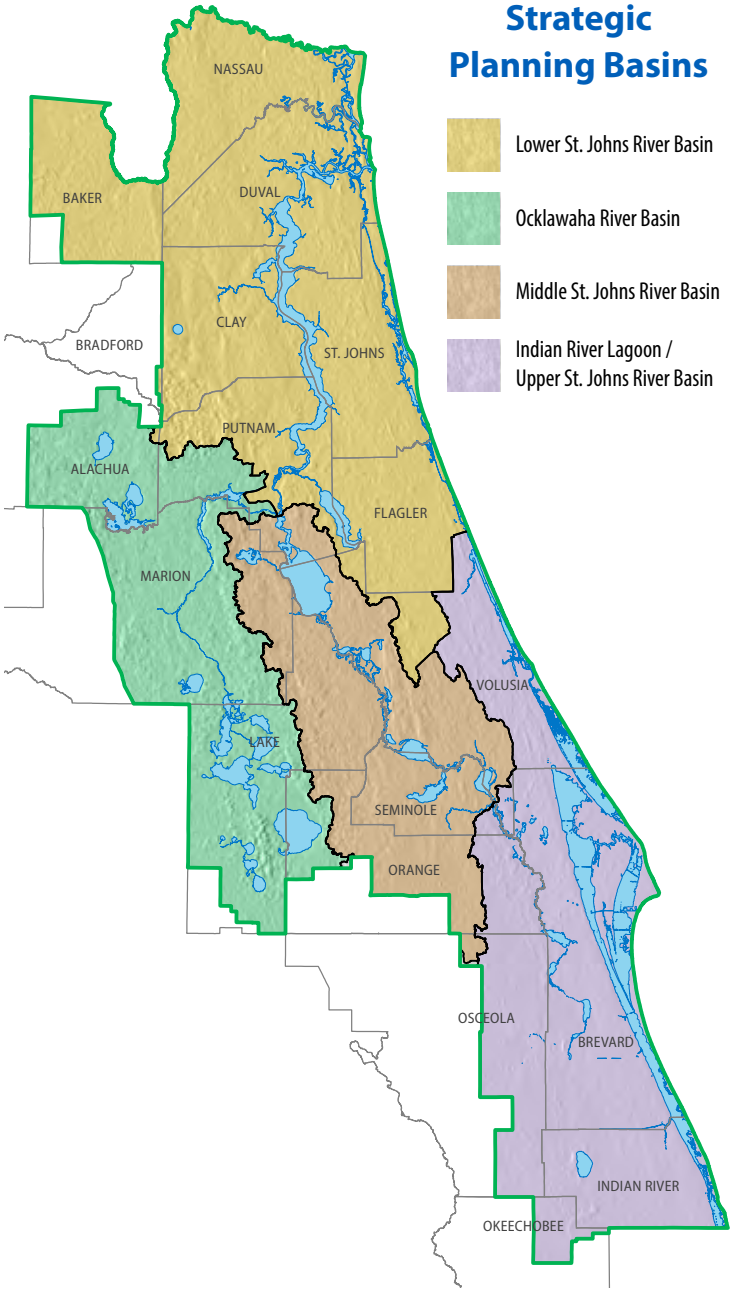
The District is focused on preserving, protecting, and restoring the District's groundwater, surface water, and natural systems. The District implements a variety of programs on a continuing basis that protect these resources and serve as the foundation for the strategic regional priorities. These programs include:

- Land acquisition
- Land management
- Public works
- Applied sciences
- Basin management
- Regulatory permitting and compliance
- Resiliency
- Water supply planning
- Water conservation

Fundamental business processes

The District's fundamental business processes provide day-to-day support for the District's programs and help ensure regional priorities are successful. These fundamental business processes include:

- Communications, public education, and outreach
- Staff resource management
- Legal support
- Financial planning and management
- Information technology
- Risk and emergency management
- Fleet and facilities management
- Records management
- Intergovernmental affairs and planning



Regional priorities

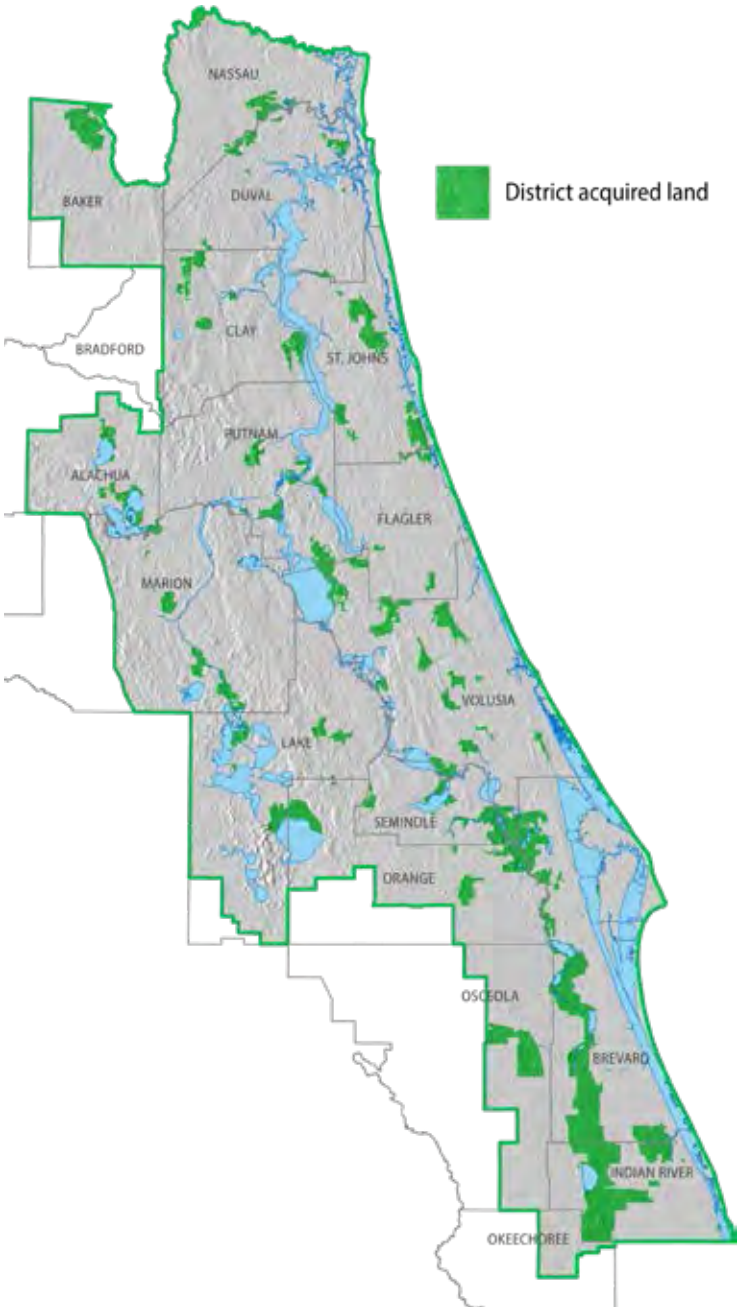
Water resource opportunities and challenges vary across the District and evolve over time. To more effectively and efficiently focus its resources and efforts, the District is divided into four strategic planning basins: Lower St. Johns River Basin, Ocklawaha River Basin, Middle St. Johns River Basin, and Indian River Lagoon / Upper St. Johns River Basin. Within each strategic planning basin, the District builds upon its ongoing program work and identifies regional priorities for this strategic planning period.

Land acquisition

The District acquires land to protect and preserve water resources. In addition, these lands protect plant and wildlife habitat and provide areas for public recreation and environmental education. The benefits are far-reaching for the public and environment, helping to advance all the District's core missions. District conservation lands preserve the ability of floodplains to store floodwaters, filter sediments and nutrients, and provide critical wetland habitat. The District's approach to select and prioritize properties for land acquisition is all-encompassing and focuses on how the property:

- Helps satisfy the District's water resources, flood protection and natural systems protection objectives
- Supports water resource projects
- Fits into the District's land management strategy for optimal management boundaries
- Provides for ecosystem resilience in floodplains, river corridors, or coastal wetlands

As such, acquisitions are focused on wetlands, especially floodplain wetlands, and uplands which buffer water bodies and provide habitat between rapidly encroaching development. The District owns or manages approximately 778,000 acres of land throughout its 18-county service area. The District maintains simple or joint fee ownership of more than 615,000 acres and is the lead manager for over 425,000 acres, which includes more than 306,000 acres of aquatic communities and 100,000 acres of forest. The District is also responsible for operating and maintaining 175 miles of District levees, 115 miles of federal levees, and 262 water control structures. Virtually all District property is open to the public for recreational activities that are compatible with conservation, including hunting, camping and boating; radio tower sites and utility easements; monitoring equipment; and compatible agricultural purposes.



Land management

The District's land management program responsibilities include habitat restoration, prescribed fire and wildfire response, and invasive plant management.

The land management plans approved by the District's Governing Board for each District property establish the philosophy and direction for management and use of District lands.

The land management plan provides for water resource protection, a diversity of habitats, compatible recreational uses, wildlife habitat restoration and enhancement, and the continuation, where possible, of traditional land and water resource uses. Legislative directives guide the land management planning process from acquisition evaluations to the development of land management plans. These plans identify resource needs and compatible uses, and the District solicits public input in the review and update for each plan.

The District actively pursues partnerships for land management with other state agencies, local governments and nonprofit organizations. In fact, more than three-quarters of the District's land holdings have been purchased, and are being managed, in conjunction with other groups.

Public works and operation and maintenance

The District's public works and operation and maintenance program is responsible for planning, designing, and engineering, constructing, operating, and monitoring complex projects. As part of its flood protection mission, the District employs both structural and non-structural water management techniques. A key element in the District's structural flood protection is our role as local sponsor of two federal flood control projects: The Upper St. Johns River Basin Project and the Ocklawaha River Basin portion of the Four River Basins, Florida Project. Across the District, the program is responsible for operating and maintaining 175 miles of farm/project levees, 115 miles of federal levees, and 262 water control structures within the District.

