



WEBINAR HOUSEKEEPING

Attendee Participation

Open your control panel.

Join audio:

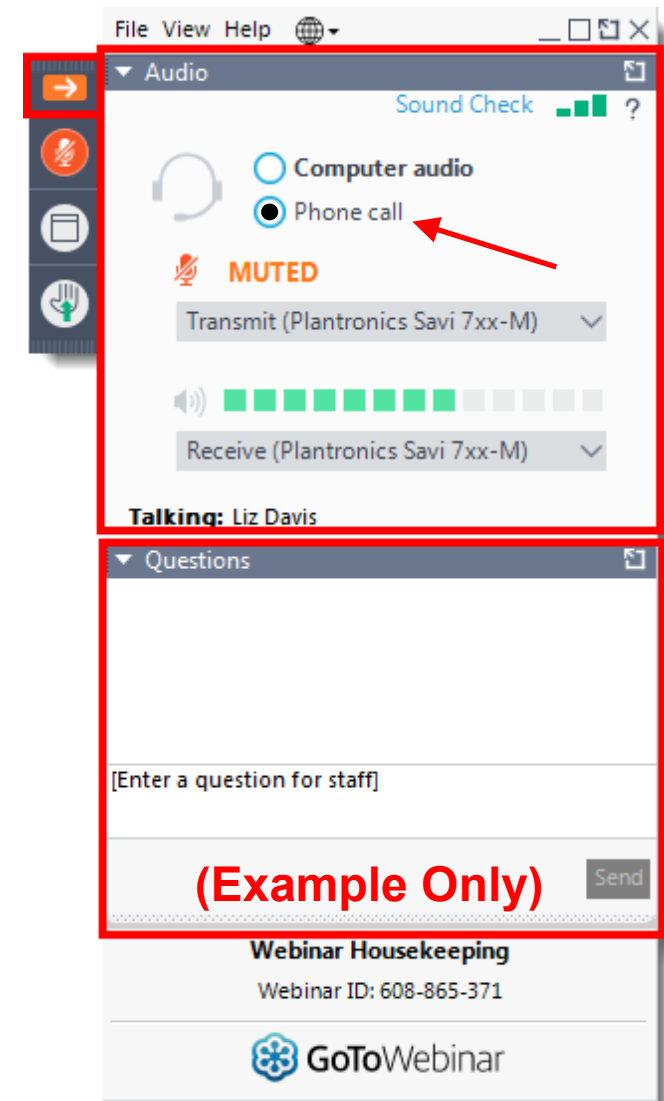
- Choose Computer Audio **or**
- Choose Phone Call and dial using the information provided with your registration.

Attendee audio will automatically be muted.

Submit questions and comments via the **Questions** panel.

If viewing this webinar as a group, please provide a list of attendees via the **Questions** panel.

Note: Today's presentation is being recorded and will be provided on the file transfer protocol (FTP) site after the webinar.





LAKE JESUP BASIN MANAGEMENT ACTION PLAN ANNUAL MEETING

Evelyn Becerra

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoToWebinar | July 9, 2024



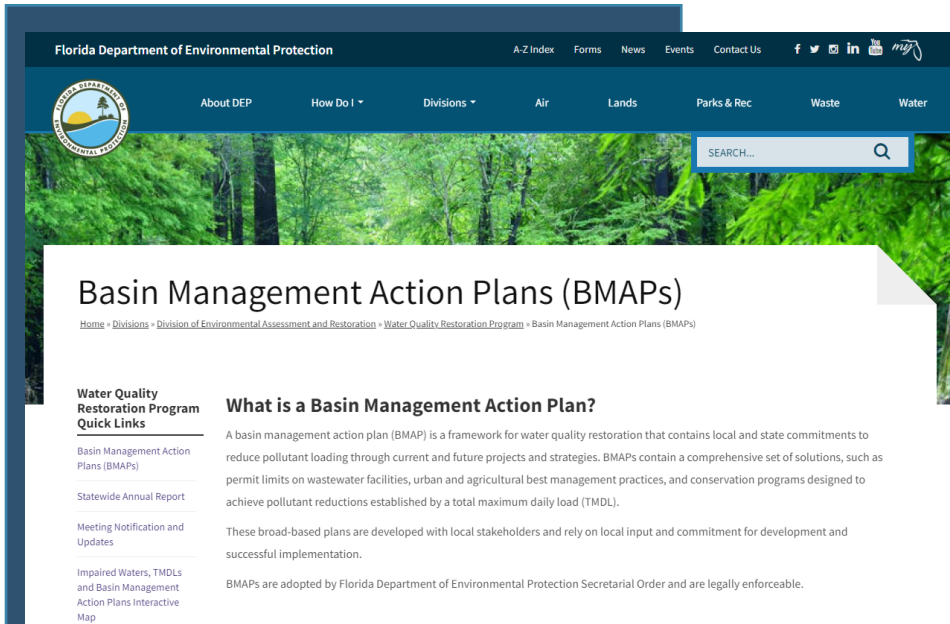
AGENDA

- Basin Management Action Plan (BMAP) Overview.
- Statewide Annual Report (STAR).
- Annual progress.
- St. Johns River Water Management District (SJRWMD) Update.
- Next steps- BMAP update:
 - Milestones.
 - Hot Spot analysis.
 - SJR Model.





