

2021 Florida Statewide Annual Report
on Total Maximum Daily Loads, Basin Management
Action Plans, Minimum Flows and Minimum Water
Levels, and Recovery or Prevention Strategies
Americans with Disabilities Act (ADA) Version

Florida Department of Environmental Protection

Division of Environmental Assessment and Restoration

and

Office of Water Policy and Ecosystems Restoration

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Introduction

Florida has wide-ranging efforts in place to protect and restore the water quality and the minimum flows and levels of the state's waters. The Florida Department of Environmental Protection (DEP) is pleased to present the **2021 Statewide Annual Report** on these efforts in a dynamic and [interactive Story Map](#) format which is best viewed using Google Chrome or Microsoft Edge. As required by Section 403.0675, Florida Statutes (F.S.), this report updates the status of protection and restoration actions through total maximum daily loads (TMDLs), basin management action plans (BMAPs), minimum flows or minimum water levels (MFLs), and recovery or prevention strategies.

Data used to complete this report are available for download on the Contacts and Data tab of the [interactive Story Map](#).

Total Maximum Daily Loads

The Florida Department of Environmental Protection (DEP) monitors the quality of waterbodies across the state, assessing their condition against the applicable water quality standards and listing those that exceed the criteria as "impaired" for one or more pollutants. Florida Statutes require total maximum daily loads (TMDLs) to be developed for any waterbody or waterbody segment placed on the DEP Verified List of Impaired Waters. A TMDL is a water quality restoration goal establishing the maximum amount of a pollutant that a waterbody can assimilate without causing exceedances of water quality standards.

As such, TMDL development is an important step toward restoring state waters to their designated uses. Basin management action plans (BMAPs) and permits issued for point sources often rely upon TMDLs as the basis for their water quality goals.

In 2014, DEP provided the U.S. Environmental Protection Agency with a priority framework document that contained a long-term plan for addressing how to assess waters and develop TMDLs under the Florida Statutes and Section 303(d) of the federal Clean Water Act. The document focused on Florida's transition from a pace-driven TMDL development schedule to a new approach based on recovery potential screening.

In March 2019, DEP scheduled and completed a check-in period to update the priority list based on new public comments, new sampling data, and new verified impairments. The updated priority list aligns with the Governor's [Executive Order 19-12](#) (Achieving More Now For Florida's Environment), implementing major reforms to ensure the protection of Florida's environment and water quality.

As of December 31, 2021, DEP has adopted a total of 453 TMDLs. Of these, 268 were developed for dissolved oxygen, nutrients, and/or un-ionized ammonia; 179 for bacteria; and 5 for iron, lead, or turbidity. In addition, the state has adopted a statewide TMDL for mercury, based on fish consumption advisories, affecting over 1,100 waterbody segments. These TMDLs cover portions of many of the state's largest watersheds. DEP has many more TMDLs in various

stages of development; for an overview of waterbodies or segments with adopted or in-progress TMDLs in Florida, see **Figure 1**. For more information about the TMDL program, click [here](#).

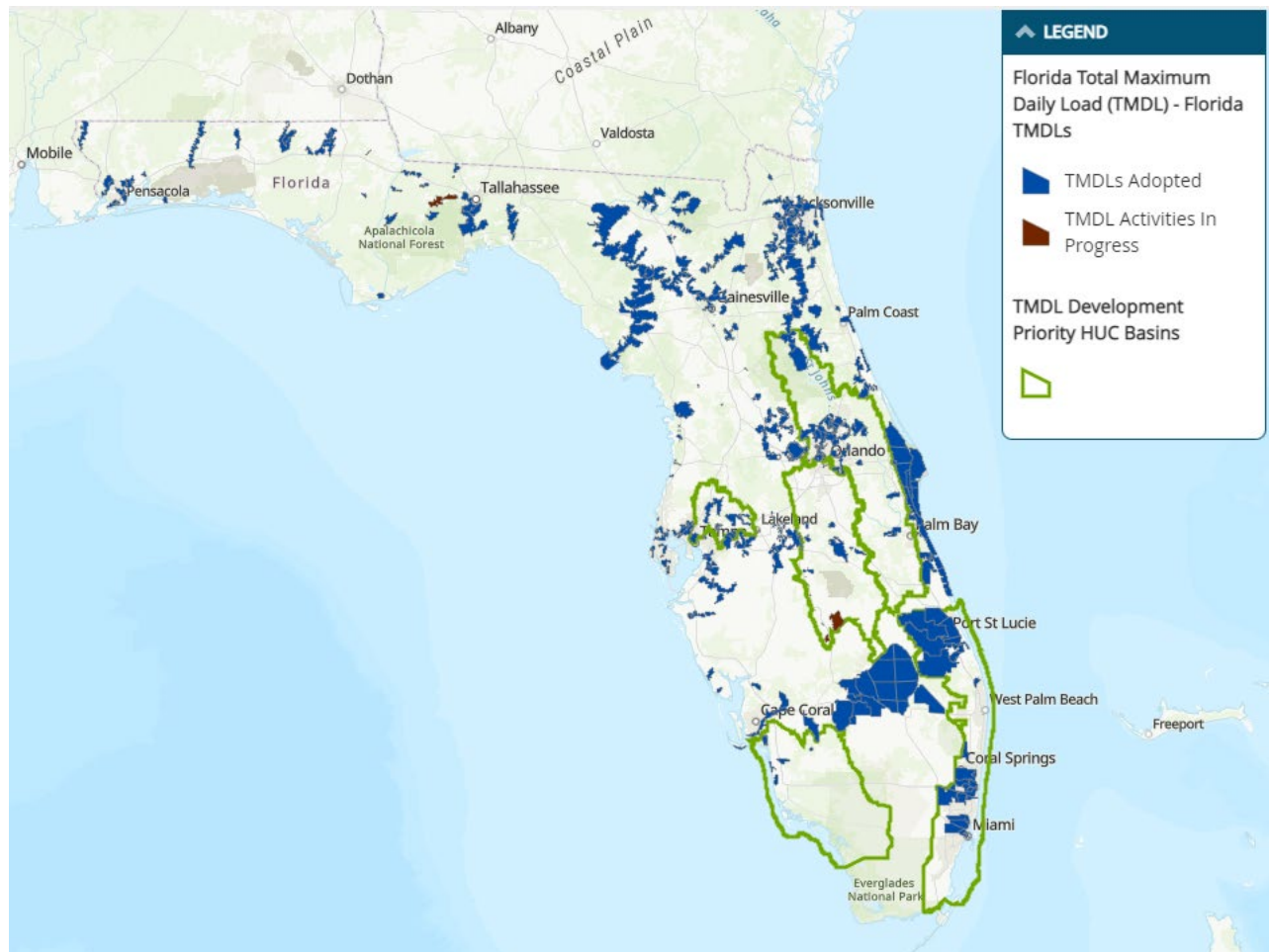


Figure 1. Overview of adopted and in-progress TMDLs, and TMDL priority basins, as of December 31, 2021

HUC = Hydrologic unit code

Basin Management Action Plans

A basin management action plan (BMAP) is a framework for water quality restoration that contains local and state commitments to reduce pollutant loading through current and future projects and strategies. BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to achieve pollutant reductions established by a total maximum daily load (TMDL). These broad-based plans are developed with local stakeholders and rely on local input and commitment for development and successful implementation. BMAPs are adopted by Florida Department of Environmental Protection (DEP) Secretarial Order and are legally enforceable. **Figure 2** shows the basins with adopted BMAPs as of December 31, 2021.

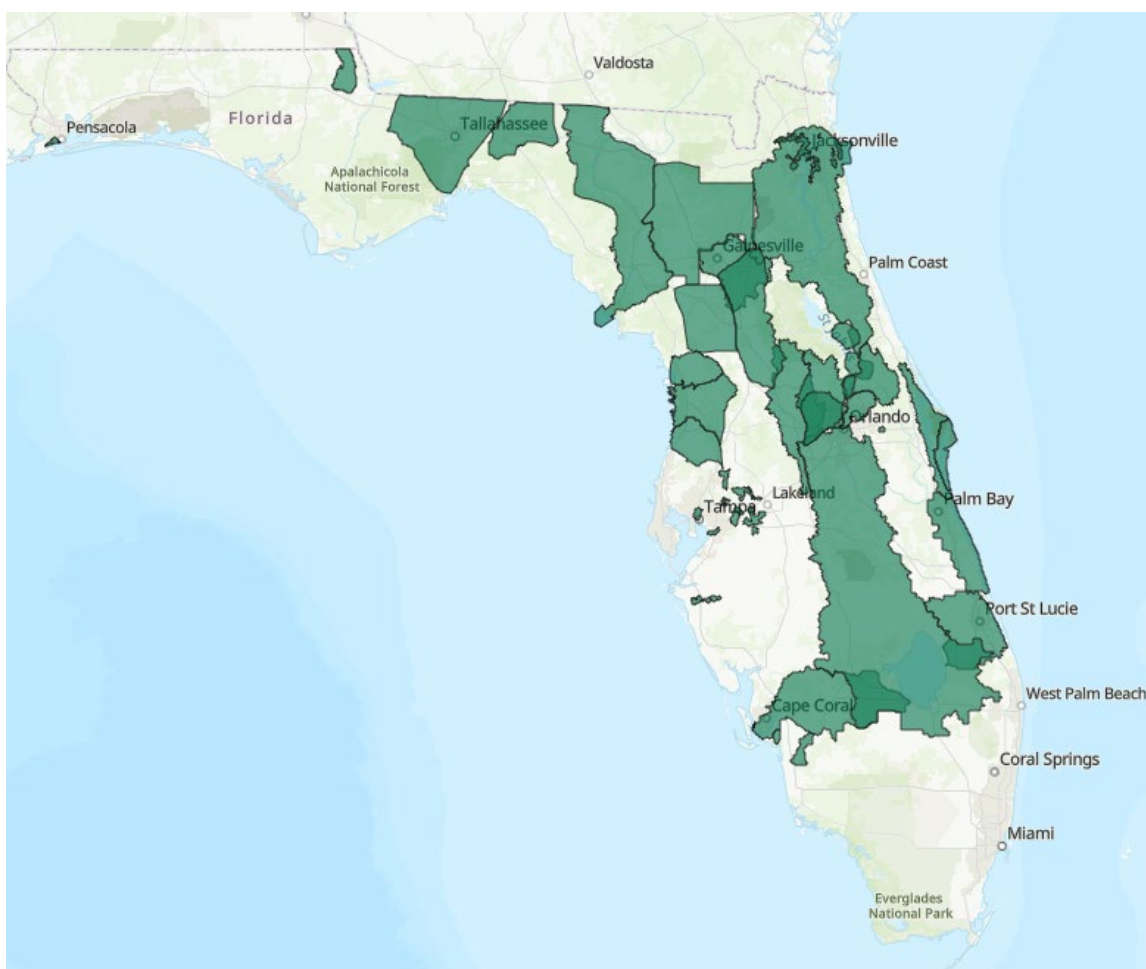


Figure 2. Adopted BMAPs as of December 31, 2021

Navigation

Select any of the following sections for additional information about BMAPs.

- [Northern Everglades and Estuaries Protection Program BMAPs.](#)
- [Outstanding Florida Springs BMAPs.](#)
- [Additional Nutrient BMAPs.](#)
- [Fecal Indicator Bacteria BMAPs.](#)
- [Alternative Restoration Approaches.](#)

How to Use This Report

The management actions listed in the BMAPs comprise local projects proposed and committed to by counties, municipalities, special districts, private industrial facilities, wastewater utilities, commercial agricultural operations, state agencies, and other stakeholders. In 2021, DEP contacted stakeholders in all BMAP areas to request information on the **status of projects through December 31, 2021**. For a downloadable file that provides updates on existing projects, as well as information about new or planned projects, provided by the responsible entities, [click here](#). In some cases, the information provided by the entity was incomplete, no update was provided, or the project was completed some time ago and the entity could not easily obtain records.

The terms used throughout the project tables are defined as follows:

- **Not provided:** Information was requested by DEP but was not provided by the lead entity.
- **TBD:** To be determined. Information is not currently available but will be provided by the lead entity when it is available.
- **NA:** Not applicable. Information is not relevant to the project.
- **0:** Zero. The numeric value is zero.

The designations for project status used in the tables are as follows:

- **Canceled:** Project or activity was planned but will no longer take place. This includes the cessation of ongoing activities.
- **Completed:** Project, activity, or task is finished and is providing water quality benefits.
- **Planned:** Project or activity is conceptual or proposed.
- **Underway:** Project or activity has commenced or has been initiated but is not completed and is not yet reducing nutrient loads from the treated area.
- **Ongoing:** Project or activity which requires action each year to continue providing water quality benefits. These projects are typically non-structural and continuous.

Additional Items of Note

- The information included in this report reflects the implementation status as of **December 31, 2021**.
- The projects and management strategies are ranked with a priority of high, medium, or low. Projects with a "completed" status were assigned a low priority. Projects classified as "underway" were assigned a medium priority because some resources have been allocated to these projects, but additional assistance may be needed for the projects to be completed. A high priority was assigned to projects listed as "planned" or "ongoing."
- Underway and planned projects may be assigned estimated reductions and costs that have not been verified or may be listed as TBD. As projects move to a completed status, DEP will review the project information and revise reductions as appropriate.
- In BMAPs statewide, owner-implemented best management practices or water quality monitoring are required for agricultural operations to show compliance with water quality standards. In some BMAPs, load reductions associated with agricultural best management practices have been estimated. Agricultural enrollment information is provided by the Florida Department of Agriculture and Consumer Services (FDACS) as part of a statewide [Implementation Report](#), submitted annually to the Governor and Legislature. The FDACS report includes more details on the status of implementation of agricultural nonpoint source best management practices and summarizes survey responses, response rates, site inspections, and other methods used to verify the implementation of and compliance with best management practices pursuant to BMAPs.
- While the Florida Department of Transportation submits project information, there is no specific cost breakdown for water quality improvement projects, which are embedded into and implemented as part of larger transportation projects adopted in its Five-Year Work Program, pursuant to Section 339.135, Florida Statutes (F.S.).
- Beginning in 2020, DEP designated ongoing projects separately from completed projects. Previous reductions and costs included ongoing projects as a part of completed project totals.
- **Table 1** summarizes the total nitrogen (TN) and total phosphorus (TP) reductions for completed, ongoing, planned, and underway projects statewide as of December 31, 2021, as well as the costs for construction and annual operations and maintenance.

Table 1. TN and TP reductions summary as of December 31, 2021

lbs/yr = Pounds per year

Project Status	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Cost Estimate	Cost Annual Operations and Maintenance
Completed	4,731,535	771,668	\$9,045,295,365	\$161,533,094
Ongoing	3,109,184	321,451	\$77,988,671	\$48,679,173
Planned	865,911	19,919	\$2,369,376,083	\$6,888,452
Underway	1,765,504	150,553	\$6,675,818,816	\$18,036,075

Northern Everglades and Estuaries Protection Program BMAPs

Introduction

In 2007, the Florida Legislature created the Northern Everglades and Estuaries Protection Program, which expanded the Lake Okeechobee Protection Act to include the Caloosahatchee River and the St. Lucie River and Estuaries. During the 2016 session, the Florida Legislature amended the Northern Everglades and Estuaries Protection Program (Section 373.4595, F.S.) to strengthen provisions for implementing the BMAPs and further clarify the roles and responsibilities, coordination, implementation, and reporting efforts among the three Coordinating Agencies: DEP, FDACS, and South Florida Water Management District (SFWMD). The primary goal of the program is to restore and protect the state's surface water resources by addressing the quality, quantity, timing, and distribution of water to the natural system.

Section 373.4595, F.S., requires the Northern Everglades and Estuaries Protection Program BMAPs to include milestones for implementation and water quality improvement, and associated water quality monitoring components sufficient to evaluate whether reasonable progress is being achieved over time. Implementation schedules must include 5-, 10-, and 15-year measurable milestones and targets to achieve the TMDLs addressed by the BMAPs no later than 20 years after BMAP adoption. The initial implementation schedule is used to provide guidance for planning and funding purposes and is exempt from Chapter 120, F.S. If restoration within 20 years is not practicable, the schedule must explain the constraints that prevent the achievement of the TMDLs within 20 years and include additional 5-year milestones, as necessary.

In addition, in January 2019, Executive Order 19-12 (Item C) included a requirement to update and secure all restoration plans, within one year, for waterbodies impacting south Florida communities, including the Northern Everglades and Estuaries Protection Program BMAPs. Updates to the Caloosahatchee River and Estuary, Lake Okeechobee, and St. Lucie River and Estuary BMAPs were adopted on February 3, 2020, and this report is based on the updated BMAPs. Additions to the updated BMAPs included revisions to the water quality models, the BMAP water quality monitoring networks, and the implementation of several new management strategies. The BMAP areas for the Caloosahatchee River and Estuary and St. Lucie River and Estuary were expanded, and stakeholder allocations were refined in those BMAPs based on the updated models to improve nutrient loading estimates. The Basinwide Sources Approach is a

new strategy that addresses nutrient loading from several primary source categories, and the Targeted Restoration Area approach evaluates and prioritizes basins within the BMAP area based on measured water quality data to efficiently allocate project resources.

Figure 3 shows the Northern Everglades and Estuaries Protection Program BMAP areas and the implementation status of the BMAP projects as of December 31, 2021. The subsequent sections describe the estimated pollutant reduction in each basin in pounds per year. These projects were submitted to provide reasonable assurance to DEP that each entity has a plan for how to meet its nutrient reduction obligation, as assigned. However, the list of projects is meant to be flexible enough to allow for changes that may occur over time. During the annual review of BMAP implementation efforts, project-specific information may be revised and updated, resulting in changes to the estimated reductions for those projects. The revisions may increase or decrease estimated reductions, and DEP will work with stakeholders to address revisions as they are identified.

The Coordinating Agencies are working on additional projects, listed with identifiers beginning with "CA-," and the reductions shown are coarse estimates developed with the best available information. Projects are also listed that are coordinated by SFWMD or FDACS, and many of these projects depend on annual legislative funding. For SFWMD dispersed water management projects, the completion date is the construction completion date, at which time the project is considered completed and operating. FDACS projects include lands enrolled in the Best Management Practices Program, hybrid wetland treatment technology, and floating aquatic vegetation treatment funded through the agency. New projects will continue to be developed and identified in conjunction with local stakeholders, and several Coordinating Agency initiatives are underway to plan for projects and gather additional data.

For the Northern Everglades and Estuaries Protection Program BMAPs, DEP works in collaboration with the SFWMD, St. Johns River Water Management District, and Southwest Florida Water Management District.