Applied sciences

The District's applied sciences program is responsible for the following environmental services related to water management: surface water basin management planning, environmental planning and assessment, water resource and environmental restoration, administration and management of the Surface Water Improvement and Management (SWIM) program, and administration and management of other surface water projects. In addition, the District's applied sciences program is responsible for developing surface water, groundwater, and hydrodynamic models to support District efforts, such as minimum flows and levels and water supply planning. The work of this program provides much of the scientific foundation for the District's regional priorities.

District programs

Basin management

The District's basin management program coordinates all efforts within the District's four strategic planning basins, including developing basin work plans to address the science, data and projects needed within each basin. The basin management program works with stakeholders and local government partners to identify and implement solutions to the challenges in each basin. In addition, the basin management program coordinates the development of two important planning tools:

State of the resource reports

The District is developing a State of the Resource Report for each of the strategic planning basins. These reports will establish the foundation for the District's strategic planning efforts going forward. By identifying the resource challenges and constraints, the District can prioritize its efforts and resources in identifying and implementing solutions.

Development of feasibility studies

Building off of the State of the Resource Reports, the District will develop feasibility studies to identify projects and opportunities to address the resource challenges and constraints in each strategic planning basin.

Regulatory permitting and compliance

The District's regulatory program works diligently to protect water resources as part of the District mandate to ensure sustainable use of Florida's water for people and nature. The regulatory permitting program provides a system of checks and balances to ensure that the agency is conscientiously protecting water resources while simultaneously working with permit applicants to meet rule criteria. The District has three main regulatory permitting programs: Environmental Resource Permitting, Consumptive Use Permitting, and Water Well Construction (WWC). In addition, the District's compliance program conducts compliance reviews and inspections on issued environmental resource permits (ERPs), consumptive use permits (CUPs), and WWC permits to ensure the systems are constructed in accordance with approved plans, function as intended, and adhere to all permit conditions.

Resiliency

Resiliency is integrated into essentially everything the District does and is reflected in the District's core missions. The District is focused on protecting valuable fresh groundwater from saltwater intrusion and changes in water demand, withdrawals, and recharge due to changes in climate. Additionally, the District is committed to assisting in protecting local communities from flooding through projects, data collection and analysis, and coordination. One of the District's preferred approaches to protecting water resources is through nature-based efforts, such as land acquisition, wetland enhancement, and green infrastructure, like living shorelines, which provide ongoing benefits with less long-term management.

Water supply

The District's water supply program identifies future water supply needs for a 20-year planning horizon, and develops programs and projects needed to ensure sustainable supplies for both people and the environment. Work includes developing regional water supply plans for each of the District's three water supply planning regions. For most of the District, the main source of water comes from underground aquifers, primarily the Floridan aquifer, whose source of water is limited. The District also continues to look for opportunities to partner with the agricultural operations throughout the area to improve water conservation.

Water Conservation

In February 2024, the District launched a new Water Conservation Outdoor Rebate Program designed to encourage utilities and local governments to implement quantifiable water conservation activities for their customers. The rebate program is initially limited to four outdoor conservation practices that are based on research shown to have consistent measurable water savings.

The water conservation team continues to cultivate relationships with property management companies and their community association managers so that they value the District as a resource to help them do their jobs and serve their homeowners' associations more effectively. This is being achieved by hosting booths at key industry shows in Orlando and Jacksonville and offering webinars to these stakeholders to increase their understanding of water conservation-related topics.

The team is building meaningful partnerships to drive behavioral change and address issues that impact multiple audiences. As an example, District representatives are engaging with the North Florida Builders Association to develop strategies for water-efficient growth in north Florida. This will involve partnering with builders, developers, municipalities, and other governmental officials to make certain water conservation practices are implemented.

The team is also expanding the District's relationship with UF IFAS' Florida-Friendly Landscaping Program to jointly certify Florida Water Star℠ Gold and to educate their audiences about efficient irrigation design and appropriate scheduling. District staff are working to develop online modules for the landscape irrigation industry to prepare them to complete Florida Water Star-accredited professional exams.

The water conservation team is conducting Florida Water Star certification for not-for-profit builders with plans to expand beyond the three counties that currently participate. This ensures that customers of organizations like Habitat for Humanity are building to Florida Water Star℠ standards, saving their customers even more money while helping to protect Florida's resources.

Water conservation staff are also enhancing the network of teachers in its District who are qualified to instruct Project WET (Water Education for Teachers) curriculum.

Water conservation staff routinely collaborate with regulatory staff to review the water conservation sections of Consumptive Use Permits, and guide applicants on how to produce more robust conservation plans that save water and meet permit requirements.

Fundamental business processes

Communications, public education, and outreach

Communicating the District's priorities and efforts to the community is an important element of the District's success. The District's communications, public education, and outreach ensures teachers, students, the public, stakeholder groups, and news media receive timely, accurate, and consistent information about water resources and District programs, projects, rules, and Governing Board actions. The information helps promote water resource stewardship, including behaviors that conserve water and decrease pollution of watersheds and water bodies. Information is provided through websites, social media, news releases, interviews, tours, presentations, events, school curricula, newsletters, podcasts, and informational videos.

Staff resource management

The recruiting and maintaining of District staff is critical to successfully implementing the core missions and strategic plan. The District's staff resource management activities include recruitment and hiring, compensation and benefits, training and development, legal compliance, workforce planning, and employee relations. Human Resources personnel develop programs and provide support and guidance to staff and management aligned with agency leadership direction.

Legal support

The District relies on the Office of General Counsel for professional legal advice, representation, rulemaking services, and research on matters relating to contracts, land management, real estate, governmental oversight, ethics, and personnel.

Financial planning and management

The District's financial planning and management responsibilities include processing payroll and vendor payments; maintaining the District's investment program, banking relationships and capital assets; federal, state, and local grants compliance; monitoring and billing; preparing financial statements; conducting districtwide budgeting and financial planning activities; purchasing and procurement; and providing financial reports and fiscal assistance to staff, the Governing Board, and various state and federal agencies.

Information technology

The District relies on computing hardware, software, and databases to accomplish its core missions. The information technology program oversees the District's computer hardware and software, data lines, computer support and maintenance, information technology consulting services, data centers, network operations, web support and updates, desktop support, and application development.

Fundamental business processes

Risk and emergency management

The District manages its risks by having appropriate insurance and safety education, training, and protocols in place. In addition, the District has plans and processes in place to continue operations and minimize operational disruptions during emergency events, including coordination with other local, state, and federal entities.

Fleet and facilities management

The District has 10 office/field station locations throughout the District to meet the needs of its public customers and the natural resources it protects and preserves. Nine of these are owned and maintained by the District. In addition, in order to accomplish its core missions, the District owns and maintains a fleet of vehicles and equipment ranging from passenger vehicles and vessels to heavy, specialized terrestrial and aquatic equipment.

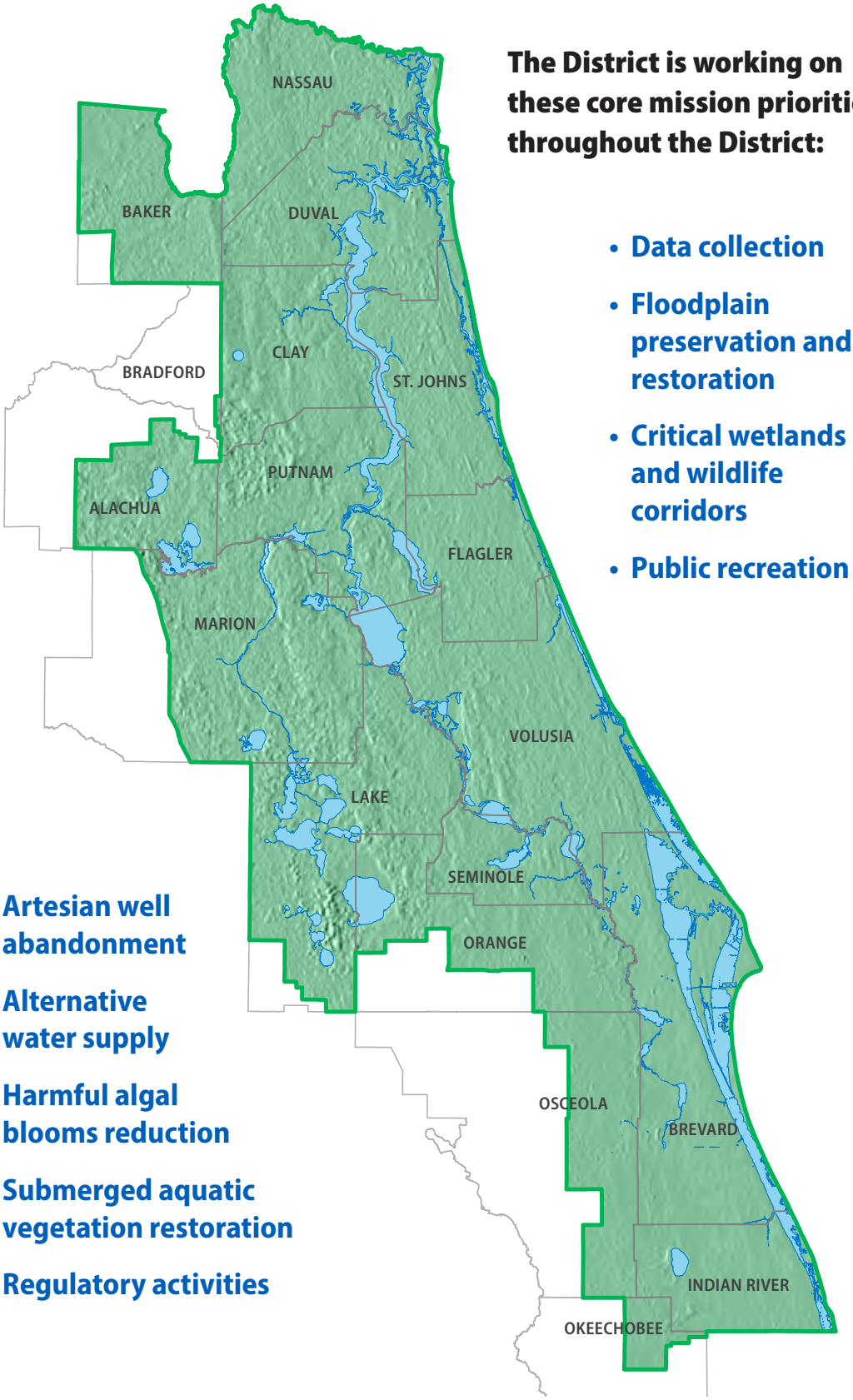
Records management

The District's records serve to document the important work of the District. These records must be received, routed, maintained and managed, in accordance with state retention requirements, and be available for public records requests or other legal purposes.