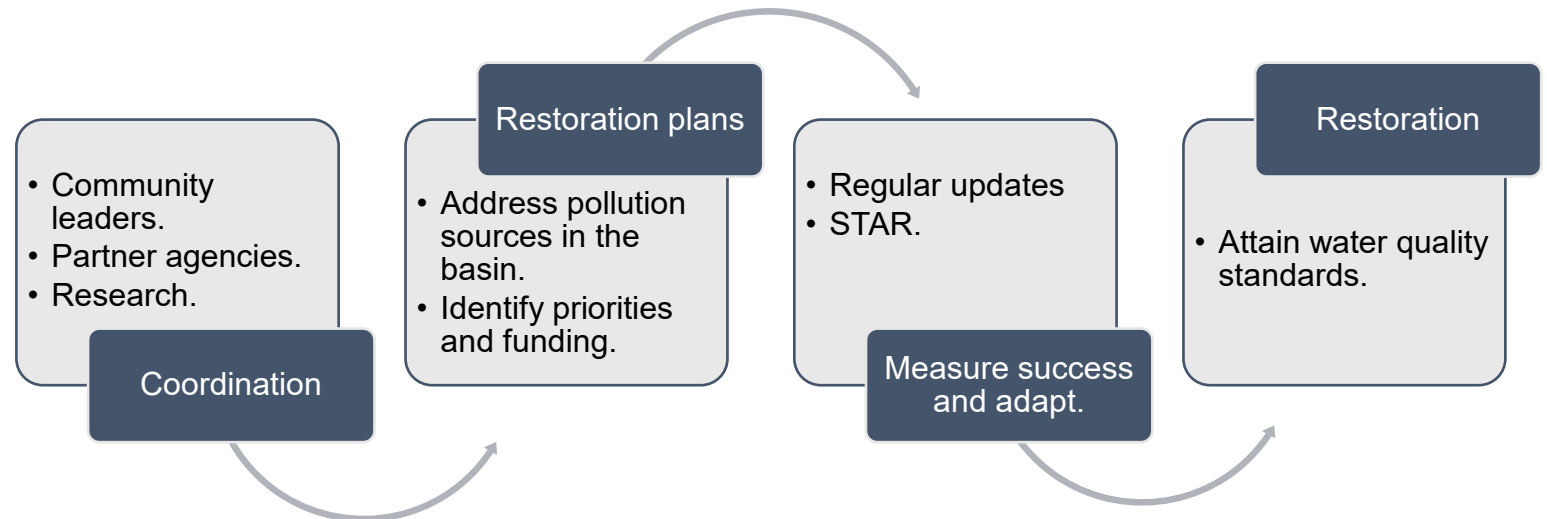
BMAPS



One of DEP's methods for **restoring water quality** in an impaired waterbody.

BMAPs are:

- Developed with stakeholder input.
- Adopted by the Florida Department of Environmental Protection's (DEP) Secretarial Order.
- Enforceable.
- Implemented through a phased approach.
- Reported on annually.
- Updated regularly.





KEY BMAP COMPONENTS

- Total maximum daily loads (TMDLs) being addressed.
- Area addressed by the restoration plan.
- Identify sources.
- Phased implementation approach.
- Milestones.
- Projects and management strategies.
- Future growth impacts.

Projects to meet the TMDL:

- Implementation timeline.
- Commitment to projects.
- Expected water quality improvement from projects and management strategies.

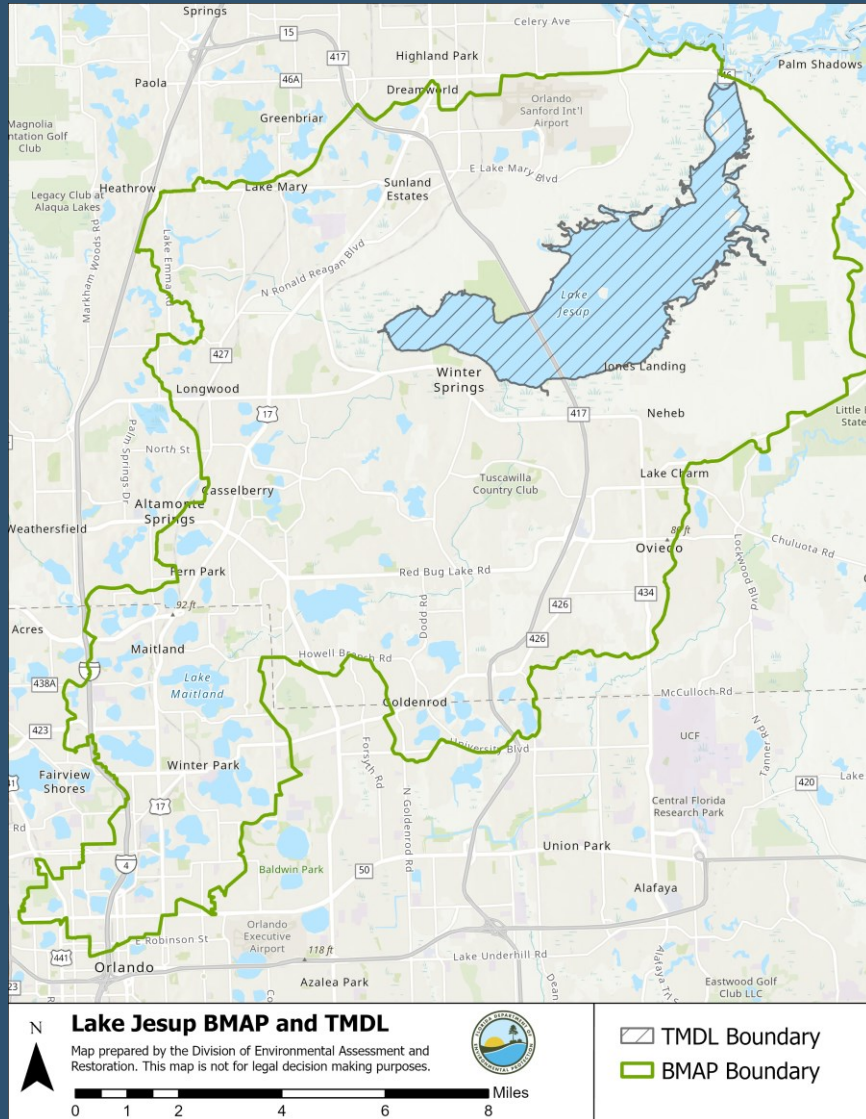
Process to assess progress toward achieving the TMDL:

- Monitoring plan.
- Project reporting.
- Periodic follow-up meetings.
- Water quality analyses.



BACKGROUND

LAKE JESUP BMAP STAKEHOLDERS



Stakeholders

City of Altamonte Springs

City of Casselberry

City of Lake Mary

City of Longwood

City of Maitland

City of Orlando

City of Oviedo

City of Sanford

City of Winter Park

City of Winter Springs

Orange County

Seminole County

Site 10

Town of Eatonville

Turnpike Enterprise

Florida Department of Transportation (DOT), District 5

Florida Department of Agriculture and Consumer Services (DACCS)

SJRWMD



- ## Lake Jesup BMAP:

- ## BMAP Amendment:

- Adopted July 2019.
- Provides information on changes since the 2010 BMAP was adopted.

- Total required reductions:
 - 11,019 lbs./yr. TP.
 - 55,013 lbs./yr. TN.



CLEAN WATERWAYS ACT: TIMELINE

June 12, 2023

Final Order signed by the Secretary.



July 12, 2023

Deadline for written explanation of potential exemption to be submitted to the department.



Feb. 1, 2024

Deadline for submitting draft onsite sewage treatment and disposal systems (OSTDS) remediation and/or wastewater treatment plans for the department's review.



Aug. 1, 2024

Deadline for submitting complete OSTDS remediation and/or wastewater treatment plans to the department.

The nutrient BMAPs included in the [Final Order](#) require these plans.



HB 1379: ENVIRONMENTAL PROTECTION

Increased protection for Outstanding Florida Springs (OFS).

Strengthens Water Quality Protections and BMAPs.

HB 1379

Improves Local Government Long-Term Comprehensive Planning.

Expands Funding Opportunities to Address Water Quality Impairments.

Strengthen BMAPs:

- Requires a list of identified projects to achieve 5-year milestones.
- Requires a list of agricultural cooperative regional water quality improvement elements.

Improve Comprehensive Planning:

- Requires BMAP projects to be included in comprehensive plans to prioritize implementation.

Improve Domestic Wastewater:

- Requires more stringent wastewater treatment standards, if required to meet the TMDL.

Expand Grant Opportunities.



2024 DEP AGENCY BILL: HB 1557

Advances the protection of our environmental resources by:

Improving Treatment of Reclaimed Water

Ensures that reclaimed water is treated to meet advanced waste treatment (AWT) or a more stringent treatment standard in certain BMAP areas, while still promoting its use to eliminate surface water discharges and meet water supply challenges.

Expanding Wastewater Facility Plans

Supports the development of domestic wastewater treatment plans and OSTDS remediation plans within BMAP or other restoration areas by requiring facilities to provide information to the local entities developing these plans.