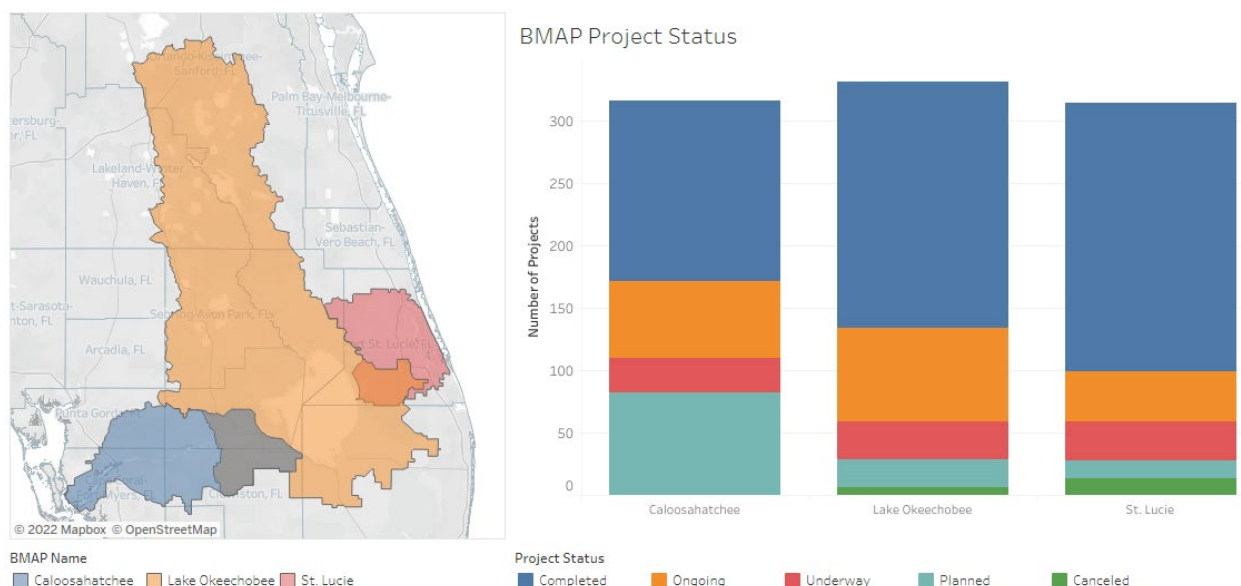


Figure 3. Northern Everglades and Estuaries Protection Program BMAP project status

Caloosahatchee Estuary BMAP

BACKGROUND

The Caloosahatchee River and Estuary Basin is the 893,940-acre watershed draining into the Caloosahatchee River (C-43 Canal) or the Caloosahatchee Estuary downstream of the Franklin Lock (S-79). The Caloosahatchee River and Estuary Watershed is located in southwestern Florida in Charlotte County, Collier County, Glades County, Hendry County, and Lee County. The Caloosahatchee River runs from Lake Okeechobee through a series of locks to San Carlos Bay. It has both fresh and marine segments: the freshwater segment is from Lake Okeechobee to the Franklin Lock. The marine segment, or Caloosahatchee Estuary, extends from the Franklin Lock to Shell Point, adjacent to San Carlos Bay, with Pine Island Sound to the northwest and Estero Bay to the southeast.

Water quality in the Caloosahatchee River and Estuary Watershed is affected by freshwater runoff from agricultural and urban sources in the watershed and discharges from Lake Okeechobee. DEP identified the Caloosahatchee Estuary as impaired for dissolved oxygen (DO) and nutrients. In August 2009, DEP adopted the Caloosahatchee Estuary TMDL, which established a total nitrogen (TN) reduction target in the Caloosahatchee Estuary, downstream of the Franklin Lock, to reduce chlorophyll *a* levels. The Caloosahatchee Estuary BMAP was first adopted in November 2012 to implement the TN TMDL.

Additionally, DEP identified the following five tributaries to the Caloosahatchee River as impaired for DO: S-4 Basin, C-19 Canal, Lake Hicpochee, Long Hammock Creek, and Townsend Canal. In late 2019, TMDLs were adopted for these tributaries, which established reduction targets for TN, total phosphorus (TP), and biochemical oxygen demand (BOD).

The Caloosahatchee Estuary BMAP is governed by Section 373.4595, F.S., as part of the Northern Everglades and Estuaries Protection Program. The primary goal of this program is to restore and protect the state's surface water resources by addressing the quality, quantity, timing, and distribution of water to the ecosystem. The statutory milestones for implementation and water quality improvement, and the associated water quality monitoring component, were included in the 5-Year Review for the Caloosahatchee Estuary BMAP, completed in November 2017. Executive Order 19-12 required an update to this BMAP in 2020 that incorporates recommendations from the 5-Year Review. The Caloosahatchee River Tributary TMDLs were also incorporated into the updated 2020 Caloosahatchee River and Estuary BMAP.

STATUS OF PROJECTS

Through December 31, 2021, 126 projects were completed and 39 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 727,351 lbs/yr of TN, or 80 % of the reductions needed to meet the portion of the TN TMDL for the Caloosahatchee Estuary. An additional 73 projects are identified as underway or planned and are estimated to achieve an additional 21,444 lbs/yr of TN. The reported total cost for projects is estimated to be \$1,620,031,397. Since the tributary TMDLs were incorporated into the BMAP for the first time as part of the 2020 update, future reports will include progress towards the tributary TMDLs.

[Caloosahatchee Story Map](#)

Lake Okeechobee BMAP

BACKGROUND

Lake Okeechobee, the largest lake in the southeastern U.S., is a shallow, eutrophic lake with an average depth of 9 feet. The Lake Okeechobee Watershed covers more than 2.9 million acres and consists of 9 subwatersheds. In 2001, DEP adopted a TP TMDL for Lake Okeechobee after it was identified as impaired for TP. The TMDL is a TP load to Lake Okeechobee of 308,647 lbs/yr (140 metric tons per year), of which 77,162 lbs/yr fall directly on the lake through atmospheric deposition. The remaining 231,485 lbs/yr of TP are allocated to the entire Lake Okeechobee Watershed. The Lake Okeechobee BMAP was first adopted in December 2014 to implement the TP TMDL.

The Lake Okeechobee BMAP is governed by Paragraph 373.4595, F.S., as part of the Northern Everglades and Estuaries Protection Program. The primary goal of this program is to restore and protect the state's surface water resources by addressing the quality, quantity, timing, and distribution of water to the ecosystem. The statutory milestones for implementation and water quality improvement, and the associated water quality monitoring component, were included in the 5-Year Review for the Lake Okeechobee BMAP in December 2019. Executive Order 19-12 required an update to this BMAP in 2020, and the 5-Year Review was included as part of the updated BMAP that was adopted in February 2020.

STATUS OF PROJECTS

Through December 31, 2021, 197 projects were completed and 75 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 243,343 lbs/yr of TP, or 26 % of the reductions needed to meet the TP TMDL. An additional 53 projects are identified as underway or planned and are estimated to achieve an additional 11,252 lbs/yr of TP. The reported total cost for projects is estimated to be \$1,757,536,740.

[Lake Okeechobee Story Map](#)

St. Lucie River and Estuary BMAP

BACKGROUND

The St. Lucie River and Estuary Basin is a 514,649-acre watershed located in southeast Florida in Martin County, St. Lucie County, and Okeechobee County. It drains into the St. Lucie Estuary, a major tributary of the southern Indian River Lagoon. Water quality in the St. Lucie Estuary is affected by freshwater runoff from agricultural and urban sources in the watershed and discharges from Lake Okeechobee.

DEP identified the St. Lucie River and Estuary as impaired by excessive amounts of TP, TN, and BOD. In March 2009, DEP adopted nutrient and DO TMDLs for the St. Lucie Basin. The St. Lucie River and Estuary BMAP was adopted in June 2013 to implement the TN and TP TMDLs.

The St. Lucie BMAP is governed by Paragraph 373.4595, F.S., as part of the Northern Everglades and Estuaries Protection Program. The primary goal of this program is to restore and protect the state's surface water resources by addressing the quality, quantity, timing, and distribution of water to the ecosystem. The statutory milestones for implementation and water quality improvement, and the associated water quality monitoring component, were included in the 5-Year Review for the St. Lucie BMAP, completed in June 2018. Executive Order 19-12 required an update to this BMAP in 2020. The updated BMAP was formally adopted in February 2020 and it incorporates recommendations from the 5-Year Review.

STATUS OF PROJECTS

Through December 31, 2021, 215 projects were completed and 40 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 840,813 lbs/yr of TN, or 80 % of the reductions needed to meet the TN TMDL, and 203,966 lbs/yr of TP, or 50 % of the reductions needed to meet the TP TMDL. An additional 46 projects are identified as underway or planned and are estimated to achieve an additional 246,301 lbs/yr of TN and 86,917 lbs/yr of TP. The reported total cost for projects is estimated to be \$3,562,630,691.

[St. Lucie Story Map](#)

Outstanding Florida Springs BMAPs

Introduction

The Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.) provides for the protection and restoration of the state's Outstanding Florida Springs (OFS), which comprise 24 first magnitude springs, 6 additional named springs, and their associated spring runs. The act provides the following special protections for OFS, many of which are implemented through the BMAP program.

- Adoption of implementation plans with 5-year milestones and a target to achieve the TMDL within 20 years.
- Delineation of priority focus areas where statutory prohibitions on certain activities will apply.
- Identification of and estimated pollutant loads for each point source or category of nonpoint sources in the springshed.
- Listing of specific projects and programs, along with planning level estimates of costs, funding sources, schedules, and anticipated benefits.
- Creation of remediation plans for onsite sewage treatment and disposal systems where such plans are found to be necessary.

The BMAPs are designed to achieve 80 % of the load reductions needed for the spring vent within 10 years of adoption (30 % within 5 years and 50 % within 10 years), and 100 % of the load reductions within 15 years. DEP will evaluate progress towards these milestones and adjust management strategies to ensure that each TMDL will be met no later than the 20-year goal. For specific details on the TMDL targets and impairments addressed by each BMAP, please refer to the BMAP documents posted [here](#).

During the development of the springs BMAPs to meet the requirements of the 2016 Florida Springs and Aquifer Protection Act, five individual BMAPs were challenged which resulted in delaying the effective dates for implementation. The Santa Fe River, Silver Springs and Upper Silver River, Rainbow Spring Group and Rainbow River, Suwannee River, Volusia Blue Spring, and Wekiwa and Rock Springs BMAPs were all effective as of May 18, 2021. All other springs BMAPs were effective as of January 4, 2019.

The map in **Figure 4** shows the OFS BMAP areas and the implementation status of projects by BMAP area as of December 31, 2021. The subsequent sections describe the estimated pollutant reduction in each basin in pounds per year.

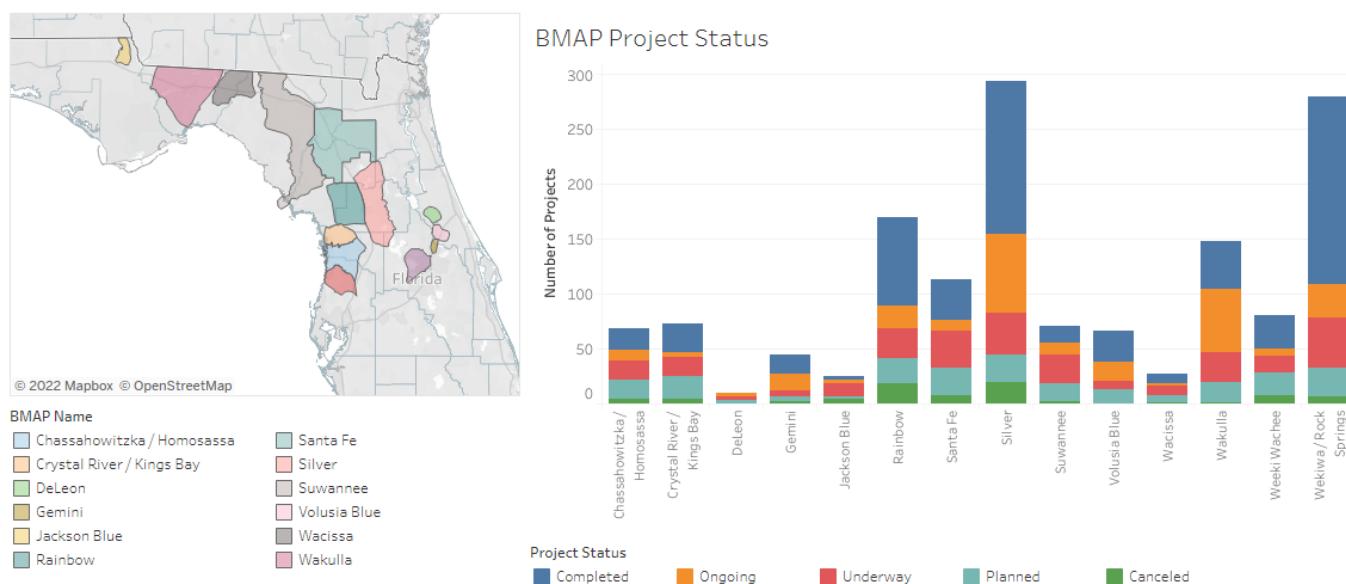


Figure 4. OFS BMAP project status

Crystal River/Kings Bay BMAP

BACKGROUND

The Crystal River/Kings Bay BMAP area consists of 178,753 acres located in Citrus County, adjacent to the City of Crystal River. The BMAP area contains the Crystal River/Kings Bay springs complex, which has more than 70 springs that account for 99 % of the fresh water entering the 600-acre Kings Bay. The BMAP area also includes the surface water basin as well as the groundwater contributing areas for the springs (or springsheds).

STATUS OF PROJECTS

Through December 31, 2021, 26 projects were completed and 5 activities are listed as ongoing. The projects completed to date are estimated to achieve total TN reductions of 23,615 lbs/yr. An additional 38 projects are identified as underway or planned and are estimated to achieve an additional 225,142 lbs/yr of TN. The reported total cost for projects is estimated to be \$490,837,030.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Crystal River/Kings Bay Story Map](#)

DeLeon Spring BMAP

BACKGROUND

DeLeon Spring is located in Volusia County and is part of the Lake Woodruff Planning Unit of the Middle St. Johns River Basin. The BMAP area encompasses 65,392 acres. DeLeon Spring is a second magnitude spring located in DeLeon Spring State Park, 5 miles northwest of the City of

DeLand. A series of lakes and creeks connects the headspring to the St. Johns River 12 miles downstream.

STATUS OF PROJECTS

Through December 31, 2021, 4 activities were listed as ongoing. The projects completed to date are estimated to achieve total TN reductions of 4,079 lbs/yr. An additional 6 projects are identified as underway or planned and are estimated to achieve an additional 15,697 lbs/yr of TN. No cost estimates have been provided for this BMAP.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[DeLeon Spring Story Map](#)

Gemini Springs BMAP

BACKGROUND

The Gemini Springs BMAP area comprises 27,290 acres located in the Lake Monroe Planning Unit of the Middle St. Johns River Basin. The BMAP area is situated in the City of DeBary and also includes portions of the City of Lake Mary, City of Sanford, Seminole County, and Volusia County. Gemini Springs is an impaired second magnitude OFS.

STATUS OF PROJECTS

Through December 31, 2021, 18 projects were completed and 15 activities were listed as ongoing. The projects completed to date are estimated to achieve total TN reductions of 2,148 lbs/yr. An additional 10 projects are identified as underway or planned and are estimated to achieve an additional 4,636 lbs/yr of TN. The reported total cost for projects is estimated to be \$18,633,876.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Gemini Springs Story Map](#)

Homosassa and Chassahowitzka Springs Groups BMAP

BACKGROUND

The Homosassa and Chassahowitzka BMAP area encompasses 340,609 acres located in southern Citrus County, including the City of Inverness, and northern Hernando County, including a portion of the City of Brooksville. The BMAP area contains both the Homosassa Spring Group, numerous springs that are the source waters for the Homosassa River, the Chassahowitzka Spring Group, and 6 springs that make up the headwaters of the Chassahowitzka River. The Chassahowitzka River is a designated Outstanding Florida Water (OFW) that discharges into the Gulf of Mexico. This area includes the surface water basin as well as the groundwater contributing areas for the springs (or springsheds).

STATUS OF PROJECTS

Through December 31, 2021, 20 projects were completed and 10 activities are listed as ongoing. The projects completed to date are estimated to achieve TN reductions of 18,854 lbs/yr. An additional 35 projects are identified as underway or planned and are estimated to achieve an additional 61,917 lbs/yr of TN. The reported total cost for projects is estimated to be \$113,089,061.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Homosassa and Chassahowitzka Story Map](#)

Jackson Blue Spring and Merritts Mill Pond BMAP

BACKGROUND

The Jackson Blue Basin encompasses 141 square miles in Jackson County, Florida. Jackson Blue Spring forms the headwaters of the 270-acre Merritts Mill Pond, which forms the headwaters of Spring Creek, a tributary to the Chipola River, designated as an OFW. This area includes the surface water basin as well as the groundwater contributing areas for the spring (or springsheds).

STATUS OF PROJECTS

Through December 31, 2021, 3 projects were completed and 4 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 133,516 lbs/yr of TN. An additional 14 projects are identified as underway or planned and are estimated to achieve an additional 37,777 lbs/yr of TN. The reported total cost for projects is estimated to be \$17,872,146.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Jackson Blue Spring and Merritts Mill Pond Story Map](#)

Rainbow Spring BMAP

BACKGROUND

The Rainbow Spring BMAP area covers 679 square miles and includes portions of Marion County and Levy County. The BMAP area approximates the extent of the groundwater capture area determined by the Southwest Florida Water Management District and includes the surface drainage for the Rainbow River. The eastern boundary of the BMAP area coincides with the western extent of the Silver Springs BMAP area and Interstate 75.

STATUS OF PROJECTS

Through December 31, 2021, 81 projects were completed and 20 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 39,828 lbs/yr of TN. An additional 50 projects are identified as underway or planned and are estimated to achieve an

additional 116,689 lbs/yr of TN. The reported total cost for projects is estimated to be \$155,378,753.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Rainbow Spring Story Map](#)

Santa Fe River BMAP

BACKGROUND

The Santa Fe River Basin encompasses an area of over 1 million acres and includes all or portions of Alachua County, Bradford County, Columbia County, Gilchrist County, and Union County. Urban areas include Lake City and Fort White in Columbia County and Alachua, Archer, High Springs, La Crosse, and Newberry in Alachua County. The basin also includes the following OFS: Ichetucknee Spring Group, Hornsby Spring, Devil's Ear Spring, Poe Spring, Columbia Spring, and Treehouse Spring.

STATUS OF PROJECTS

Through December 31, 2021, 27 projects were completed and 10 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 98,370 lbs/yr of TN. An additional 41 projects are identified as underway or planned and are estimated to achieve an additional 362,866 lbs/yr of TN. The reported total cost for projects is estimated to be \$91,052,513.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Santa Fe Story Map](#)

Silver River and Springs BMAP

BACKGROUND

The Silver Springs BMAP area covers 989 square miles and is located primarily in Marion County. The BMAP area approximates the extent of the 1,000-year modeled groundwater capture zone. The BMAP addresses the surface drainage basin for Silver River but no other surface water basins located in the BMAP area. The western boundary of the BMAP area coincides with the eastern extent of the Rainbow Springs BMAP area and Interstate 75.