Intergovernmental affairs and planning

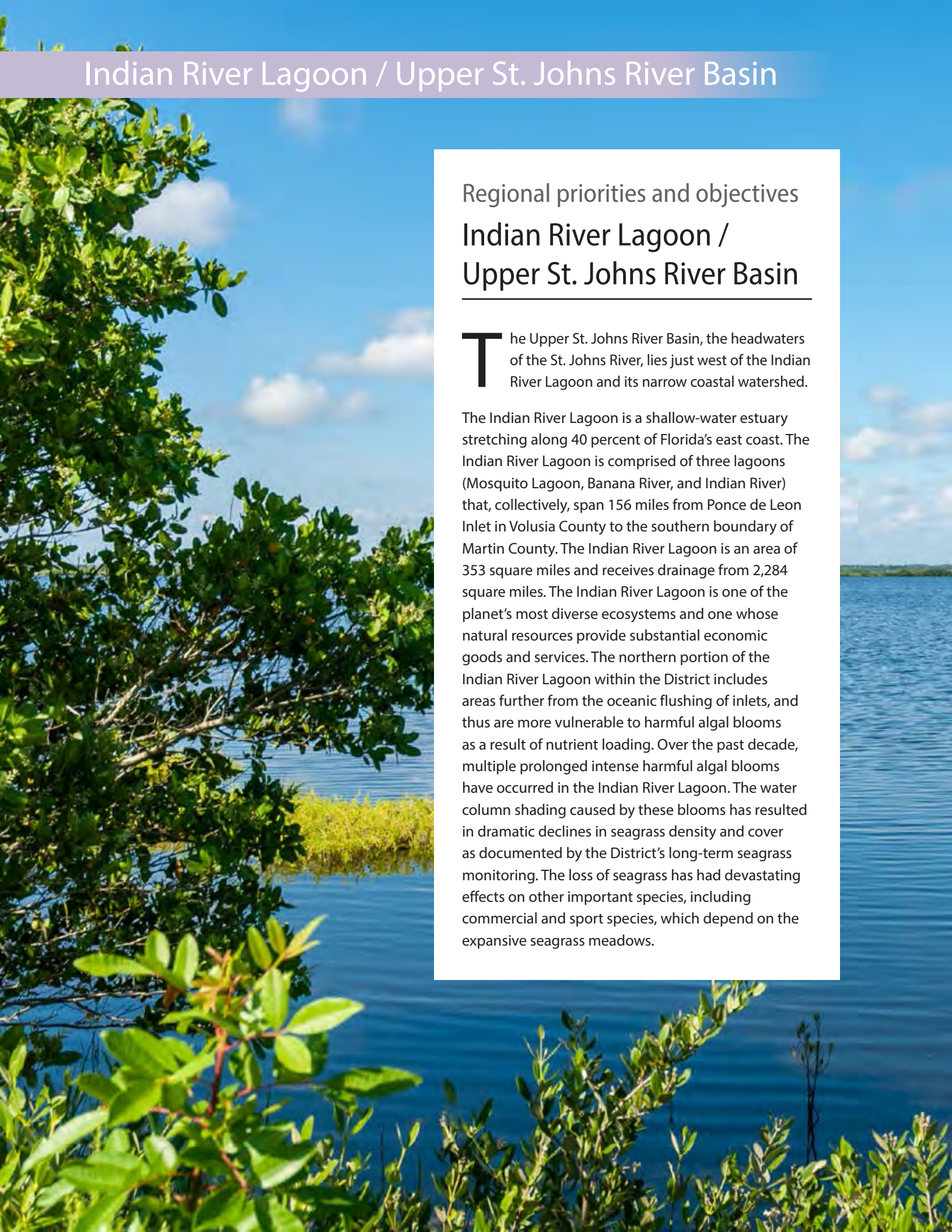
The District's legislative activities include coverage of Florida's legislative sessions, coordination with local legislative offices, and interaction with delegation members. District staff coordinate with the other water management districts and the Florida Department of Environmental Protection (DEP) to monitor state and federal legislative and congressional activities. In addition, the District engages with local governments on local and regional land use planning activities, including comprehensive plan reviews.

Districtwide core mission



The District is working on these core mission priorities throughout the District:

- **Data collection**
- **Floodplain preservation and restoration**
- **Critical wetlands and wildlife corridors**
- **Public recreation**
- **Artesian well abandonment**
- **Alternative water supply**
- **Harmful algal blooms reduction**
- **Submerged aquatic vegetation restoration**
- **Regulatory activities**



Regional priorities and objectives

Indian River Lagoon / Upper St. Johns River Basin

The Upper St. Johns River Basin, the headwaters of the St. Johns River, lies just west of the Indian River Lagoon and its narrow coastal watershed.

The Indian River Lagoon is a shallow-water estuary stretching along 40 percent of Florida's east coast. The Indian River Lagoon is comprised of three lagoons (Mosquito Lagoon, Banana River, and Indian River) that, collectively, span 156 miles from Ponce de Leon Inlet in Volusia County to the southern boundary of Martin County. The Indian River Lagoon is an area of 353 square miles and receives drainage from 2,284 square miles. The Indian River Lagoon is one of the planet's most diverse ecosystems and one whose natural resources provide substantial economic goods and services. The northern portion of the Indian River Lagoon within the District includes areas further from the oceanic flushing of inlets, and thus are more vulnerable to harmful algal blooms as a result of nutrient loading. Over the past decade, multiple prolonged intense harmful algal blooms have occurred in the Indian River Lagoon. The water column shading caused by these blooms has resulted in dramatic declines in seagrass density and cover as documented by the District's long-term seagrass monitoring. The loss of seagrass has had devastating effects on other important species, including commercial and sport species, which depend on the expansive seagrass meadows.

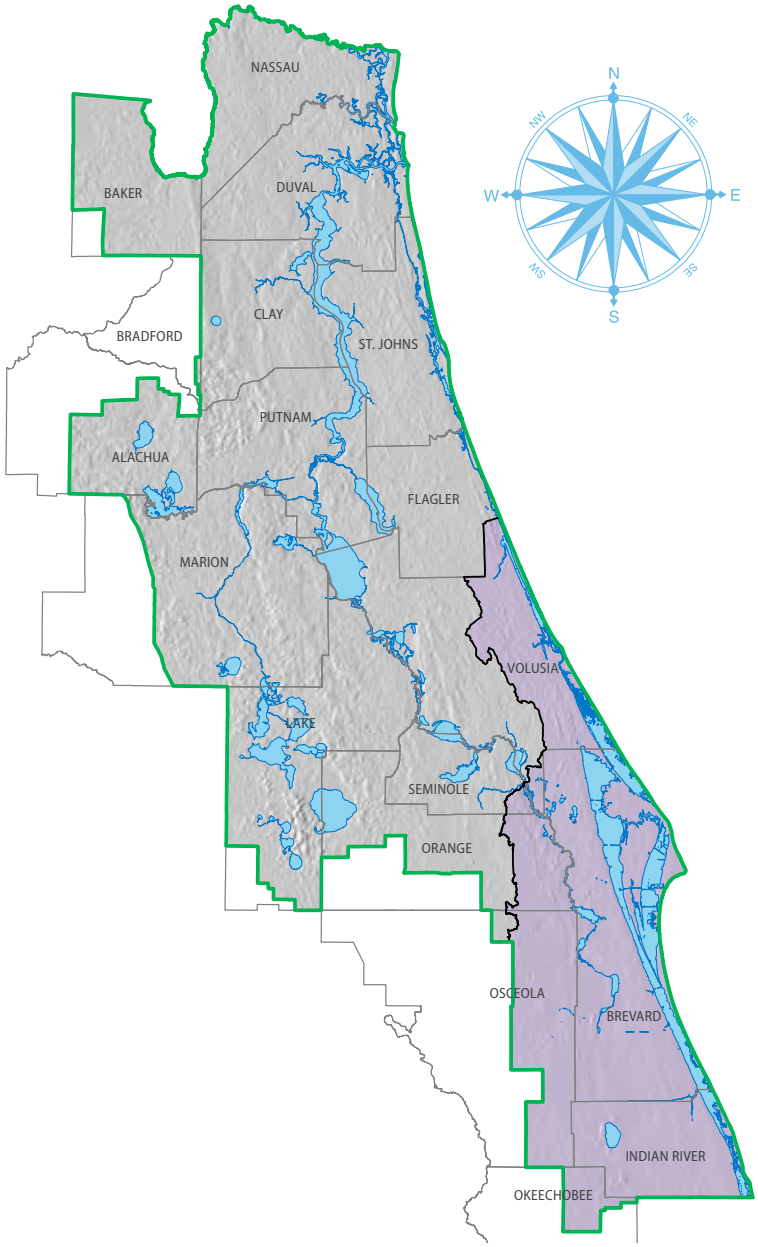
Indian River Lagoon / Upper St. Johns River Basin

The District is implementing a comprehensive strategy to reduce harmful algal blooms in the Indian River Lagoon. The components of this strategy are referred to as "diet, exercise and physical therapy" efforts as explained below.