Investing in Innovative Technologies

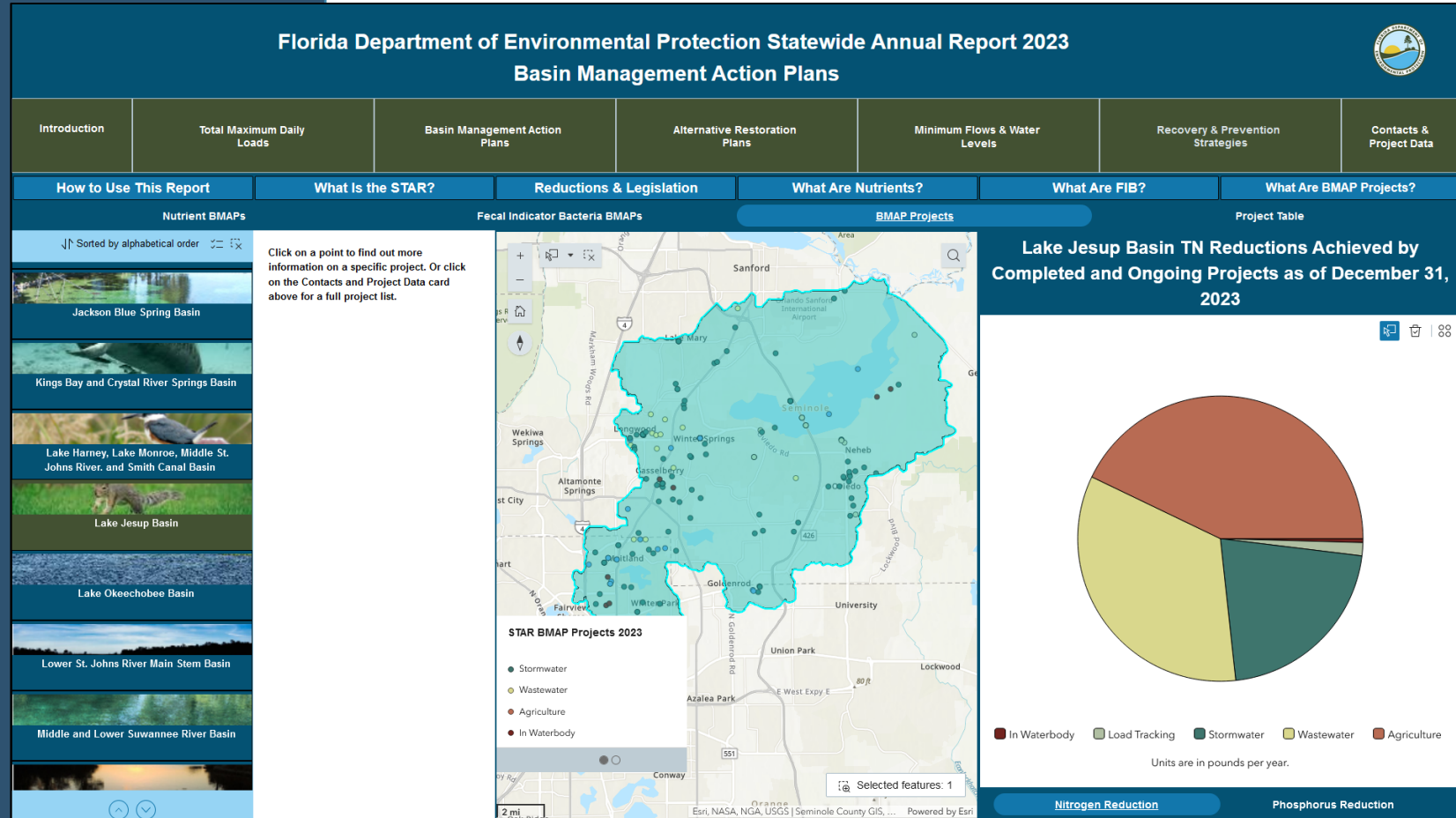
Creates a program to expeditiously review new and innovative enhanced nutrient-reducing OSTDS to reduce the nutrients entering Florida's waterways.



STAR PROJECT REPORTING

What is the STAR?

- Summarizes accomplishments in the BMAPs statewide.
- Reports on restoration projects and management strategies.
- Published July 1 of each year.
- STAR 2023 is now live.



<https://floridadep.gov/STAR>



PROGRESS

LAKE JESUP BMAP STATUS OF PROJECTS

Projects through Dec. 31, 2023.

Lead Entity	Completed	Ongoing	Planned	Underway	Total
City of Altamonte Springs	2	3			5
City of Casselberry	10	4	5	2	21
City of Lake Mary	1	3			4
City of Longwood	15	6	2	2	25
City of Maitland	6	4	5	4	19
City of Orlando	7	4	3	1	15
City of Oviedo	5	4	11	1	21
City of Sanford	2	2	2		6
City of Winter Park	8	2	1	5	16
City of Winter Springs	7	8	1	2	18
DACS	1	1		1	3
DOT District 5	10	2		3	15
Orange County	4	4		1	9
Seminole County	10	4	2	4	20
Site 10	1				1
Town of Eatonville		2			2
Turnpike Enterprise	1	2			3
Grand Total	90	55	32	26	203