STATUS OF PROJECTS

Through December 31, 2021, 140 projects were completed and 71 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 78,046 lbs/yr of TN loading at the springs and Upper Silver River. An additional 63 projects are identified as underway or planned and are estimated to achieve an additional 122,179 lbs/yr of TN. The reported total cost for projects is estimated to be \$303,947,782.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Silver River and Springs Story Map](#)

Suwannee River BMAP

BACKGROUND

The Suwannee River BMAP area comprises three sub-basins (Lower Suwannee River, Middle Suwannee River, and Withlacoochee River) and encompasses 1,323,662 acres in eastern Dixie, eastern Madison, western Hamilton, northeast and eastern Lafayette, western Levy, western Gilchrist, small pockets of Taylor and Columbia counties, and the majority of Suwannee County. Population centers include Live Oak and Branford in Suwannee County, Mayo in Lafayette County, Bell and Trenton in Gilchrist County, Fanning Springs in Gilchrist and Levy counties, Chiefland in Levy County, and Madison and Lee in Madison County. Seven springs in the Suwannee River Basin are impaired OFS: Fanning Springs, Manatee Spring, Falmouth Spring, Troy Spring, Lafayette Blue Spring, Madison Blue Spring, and Peacock Springs.

STATUS OF PROJECTS

Through December 31, 2021, 15 projects were completed and 11 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 350,528 lbs/yr of TN. An additional 43 projects are identified as underway or planned and are estimated to achieve an additional 608,032 lbs/yr of TN. The reported total cost for projects is estimated to be \$86,629,633.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Suwannee River Story Map](#)

Upper Wakulla River and Wakulla Springs BMAP

BACKGROUND

The BMAP area encompasses 848,445 acres, or 1,325 square miles. The Upper Wakulla River and Wakulla Springs are designated as an OFW. The river and springs are very dynamic groundwater and surface water-fed systems. Wakulla Springs, designated as an OFS, is one of the deepest freshwater springs in the world and the primary source of water for the Wakulla River. In the Upper Wakulla River and Wakulla Springs Basin, the Cody Scarp generally separates the semi-confined geologic features to the north (soils characterized with lower potential for groundwater impacts) and areas of unconfined geologic features to the south (highly permeable karst areas with a high potential for groundwater impacts).

STATUS OF PROJECTS

Through December 31, 2021, 44 projects were completed and 57 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 19,722 lbs/yr of TN. An additional 46 projects are identified as underway or planned and are estimated to achieve an additional 44,674 lbs/yr of TN. The reported total cost for projects is estimated to be \$422,797,631.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Upper Wakulla River and Wakulla Springs Story Map](#)

Volusia Blue Springs BMAP

BACKGROUND

The Volusia Blue Spring BMAP area comprises 108 square miles and encompasses portions of the City of DeBary, City of DeLand, City of Deltona, and City of Lake Helen; all of the City of Orange City; and a portion of unincorporated Volusia County. Volusia Blue Spring is an impaired first magnitude OFS.

STATUS OF PROJECTS

Through December 31, 2021, 28 projects were completed and 17 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 17,038 lbs/yr of TN. An additional 21 projects are identified as underway or planned and are estimated to achieve an additional 43,842 lbs/yr of TN. The reported total cost for projects is estimated to be \$89,760,577.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Volusia Blue Springs Story Map](#)

Wacissa Spring Group BMAP

BACKGROUND

The Wacissa River and Wacissa Spring Group BMAP area comprises 327,585 acres in Madison County and Jefferson County, including the City of Monticello. The BMAP area contains one impaired OFS, the Wacissa Spring Group. The area includes the surface water basin as well as the groundwater contributing areas for the springs (or springsheds).

STATUS OF PROJECTS

Through December 31, 2021, 8 projects were completed and 3 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 19,455 lbs/yr of TN. An additional 15 projects are identified as underway or planned and are estimated to achieve an additional 59,200 lbs/yr of TN. The reported total cost for projects is estimated to be \$9,799,765.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Wacissa Spring Group Story Map](#)

Weeki Wachee BMAP

BACKGROUND

The Weeki Wachee BMAP area consists of 200,474 acres located in southern Hernando County, including a portion of the City of Brooksville, and northern Pasco County. The BMAP area contains the Weeki Wachee Spring Group which is composed of a single, large main spring and numerous smaller springs spread over an area of nearly five square miles. Weeki Wachee Spring is the primary source of the Weeki Wachee River and the largest spring (by discharge) in the group. The BMAP area also contains Magnolia-Aripeka Springs Group; Mud Spring, Salt Spring, Wilderness Spring (collectively referred to as the Wilderness-Mud-Salt Springs Group); and Jenkins Creek Spring. All are located within the Weeki Wachee riverine system OFW boundaries. The area includes the surface water basin as well as the groundwater contributing areas for the springs (or springsheds).

STATUS OF PROJECTS

Through December 31, 2021, 30 projects were completed and 7 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 60,181 lbs/yr of TN. An additional 35 projects are identified as underway or planned and are estimated to achieve an additional 132,167 lbs/yr of TN. The reported total cost for projects is estimated to be \$150,130,065.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones or the 20-year target will not be met, an explanation of possible causes and potential solutions will be provided.

[Weeki Wachee Story Map](#)

Wekiwa Spring and Rock Springs BMAP

BACKGROUND

The Wekiwa Spring and Rock Springs Basins are located in Lake, Orange, and Seminole counties. The BMAP area is approximately 183,165 acres, or 286 square miles. Major centers of population in the basin include the cities of Altamonte Springs, Apopka, Maitland, Ocoee, Orlando, Winter Garden, and the Town of Oakland. Wekiwa Spring forms the headwater of the Wekiwa River, a tributary to the St. Johns River. Rock Springs discharges into Rock Springs Run, which then joins the Wekiwa River. Please see the “Additional Nutrient BMAPs” section for information on the Wekiwa River BMAP.

STATUS OF PROJECTS

Through December 31, 2021, 171 projects were completed and 31 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 71,222 lbs/yr of TN. An additional 71 projects are identified as underway or planned and are estimated to achieve an additional 79,070 lbs/yr of TN. The reported total cost for projects is estimated to be \$324,847,110.

Additional information will be provided when the OFS BMAP reaches its 5-, 10-, and 15-year milestones. If the milestones, or the 20-year target, will not be met, an explanation of possible causes and potential solutions will be provided.

[Wekiwa Spring and Rock Springs Story Map](#)

Additional Nutrient BMAPs

Other BMAPs not in the OFS or Northern Everglades and Estuaries Protection Program groups that address nutrient impairments are included in the Surface Water BMAPs for Nutrients group. **Figure 5** shows the Surface Water BMAPs for Nutrients BMAP areas in the state and the implementation status of the projects by BMAP area as of December 31, 2021. The subsequent sections describe the estimated pollutant reduction in each basin in pounds per year.

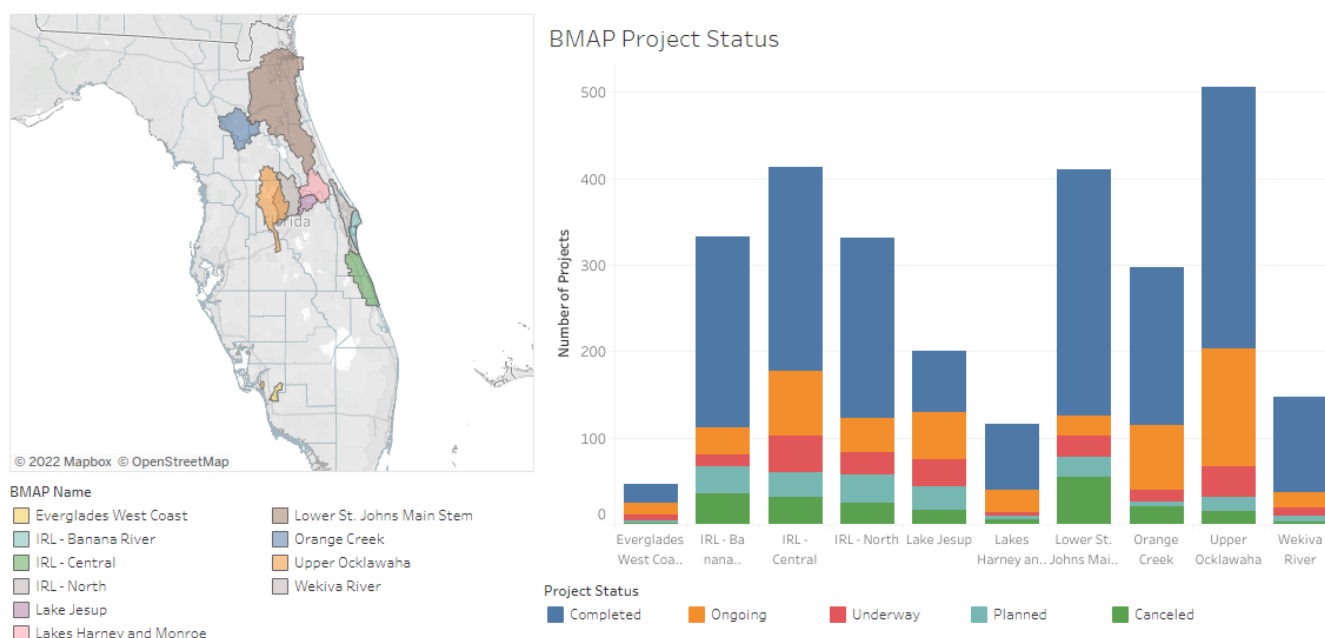


Figure 5. Surface water nutrient BMAPs project status

Everglades West Coast BMAP

BACKGROUND

The Everglades West Coast Basin is the 55,469-acre watershed composed of the Hendry Creek and Imperial River basins, which drain into Estero Bay in the Western Everglades area. Estero Bay proper is a shallow, subtropical lagoon separated from the Gulf of Mexico by barrier islands.

Hendry Creek is located in the southwest part of Lee County, 3 miles south of the City of Ft. Myers and 3 miles southeast of the City of Cape Coral. It flows south for 6 miles into north Estero Bay and drains a watershed area of 10,493 acres. The Imperial River basin covers an area of 44,976 acres, of which 4,416 acres are surface waters. Oak Creek and Leitner Creek flow into the upstream portion of the Imperial River.

DEP identified Hendry Creek and Imperial River as impaired for DO. In August 2008, DEP adopted the Hendry Creek and Imperial River TMDLs, which established TN reduction targets for the basins. The Everglades West Coast BMAP was adopted in November 2012 to implement the TN TMDLs.

STATUS OF PROJECTS

Through December 31, 2021, 23 projects were completed and 13 activities are listed as ongoing. An additional 9 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$90,464,595. Estimated reductions by basin are listed below for completed and ongoing as well as underway and planned projects.

- Hendry Creek
 - Completed and Ongoing: 6,957 lbs/yr or 67 % of TN.
 - Underway and Planned: 3,913 lbs/yr of TN.
- Imperial River
 - Completed and Ongoing: 15,330 lbs/yr or 25 % of TN.
 - Underway and Planned: No estimated reductions reported.

[Everglades West Coast Story Map](#)

Indian River Lagoon - Banana River Lagoon BMAP

BACKGROUND

The Banana River Lagoon BMAP area comprises 97,139 acres of the Indian River Lagoon (IRL) between Merritt Island and the coastal barrier island and extends in a north-south direction from Banana Creek south to the Eau Gallie Causeway. Sykes Creek and Newfound Harbor are the primary tributaries to the Banana River.

DEP verified the IRL as impaired because of excessive amounts of TN and TP, as evidenced by a decrease in seagrass distribution and by low DO. In March 2009, DEP adopted nutrient and DO TMDLs for the IRL, with a focus on the water quality conditions necessary for seagrass regrowth at the depth limits where seagrass historically grew in the lagoon, based on a multiyear composite of seagrass coverage.

The Banana River Lagoon BMAP is one of three separate BMAPs developed for the IRL, because of the IRL's large size and hydrologic diversity. Updates to the Banana River Lagoon BMAP were developed in cooperation with local stakeholders throughout 2020 and were formally adopted in February 2021.

STATUS OF PROJECTS

Through December 31, 2021, 221 projects were completed and 31 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 54,739 lbs/yr of TN, or 42 % of the reductions needed to meet the portion of the TN TMDL, and 6,791 lbs/yr of TP, or 34 % of the reductions needed to meet the TP TMDL allocated to the subbasin. An additional 45 projects are identified as underway or planned and are estimated to achieve an additional 768 lbs/yr of TN and 146 lbs/yr of TP. The reported total cost for projects is estimated to be \$178,449,137.

[Banana River Lagoon Story Map](#)

IRL - Central Indian River Lagoon BMAP

BACKGROUND

The Central Indian River Lagoon BMAP area covers 355,426 acres of the IRL between Melbourne and Fort Pierce, and extends north-south from the Melbourne Causeway south to the Fort Pierce Inlet.

DEP verified the IRL as impaired because of excessive amounts of TN and TP, as evidenced by a decrease in seagrass distribution and by low DO. In March 2009, DEP adopted the IRL nutrient and DO TMDLs, with a focus on the water quality conditions necessary for seagrass regrowth at the depth limits where seagrass historically grew in the lagoon, based on a multiyear composite of seagrass coverage.

The Central Indian River Lagoon BMAP is one of three separate BMAPs developed for the IRL because of the lagoon's large size and hydrologic diversity. Updates to the Central IRL BMAP were developed in cooperation with local stakeholders throughout 2020 and were formally adopted in October 2021.

The Central Indian River Lagoon was further divided into four project zones, with boundaries based on the distinct hydrology in different areas of the basin and their corresponding annual residence times. The zones are important because flushing times vary greatly among locations and consequently affect how nutrient reductions will impact these distinct areas. They identify large areas where projects should be implemented to ensure that the load reductions achieve the desired response for the lagoon. The zones are as follows:

- **Central A** – Melbourne Causeway (U.S. Highway 192) to the north tip of Grant Farm Island.
- **Central Sebastian (SEB)** – Grant Farm Island to Wabasso Causeway (County Road 510).
- **Central B** – Wabasso Causeway to the boundary between Indian River County and St. Lucie County.
- **Central SIRL** – The St. Lucie County/Indian River County line to the Fort Pierce Inlet.

STATUS OF PROJECTS

Through December 31, 2021, 237 projects were completed and 75 activities are listed as ongoing. An additional 70 projects were identified as underway or planned. The reported

total cost for projects is estimated to be \$286,726,505. Estimated reductions by project zone are listed below for completed and ongoing as well as underway and planned projects.

- Project Zone A
 - Completed and Ongoing: 78,907 lbs/yr or 30 % of TN and 9,619 lbs/yr or 24 % of TP.
 - Underway and Planned: 24,012 lbs/yr of TN and 3,102 lbs/yr of TP.
- Project Zone SEB
 - Completed and Ongoing: 69,109 lbs/yr or 26 % of TN and 30,372 lbs/yr or 65 % of TP.
 - Underway and Planned: 3,114 lbs/yr TN and 32,225 lbs/yr TP.
- Project Zone B
 - Completed and Ongoing: 88,071 lbs/yr or 30 % of TN and 14,626 lbs/yr or 39 % of TP.
 - Underway and Planned: 7,803 lbs/yr TN and 680 lbs/yr TP.
- Project Zone SIRL
 - Completed and Ongoing: 19,380 lbs/yr or 20 % of TN and 4,178 lbs/yr or 19 % of TP.
 - Underway and Planned: No estimated reductions reported.

[Central Indian River Lagoon Story Map](#)

IRL – North Indian River Lagoon BMAP

BACKGROUND

The North Indian River Lagoon BMAP area covers 217,090 acres of the IRL between Edgewater and Melbourne and extends in a north-south direction from Turnbull Creek to the Melbourne Causeway. Turnbull Creek, the Canaveral Barge Canal, the valley between Ten Mile Ridge and the Atlantic Coastal Ridge, and the Eau Gallie River are the primary tributaries to the North Indian River Lagoon.

DEP verified the IRL as impaired because of excessive amounts of TN and TP, as evidenced by a decrease in seagrass distribution and by low DO. In March 2009, DEP adopted the IRL nutrient and DO TMDLs, with a focus on the water quality conditions necessary for seagrass regrowth at the depth limits where seagrass historically grew in the lagoon, based on a multiyear composite of seagrass coverage.

The North Indian River Lagoon BMAP is one of three separate BMAPs developed for the IRL because of the IRL's large size and hydrologic diversity. Updates to the North IRL BMAP were developed in cooperation with local stakeholders throughout 2020 and were formally adopted in February 2021.

The North Indian River Lagoon was further divided into two project zones with boundaries based on the distinct hydrology in different areas of the basin and their corresponding annual residence times. The zones are important because flushing times vary greatly among locations and consequently affect how nutrient reductions will impact these distinct areas. They identify large areas where projects should be implemented to ensure that the load reductions achieve the desired response in the lagoon. The zones are as follows:

- **North A** – Turnbull Creek to NASA Causeway (State Road 405).
- **North B** – NASA Causeway to Melbourne Causeway (U.S. Highway 192).

STATUS OF PROJECTS

Through December 31, 2021, 209 projects were completed and 40 activities are listed as ongoing. An additional 58 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$227,405,582. Estimated reductions by project zone are listed below for completed and ongoing as well as underway and planned projects.

- Project Zone A
 - Completed and Ongoing: 43,848 lbs/yr or 37 % of TN and 8,349 lbs/yr or 42 % of TP.
 - Underway and Planned: 4,672 lbs/yr of TN and 1,090 lbs/yr TP.
- Project Zone B
 - Completed and Ongoing: 77,519 lbs/yr or 58 % of TN and 16,202 lbs/yr or 63 % of TP.
 - Underway and Planned: 10,469 lbs/yr TN and 1,286 lbs/yr TP.

[North Indian River Lagoon Story Map](#)

Lake Jesup BMAP

BACKGROUND

Lake Jesup is one of the largest lakes in Central Florida and is part of the St. Johns River system. The lake has a surface area of 10,660 acres (16.7 square miles) and drains a watershed area covering 86,382 acres (135 square miles).

DEP identified Lake Jesup as impaired for nutrients. In 2006, DEP adopted TMDLs for TP and TN for the lake.

STATUS OF PROJECTS

Through December 31, 2021, 72 projects were completed and 54 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 64,169 lbs/yr of TN, or 117 % of the reductions needed to meet the TN TMDL, and 10,639 lbs/yr of TP, or 97 % of the reductions needed to meet the TP TMDL. An additional 58 projects are identified as underway or planned and are estimated to achieve an additional 24,241 lbs/yr of TN and 3,535 lbs/yr of TP. The reported total cost for projects is estimated to be \$129,857,096.

[Lake Jesup Story Map](#)

Lakes Harney, Monroe, Middle St. Johns River, and Smith Canal BMAP

BACKGROUND

The Lakes Harney and Monroe and Middle St. Johns River Basin covers an area of 241,928 acres. It includes the main stem of the Middle St. Johns River between the inlet of Lake Harney and the confluence of the St. Johns River with the Wekiva River. These river segments receive inflows from the Upper St. Johns River and several major tributaries, including the Econlockhatchee River, Deep Creek, and Lake Jesup.

The river segments, including two wide areas of the main stem of the river referred to as Lake Monroe and Lake Harney, were verified as impaired because of excessive nutrients and low DO. In 2009, DEP adopted nutrient and DO TMDLs with reduction targets for TN and TP for Lakes Harney and Monroe and the Middle St. Johns River Basin, including Smith Canal. The Smith Canal Watershed is located in the southern portion of the basin and drains an area of 10 square miles.