The District is working with many partners to implement projects to reduce the nutrients entering the Indian River Lagoon (a nutrient diet), as well as removing legacy nutrients stored within the Indian River Lagoon (exercise to remove nutrients). The "diet" efforts have included efforts to better treat wastewater, reduce loading from septic tanks and stormwater, and projects to address the large drainage canals that artificially increase drainage to the Indian River Lagoon. "Exercise" projects include multiple muck dredging projects that remove nutrient-rich muck sediments and their associated legacy nutrients.

The basins of the upper St. Johns River and Indian River Lagoon are hydrologically linked by a series of dredged canals that artificially increase drainage to the Indian River Lagoon. This artificial drainage creates challenges for both water bodies. The Indian River Lagoon would benefit from reduced inputs of freshwater, sediments, and nutrients, while the upper St. Johns River can more easily accommodate the water after treatment via constructed wetlands.

The District controls one large canal, C-54, which can route floodwaters from the upper St. Johns River to the Indian River Lagoon. The District's intent is to minimize discharges to the Indian River Lagoon through C-54 to the greatest extent possible. The ability to avoid these discharges relies upon the Upper St. Johns River Basin Project, a multi-decade collaboration between the United States Army Corp of Engineers (USACE) and the District. This internationally recognized project relies upon a semi-structural approach of conserving available floodplain wetlands, along with reservoirs that provide water quality treatment, water supply for the surrounding agricultural lands, and contribute to flood protection. The 166,500-acre project is also home to some of Florida's best fishing, hunting, and wildlife observation areas.



Development of the Southern District Density-Dependent Model

The District is currently developing the Southern District Density-Dependent Model that will have predictive capabilities to quantify water quality changes due to increased groundwater withdrawals, sea-level rise, and aspects of climate change. This tool will help to guide water users and will facilitate future water supply planning efforts in the region.

Land acquisition and coastal wetland restoration

Many coastal wetlands were impacted in past decades to help manage mosquitoes. The impacts included dragline ditching, impounding, and isolating the wetlands. In addition to the loss of nutrient sequestration, impacted wetlands are less able to provide the critical nursery areas for important sport and commercial species. The acquisition and management of the St. Johns River's floodplain has been one of the District's long-standing goals. Properly functioning wetlands remove and permanently store nutrients, and are helpful in protecting against sea-level rise. Restoration of impacted wetlands generally involves the removal of dikes and spoil piles by returning the material to the adjacent borrow areas, and then regrading the area to match the elevation of nearby functional wetlands.

As of July 1, 2023, the District has acquired a real estate interest in nearly 300,000 acres, including 166,000 acres it owns and manages, at a cost of over $530 million within the Indian River Lagoon and Upper St. Johns River basins. The majority of this area is floodplain wetlands and sit within the 100-year floodplain. Floodplain wetlands contribute significant ecological goods and services related to water quality, floodwater storage, water supply, and natural

systems. These wetlands typically are estimated to return between $6,500–$12,000 in value per acre annually. The future acquisition strategy for the Upper St. Johns River Basin will focus on lands identified for potential acquisition on the 2023–24 List of Critical Wetlands or 2024 Land Acquisition Map that provide floodplain connection and optimal land management boundaries.

Crane Creek M-1 Canal Flow Restoration project

The Crane Creek M-1 Canal Flow Restoration project is an important regional water resource development project spanning the cities of Melbourne and West Melbourne, and part of Brevard County. When complete, drainage from a 5,300-acre urbanized watershed will be diverted from the Indian River Lagoon back to the St. Johns River. The project is currently under construction and is set for completion in 2025. There are significant benefits to Indian River Lagoon's water quality, including annual nutrient load reductions of approximately 24,000 pounds of nitrogen and 3,100 pounds of phosphorus. Furthermore, because flow is being restored back westward to the upper St. Johns River, there will be approximately 7 mgd of additional alternative water supply created.

C-10 Water Management Area project

The C-10 Water Management Area water diversion project includes pumping stormwater from the C-10 canal which would otherwise flow to the Indian River Lagoon into a new 1,300-acre reservoir for passive nutrient load reduction treatment before discharging the water into the St. Johns River. This important project will reduce freshwater, sediment, and nutrient loads to the Indian River Lagoon with annual nutrient load reductions of approximately 148,000 pounds of nitrogen and 13,000 pounds of phosphorus. The project is currently in the design phase and total construction cost is estimated at $60 million. The construction is not currently funded.

Indian River Lagoon / Upper St. Johns River Basin

Fellsmere Joint Venture Dispersed Water Storage/Nutrient Reduction project

The Fellsmere Joint Venture (FJV) Dispersed Water Storage / Nutrient Reduction pilot project is a public-private partnership between the District and FJV that will restore a watershed currently flowing to the Indian River Lagoon by holding and treating stormwater on private land (i.e., treatment reservoir), and, thereby, eliminating freshwater and nutrient inputs to the Indian River Lagoon. The project is located in Indian River County. Once completed, this project has the capability to pump up to 18 mgd of stormwater into the treatment reservoir before releasing the water back to the St. Johns River or being utilized for irrigation purposes. The estimated annual nutrient load reductions to the Indian River Lagoon are 13,000 pounds of nitrogen and 7,500 pounds of phosphorus annually. The re-diversion of water back to the St. Johns River, where it flowed historically, will have the added benefit of increasing water supply availability associated with the St. Johns River.

Indian River Lagoon stormwater capture and treatment project development and feasibility study

In 2017, the District developed an Indian River Lagoon Feasibility Study. The 2017 study focused on identifying regional stormwater related projects with high load reductions, particularly ones that could harvest or divert excess stormwater for beneficial use. In the end, nine projects were identified, one of which the District pursued and which is now under construction (Crane Creek).

The District is currently updating this study to focus on potential stormwater-related, medium scale projects outside of the Mosquito Lagoon and the southern part of the Indian River Lagoon, which is outside of the District. Thirty projects have been identified and 10 projects will be conceptually developed (two updates from the 2017 plan and eight new projects). The District anticipates a final update to the study in April 2024.

District project partnerships

Since 2014, the Indian River Lagoon cost-share projects have contributed to the District's efforts to restore the Indian River Lagoon's health by supporting efforts being conducted by local entities. The District has worked with the three counties bordering the Indian River Lagoon within the District (Volusia, Brevard, and Indian River), as well as 16 different municipalities and three private entities. Together, the District and its partners have 62 cost-share projects completed or in progress. The estimated total annual nutrient reduction benefit of these 62 projects is more than 166,000 pounds of nitrogen and 16,900 pounds of phosphorus. The District's total construction cost for these projects is approximately $121 million, which includes $37 million from DEP. The District also manages an additional 15 stormwater projects being entirely funded by DEP with a cost of approximately $7 million. Past, current, and future projects include local or regional stormwater management projects, which address areas identified as contributing significant nutrient loading to the Indian River Lagoon, wastewater treatment improvement projects, and abandonment of residential and commercial septic tanks and connection to central sewer.

Restoring filter feeders and living shorelines

The District has also worked with local partners bordering the Indian River Lagoon to create, improve, and restore natural systems within the lagoon through the districtwide cost-share program. These efforts to restore the Indian River Lagoon biological system's ability to attenuate nutrients has been termed "physical therapy." One project example includes restoring oyster beds, supporting research on clam beds, and the propagation of clams through the determination of the best water quality conditions for clam larvae development. Three projects targeting clam bed research and oyster reef construction along degraded shorelines resulted in restoration of 1.13 acres of lagoon bottoms providing annual nutrient load reduction benefit of nearly 800 pounds of nitrogen and 60 pounds of phosphorus. The total construction cost of these projects was approximately $2 million, with cost-share and DEP funding contributing $1.2 million.

The Brevard County Oyster Reef Living Shoreline cost-share project involved the construction of seven oyster reefs totaling 2,360 linear feet in the Indian

River Lagoon. The estimated annual nutrient load reduction water quality benefit to the Indian River Lagoon is 639 pounds of nitrogen and 48 pounds of phosphorus. The District provided $60,000 toward construction of the $310,000 project. Approximately 0.6 acre of oyster reefs were created.

The Brevard Zoo Clam Restoration research project assessing clam viability involved adult clams and seed clams grown, planted, and monitored throughout the Indian River Lagoon in approximately 100 distinct sites that vary in size. Project funding was provided through the 2021 Indian River Lagoon Water Quality Improvement Grant. Approximately 0.35 acre of clam area was planted.

The Cocoa Beach Convair Cove Low Impact Development and Living Shoreline project includes installation of a stormwater low-impact development treatment train tool, including permeable pavers, underground rain tanks, bioactivated media barrier wall, and rain garden bioswales. Additionally, a living shoreline will be created that includes mangroves, oysters, and grasses. The estimated annual nutrient load reduction water quality benefit to the Banana River Lagoon is 168 pounds of nitrogen and 16 pounds of phosphorus. Approximately 0.25 acre of living shoreline will be created.

The Riverside Conservancy Living Shoreline project involves the restoration of one-quarter mile of degraded shoreline along the Indian River Lagoon within southeastern Volusia County. It includes the planting of mangroves, salt marsh plants, and placement of oyster reef modules. Approximately 0.25 acre of living shoreline restoration will be established.

The District was awarded in 2023 two wetlands restoration grants for upcoming restoration projects. One grant, known as the Sternstein Burch grant, was for $87,500 and involves the restoration of approximately 72 acres in Volusia County along Mosquito Lagoon. This effort is in partnership with the city of Oak Hill and Volusia County. The other grant was for $170,000 and involves restoration of 340 acres at Merritt Island National Wildlife Refuge T-10-H in Brevard County along the Indian River Lagoon.

Phosphorus Challenges in the Upper St. Johns River Basin

The Upper St. Johns River Basin is a region of the District where structural flood protection is provided by the Upper St. Johns River Basin Project. Historically, the area was comprised of expansive herbaceous marsh and river-run lakes. The District now owns and manages over 166,000 acres for flood mitigation, water quality, natural systems enhancement and water supply.