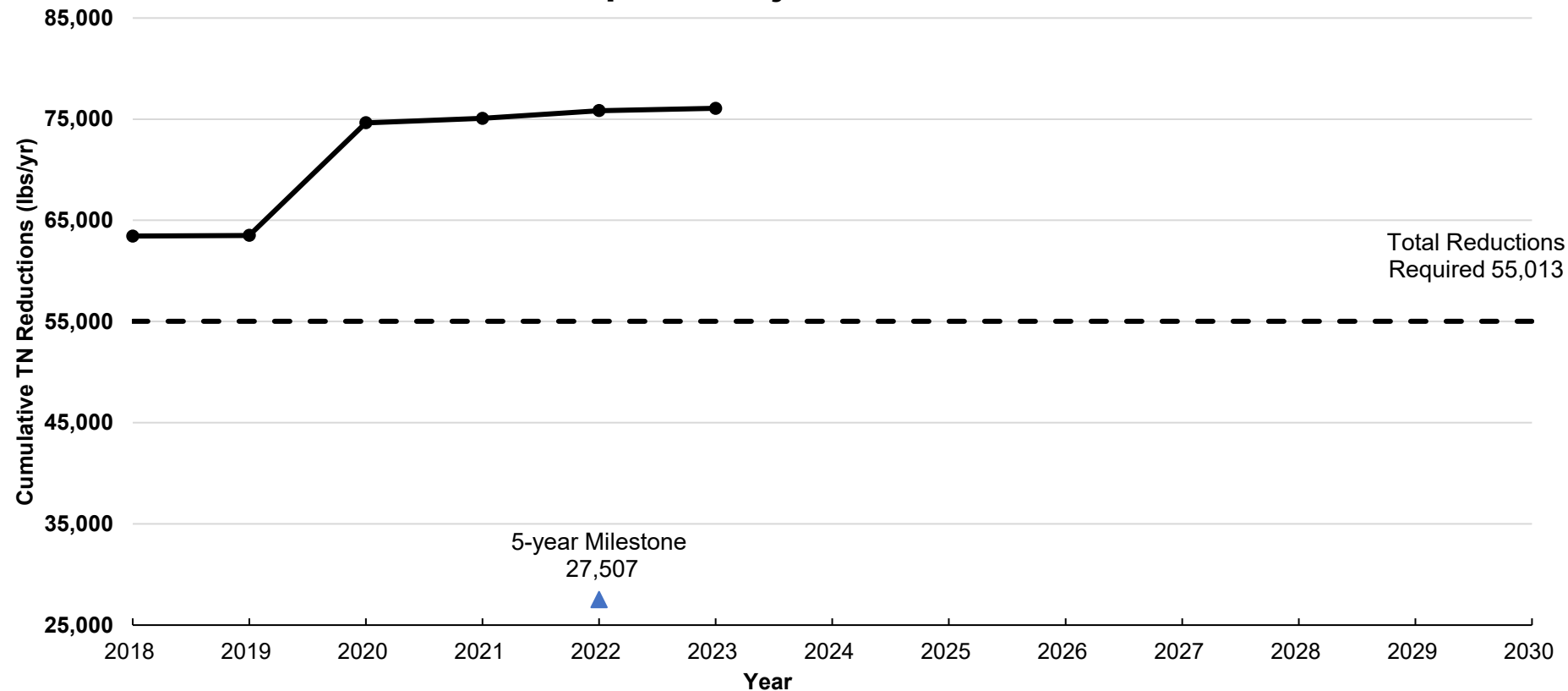
As of Dec. 31, 2023,
verified projects in the Lake
Jesup BMAP have reduced
76,067 lbs./yr. of TN and
12,785 lbs./yr. of TP.