STATUS OF PROJECTS

Through December 31, 2021, 76 projects were completed and 26 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 75,178 lbs/yr of TN, or 86 % of the reductions needed to meet the portion of the TN TMDL, and 18,506 lbs/yr, or 104 % of the reductions needed to meet the portion of the TP TMDL allocated to the allocated to the Lakes Harney and Monroe and Middle St. Johns River Basin. An additional 9 projects are identified as underway or planned and are estimated to achieve an additional 10,065 lbs/yr of TN and 768 lbs/yr of TP. The reported total cost for projects is estimated to be \$52,618,581.

[Lakes Harney, Monroe, Middle St. Johns River, and Smith Canal Story Map](#)

Lower St. Johns River Main Stem BMAP

BACKGROUND

The Lower St. Johns River (LSJR) Main Stem encompasses the 2,750-square-mile drainage area flowing north from the mouth of the Ocklawaha River to the Atlantic Ocean. This reach of the St. Johns River is 101 miles long.

DEP identified the LSJR as impaired for chlorophyll *a* in the freshwater section (Buffalo Bluff to Black Creek) and for DO in the marine section (Black Creek to the Atlantic Ocean near Mayport). DEP adopted TN and TP TMDLs to reduce chlorophyll *a* levels in the freshwater section. It also adopted a TN TMDL in the marine section to restore DO levels.

STATUS OF PROJECTS

Through December 31, 2021, 304 projects were completed and 20 activities are listed as ongoing. An additional 51 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$5,165,200,014. Estimated reductions by section are listed below for completed and ongoing as well as underway and planned projects.

- Freshwater Section
 - Completed and Ongoing: 667,101 lbs/yr or 117 % of TN and 140,139 lbs/yr or 122 % of TP.
 - Underway and Planned: 945 lbs/yr TN and 248 lbs/yr TP.
- Marine Section
 - Completed and Ongoing: 2,522,952 lbs/yr or 105 % of TN.
 - Underway and Planned: 252,515 lbs/yr TN.

[LSJR Main Stem Story Map](#)

Orange Creek BMAP

BACKGROUND

The Orange Creek Basin covers an area of 501 square miles. Located largely in Alachua County, it includes the following watersheds: Hogtown Creek, Lochloosa Lake, Newnans Lake, Orange Creek, Orange Lake, and Paynes Prairie (including Alachua Sink, Lake Wauberg, Sweetwater Branch, and Tumblin Creek).

The BMAP addresses TMDLs for multiple waterbodies including Alachua Sink, Lake Wauberg, Lochloosa Lake, Newnans Lake, Orange Lake, and Trout Lake. The TP TMDLs for Lake Wauberg, Newnans Lake, and Orange Lake were adopted in 2003 and in 2017 for Lochloosa Lake. TMDLs for TN were adopted in 2006 for Alachua Sink and in 2017 for Lochloosa Lake.

DEP identified fecal coliform impairments for Hogtown Creek, Sweetwater Branch, and Tumblin Creek and adopted fecal coliform TMDLs for these waterbodies in 2003.

STATUS OF PROJECTS

Through December 31, 2021, 184 projects were completed and 75 activities are listed as ongoing. An additional 19 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$407,236,239. Estimated reductions by subbasin are listed below for completed and ongoing as well as underway and planned projects.

- Lake Wauberg
 - Completed and Ongoing: 167 lbs/yr of TN and 34 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Lochloosa Lake
 - Completed and Ongoing: 6,905 lbs/yr of TN and 1,210 lbs/yr of TP.
 - Underway and Planned: 1,445 lbs/yr of TN and 408 lbs/yr of TP.
- Newnans Lake
 - Completed and Ongoing: 7,253 lbs/yr of TN and 1,805 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.

- Orange Creek
 - Completed and Ongoing: 46,962 lbs/yr of TN and 7,900 lbs/yr of TP.
 - Underway and Planned: 2,088 lbs/yr of TN and 1,134 lbs/yr of TP.
- Orange Lake
 - Completed and Ongoing: 3,805 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Sweetwater Branch/Paynes Prairie/Alachua Sink
 - Completed and Ongoing: 75,498 lbs/yr of TN.
 - Underway and Planned: 59,975 lbs/yr of TN.

The Orange Creek BMAP also included projects to address fecal indicator bacteria TMDLs for urban streams. In 2015, DEP adopted EPA criteria for *Escherichia coli* (*E. coli*) for freshwater bacteria which states that no more than 10 % of samples taken for a given waterbody can exceed 410 colony-forming units per 100 milliliters (cfu/100mL). Based on data from 2014 through 2021, the frequency of exceedances of the ten percent threshold of applicable criteria were 71.4 %, 85.7 %, and 33.3 % for Hogtown Creek, Sweetwater Branch, and Tumbler Creek, respectively. Due to the small number of samples available to calculate the percent exceedance during this period, the data shown should not be used as a full assessment of overall water quality.

[Orange Creek Story Map](#)

Upper Ocklawaha BMAP

BACKGROUND

The Upper Ocklawaha River Basin covers an area of 878 square miles and includes the watersheds for the Harris Chain of Lakes, Lake Apopka, Lake Griffin, and the Palatlahaha River (Clermont Chain of Lakes), as well as stream segments that connect the lakes. The basin is located largely in Lake County.

The BMAP addresses TMDLs for 13 waterbodies. DEP identified Lake Apopka, Lake Beauclair, Lake Carlton, Lake Dora, Lake Eustis, Lake Griffin, Lake Harris/Little Lake Harris, Lake Yale, the Palatlahaha River (north of State Road 50), and Trout Lake as impaired for TP and adopted individual TP TMDLs in 2003 for all but Trout Lake, for which a TMDL was adopted in 2006. DEP identified Lake Denham, Lake Roberts, and Marshall Lake as impaired for TP and adopted TP TMDLs in 2017. The focus of restoration efforts in the basin is the reduction and management of TP loading. In Lake Denham, Lake Roberts, Marshall Lake, the Palatlahaha River, and Trout Lake, TN contributes to the problem, and BOD is also identified as a pollutant contributing to the impairment in the Palatlahaha River. Priority waterbodies include Lake Carlton, Lake Harris, and Lake Yale, the Palatlahaha River, and Trout Lake.

STATUS OF PROJECTS

Through December 31, 2021, 303 projects were completed and 136 activities are listed as ongoing. An additional 52 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$314,099,781. Estimated reductions by subbasin are listed below for completed and ongoing as well as underway and planned projects.

- Lake Apopka
 - Completed and Ongoing: 110,780 lbs/yr of TP.
 - Underway and Planned: 258 lbs/yr of TP.
- Lake Beauclair
 - Completed and Ongoing: 294 lbs/yr of TP.
 - Underway and Planned: 313 lbs/yr of TP.
- Lake Carlton
 - Completed and Ongoing: 217 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Lake Denham
 - Completed and Ongoing: 17 lbs/yr of TP.
 - Underway and Planned: 1,100 lbs/yr of TP.
- Lake Dora
 - Completed and Ongoing: 1,697 lbs/yr of TP.
 - Underway and Planned: 6 lbs/yr of TP.
- Lake Eustis
 - Completed and Ongoing: 2,584 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Lake Griffin
 - Completed and Ongoing: 44,117 lbs/yr of TP.
 - Underway and Planned: 15 lbs/yr of TP.
- Lake Harris
 - Completed and Ongoing: 8,496 lbs/yr of TP.
 - Underway and Planned: 25 lbs/yr of TP.
- Lake Roberts
 - Completed and Ongoing: 4 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Lake Yale
 - Completed and Ongoing: 1,157 lbs/yr of TP.

- Underway and Planned: No estimated reductions reported.
- Marshall Lake
 - Completed and Ongoing: 17 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.
- Palatlakaha River
 - Completed and Ongoing: 7,164 lbs/yr of TN and 2,729 lbs/yr of TP.
 - Underway and Planned: 107 lbs/yr of TN and 12 lbs/yr of TP.
- Trout Lake
 - Completed and Ongoing: 16,108 lbs/yr of TN and 3,316 lbs/yr of TP.
 - Underway and Planned: 153 lbs/yr of TN and 31 lbs/yr of TP.
- Upper Ocklawaha
 - Completed and Ongoing: 2,966 lbs/yr of TN and 586 lbs/yr of TP.
 - Underway and Planned: No estimated reductions reported.

[Upper Ocklawaha Story Map](#)

Wekiva River, Rock Springs Run, and Little Wekiva Canal BMAP

BACKGROUND

The Wekiva River receives discharges from several major tributaries, including Wekiwa Springs Run, Rock Springs Run, Little Wekiva River, and Blackwater Creek. The Wekiva River system (including the main stem of the Wekiva River and Rock Springs Run) is designated by the state as an OFW, the Wekiva River and portions of its tributaries are designated as a state Aquatic Preserve worthy of special protection because of their natural attributes, and the river is also designated by the federal government as a Wild and Scenic River. The BMAP area includes the Wekiva River surface water basin, the Little Wekiva Canal Basin, and the surface water basin of the Little Wekiva River and Blackwater Creek.

The Wekiva River, Rock Springs Run, and Little Wekiva Canal BMAP is a surface water BMAP to implement TN, TP, and biochemical oxygen demand impairments. Please see the “Outstanding Florida Springs BMAPs” section for more information on the Wekiwa Spring and Rock Springs BMAP.

STATUS OF PROJECTS

Through December 31, 2021, 111 projects were completed and 18 activities are listed as ongoing. The projects completed to date are estimated to achieve total reductions of 44,510 lbs/yr of TN and 24,436 lbs/yr of TP. An additional 16 projects are identified as underway or planned and are estimated to achieve an additional 170 lbs/yr of TN and 41 lbs/yr of TP. The reported total cost for projects is estimated to be \$91,125,915.

[Wekiva River, Rock Springs Run, and Little Wekiva Canal Story Map](#)

Fecal Indicator Bacteria BMAPs

Introduction

DEP is dedicated to identifying and reducing human health risks associated with bacteria. Along with revised standards (**Figure 6**), DEP has coupled the applicable fecal indicator bacteria (FIB) analytes, *E. coli* and Enterococci, with source-specific analytes to provide source information about impairments and to guide restoration. DEP uses a suite of human waste indicators consisting of a number of chemical tracers (acetaminophen, naproxen, ibuprofen, hydrocodone, and sucralose), two human biological markers (HF-183 and HumM2), and the dye propidium monoazide. In watersheds where cattle may be a source, the biological markers BacR and CowM2 are used. The restoration goal for each FIB BMAP is to meet the state's bacteria standards. **Figure 7** shows the Fecal Indicator Bacteria BMAP areas in the state.

DEP adopted the U.S. Environmental Protection Agency (EPA) criteria for *E. coli* bacteria (Class I and III fresh water) and Enterococci bacteria (Class III marine water) to replace the existing criteria for fecal coliform bacteria. The tables in each BMAP section below show the extent of exceedances of the ten percent threshold of the applicable criteria (either *E. coli* or Enterococci) for the period from January 1, 2014 to June 30, 2021. These numbers are based on the available data included in the Impaired Waters Rule (IWR) database as of January 2022.

Entities can use source-specific analytes and a source tracking monitoring strategy to narrow down the size of the watershed suspected of containing sources that are actively contributing FIB to impaired waters. Further investigative techniques such as dye traces, smoke tests, and camera deployments can be used to identify the exact location of some sources. However, some source locations may be more difficult to identify. As anthropogenic sources are identified, they are eliminated through existing remediation policies and processes. Where septic systems are a suspected source, the Florida Department of Health will communicate with property owners to eliminate discharges. If commercial livestock appear to be contributing waste, FDACS will work with agricultural producers to implement best management practices. In cases where sanitary sewer is a contributor, utilities will take immediate action to repair leaks in utility-owned infrastructure or, where private infrastructure is the source, entities will mandate that property owners make repairs. However, no action will be taken to reduce waste contributions from wildlife.

Communities committed to restoration need dedicated funding to pursue source identification efforts (monitoring and investigations) requiring specialized laboratory analyses. [Click here](#) to learn more about reducing pathogens and go to the progress tab to see a map of each FIB BMAP WBID, with the symbols showing what source types DEP detected during 2018 monitoring.

In December 2015, DEP adopted the U.S. Environmental Protection Agency criteria for *E. coli* bacteria (Class I and III fresh water) and Enterococci bacteria (Class III marine waters) to replace the previous Class III criteria for fecal coliform bacteria.

Ten percent threshold criteria per the state standard for Class III recreational use waters

Previously
400 cfu/100mL fecal coliform

Currently
Freshwater segments with WBID numbers
410 cfu/100mL *E. coli*

Marine WBIDs
130 cfu/mL Enterococci

Figure 6. Revised FIB standards

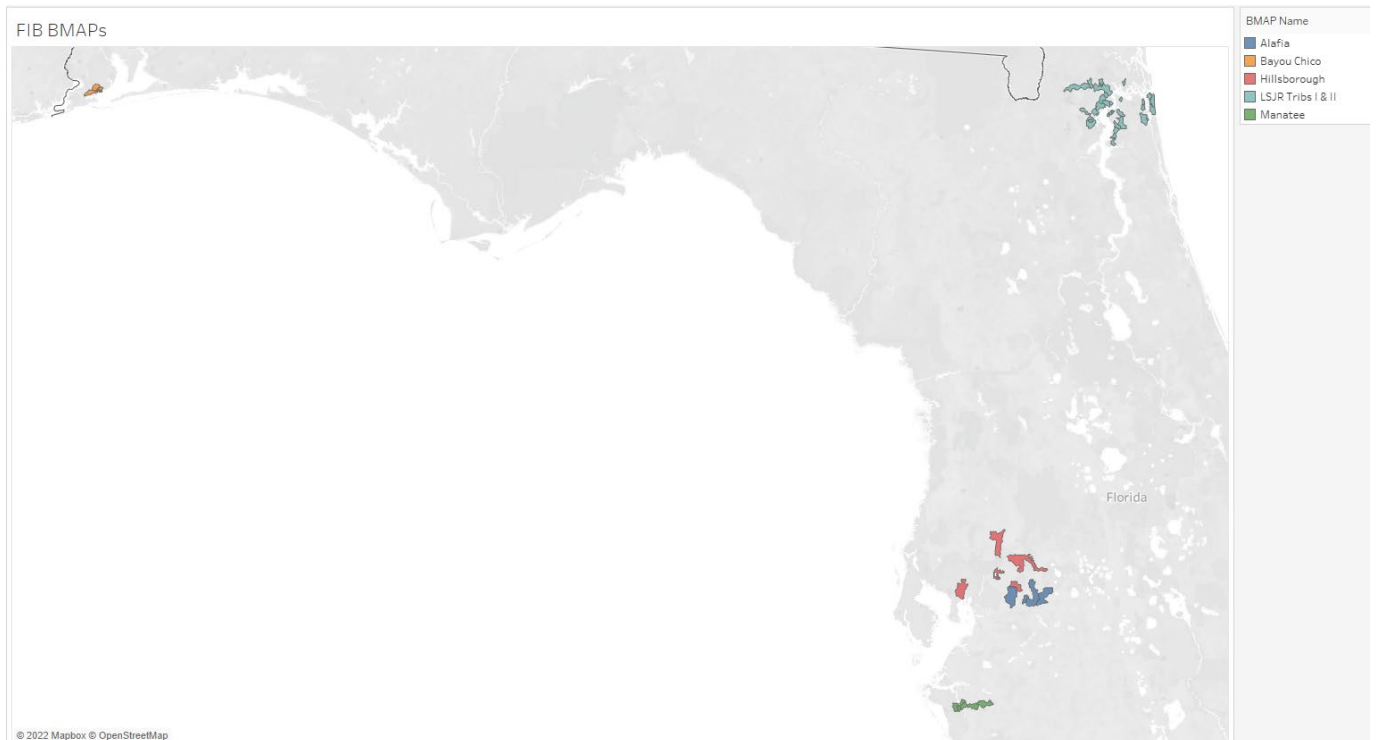


Figure 7. FIB BMAP exceedances

Alafia River BMAP

BACKGROUND

The Alafia River Basin covers an area of more than 410 square miles in Hillsborough County and Polk County. In portions of the basin, FIB and nutrients were identified as the primary pollutants causing impairment. In 2004, DEP adopted a TMDL for Thirty Mile Creek (WBID 1639). It later adopted TMDLs for Mustang Ranch Creek (WBID 1592C), Turkey Creek (WBID 1578B), English Creek (WBID 1552), and Poley Creek (WBID 1583) in 2009, as well as Alafia River Above Hillsborough Bay Tidal Segment (WBID 1621G) in 2011.

The BMAP, adopted in 2014, includes the implementation of FIB source identification efforts such as Walk the Watershed, also known as Walk the WBID. The BMAP requires production agricultural operations to participate in the FDACS Best Management Practices Program or elect to perform water quality monitoring of their operations. The BMAP addresses four fecal coliform TMDLs (WBIDs 1552, 1578B, 1583, and 1592C).

STATUS OF PROJECTS

Through December 31, 2021, 9 projects were completed and 19 activities are listed as ongoing. An additional 3 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$419,200.

FREQUENCY OF EXCEEDANCE

Table 2. Alafia River frequency of exceedance

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance <i>Enterococci</i>
1578B	Turkey Creek	58	N/A
1592C	Mustang Ranch Creek	41	N/A
1552	English Creek	38	N/A
1583	Poley Creek	83	N/A

Bayou Chico BMAP

BACKGROUND

Bayou Chico has a 10-square-mile drainage area and a water surface area of 0.4 square miles. DEP identified the Bayou Chico Watershed as impaired for fecal coliform bacteria. In February 2008, DEP adopted the Bayou Chico Watershed TMDL, which called for a 61 % reduction in fecal coliform bacteria. The Bayou Chico BMAP, adopted in August 2011, addresses Bayou Chico (WBID 846), Jones Creek (WBID 846A), Jackson Creek (WBID 846B), Bayou Chico Drain (also known as Maggie's Ditch) (WBID 846C), Bayou Chico Beach (WBID 846CB), and Sanders Beach (WBID 848DA).

STATUS OF PROJECTS

Through December 31, 2021, 62 projects were completed and 30 activities are listed as ongoing. An additional 9 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$69,736,596.

BEACH ADVISORIES

Table 3 lists the number of beach advisories each year from January 1, 2014, through June 30, 2021. Based on these data, Bayou Chico Beach exceeded the number of advisory days allowed (20 days of advisories from January 1 to December 31) each year, and Sanders Beach exceeded the number of advisory days allowed in 2 of the last 7.5 years. The table shows, with the exception of 2017 and 2019, a significant decrease in the number of advisory days since 2014 at Bayou Chico Beach. **Figure 8** shows that since 2004, the number of advisory days at Sanders Beach is often near or under the 20-day annual maximum. The reason for the increased number of beach advisory days in 2017 and 2019 is not known at the time of this report's publication.