The District has extensive monitoring stations in the Upper St. Johns River Basin and phosphorus and harmful algal blooms continue to be a challenge. The 2018 Water Quality Status and Trends Report indicated 10 of the 55 sites exhibit increasing total phosphorus trends, with Blue Cypress Lake showing an increasing Chlorophyll a trend. These trends have continued even in recent years. In addition, 31 segments are identified as not meeting state water quality standards. As a result, the District is focused on projects that reduce phosphorus in this basin.

DEP-funded research on biosolids

The lakes of the Upper St. Johns River Basin, like many of Florida's aquatic ecosystems, are threatened by a variety of factors. Nutrient enrichment stimulates harmful algal blooms, which can be toxic and shade the water column, reducing the light available to support critical submerged aquatic vegetation. One increasing source of phosphorus in the basin is from the land application of municipal wastewater biosolids. DEP is funding the District to conduct applied research to identify solutions to reduce the threat that phosphorus-rich biosolids can pose to water quality in receiving water bodies.

Nutrient management through fish harvesting

The District has a long history of cost-effectively harvesting rough fish to remove phosphorus from water bodies including those in the Upper St. Johns River Basin. Recent experimental harvests conducted by the District, FWC, and private commercial fishers suggest that seasonal harvests of several invasive species may be a cost-effective phosphorus removal tool. In addition, removal of these species may also reduce the impacts their nesting behavior could have on submerged aquatic vegetation beds, and erosion of stream banks and levees, which is a potential natural resource benefit.

Regional priorities and objectives

Middle St. Johns River Basin

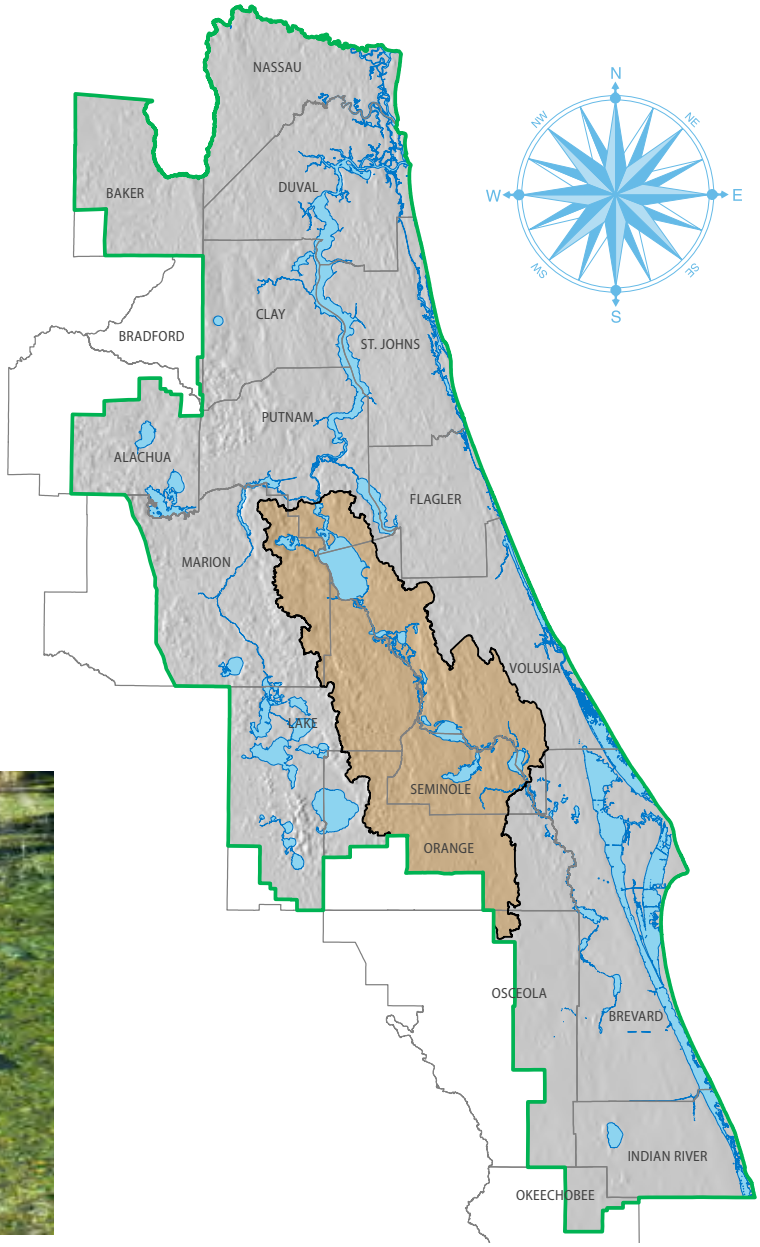
The Middle St. Johns River Basin is focused around four large lakes (George, Monroe, Jesup, and Harney), between which the St. Johns River stretches, and the region's Outstanding Florida Springs, including the Wekiva system, Silver Glen, Alexander, Juniper, DeLeon, Salt, Volusia Blue, and Gemini springs. Much of this reach of the St. Johns River exists at sea level during drier periods and, thus, is vulnerable to reverse flows when strong onshore winds exist at the St. Johns River's mouth near Mayport. This is often associated with tropical events, which can also contribute significant rainfall. The combined effect of reverse riverine flows and high rainfall creates the potential for rapid and dramatic changes in water elevation and flooding along this reach.

Regional development has modified the hydrology of the middle St. Johns River. Lake Jesup's riverine exchange with the St. Johns River has decreased over time and increased its vulnerability to nutrient pollution leading to frequent harmful algal blooms. Decades of urban runoff and the intense prolonged harmful algal blooms have greatly increased the accumulation of muck sediments in Lake Jesup, especially the western portion where the tributaries deliver nutrient loads to the lake and are furthest from the flushing of the St. Johns River. Shading by these harmful algal blooms has largely eliminated submerged aquatic vegetation in Lake Jesup.

The region's numerous springs are facing different intensities of change based upon the location of their springshed (i.e., recharge area). Volusia Blue Spring and the Wekiva system's springs, whose springsheds have experienced intense development and increased water use, are more vulnerable to these impacts and, thus, the focus of water quality and supply projects.

Implementing the Volusia Blue Springs Prevention and Recovery Strategy

Implementation of the 2013 Volusia minimum flow and level prevention and recovery strategy is currently ongoing and will address impacts to Volusia Blue Spring and lakes Butler and Shaw in Volusia County. Stakeholder engagement continues as does construction of projects from the strategy and new project development. Projects include water conservation, increased reclaimed water utilization and interconnects, use of the St. Johns River as an alternative water supply, and aquifer recharge. Since strategy approval in 2013, over $65 million has been utilized on the construction of projects to benefit minimum flow and level water bodies in western Volusia County, with $27 million awarded through state cost-share programs.



Develop regional groundwater model

In January 2024, the District, in collaboration with the Southwest Florida Water Management District, finalized a new regional groundwater model known as the Central Springs Model. The model will support future planning, minimum flows and levels, and regulatory efforts. Planning efforts highlight that, in order to protect the region's natural systems, the continued reliance on the Upper Floridan aquifer is not sustainable throughout the planning horizon and that water supply and water resource development projects would be needed to meet the region's water demands. An update to the model is anticipated in late 2024, which will be used to evaluate proposed consumptive use permits, MFL analyses and regional water supply planning efforts.

Implementing the Central Florida Water Initiative

The Central Florida Water Initiative (CFWI) water supply planning region covers five counties, Orange, Osceola, Polk, Seminole and southern Lake, which overlaps the boundaries of the St. Johns River, South Florida and Southwest Florida water management districts. The CFWI is a collaborative water supply planning effort among the state's three largest water management districts, DEP, FDACS, water utilities, environmental groups, business organizations, agricultural communities and other stakeholders that was created to deal with projected water supply constraints in the area.

Taylor Creek Reservoir

Located in eastern Orange and Osceola counties, the Taylor Creek Reservoir currently provides surface water to the city of Cocoa for potable water use. The reservoir is an alternative water supply project that can provide an additional 54 mgd of water to the city of Cocoa and other water suppliers in the Upper St. Johns River, Middle St. Johns River, and Indian River Lagoon basins. Use of surface water from Taylor Creek Reservoir to meet potable water needs will reduce impacts associated with aquifer drawdown while supporting increased demand. To expand and facilitate the use of the reservoir as a water supply source, modifications to the existing reservoir are required.

Design concepts involve raising the levee 3–4 feet, extending the levee another 3,700 linear feet (LF) at the north end, extending/buttressing and reinforcing the slopes at the S-164 structure, and raising the maximum regulation schedule. The District is contracting for additional geotechnical evaluation and design support. Assuming this evaluation yields favorable results, 60% design should be complete by spring 2024 at which time costs will be updated. The project is scheduled for completion in 2029 pending funding availability.

Reevaluation of minimum flows and levels

The reevaluation of the 1992 minimum flows and levels for the Wekiva River, Wekiwa Springs, Rock Springs, Palm Springs, Sanlando Springs, and Starbuck Springs, as well as development of a new minimum flow and level for the Little Wekiva River, are underway. Peer review for the draft minimum flows and levels began in 2023, along with stakeholder outreach and development of any required prevention and recovery strategy. Rulemaking is anticipated in FY 2024–2025.

Chemical treatment of lake sediments

Lake Jesup's large volume of nutrient-rich muck sediments, a legacy phosphorus source, continue to enrich the lake. To address this legacy load, projects to remove or biologically inactivate phosphorus will likely be necessary for the lake to reach its water quality goals. The District has received funding from DEP to explore the potential for a chemical treatment to the lake's sediments, which would bind phosphorus so that it is no longer biologically available to support harmful algal bloom development.