PROGRESS

LAKE JESUP BMAP- TN

Lake Jesup TN Project Reductions

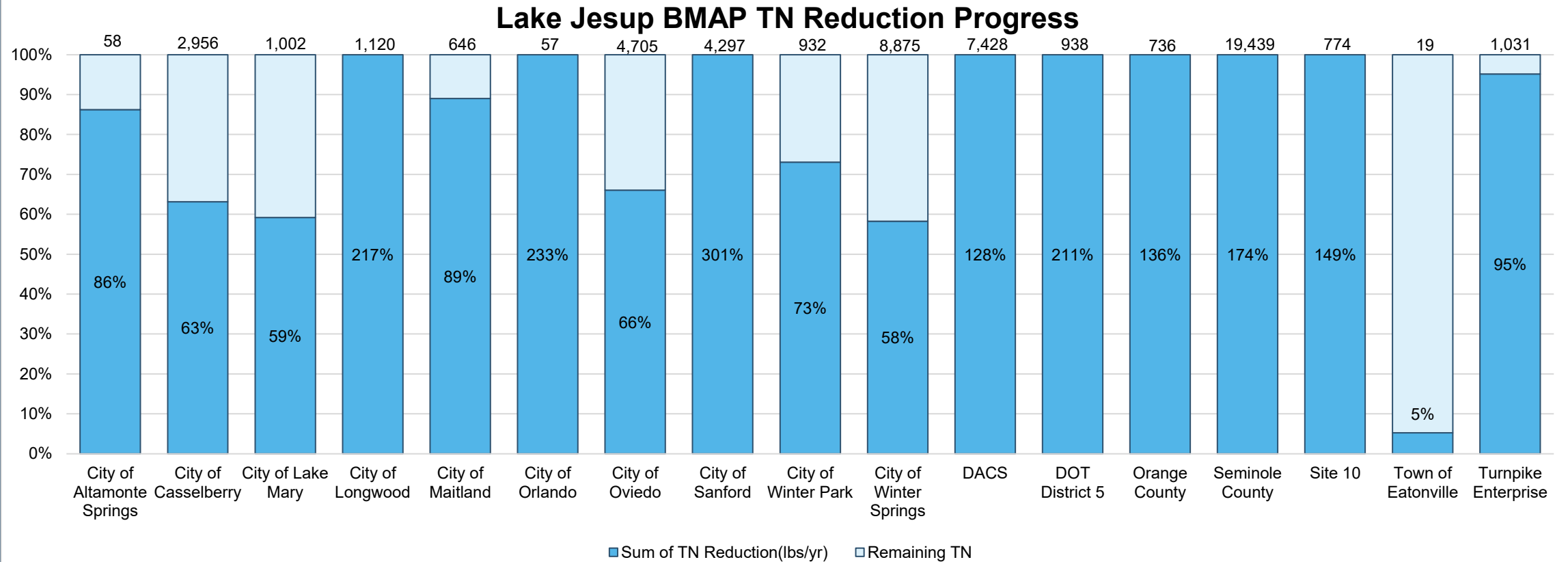


***Completed
and ongoing
projects only.***



PROGRESS

ENTITY PROGRESS- TN



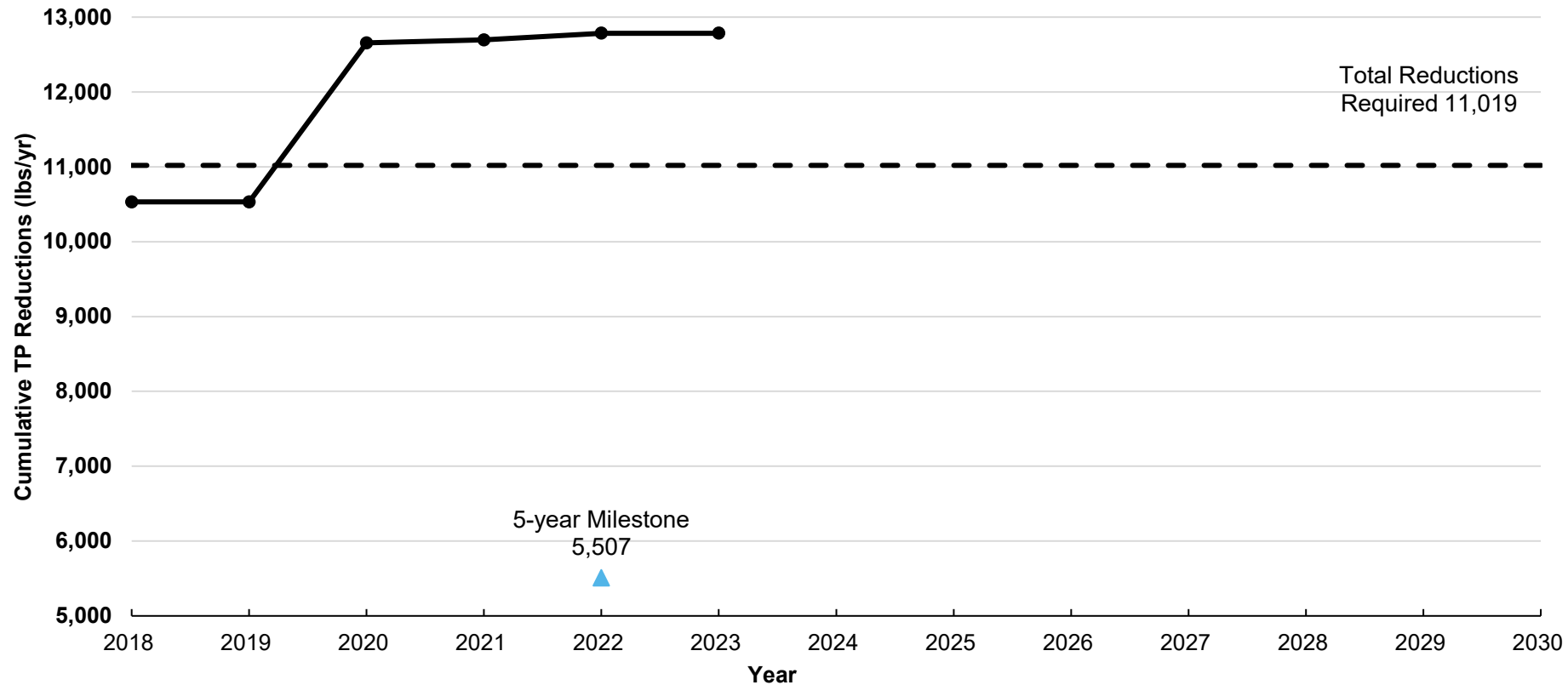
Completed and ongoing projects only.



PROGRESS

LAKE JESUP BMAP- TP

Lake Jesup TP Project Reductions



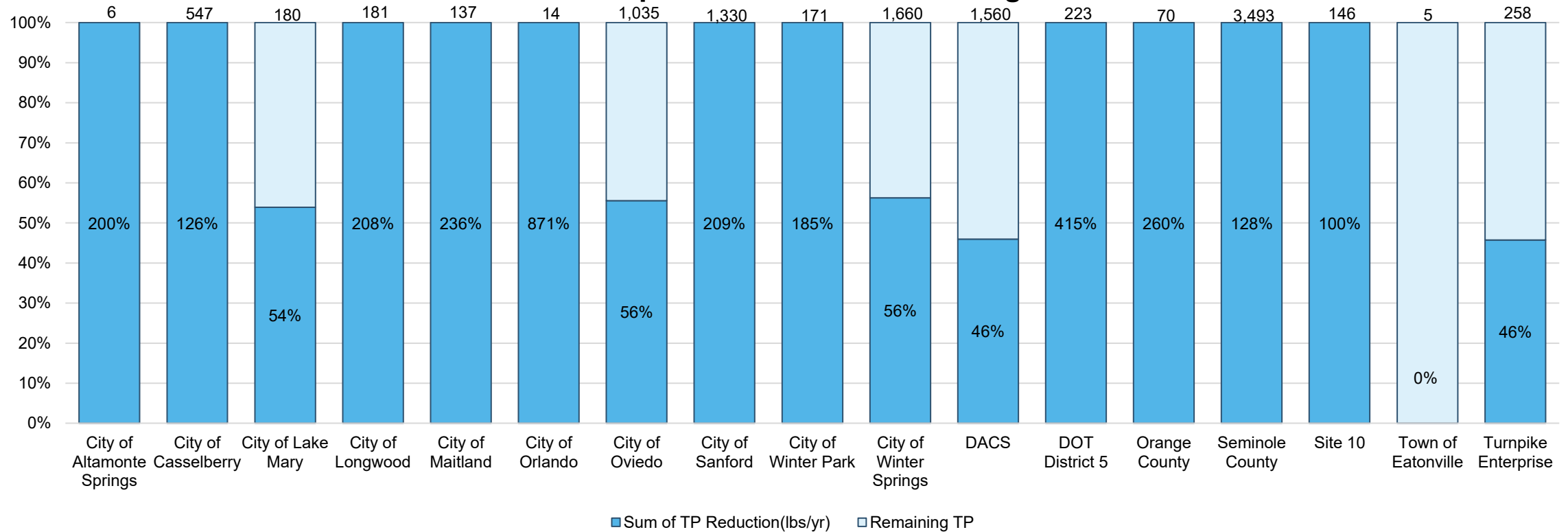
***Completed
and ongoing
projects only.***