Table 3. Bayou Chico number of beach advisories per year, 2014–21

*Date range January 1, 2021–June 30, 2021

WBID	Waterbody Name	2014	2015	2016	2017	2018	2019	2020	2021*
848DA	Sanders Beach	5	18	0	62	18	26	58	36
846CD	Bayou Chico Beach	81	86	57	153	75	134	100	71

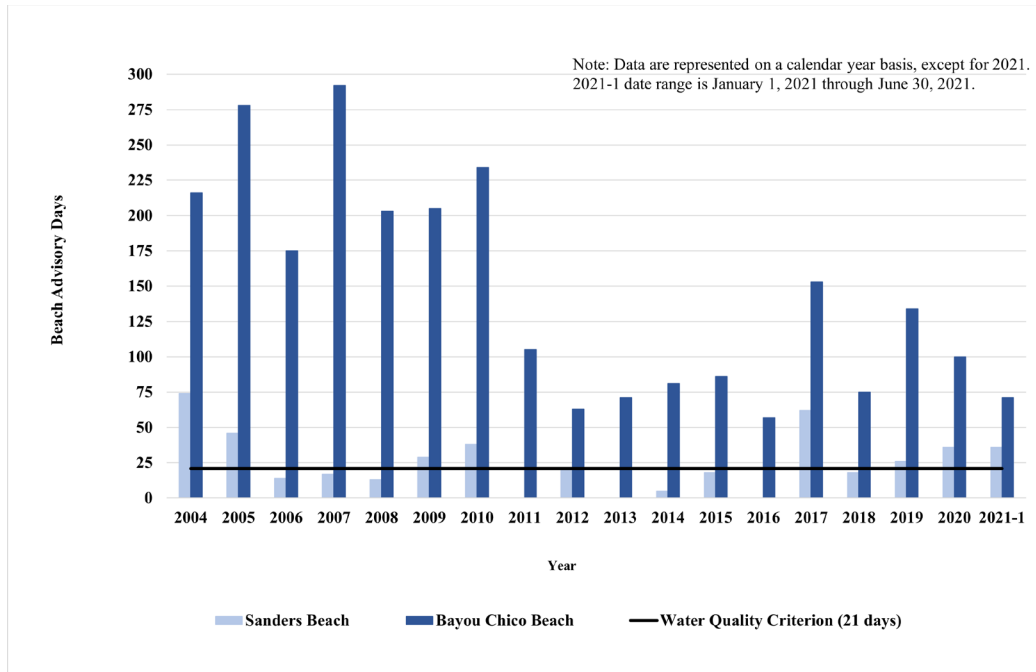


Figure 8. Graph of Bayou Chico Beach and Sanders Beach advisories by year, 2004–21

FREQUENCY OF EXCEEDANCE

Table 4. Bayou Chico frequency of exceedance

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
846A	Jones Creek	32	N/A
846B	Jackson Creek	50	N/A
846C	Bayou Chico Drain	N/A	40
846	Bayou Chico	N/A	30

Hillsborough River BMAP

BACKGROUND

The Hillsborough River drains an area of more than 690 square miles. The Hillsborough River BMAP was adopted in 2009 to implement 6 fecal coliform TMDLs in the Hillsborough River Basin: Lower Hillsborough River (WBID 1443E), and intermittently flowing tributaries New River (WBID 1442), Blackwater Creek (WBID 1482), Flint Creek (WBID 1522A), Baker Creek (WBID 1522C), and Spartman Branch (WBID 1561). The watersheds addressed by the BMAP include the urban and suburban areas of Tampa, Plant City, and Lakeland, as well as agricultural and natural lands.

STATUS OF PROJECTS

Through December 31, 2021, 71 projects were completed and 104 activities are listed as ongoing. An additional 20 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$201,906,780.

FREQUENCY OF EXCEEDANCE

Table 5. Hillsborough River frequency of exceedance

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
1443E	Lower Hillsborough River	N/A	59
1561	Spartman Branch	40	N/A
1522C	Baker Creek	23	N/A
1522A	Flint Creek	29	N/A
1482	Blackwater Creek	25	N/A
1442	New River	36	N/A

Lower St. Johns River Tributaries BMAPs I and II

BACKGROUND

Fecal coliform bacteria were identified as the primary pollutant causing impairment in portions of the LSJR Basin. In 2006, 2009, and 2010, DEP adopted fecal coliform TMDLs for 25 verified impaired waterbodies in Duval County, all in the LSJR Basin. DEP adopted 2 BMAPs to implement the fecal coliform TMDLs in the basin. BMAP I was adopted in December 2009 and addresses the 10 most impaired tributaries. BMAP II was adopted in August 2010 and addresses the remaining 15 impaired tributaries.

STATUS OF PROJECTS

Through December 31, 2021, 583 projects were completed and 169 activities are listed as ongoing. An additional 46 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$419,224,924.

FREQUENCY OF EXCEEDANCE

Table 6. Lower St. Johns River Tributaries frequency of exceedance

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
2326B	Goodbys Creek (Marine Segment)	N/A	56
2256	Deer Creek	N/A	93

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
2299A	Open Creek (Marine Segment)	N/A	67
2326A	Goodbys Creek (Freshwater Segments)	71	N/A
2299B	Open Creek (Fresh Segment)	61	N/A
2304	Miramar Creek	82	N/A
2235	Newcastle Creek	68	N/A
2204	Terrapin Creek	84	N/A
2280B	Big Fishweir Creek (Marine Segment)	N/A	22
2252	Hogan Creek	56	N/A
2287A	Miller Creek (Freshwater Segment)	100	N/A
2287B	Miller Creek (Marine Segment)	N/A	83
2322	Butcher Pen Creek	78	N/A
2280A	Big Fishweir Creek (Freshwater Segment)	78	N/A
2240A	Greenfield Creek (Marine Segment)	N/A	56
2240B	Greenfield Creek (Freshwater Segment)	36	N/A
2203	Trout River Middle Reach (Freshwater Segment)	38	N/A
2203A	Trout River Lower Reach	N/A	23
2203B	Trout River Middle Reach (Marine Segment)	N/A	73
2265C	Pottsburg Creek (Freshwater Segment)	48	N/A
2265D	Pottsburg Creek (Marine Segment)	N/A	25
2227A	Sherman Creek (Freshwater Portion)	44	N/A
2227B	Sherman Creek (Marine Portion)	N/A	53
2381	Cormorant Branch	67	N/A

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
2324	Fishing Creek	52	N/A
2282	Wills Branch (North Prong)	74	N/A
2228A	Moncrief Creek (Marine Segment)	N/A	58
2228B	Moncrief Creek (Freshwater Segment)	30	N/A
2207A	Blockhouse Creek (Freshwater Segment)	100	N/A
2207B	Blockhouse Creek (Marine Segment)	N/A	69
2257	McCoy Creek	67	N/A
2266	Hopkins Creek	N/A	71
2361	Deep Bottom Creek	90	N/A
2316	Williamson Creek	70	N/A
2297A	Craig Creek (Freshwater Segment)	No data	N/A
2297B	Craig Creek (Marine Segment)	N/A	92

Manatee River BMAP

BACKGROUND

The Manatee River drains an area of 360 square miles, flowing 45 miles westward and discharging to Lower Tampa Bay. The Manatee River BMAP was adopted in 2014 and addresses 4 fecal coliform TMDLs adopted in 2009 for Nonsense Creek (WBID 1913), Braden River above Evers Reservoir (WBID 1914), Rattlesnake Slough (WBID 1923), and Cedar Creek (WBID 1926), as well as 2 DO and nutrient TMDLs for Nonsense Creek (WBID 1913) and Braden River above Evers Reservoir (WBID 1914).

The BMAP includes the implementation of FIB source identification efforts, such as Walk the WBID, and requires production agricultural operations to participate in the FDACS Best Management Practices Program or elect to perform water quality monitoring of their operations.

STATUS OF PROJECTS

Through December 31, 2021, 7 projects were completed and 6 activities are listed as ongoing. An additional 9 projects were identified as underway or planned. The reported total cost for projects is estimated to be \$10,307,229.

Table 7. Manatee River frequency of exceedance

WBID	Waterbody Name	January 1, 2014 to June 30, 2021 % Exceedance <i>E. Coli</i>	January 1, 2014 to June 30, 2021 % Exceedance Enterococci
1923	Rattlesnake Slough	43	N/A
1926	Cedar Creek	35	N/A
1913	Nonsense Creek	53	N/A
1914	Braden River above Ward Lake	10	N/A

Alternative Restoration Approaches

As an alternative to total maximum daily loads (TMDLs) and basin management action plans (BMAPs), the Impaired Waters Rule (IWR) authorizes stakeholder-led restoration goal setting and project planning via alternative restoration plans. These plans can be established in a more streamlined manner, minimizing the regulatory process, leading to cleaner water, faster. The optimal time to propose or submit one of these plans is during the biennial assessment cycle, prior to TMDL development. Waterbodies subject to a stakeholder-developed restoration plan are not included in the State's Verified List. **Figure 9** shows the areas in the state where alternative restoration approaches are being implemented.

Local stakeholders may have recently completed, ongoing, and/or planned (in the near future) restoration activities or implemented management strategies that are expected to improve the water quality of an impaired waterbody. In such cases, where restoration projects have been or will soon be completed, documentation provided to the department may be sufficient to show that the waterbody is reasonably expected to attain its applicable water quality standards. These waterbodies will be assessed as categories 4b (Reasonable Assurance Plan) or 4e (Pollutant Reduction Plan).

DEP may, after further review of water quality data, determine that ongoing progress towards attainment of water quality standards is insufficient to restore an impaired waterbody assessed as 4b or 4e. If so, developing a traditional TMDL and BMAP is always a water quality restoration option.

For more information on Alternative Restoration Approaches, including an [online survey](#) to help stakeholders identify candidate waterbodies, please visit our [webpage](#).

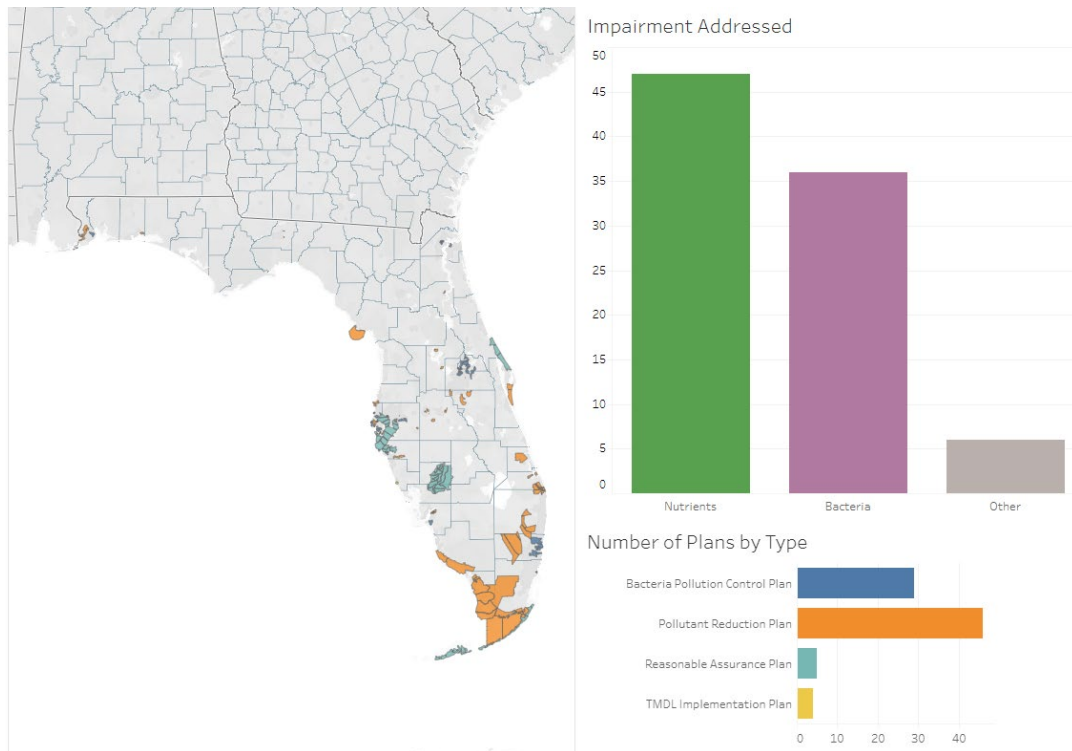


Figure 9. Alternative restoration approaches

Minimum Flows and Minimum Water Levels

Florida Statutes define minimum flows and minimum water levels (MFLs) as the limits at which further water withdrawals would be significantly harmful to the water resources or ecology of the area.

As a part of fulfilling their mission and statutory responsibilities, the state's water management districts establish MFLs for priority waterbodies within their boundaries. In areas adjacent to water management district boundaries where water withdrawals from more than one district affect priority water bodies, the DEP may establish MFLs.

MFLs are used in planning for future water uses and in regulating water withdrawals.

A Brief Overview

What Are MFLs?

Minimum flows and minimum water levels (MFLs) are the limits at which further water withdrawals would be significantly harmful to the water resources or ecology of the area.

MFLs are adopted into the rules of the state's five water management districts or DEP.

How Many MFLs Does Florida Have?

As of March 1, 2022, Florida has adopted 427 MFLs statewide. Every year, the state's five water management districts develop a Priority List and Schedule identifying the waterbodies for which the districts intend to adopt an MFL in the next few years.

How Are MFLs Used?

The water management districts use MFLs to review applications for water withdrawal permits and environmental resource permits.

MFLs are also used as environmental constraints as the water management districts plan for future water needs.

How Are MFLs Developed?

MFLs are developed using the best available information. Water management districts look at the effects of reduced flows and levels on fish and wildlife habitat, fish passage, recreation, water quality, navigation, and other environmental values.

What Happens if an MFL Is Not Being Met?

Recovery and prevention strategies identify projects that can help restore and protect MFL waterbodies and provide water for future users.

A recovery strategy is developed if an MFL is not currently being met.

A prevention strategy is developed if an MFL is currently being met but is projected to not be met in the next 20 years.

Status of MFLs

As of March 1, 2022, 427 MFLs have been adopted statewide for all waterbody types, including the following:

- 238 lakes.
- 55 wetlands.
- 68 springs (28 of which are designated as Outstanding Florida Springs [OFS]¹).
- 43 rivers and estuaries (which includes 19 total estuaries).
- 23 individual MFLs within 5 aquifer systems.

¹ There are 30 designated OFS. Jackson Blue Spring and Gainer Spring Group, located in the NFWFMD, are scheduled to be adopted by July 1, 2026, in compliance with section 373.042(2)(a), Florida Statutes.

Figure 10 shows a map and graph of the location and count of MFLs by waterbody type. To view a map of all adopted MFLs as a separate application, please visit DEP's [Statewide Adopted MFLs](#).

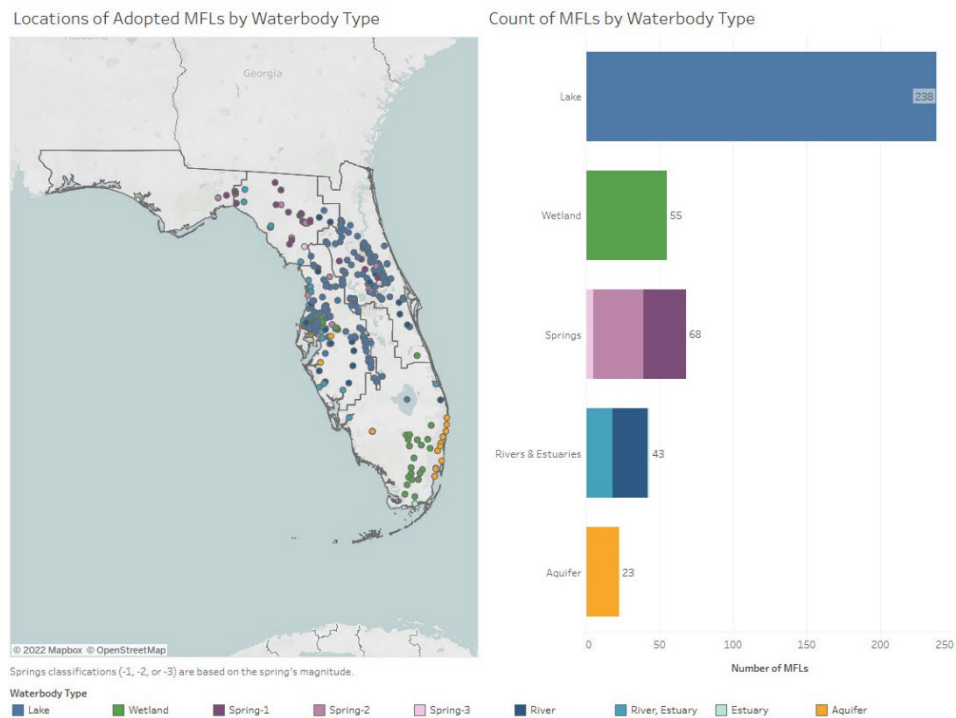


Figure 10. Map and graph of the location and count of MFLs by waterbody type

Recovery and Prevention Strategies

For each waterbody where flows or water levels are below their adopted minimum flows or minimum water levels (MFL) or are projected to fall below an MFL within 20 years, the respective water management district is required to implement a recovery or prevention strategy to ensure the MFL is recovered and maintained over the long term. Strategies may include, but are not limited to, the identification of water resource and water supply development projects, funding assistance, environmental restoration projects, conservation programs, water shortage plans, and regulatory provisions.

Recovery and Prevention Strategies—Background and Progress

Lower Santa Fe and Ichetucknee River and Priority Springs Recovery Strategy

In 2015, DEP adopted regulatory components of the Lower Santa Fe/Ichetucknee River and Priority Springs (LSFIR) Recovery Strategy due to the cross-boundary nature of MFLs established for these water bodies. In addition, non-regulatory components of the recovery

strategy were approved by the Governing Boards of the Suwannee River and St. Johns River Water Management Districts.

The purpose of the recovery strategy is to develop near-term managerial practices to address withdrawal-related streamflow impacts and provide a framework to implement long-term water management strategies, water resource development projects, and conservation measures, designed to recover and maintain MFLs in these waterbodies.

Technical work for the LSFIR MFL re-evaluation was completed in 2021 and the Department and the Suwannee River and St. Johns River Water Management District staff are currently engaged in rulemaking to update the MFL and develop an updated Recovery Strategy.

The graph in **Figure 11** represents cumulative data for implementation of the LSFIR Recovery Strategy since its adoption in 2015. This includes reuse and non-reuse projects that are complete or currently underway.