Lake Jesup Nutrient Removal project

In 2021, a preliminary water quality improvement study for Lake Jesup indicated that treatment technologies located on a relatively small footprint could remove an appreciable amount of nutrients from the lake more efficiently than other treatment alternatives, such as a wetland treatment system, which requires more land. The District has proposed a full-scale nutrient removal system located at a 9.7-acre District-owned upland site. The system will involve pumping raw water from Lake Jesup to the site, treatment through a media-based system, and discharging the effluent with improved water quality.

The project is in the design phase, which will last approximately 2.5 years and include a bench-top pilot project to evaluate the media. A preliminary analysis indicates that internal nutrient loading to the lake could be annually reduced by more than 85,000 pounds of nitrogen and 6,300 pounds of phosphorus. The project is estimated to cost $20–$25 million.

Nutrient management through rough fish harvesting

Another technique to remove phosphorus from lakes is the harvest of rough fish, typically native gizzard shad, which proliferate in polluted waters. In the Middle St. Johns River Basin, the District has harvested fish from Lake George during several years (2015–19, 2023). The 2023 harvest alone removed 5,803 pounds of phosphorus.

Floodplain acquisition and management

The low elevation of the middle St. Johns River, and its vulnerability to reverse flows and heavy rainfall during tropical events, combine to create the largest range in river elevations along the St. Johns River. The structural flood protection provided by the Upper St. Johns River Basin Project does not extend downriver to the middle St. Johns River. Thus, flood protection in this region relies on non-structural techniques, such as conservation of its significant floodplain wetlands to store floodwater.

In the Middle St. Johns River Basin, the land acquisition strategy is to identify strategic lands for acquisition that provide for natural flood protection, water quality improvements, and link important natural areas along the St. Johns River and its major tributaries, including the Wekiva and Econlockhatchee rivers, Lake Jesup, Lake Monroe, and Lake Harney. The District owns and manages more than 100,000 acres in the basin for restoration or protection purposes, including approximately 16,000 acres of floodplain wetlands. There are numerous opportunities to acquire and expand public ownership of these floodplain areas. The District will engage with voluntary sellers and local government partners to acquire lands identified for potential acquisition on the 2023–24 List of Critical Wetlands and the 2024 Land Acquisition map.

Regional priorities and objectives

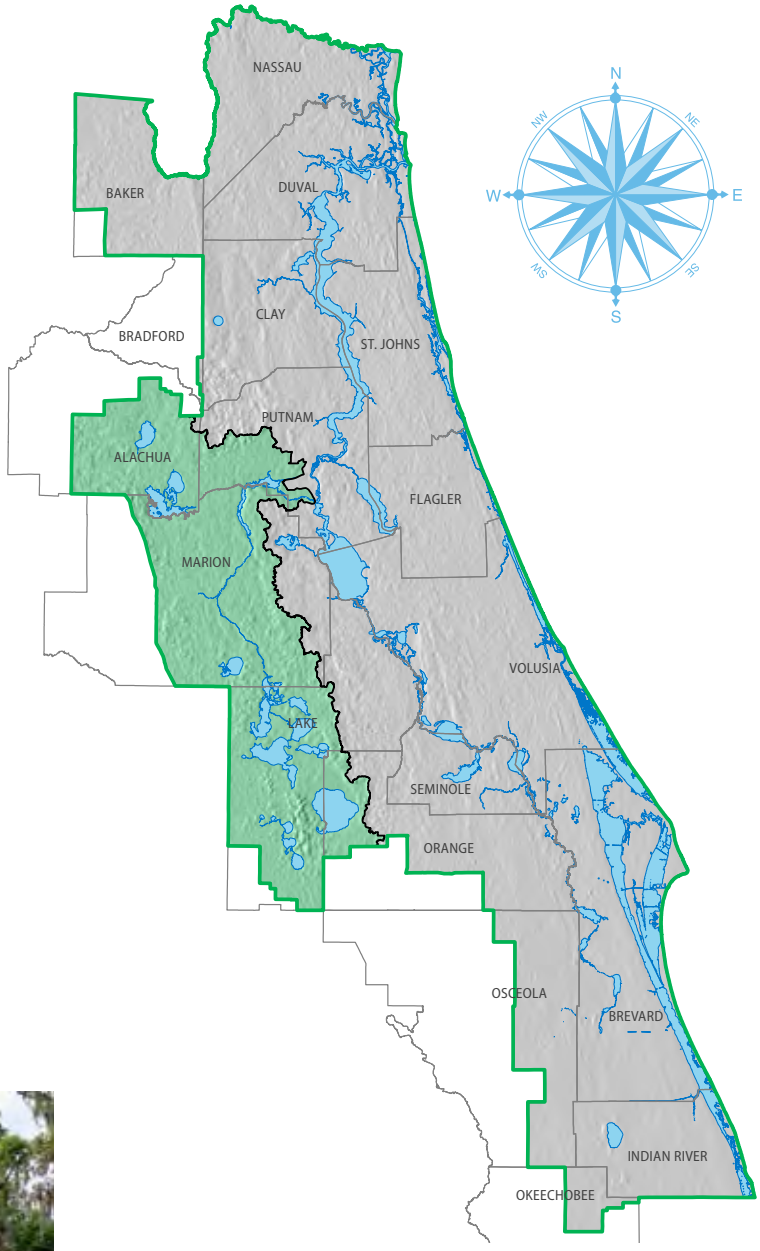
Ocklawaha River Basin

The Ocklawaha River Basin is centered around the St. Johns River's largest tributary, the Ocklawaha River. The Ocklawaha River region has two headwater areas, the Orange Creek Basin and Upper Ocklawaha River Basin. The Orange Creek Basin's key water resources include Paynes Prairie and Newnans, Orange, and Lochloosa lakes in Alachua and Marion counties. This basin drains to the Ocklawaha River via Orange Creek and to the Upper Floridan aquifer via significant sink features in both Paynes Prairie and Orange Lake. The Upper Ocklawaha River Basin's key water features are the Palatlakaha River, including its associated chain of lakes in south Lake County, and the Upper Ocklawaha River Chain of Lakes, which includes Lake Apopka as its headwaters, followed by a chain of smaller, yet important lakes (Beauclair, Dora, Eustis, Yale, Harris, and Griffin). Connectivity between the Upper Ocklawaha River Basin's lakes was altered more than a century ago by the dredging of multiple canals to facilitate transportation. The District operates water control structures on these canals that regulate water elevations and also navigation locks that allow boats to move between the staggered water elevations. These structures and the associated water elevation regulation schedules are part of the District's flood protection efforts in the Upper Ocklawaha River Basin.

Implement the Silver Springs Prevention Strategy

Silver Springs, located just outside of the city of Ocala in Marion County, is one of Florida's most iconic Outstanding Florida Springs. There are many pressures and demands for water supply in this area and, accordingly, minimum flows and levels were developed for Silver Springs in 2017 after the passing of the Florida Springs and Aquifer Protection Act. The District developed a plan to help ensure Silver Springs could meet its minimum flows and levels throughout the 2040 planning horizon (*www.sjrwmd.com/static/mfls/ssmfl/Silver-Springs-Prevention-Strategy.pdf*).

The Silver Springs Prevention Strategy prescribed regulatory measures specific to water users whose use impact the springs and identified projects for water conservation and increased reclaimed water utilization. Implementation of the strategy projects and regulatory measures, such as limiting groundwater withdrawals from the Upper Floridan aquifer to 2024, demonstrated demand will ensure achievement of the Silver Springs minimum flows and levels through the 2040 planning horizon. Two example projects included in the Silver Springs Prevention Strategy are:



Ocala Wetland Groundwater Recharge Park

The District and DEP have funded $4.2 million toward the Ocala Wetland Groundwater Recharge Park. This project is located in the Silver Springs Priority Focus Area and is a major component of the Silver Springs Prevention Strategy. The project currently recharges/treats 3.4 mgd and reduces 29,000 lbs./yr. total nitrogen and 30,500 lbs./yr. total phosphorus, benefiting Silver Springs.

Ocala Lower Florida Aquifer Conversion Project

The city of Ocala is also constructing the Lower Floridan Aquifer Conversion Project. Implementation of this 7.5 million gallons per day conversion project is needed to achieve the Silver Springs MFL, as it will provide over half of the required flow increase, 6.9 cubic feet per second. The city is planning to exceed the requirements of the Strategy by converting additional withdrawals to the LFA, which is an alternative water supply (AWS) in Marion County. By converting additional withdrawals to an AWS, the city will further enhance and protect the water resources associated with Silver Springs and the Silver River. Phases I and II of city's LFA conversion project are complete and consisted of drilling three LFA wells. The 60% design for the remaining project phases is currently under review.

Maintain flood protection capabilities

The hydrology of the Ocklawaha River Basin was highly modified, long before the District was created, by the dredging of canals between lakes and a portion of the Ocklawaha River. To prevent the over-draining of the water bodies, water control structures were constructed decades ago to independently regulate the water elevations of Lake Apopka, and lakes Beauclair, Denham, Harris, Eustis, and Griffin. The District now operates these structures and their associated navigational locks that provide boat access.

The District maintains and operates four water control structures within the Upper Ocklawaha River Basin that provide flood protection by managing discharges which, in turn, maintain water elevations on the lakes within their established regulation schedules. The District's FY 2023-24 workplan includes several refurbishment projects in the basin, including repairs to the C231 levee, stabilizing the

A-B Canal west levee and improvements on the Lake Apopka Loop Trail. DEP manages and operates the dam and lock associated with Rodman Reservoir. Additionally, the District has purchased approximately 47,000 acres of muck farms, many acres of which remain hydrologically isolated from their adjacent water bodies. This allows the District to accept the stormwater from flooding rains on these properties without immediately discharging that runoff and, thereby, contributing to riverine flooding.