PROGRESS

ENTITY PROGRESS- TP

Lake Jesup BMAP TP Reduction Progress



Completed and ongoing projects only.



DATA UPLOAD

WATERSHED INFORMATION NETWORK (WIN)

- Through both the WIN and Florida STORET (STOrage and RETrieval) data repositories, DEP implements Florida statutory requirements, DEP rule requirements and U.S. Environmental Protection Agency (EPA) funding requirements for management of environmental (non-regulatory) data for the state.
- Data from WIN are used by DEP for standards development, Impaired Waters Rule assessments, TMDL development, reasonable assurance plans, alternative restoration plans, **BMAP development and assessment** and for providing data as required to EPA and to the public.
- WIN data can be retrieved through the WIN Reports and Extracts menu at <https://prodenv.dep.state.fl.us/DearWin/>.
- Data providers to WIN and STORET include DEP entities, water management districts (WMDs), cities, counties, other state agencies, universities, private and volunteer organizations.
- If your entity is collecting ambient water quality data, please upload it to WIN.



WIN COORDINATORS

WIN Coordinator	DEP District Area or Role	Phone	Email
Justin Nelson	Northeast, Northwest, Southeast	850-245-8510	Justin.M.Nelson@FloridaDEP.gov
Casey Marston	South, Southwest	850-245-8049	Casey.Marston@FloridaDEP.gov
Jason Storrs	Central, Statewide	850-245-8467	Jason.Storrs@FloridaDEP.gov