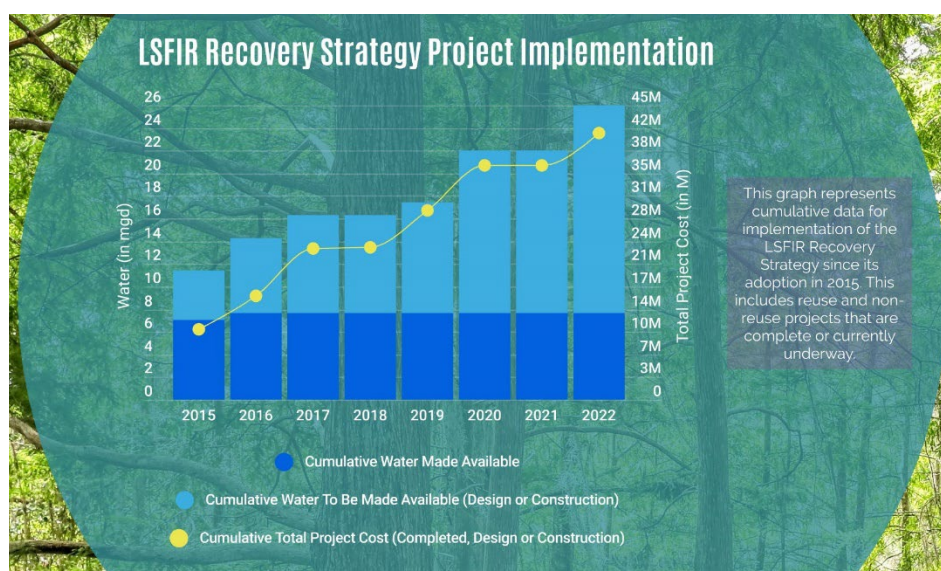


Figure 11. Graph summary of project implementation for the Lower Santa Fe Ichetucknee River and Priority Springs Recovery Strategy

Volusia Strategy

The Prevention/Recovery Strategy for Implementation of MFLs for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes (Volusia Strategy) was initially approved by the St. Johns River Water Management District Governing Board in November 2013. In March 2019, the SJRWMD completed the 2018 Volusia Strategy 5-year assessment that evaluated the status of MFLs established for 16 lakes and 3 springs in Volusia County through the 2040 planning horizon. Since 2013, MFLs were adopted for three new water bodies (Gemini Springs, DeLeon Springs, and Lake Butler) and MFLs for one system (Lake Purdom) were re-evaluated and adopted.

The projects and measures proposed in the Volusia Strategy, in conjunction with projects identified in the 5-year strategy assessment, are designed to achieve the MFLs for Blue Spring and affected lakes while meeting future water demands for utilities and other water users throughout Volusia County through 2040.

The graph in **Figure 12** represents cumulative data for implementation of the Volusia Recovery and Prevention Strategy since its adoption in 2013. This includes reuse and non-reuse projects that are complete or currently underway.

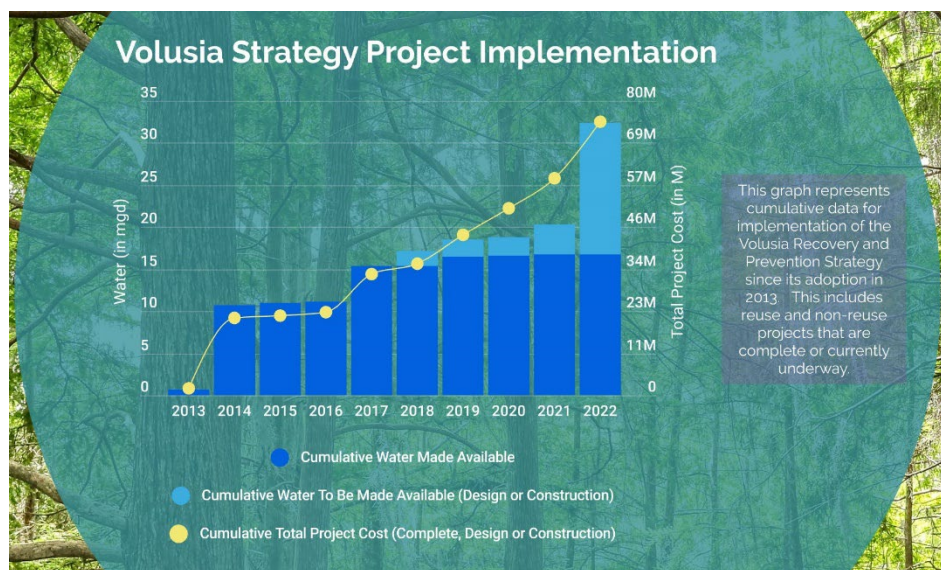


Figure 12. Graph summary of project implementation for the Volusia Strategy

Lake Butler Prevention Strategy

Minimum levels for Lake Butler, located in Volusia County, were adopted by the St. Johns River Water Management District in August 2020. The MFLs assessment for Lake Butler concluded that the water body was in prevention. Volusia County has had a prevention/recovery strategy covering its boundary since 2013, and in 2018, SJRWMD performed a five-year assessment of this strategy. SJRWMD determined that the projects contained within the 2013 Volusia Prevention and Recovery Strategy would provide sufficient benefit to Lake Butler to ensure achievement of its MFLs at 2040.

Furthermore, the projects identified in the 2018 Volusia Strategy Assessment, when implemented, would provide additional benefit to Lake Butler. Therefore, the Lake Butler Prevention Strategy does not identify any new projects, but rather includes projects from the approved 2013 Volusia Strategy and the 2018 Volusia Strategy Assessment. For project implementation information, please refer to the graph for the Volusia Recovery and Prevention Strategy.

Silver Springs Prevention Strategy

An MFL for Silver Springs, an Outstanding Florida Spring, was adopted by the St. Johns River Water Management District in 2017 based on criteria developed from river floodplain (vegetation, soils and topographic) and instream (velocity and depth) data. The MFL will maintain 94% of the long-term mean annual flow of Silver Springs and protect the structure and function of wetlands and aquatic habitats, as well as other ecological functions and values of the spring and associated run.

Currently, the MFL for Silver Springs is being achieved. However, because the MFL is projected to not be met by 2025, the Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels (Silver Springs Prevention Strategy) was adopted in 2017. The strategy identified alternative water supplies, water conservation, and regulatory measures designed to achieve the MFLs while meeting future water demands for utilities and other water users through a 20-year planning horizon.

The graph in **Figure 13** represents cumulative data for implementation of the Silver Springs Prevention Strategy since its adoption in 2017. This includes reuse and non-reuse projects that are complete or currently underway.

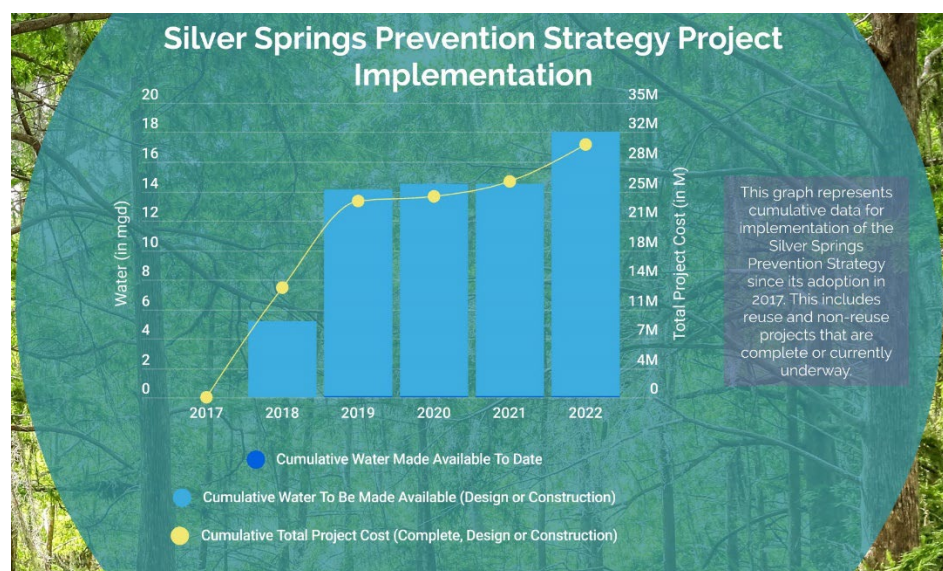


Figure 13. Graph summary of project implementation for the Silver Springs Prevention Strategy

Recovery Strategy for Lakes Brooklyn and Geneva Minimum Levels

St. Johns River Water Management District completed a reevaluation of minimum levels for Lakes Brooklyn and Geneva in 2020. The reevaluated minimum levels recommended for Lakes Brooklyn and Geneva are based on implementation of updated methods and more appropriate environmental criteria. After peer review and staff evaluation of relevant criteria, open-water area was determined to be the most sensitive for both Lakes Brooklyn and Geneva.

The status assessment for Lakes Brooklyn and Geneva indicate that they are currently not meeting their proposed MFLs based upon current (average of 2014–2018) groundwater withdrawals.

The Recovery Strategy for the Implementation of Lakes Brooklyn and Geneva MFLs was adopted in 2021 and identifies a suite of projects and measures that, when implemented, recovers the MFLs for Lakes Brooklyn and Geneva and prevents the MFLs from being violated in the future due to consumptive uses of water, while also providing sufficient water supplies for all existing and projected reasonable beneficial uses.

Since the Recovery Strategy for Lakes Brooklyn and Geneva Minimum Levels was just adopted in 2021, this graph represents cumulative data for implementation of projects within the SJRWMD from the North Florida Regional Water Supply Plan that were completed since 2014. These projects provide benefits to Lakes Brooklyn and Geneva by reducing future demand from the Floridan aquifer and have been implemented since the beginning of the MFL current condition time frame of 2014-2018.

The graph in **Figure 14** represents cumulative data for implementation of the Lakes Brooklyn and Geneva Recovery Strategy since 2014. This includes reuse and non-reuse projects that are complete or currently underway.

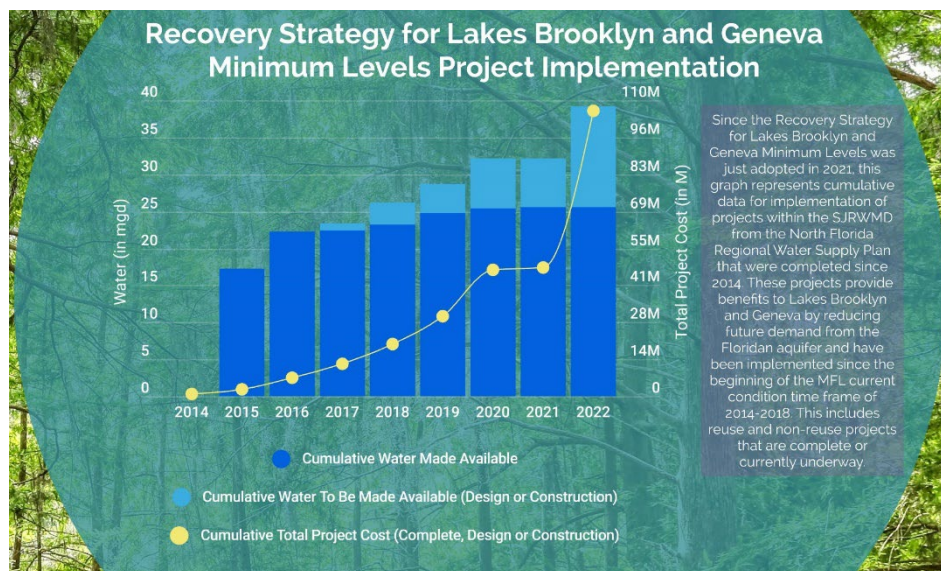


Figure 14. Graph summary of project implementation for the Lakes Brooklyn and Geneva Recovery Strategy

Southern Water Use Caution Area Recovery Strategy

The Southwest Florida Water Management District adopted the Southern Water Use Caution Area (SWUCA) Recovery Strategy in 2006 and is implementing the strategy over a 20-year period. The SWUCA extends over approximately 5,100 square miles, including all or part of eight counties in the southern portion of the district. The recovery strategy includes regulatory

and project-based components. Principal goals to achieve by 2025 include: restore minimum flows to the upper Peace River; restore minimum levels to priority lakes in the Lake Wales Ridge area; reduce the rate of saltwater intrusion in coastal Hillsborough, Manatee, and Sarasota counties by achieving a minimum aquifer level for saltwater intrusion; and ensure there are sufficient water supplies for existing and projected reasonable and beneficial uses.

As of 2021, the recovery strategy is applicable to 13 waterbodies in Highlands, Hillsborough, Manatee, Polk, and Sarasota counties where MFLs are not being achieved.

The graph in **Figure 15** represents cumulative data for implementation of the SWUCA Recovery Strategy since its adoption in 2006. This includes reuse and non-reuse projects that are complete or currently underway. Additional projects are planned/being implemented to provide for water through 2040.

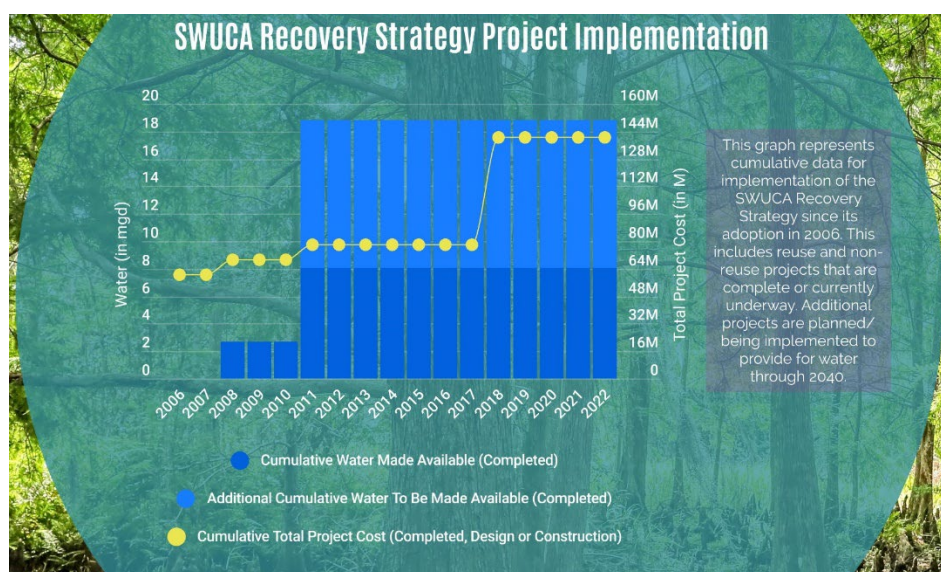


Figure 15. Graph summary of project implementation for the Southern Water Use Caution Area Recovery Strategy

Northern Tampa Bay Water Use Caution Area Recovery Strategy

The first phase of the Southwest Florida Water Management District's Northern Tampa Bay Water Use Caution Area (NTBWUCA) Recovery Strategy was adopted in 2000 to address lake and wetland MFLs and an MFL for the Lower Hillsborough River that were not being met in the approximate 1,600-square mile NTBWUCA, which includes all of Pinellas and Pasco Counties and much of Hillsborough County. The strategy called for a phased reduction in groundwater pumping from 160 million gallons per day (mgd) to 90 mgd at regional wellfields operated by Tampa Bay Water, and financial incentives for construction of alternative water supply projects. A second phase of the recovery strategy, adopted in 2010 for implementation through 2020, included a comprehensive plan that addressed continued monitoring, evaluation of environmental mitigation for withdrawal impacts, and continued water conservation activities.

In support of the recovery strategy, over 85 mgd of new regional alternative sources of public supply have been developed. A number of other projects that provide ancillary recovery benefits, including reuse and water conservation, have also been implemented within the region.

An assessment completed in 2020 identified substantial recovery of hydrologic and ecological conditions associated with strategy implementation and rainfall conditions. MFLs within the NTBUWCA for all but one lake, one wetland and the Lower Hillsborough River were found to be met, and aquifer levels in the region were near their peak elevations observed during the past 40 to 60 years. Based on these findings, the district repealed the Comprehensive Environmental Resources Recovery Plan for the NTBWUCA in 2021, addressed recovery of the single wetland MFL that was not being met through a water use permit issued to Tampa Bay Water, repealed MFLs for 1 lake and 1 wetland determined to not be appropriate MFLs water bodies, and re-adopted the Hillsborough River Recovery Strategy for continued implementation.

Hillsborough River Recovery Strategy

The Southwest Florida Water Management District adopted the Hillsborough River Strategy in 2000 as part of the Northern Tampa Bay Water Use Caution Area (NTBWUCA) Recovery Strategy because the minimum flow adopted for the Lower Hillsborough River was not being met. Concurrent with adoption of revised minimum flows for the lower river in 2007 that were similarly not being achieved, the district revised the Hillsborough River Strategy in 2007, and re-adopted it as the Hillsborough River Recovery Strategy in 2021 in conjunction with the repeal of the NTBWUCA Recovery Strategy.

The Hillsborough River Recovery Strategy outlines six recovery projects and a timeline for their implementation by the district and the City of Tampa, which is permitted to withdraw water from the reservoir upstream of the lower river. All activities and projects proposed in the recovery strategy have been completed, are available for use, or have been determined not to be viable. Additional projects and monitoring to support recovery strategy implementation are ongoing.

As of 2021, the recovery strategy continues to be applicable to the Lower Hillsborough River. Operational difficulties have prevented the minimum flows from being fully achieved on all days. Flow deficits are expected to be eliminated upon full implementation of all projects identified in the recovery strategy.

Figure 16 represents the status of project implementation for the Hillsborough River Recovery Strategy.

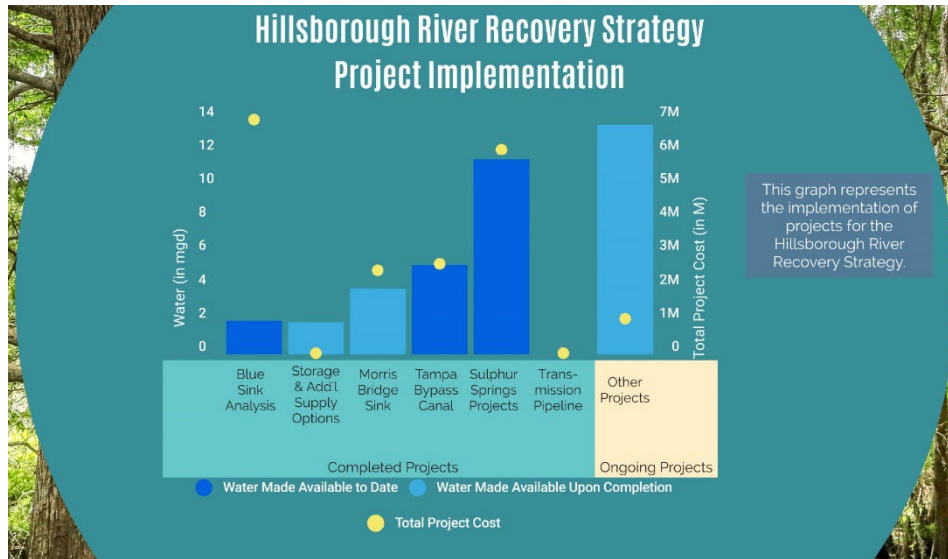


Figure 16. Graph summary of project implementation for the Hillsborough River Recovery Strategy

Dover/Plant City Water Use Caution Area Recovery Strategy

The Southwest Florida Water Management District established a minimum aquifer level and recovery strategy for the Dover/Plant City Water Use Caution Area (DPCWUCA) in 2011, based on impacts to wells and sinkhole formation associated with groundwater withdrawals for cold protection during an unprecedented weather event in 2010. The DPCWUCA extends over an approximate 260 square mile area in northeast Hillsborough County and eastern Polk County and overlaps with portions of the Southern Water Use Caution Area and Northern Tampa Bay Water Use Caution Area. The objectives of the DPCWUCA Recovery Strategy were, by 2020, to have reduced groundwater pumped for cold protection by 20 percent relative to that pumped during the 2010 weather event and to achieve the minimum aquifer level. Recovery mechanisms identified in the strategy include non-regulatory and regulatory approaches.