Creating public recreational opportunities through land management

The District's purchase of historic muck farms and the ongoing wetland restoration of these properties has created important wetland habitat in addition to reducing phosphorus loading. Some of these muck farms were in production for a short enough time period that they did not experience soil elevation loss so severe as to prevent their eventual reconnection to the adjacent water body. For instance, several portions of Emeralda Marsh Conservation Area have been reconnected to Lake Griffin and now these reconnected floodplain wetlands are highly productive fishing and hunting areas often utilized during bass fishing tournaments. All these wetland restoration areas are very popular with the public as they provide excellent opportunities for hiking, biking, wildlife photography, and other forms of resource-based recreation. The Lake Apopka Wildlife Drive itself attracts nearly 200,000 visitors annually, generating more than $3 million annually in ecotourism revenues for the region, with approximately $22,000 daily spending, while typically being open only three days per week. There are at least 369 native bird species known to utilize the Lake Apopka North Shore and the North Shore is known as the top "eBird" hotspot in Florida. In 2021, the North Shore Birding Festival had 270 participants from 13 states identifying 172 different bird species.

Continuing Lake Apopka restoration

An important source of phosphorus pollution in Lake Apopka is the historic practice of developing muck farms. Muck farms were created by artificially isolating and draining a portion of a water body's floodplain wetlands, and then implementing intensive agriculture on the area's rich organic soils. The phosphorus-rich runoff from these farms was a significant pollution source to the lake. For example, the Lake Apopka North Shore muck farms were responsible for 85% of the lake's phosphorus loading to the lake. The muck farming practice and phosphorus loading issues were prominent not just in Lake Apopka but other areas in the Ocklawaha River Basin.

The restoration of Lake Apopka has been a priority for the District since the 1990s and approximately $200 million has been invested in a variety of restoration activities. Over the years, the District has leveraged its conservation land acquisition and management capabilities by purchasing over 47,000 acres of muck farms (Lake Apopka North Shore, Lake Harris Conservation Area, Emeralda Marsh Conservation Area, Sunnyhill Restoration Area, Ocklawaha Prairie Restoration Area, Orange Creek Restoration Area) and restoring wetlands on these areas. The reduction of agricultural runoff from these former farms has been key to meeting phosphorus loading goals for several water bodies. The District's investment in improving the water quality of Lake Apopka has resulted in a 2.5 million pound load reduction of phosphorus over the past 25 years. District cost-share funding with local partners has reduced loading by an additional 3,000 pounds per year. These efforts have resulted in the phosphorus goal for Lake Apopka being met while the system continues to recover. The Lake Apopka North Shore (LANS) Land Management Plan will be updated in 2024 and will include the land management goals, strategies, and activities for the various tracts of land that comprise the LANS. Priority projects for Lake Apopka for this strategic planning period include:

Vegetation management

FWC and the District are combining Hydrilla treatments and planting of native vegetation, including submerged aquatic vegetation, to accelerate the recovery of native submerged aquatic vegetation. In addition, the District has an ongoing contract to reintroduce Illinois pondweed, which was historically abundant in the lake, but has been gone for decades. The District has spent approximately $1.5 million recently on these plantings and has another $500,000 budgeted this year to continue this work. The recovery of submerged aquatic vegetation is critical to the restoration of the region's historic fishing and hunting, as well as water quality.

Nutrient management through rough fish harvesting

In addition to reducing the phosphorus pollution entering lakes, the District has implemented a public-private partnership involving the harvest of rough fish, especially gizzard shad, from phosphorus-enriched lakes, including Lake Apopka. This harvest removes rough fish, and thereby the phosphorus in the fishes' bodies, and reduces their respective stirring up of sediments that further cloud the water. The revenues generated by the sale of these fish by a private fish processor help offset the harvest costs and allows the District to provide only a small subsidy. As such, this technique is the District's most cost-effective phosphorus removal tool. Fish harvests in this basin have been conducted on lakes Apopka, Denham, Dora, Griffin, and Newnans.

Marsh Flow-Way project

The Lake Apopka Marsh Flow-Way is a constructed wetland located along the northwest shore of Lake Apopka and west of the Apopka-Beauclair Canal. Its purpose is to filter algae, suspended sediments and associated nutrients from Lake Apopka's water, hastening the recovery of water clear enough to support submerged vegetation on the lake's bottom. This recirculating system filters about 40 percent of the lake's volume each year. Through May 2019, and prior to facility rehabilitation, the system removed about 32 metric tons of phosphorus from Lake Apopka, or an annual total phosphorus removal rate of 2.2 metric tons per year. The system also helped clear Lake Apopka's water by filtering 4,300 metric tons of total suspended solids annually.

Lake Apopka Feasibility Study

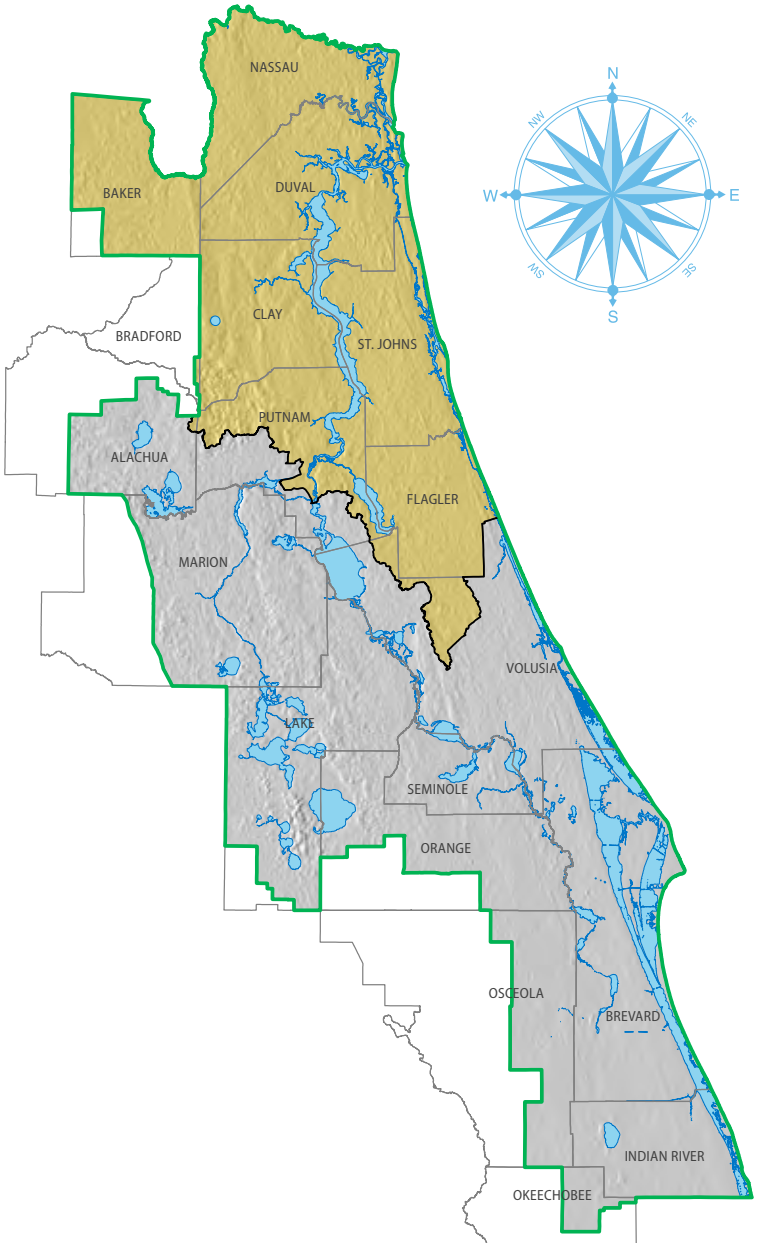
The District developed and is pursuing funding for a Lake Apopka feasibility study. This study will investigate methods or projects for further reduction of biologically available phosphorus within Lake Apopka, the contributing watershed, and discharges to the downstream lakes. The study is estimated to cost $300,000 and will take 12-18 months to complete once a contractor is engaged.

Regional priorities and objectives

Lower St. Johns River Basin

The Lower St. Johns River Basin's water bodies include the lower St. Johns, St. Marys and Nassau rivers, and the water resources of the Northern Coastal Basin. The lower St. Johns River is a broad, tidally influenced blackwater river, essentially at sea level, that has a tidal range varying from 1 to 4 feet. In this portion of the river, salinity is highly variable, transitioning from ocean water to freshwater. The area's watershed consists of a variety of landforms ranging from forested to urbanized to intensive agriculture. The tributaries draining these watersheds contribute significant amounts of nutrients to the lower St. Johns River. At times, tides and winds can cause the river to flow backward, which leads to water and nutrients staying in this portion of the river a long time before being able to drain into the ocean. This increases the lower St. Johns River's sensitivity to nutrient-related challenges like harmful algal blooms.

The Northern Coastal Basin includes coastal areas from the Georgia border to the Ponce De Leon Inlet, and spans across Nassau, Duval, St. Johns, Flagler, and Volusia counties. The Northern Coastal Basin encompasses over 1,100 square miles of coastal lowlands interspersed with numerous creeks and small rivers draining east to form a series of shallow bays and lagoons. The Northern Coastal Basin is a vast area that includes large tracts of public and private undeveloped uplands, floodplain and riverine wetlands, tidal marshes, and estuarine habitat interspersed between highly urbanized areas. The Intracoastal Waterway, a dredged waterway along the Atlantic and Gulf coasts, runs through the Northern Coastal Basin.



Updating the North Florida Regional Water Supply Plan

The majority of the Lower St. Johns River Basin is encompassed by the District's north Florida regional water supply planning area, which includes the northern portion of the District (Alachua, Baker, Bradford, Clay, Duval, Flagler, Putnam, Nassau, and St. Johns counties) and the eastern portion of Suwannee River Water Management District. The most recent North Florida Regional Water Supply Plan (NFRWSP) was approved in 2023 and concluded that fresh groundwater alone cannot supply the projected increase in future demand without causing unacceptable impacts to water resources and other natural systems. Therefore, the NFRWSP identifies water conservation efforts and projects.