A comprehensive assessment completed in 2020 indicated the 2010 weather event that precipitated adoption of the DPCWUCA minimum aquifer level and recovery strategy may be expected about once every 570 years. In addition, use of an updated modeling approach and evaluation of declining historical and projected agricultural land use and water use indicated the minimum aquifer level was being achieved and the recovery strategy is not needed. Based on these findings the district repealed the DPCWUCA Recovery Strategy in 2022, and continues to implement DPCWUCA rules and associated projects, and annually assess the status of the currently met minimum aquifer level.

Lower Alafia River Recovery Strategy

In 2010, while establishing minimum flows for the Lower Alafia River system in Hillsborough County, the Southwest Florida Water Management District determined the minimum flows were not being met due to withdrawals made by a single user from Lithia and Buckhorn Springs, which both provide flow to the river. The district subsequently adopted the minimum flows and

incorporated conditions associated with a phased recovery strategy into a water use permit issued to that user and included the recovery strategy in its regional water supply plan.

Compliance with conditions included in the water use permit has supported the achievement of minimum flows established for the Lower Alafia River system.

Comprehensive Everglades Restoration Plan

The Comprehensive Everglades Restoration Plan (CERP) proposes major modifications to the Central and Southern Florida Flood Control Project (C&SF Project), a massive flood control system constructed by the U.S. Army Corps of Engineers. These modifications are intended to restore the quantity, quality, timing and distribution of water to the natural system while providing flood control and water supply.

CERP has identified a multitude of projects. These projects are expected to deliver benefits to improve the ecological functions of over 2.4 million acres of natural areas.

CERP serves as a recovery or prevention strategy for 25 MFL monitoring sites in different waterbodies in the South Florida Water Management District within the greater Everglades ecosystem, including: Lake Okeechobee, Northwest Fork of the Loxahatchee River, Caloosahatchee River, Florida Bay, and Everglades. Annually, the district provides for the status of these projects as part of its [South Florida Environmental Report \(SFER\)](#).

Figure 17 represents the status of project implementation for the identified MFLs in the South Florida Water Management District.

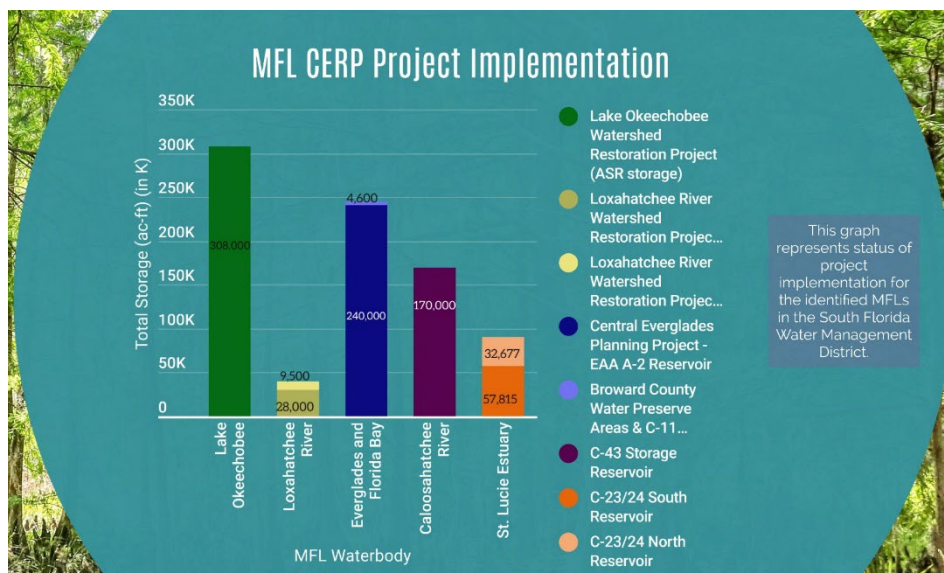


Figure 17. Graph summary of the CERP project implementation

Status of Recovery and Prevention Strategies

Of the 427 MFLs adopted to date, 70 are identified as being in either recovery or prevention. **Figure 18** shows a map and graph of the location and count of MFLs by status.

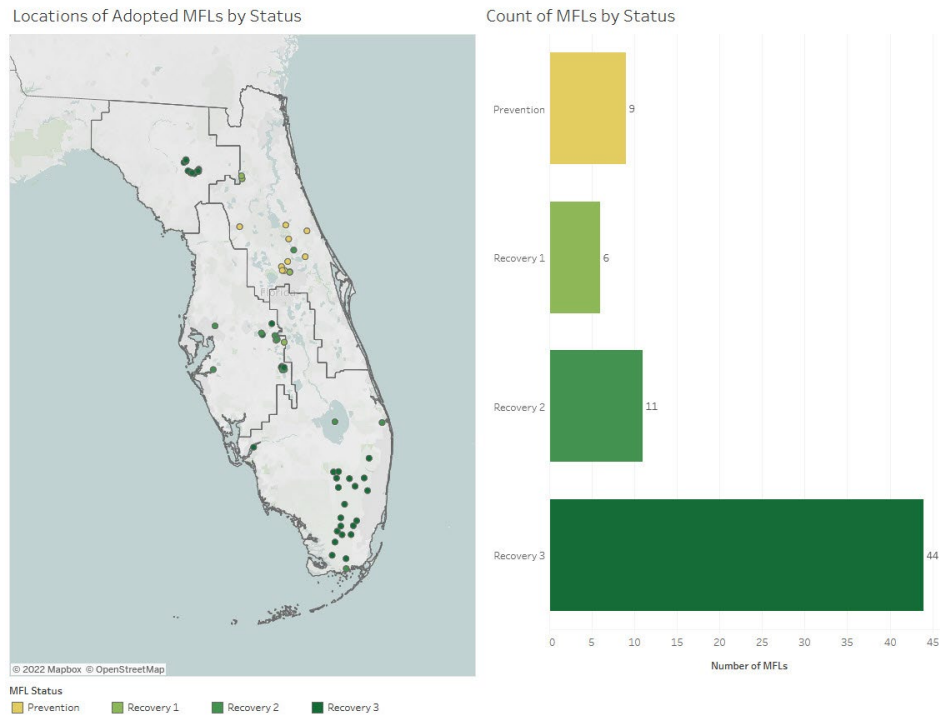


Figure 18. Map and graph of the location and count of MFLs by status

To obtain information on the status of these waterbodies for this report, each waterbody for which an MFL was adopted was evaluated by the adopting water management district. The waterbodies were identified as either meeting their adopted MFL(s), being in prevention, or being in recovery. Those in recovery were further rated as Recovery-1, Recovery-2, or Recovery-3. This rating was based on two factors: the magnitude of the violation and the regional significance of the waterbody. The magnitude of the violation was based on whether the waterbody was close, moderately close, or not close to meeting the MFL.

In evaluating the degree of MFL violation, the water management districts considered the extent of the variance from the MFL, the magnitude of the ecological impact, the time frame for recovery, and the time frame for completing the projects. In evaluating the regional significance of a waterbody, the waterbody was rated as Tier 1, Tier 2, or Tier 3 (with Tier 1 being the highest rating). In defining regional significance, the water management districts considered the waterbody's size and geographical extent, ecological importance, recreational uses, navigation, threatened and endangered species, wildlife use, aesthetics, and historical and archaeological significance.

The definitions of MFL status and the various classifications for recovery and prevention strategies are presented in **Table 8**.

Table 8. Definitions of MFL status and classifications for recovery and prevention

Status	Definition	
Meeting	This status is assigned for any MFL that was determined to be meeting its MFL at the time of its adoption or during its last status evaluation.	
Prevention	This status is assigned if the waterbody is meeting the MFL, but is projected to not meet the MFL within 20 years.	
	Relative Magnitude of the MFL Violation	Regional Significance of Waterbodies in Recovery
Recovery 1	Close	Tier 2 or 3
	Moderately Close	Tier 3
Recovery 2	Close	Tier 1
	Moderately Close	Tier 2
	Not Close	Tier 3
Recovery 3	Moderately Close	Tier 1
	Not Close	Tier 1 or 2

Status of Projects Identified to Achieve the MFLs

Recovery and prevention strategies identify project options that may be used to benefit a waterbody with an established MFL (or MFLs) while ensuring adequate sources of water for existing and future reasonable–beneficial uses. The project options listed in a recovery or prevention strategy may be mutually exclusive to another identified project and, in total, may exceed the volume of water that must be created to meet the MFL(s).

For projects benefiting a recovery or prevention strategy that are complete or currently underway, upon full completion, 177 million gallons per day (mgd) of water (reuse and non-reuse) will have been made available since 2005–06. This does not include projects identified to achieve the MFLs in the South Florida Water Management District (SFWMD) that are part of the Comprehensive Everglades Restoration Plan (CERP).

Figure 19 presents a map and graph to view the location and status of individual projects identified to achieve MFLs that have been identified as either in recovery or prevention.

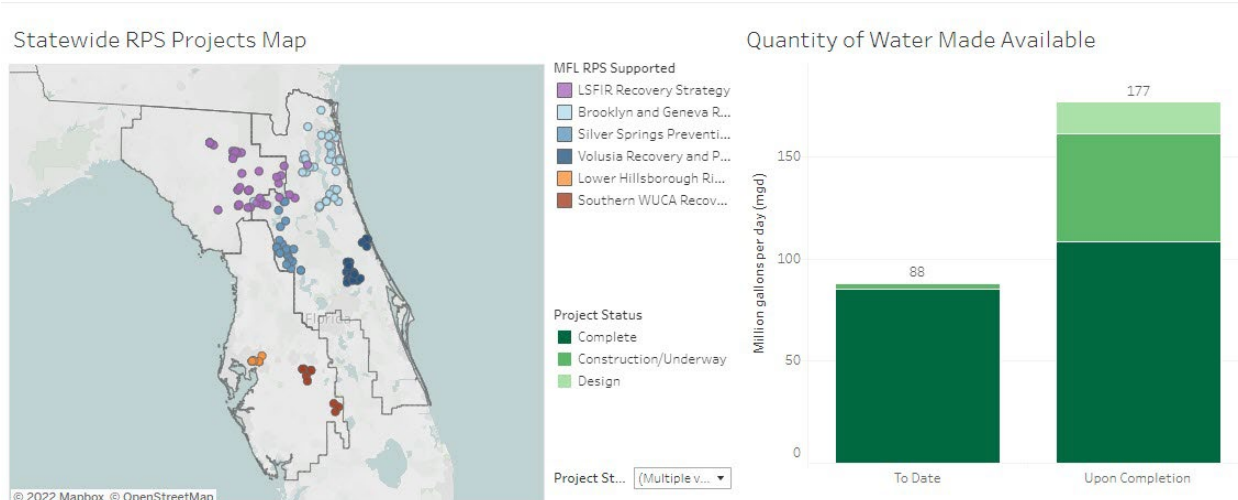


Figure 19. Map and graph of the location and status of projects identified to achieve MFLs

Suwannee River Water Management District

The Suwannee River Water Management District (SRWMD), in coordination with the St. Johns River Water Management District (SJRWMD) and DEP, identified 18 waterbodies as being in recovery, and together with the SJRWMD, is working on an updated Lower Santa Fe and Ichetucknee River and Priority Springs (LSFIR) Recovery and Prevention Strategy for these waterbodies. **Figure 20** presents a snapshot of an interactive dashboard that presents all SRWMD funded projects, all of which are in support of the LSFIR Recovery Strategy.

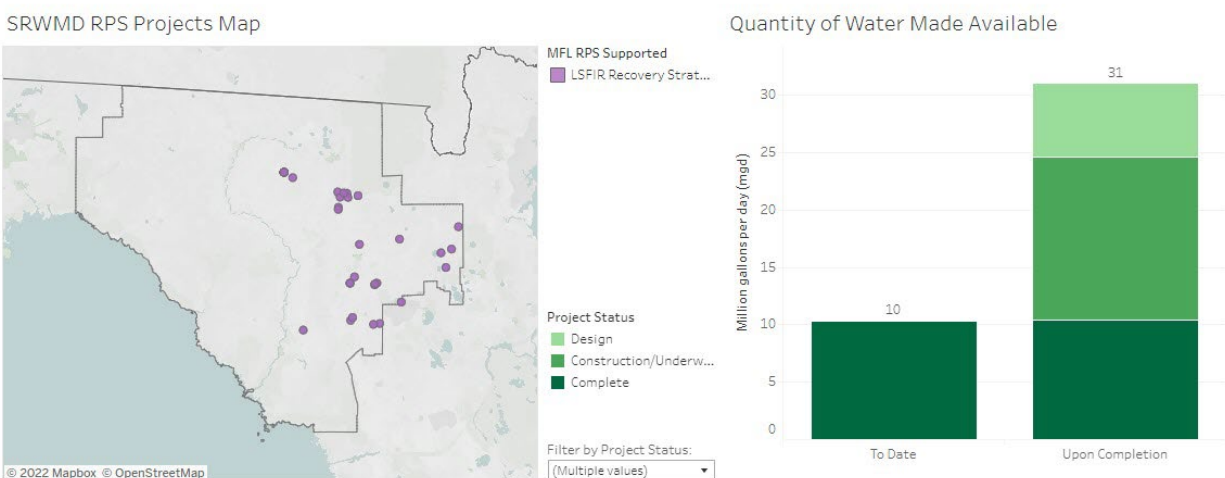


Figure 20. Map and graph of the location and status of projects identified to achieve MFLs in SRWMD

The following presents projects funded by both the SRWMD and SJRWMD that are in support of the strategy.

LOWER SANTA FE AND ICHETUCKNEE RIVER AND PRIORITY SPRINGS (LSFIR) RECOVERY STRATEGY

For projects that are complete or currently underway, upon full completion, approximately 33 mgd of water (reuse and non-reuse) will have been made available since 2015 within the SRWMD and SJRWMD in support of these MFLs (**Figure 21**).

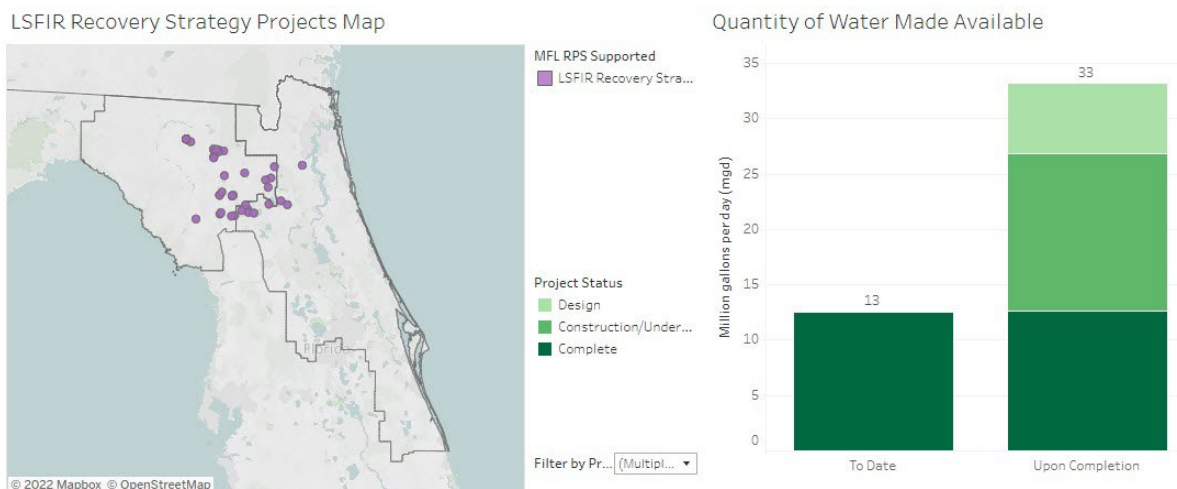


Figure 21. Map and graph of the location and status of projects identified to achieve the Lower Santa Fe and Ichetucknee River and Priority Springs MFLs

St. Johns River Water Management District

The St. Johns River Water Management District (SJRWMD) has identified 14 waterbodies as being in recovery or prevention in its district. These waterbodies are included in three prevention and/or recovery strategies adopted by the district since 2013. **Figure 22** presents all SJRWMD funded projects that are in support of these strategies.

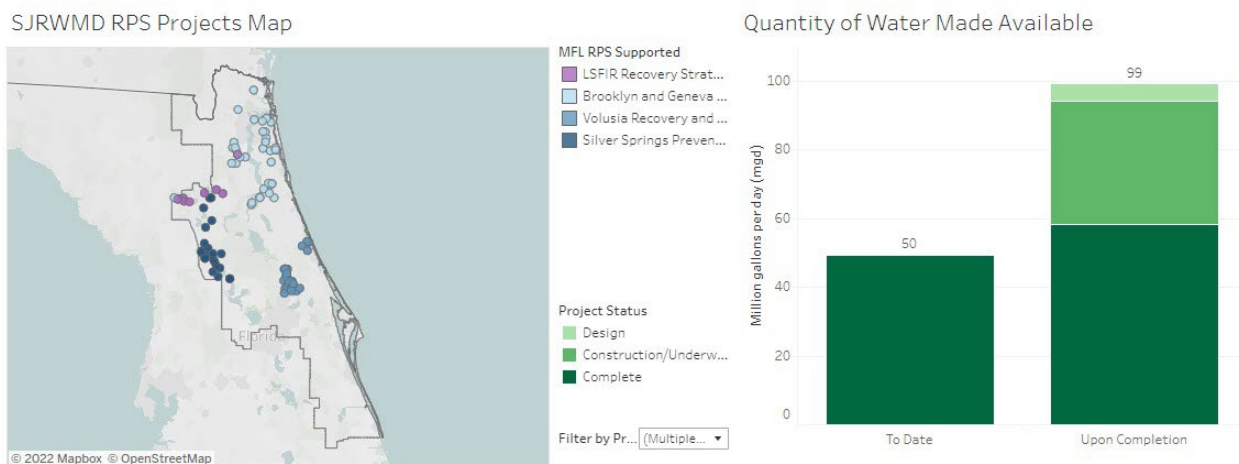


Figure 22. Map and graph of the location and status of projects identified to achieve MFLs in SJRWMD

Additionally, the SJRWMD has worked in coordination with the SRWMD and DEP to identify 18 waterbodies associated with the Lower Santa Fe and Ichetucknee River and Priority Springs Recovery (LSFIR) strategy where MFLs are not being met. Recovery of these waterbodies will be accomplished utilizing regulatory and non-regulatory measures.

The following presents information on the status of projects for individual strategies:

VOLUSIA STRATEGY

For projects that are complete or currently underway, upon full completion approximately 35 mgd of water (reuse and non-reuse) will have been made available since 2013. The project locations and water quality benefits are depicted in the map and graph in **Figure 23**.

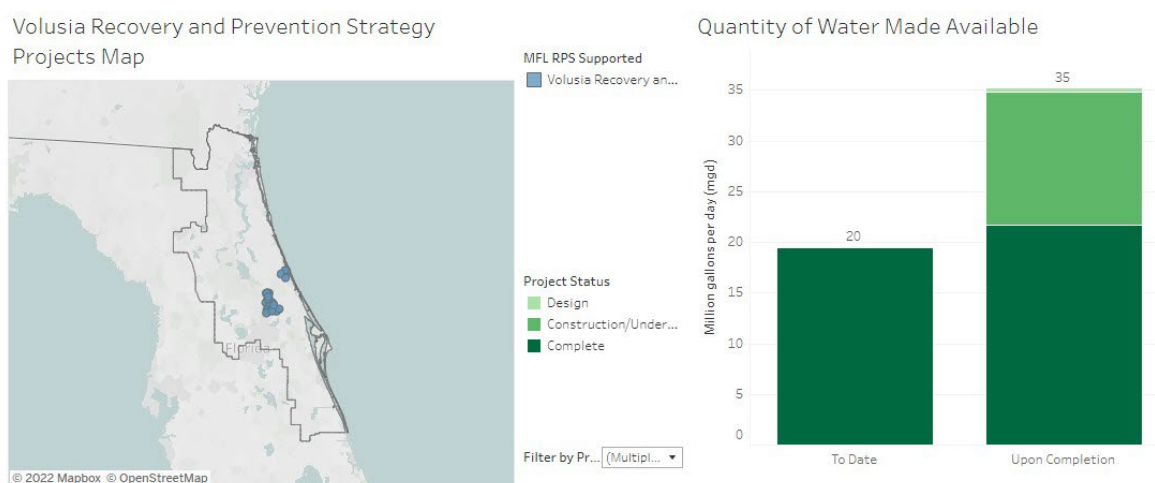


Figure 23. Map and graph of the location and status of projects identified to achieve the Volusia Strategy MFLs

LAKE BUTLER PREVENTION STRATEGY

Projects from the approved 2013 Volusia Strategy and the 2018 Volusia Strategy Assessment have been determined to provide sufficient benefit to Lake Butler to ensure achievement of its MFLs at 2040. Therefore, the Lake Butler Prevention Strategy does not identify any new projects, but rather includes those projects identified in the Volusia Strategy. For project implementation information, please refer to the graph for the Volusia Strategy (**Figure 23**).

SILVER SPRINGS PREVENTION STRATEGY

For projects that are complete or currently underway, upon full completion approximately 23 mgd of water (reuse and non-reuse) will have been made available since 2017. In addition, 2.3 mgd of water that supports the strategy was made available prior to approval of the strategy and is depicted in the map and graph for this strategy in **Figure 24**.

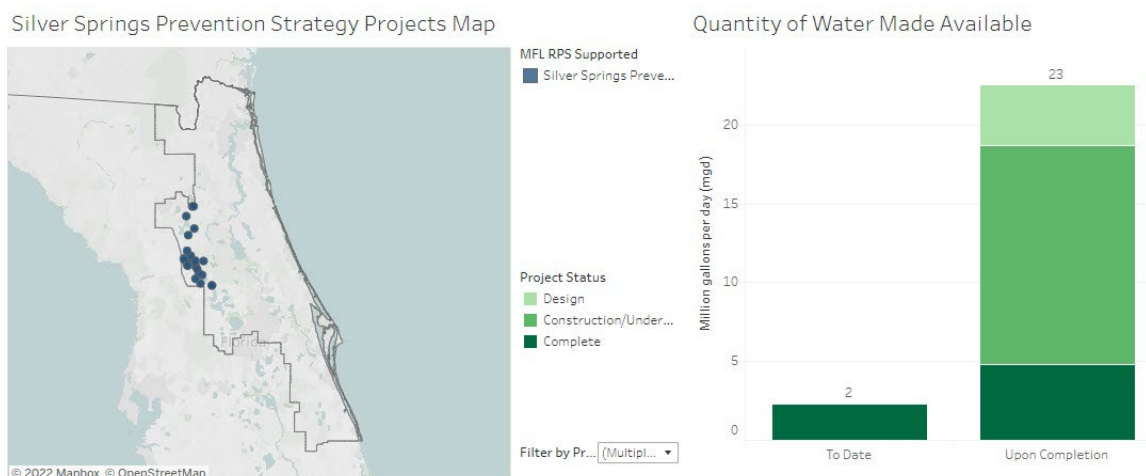


Figure 24. Map and graph of the location and status of projects identified to achieve the Silver Springs MFLs

RECOVERY STRATEGY FOR LAKES BROOKLYN AND GENEVA MINIMUM LEVELS

For projects within the SJRWMD from the North Florida Regional Water Supply Plan that are complete or currently underway, upon full completion approximately 39 mgd of water (reuse and non-reuse) will have been made available since 2014. These projects provide benefits to Lakes Brooklyn and Geneva by reducing future demand from the Floridan aquifer and have been implemented since the beginning of the MFL current condition time frame of 2014-2018 (**Figure 25**).

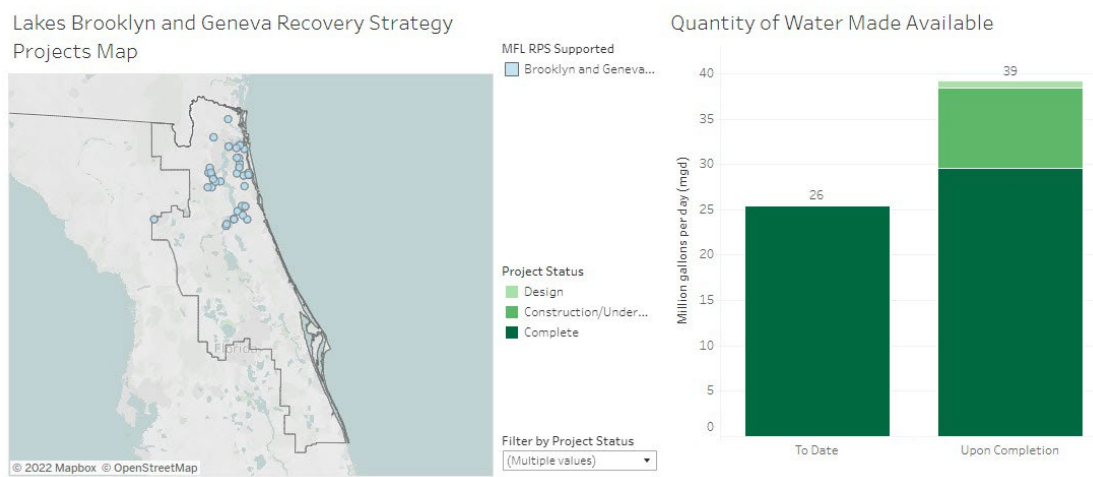


Figure 25. Map and graph of the location and status of projects identified to achieve the Lakes Brooklyn and Geneva MFLs

LOWER SANTA FE AND ICHETUCKNEE RIVER AND PRIORITY SPRINGS (LSFIR) RECOVERY STRATEGY

For projects that are complete or currently underway, upon full completion, approximately 38 mgd of water (reuse and non-reuse) will have been made available since 2014 within the SRWMD and SJRWMD in support of MFLs established for the rivers and springs (**Figure 21**).

Southwest Florida Water Management District

Through March 1, 2022, the Southwest Florida Water Management District (SWFWMD) has established 202 MFLs and identified 14 as being in recovery. These waterbodies are included in the regional Southern Water Use Caution Area (SWUCA) Recovery Strategy and the waterbody-specific, Hillsborough River Recovery Strategy. Continued implementation of one additional waterbody-specific recovery strategy has resulted in achievement of minimum flows established for the Lower Alafia River. In addition, MFLs recovery associated with two regional recovery strategies, the Northern Tampa Water Use Caution Area (NTBWUCA) Recovery Strategy and the Dover/Plant City Water Use Caution Area Recovery Strategy has been achieved, and these strategies were repealed in 2021 and 2022, respectively.

The following sections present the status of projects for individual strategies:

SOUTHERN WATER USE CAUTION AREA (SWUCA) RECOVERY STRATEGY

For projects that are complete or currently underway, upon full completion, approximately 19 mgd of water (reuse and non-reuse) will have been made available since 2006 as part of this regional recovery strategy. The project locations and water quality benefits are depicted in the map and graph in **Figure 26**.

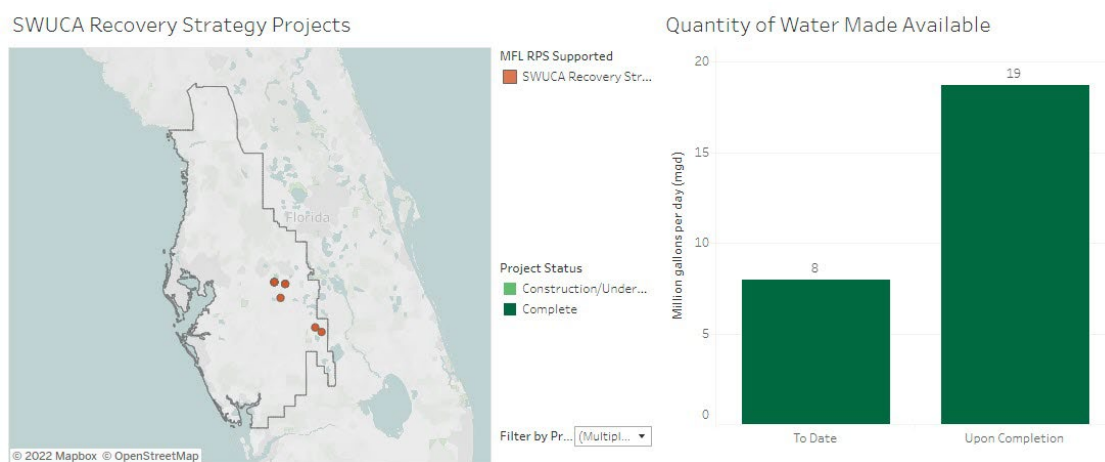


Figure 26. Map and graph of the location and status of projects identified to achieve the SWUCA MFLs

HILLSBOROUGH RIVER RECOVERY STRATEGY

For projects that are complete or currently underway, upon full completion, approximately 38 mgd of water (reuse and non-reuse) will have been made available since 2002 for this

waterbody-specific recovery strategy. This include water from Sulphur Springs, which was first used in 2002 to recover minimum flows in the Lower Hillsborough River prior to the update of the recovery strategy in 2007, as well as water from the Tampa Bypass Canal and Blue Sink, and water potentially available from Morris Bridge Sink. The water quantity benefits (in mgd) from projects implemented under the recovery strategy can be found in the graph for this strategy in **Figure 27**.

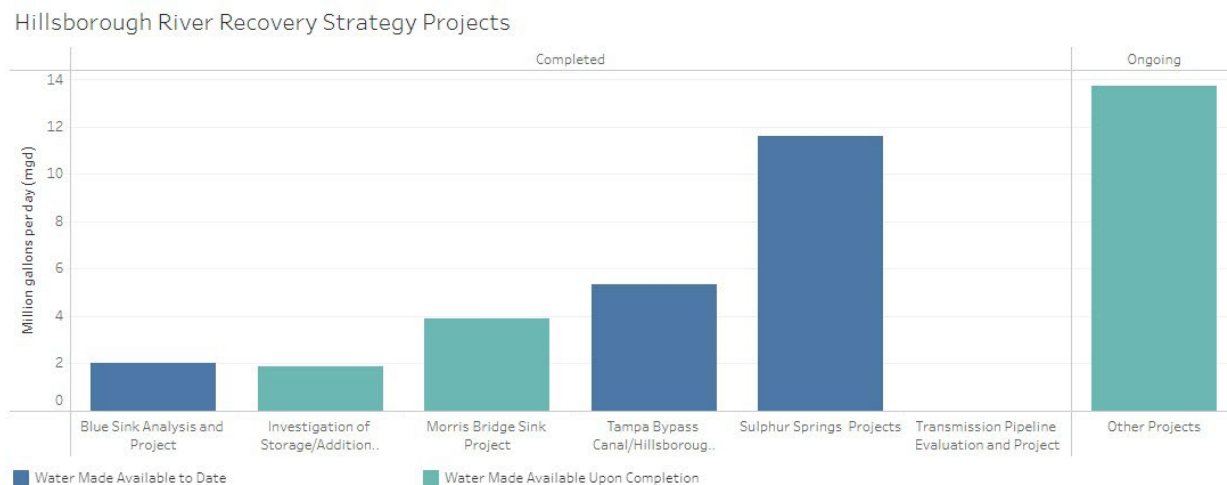


Figure 27. Map and graph of the location and status of projects identified to achieve the Lower Hillsborough River MFL

LOWER ALAFIA RIVER RECOVERY STRATEGY

The waterbody-specific Lower Alafia River Recovery Strategy is wholly based on regulatory measures associated with the permitted augmentation of the river with groundwater to offset withdrawals from Lithia and Buckhorn Springs by a single water user. Compliance with conditions included in the water use permit has supported achievement of minimum flows established for the Lower Alafia River system.

NORTHERN TAMPA BAY WATER USE CAUTION AREA (NTBWUCA) RECOVERY STRATEGY

For projects that are complete or currently underway, upon full completion, approximately 85 mgd of water (reuse and non-reuse) will have been made available since 2000, when this regional recovery strategy was first adopted. The photos for this regional recovery strategy show one of the key water supply projects that benefitted the NTBWUCA and historic and current conditions of one of the many recovered lakes in the region (**Figure 28**). Also presented is the reported monthly Consolidated Permit groundwater use that demonstrates declining groundwater use as alternative water sources became available.

Based on substantial recovery of hydrologic and ecological conditions associated with strategy implementation and rainfall conditions documented in a 2020 comprehensive assessment, the district repealed the NTBWUCA in 2021.

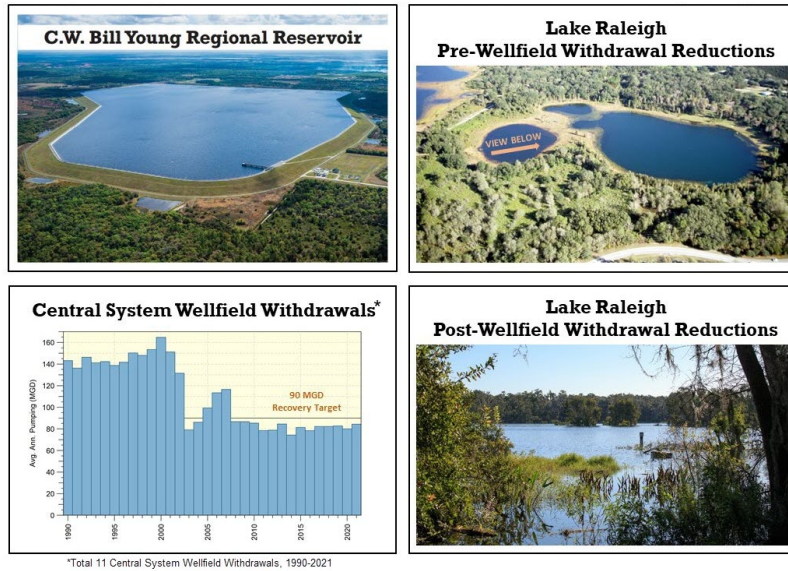


Figure 28. Projects identified to achieve the Northern Tampa Bay Water Use Caution Area MFLs

DOVER/PLANT CITY WATER USE CAUTION AREA RECOVERY STRATEGY

The regional Dover/Plant City Water Use Caution Area (DPCWUCA) Recovery Strategy consisted predominately of regulatory measures related to cold protection. A comprehensive assessment completed in 2020 indicated the minimum aquifer level for the DPCWUCA was being achieved and the recovery strategy was repealed in 2022.

South Florida Water Management District

COMPREHENSIVE EVERGLADES RESTORATION PLAN

The South Florida Water Management District (SFWMD) has identified 5 waterbodies as being in recovery—the Everglades, Florida Bay, Lake Okeechobee, Loxahatchee River, and the Caloosahatchee River—and is implementing the Comprehensive Everglades Restoration Plan (CERP) as the means to recover and protect these waterbodies. The SFWMD anticipates 1,038,100 acre-feet (ac-ft) of storage to come from projects currently planned, in design, or under construction as shown in **Figure 29**.

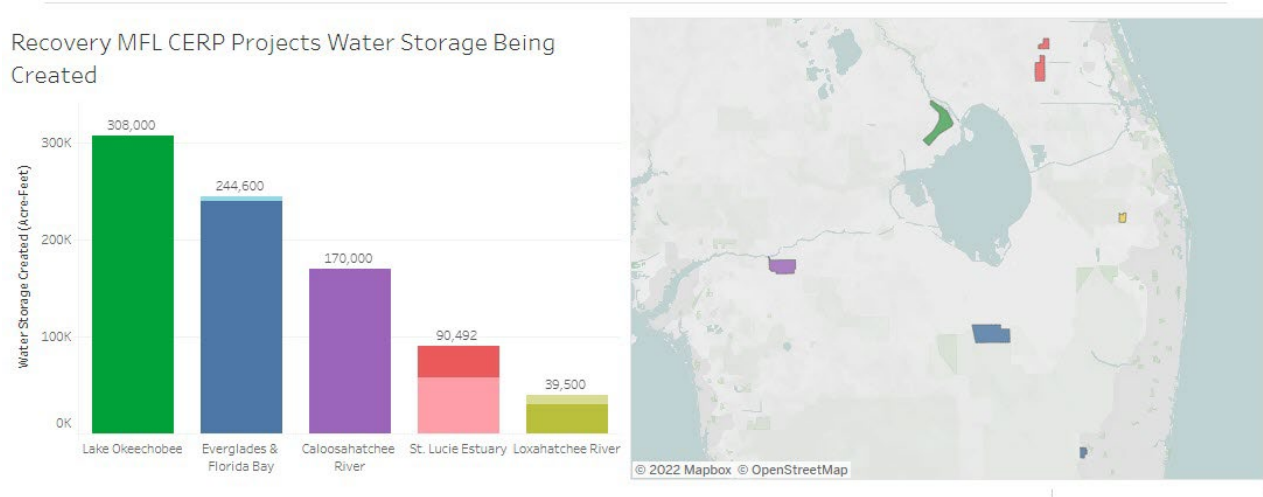


Figure 29. Map and graph of the location and benefits of CERP projects

Additionally, the SFWMD has produced videos to reflect the ongoing construction progress associated with the recovery strategies of two different MFL waterbodies, which can be found by clicking the links:

- [Everglades Agricultural Area \(EAA\) Reservoir Video.](#)
- [Caloosahatchee River \(C-43\) West Basin Storage Reservoir Video.](#)

For more information on CERP, visit the [SFWMD CERP website](#).

Contacts and Data

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For your convenience, additional information can be found as downloads in the links below. Data used as the basis for this report is provided in Excel format:

- [List of Acronyms and Abbreviations.](#)
- [Adopted BMAP Projects.](#)
- [Adopted MFLs and Recovery and Prevention Strategies.](#)
- [Status of Projects Designed to Achieve the MFLs.](#)
- [Troubleshooting Guide.](#)