The Suwannee, Santa Fe, and Ichetucknee rivers and associated Outstanding Florida Springs are water bodies located in the Suwannee River Water Management District that are potentially affected by groundwater withdrawals in both the Suwannee River and St. Johns River water management districts. The districts, along with DEP, are working collaboratively with stakeholders through the NFRWSP planning area to ensure that water supplies are available for public and agricultural uses, while also protecting water resources and natural systems.

As part of this collaborative effort, the public supply utilities (CCUA, JEA, GRU and St. Johns County Utility Department) are partnering with the District and DEP to engage an engineering consultant to compile a list of conceptual projects, including associated costs and benefits to MFL water bodies. The District's portion of the funding for this effort will not exceed $71,428.58 and DEP is funding $142,857.14, for a total of $214,285.72.

Black Creek Water Resource Development Project

The majority of northeast Florida's water use comes from fresh groundwater. Withdrawal of groundwater can have an impact on nearby water resources and natural systems. To ensure water resources and natural systems are protected, the District evaluates priority water bodies and determines the limits at which further groundwater withdrawal will significantly harm water resources or natural systems. These limits are called minimum flows and levels or MFLs.

Lakes Brooklyn and Geneva have experienced very low lake levels and the District's data indicate that these lakes are currently not meeting their MFLs. In 2021, the District adopted a plan (lakes Brooklyn and Geneva recovery strategy) to ensure that the MFLs for lakes Brooklyn and Geneva will be met over the 20-year planning horizon. This plan includes the Black Creek Water Resource Development Project.

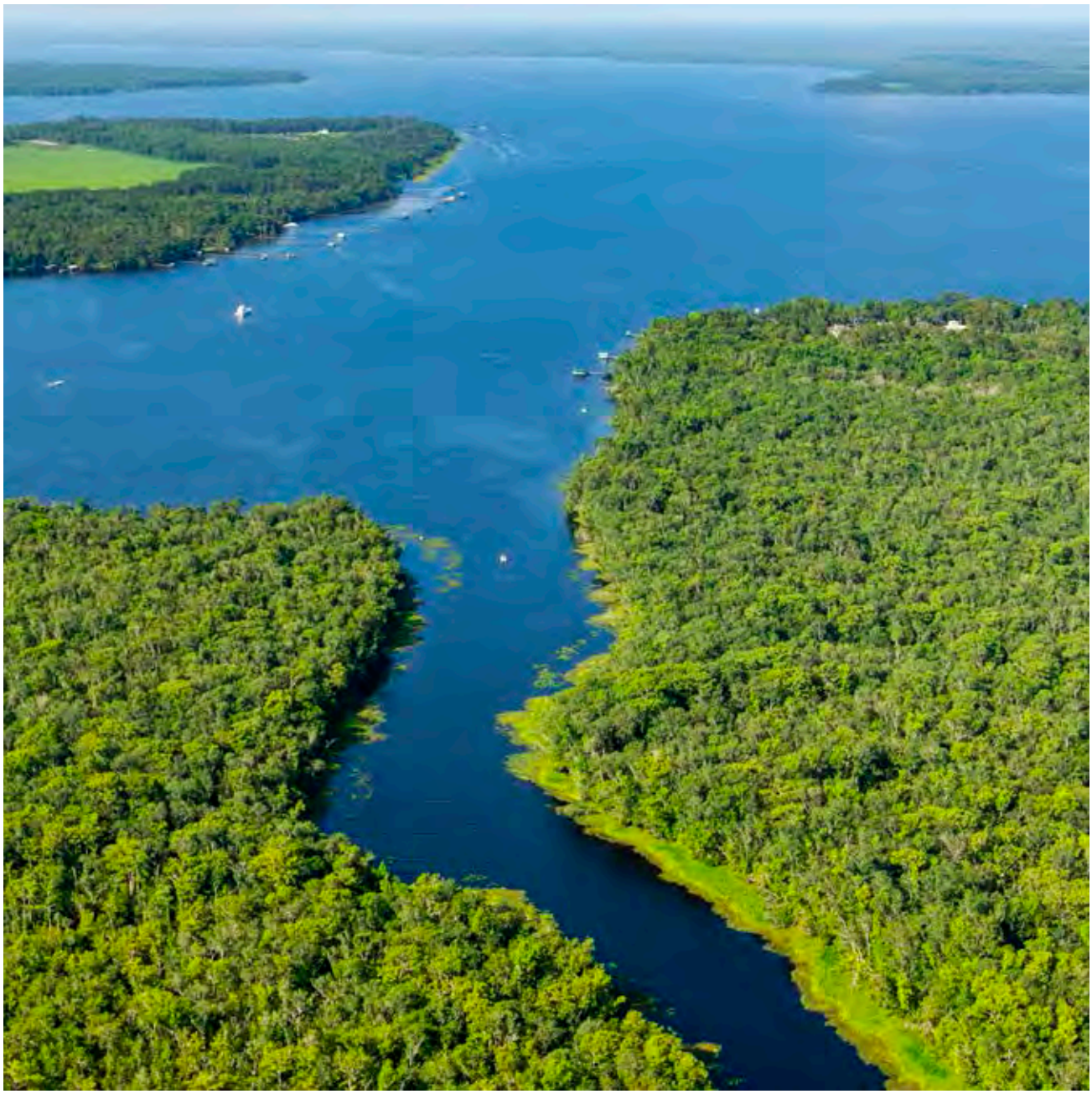
The primary goal of the Black Creek Water Resource Development Project, located in Clay County, is to increase the amount of water to the Upper Floridan aquifer in northeast Florida using higher flows from Black Creek as a source for aquifer recharge. The project is among several identified in the North Florida Regional Water Supply Plan to help meet future water supply demands while protecting natural resources. Land and easements for the project have been acquired. In addition, design and permitting is complete. Construction is underway for all elements of the project, including the pump station and intake, transmission pipeline, and treatment system. The completed project has the capability to divert up to 10 million gallons per day (mgd) during high flows from the South Fork of Black Creek through a 17-mile-long transmission pipeline, provide treatment and then discharge into Alligator Creek, which flows directly to Lake Brooklyn. The Black Creek Water Resource Development Project is expected to increase Lake Brooklyn water levels by nearly 10 feet, which will also increase the water to the Upper Floridan

aquifer by percolating through the lake's bottom. The current cost estimate for construction of the system, including the pump station, pipeline and treatment system, is approximately $118 million. Project funding totaling $43.4 million over three years was provided in the St. Johns River and Keystone Heights Lake region projects legislative appropriations beginning in 2017. Additionally, four north Florida utilities (Clay County Utility Authority, Gainesville Regional Utilities, St. Johns County Utilities, and JEA) are contributing $19.2 million toward the project. Construction of this project is anticipated to be complete in 2025.

Agricultural partnerships

The Tri-County Agricultural Area (TCAA) Water Management Partnership was developed to identify and implement on-farm projects and practices that improve water and nutrient use efficiency. These projects and practices reduce the movement of nutrients to the lower St. Johns River, improve water conservation, and maintain the long-term viability of agriculture in the TCAA. The TCAA farmland includes row crops such as potatoes, cabbage, Asian vegetables, and sod production in Putnam, Flagler, and St. Johns counties. Funding partners include DEP and Florida Department of Agriculture and Consumer Services (FDACS), with the University of Florida's Institute of Food and Agricultural Sciences and the Natural Resources Conservation Service providing technical support. The District budgets $2 million annually to support this effort.

Since 2016, over $16 million in funding has been provided for projects resulting in an estimated annual nutrient load reduction benefit of 190,000 pounds of nitrogen and almost 40,000 pounds of phosphorus. The estimated water conservation benefit is 5.5 million gallons per day (mgd). Projects have included converting seepage irrigation to more efficient irrigation types, such as irrigation drain tile and center pivots, and precision fertilizer application equipment. In addition to funding next generation practices that improve water and nutrient use efficiency, several regional stormwater facilities have been constructed to better treat stormwater runoff in the TCAA. Examples include the Deep Creek West Regional Stormwater Treatment Area, which has been operational since February 2006, and the Dog Branch Regional Stormwater Treatment Facility, which has been operational since 2007. These two projects combined reduce annual nutrients from 3,296 acres by 18,300 pounds of nitrogen and 7,700 pounds of phosphorus.



Submerged aquatic vegetation loss and coastal wetlands

The District has been conducting annual monitoring of the lower St. Johns River's submerged aquatic vegetation since 1995. Analysis of these data against hydrologic and water quality data suggest that the recent decline in submerged aquatic vegetation has been driven and perpetuated by deeper and darker water since Hurricane Irma in 2017. The District is also identifying other opportunities and challenges to the vegetation's recovery. For example, to evaluate the potential role for grazers (e.g., turtles, manatees, fish, and crabs) feeding to slow the submerged aquatic vegetation's recovery, the District and Florida Fish and Wildlife Conservation Commission (FWC) scientists have been conducting experiments that illustrates when common grazers were excluded, the submerged aquatic vegetation recovered quickly and had growth similar to pre-2017.

Strategic Plan Annual Work Plan Report FY 2022–23

The Strategic Plan Annual Work Plan Report for FY 2022–23, a "report card" of how well the District achieved its FY 2022–23 milestones/deliverables and success indicators, will be available in the Consolidated Annual Report (CAR). Once published, the CAR can be found at: *www.sjrwmd.com/documents/plans*.

List of critical wetlands to be acquired using funds from the Land Acquisition Trust Fund

In 2022, the Legislature enacted new legislation (i.e., Senate Bill 882) that requires the District's strategic plan to include a list of critical wetlands to be acquired using funds from the Land Acquisition Trust Fund, in accordance with sections 373.036(2)(e) and 373.036(2)(f)5., *Florida Statutes* (F.S.). This Strategic Plan includes the District's list of critical wetlands, which was approved by the Governing Board on November 14, 2023. The list of critical wetlands is available on the District's website at: *www.sjrwmd.com/documents/plans*.

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