Lake Jesup BMAP Update

Shannon Salvatori, SJRWMD

Anne Elise Wester, P.E., Ph.D., SJRWMD

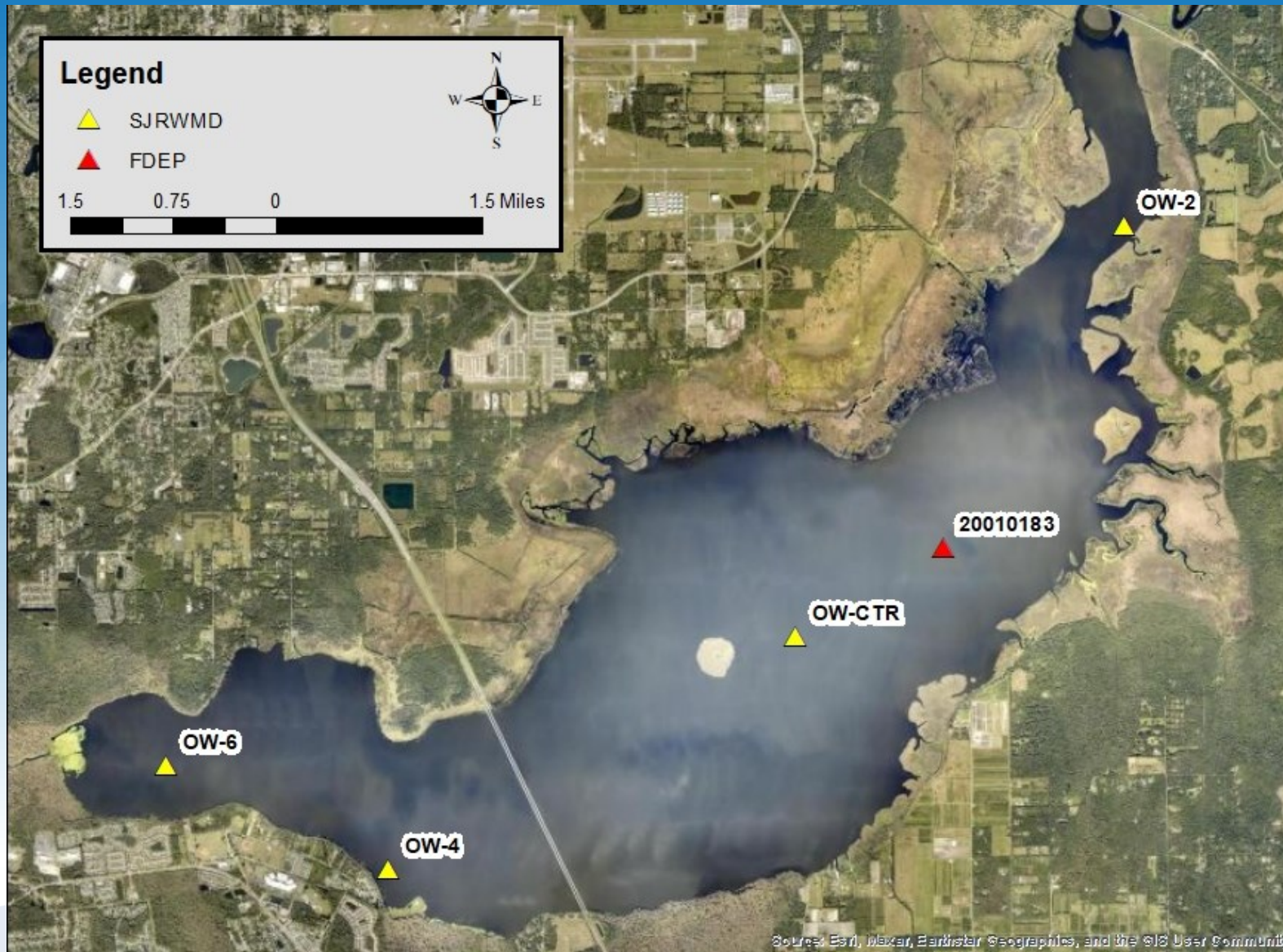


St. Johns River
Water Management District

Water Quality Update

- Jesup impaired for total nitrogen (TN), total phosphorus (TP), and chlorophyll-*a* (Chl-*a*)
 - Target TN: **1.27 mg/L**
 - Target TP: **0.096 mg/L**
 - Target Chl-*a*: **31.2 mg/m³**
- Water quality data obtained from St. Johns River Water Management District's Environmental database
- Harmful Algal Bloom (HAB) data obtained from Florida Department of Environmental Protection (DEP) HAB database



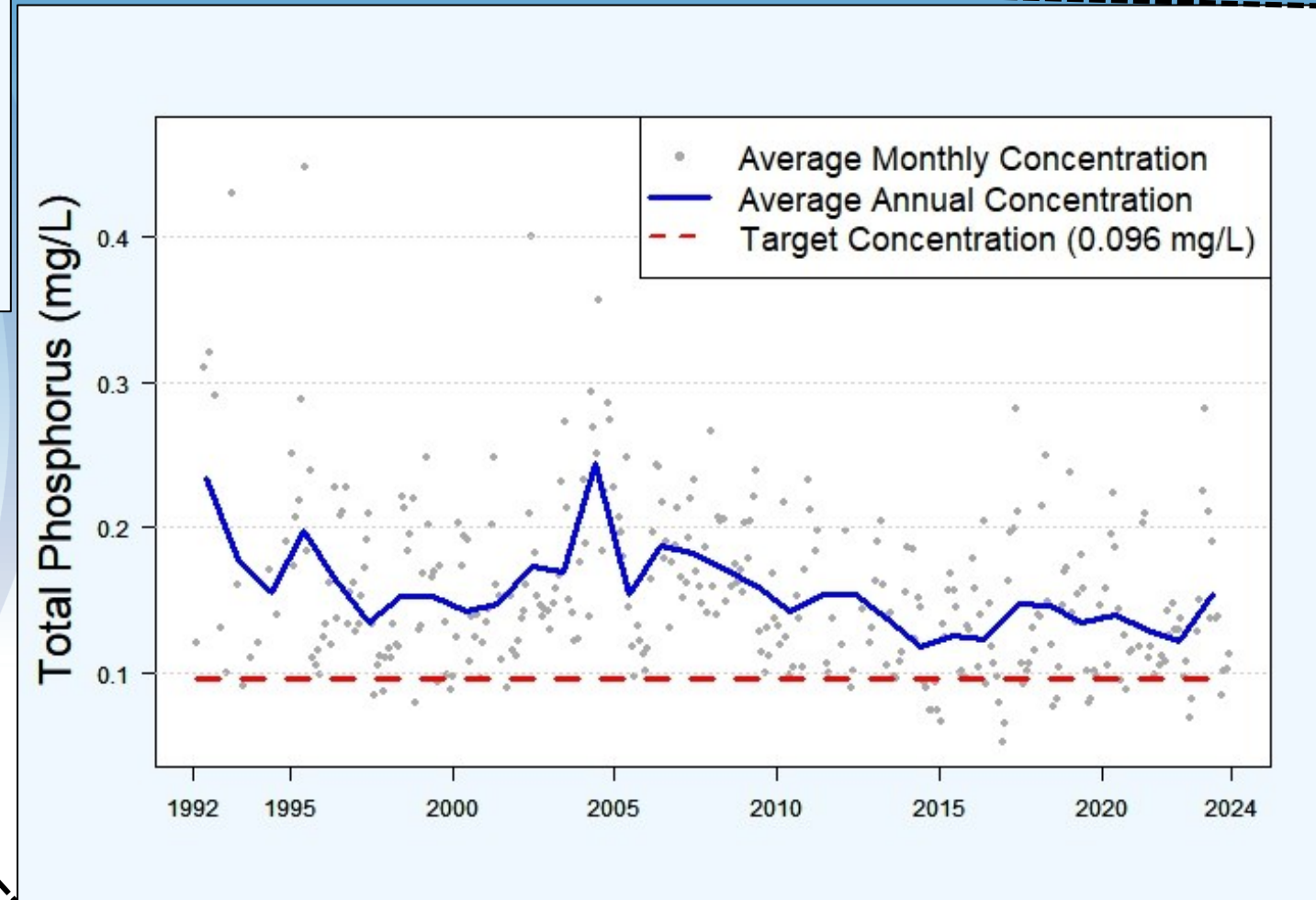
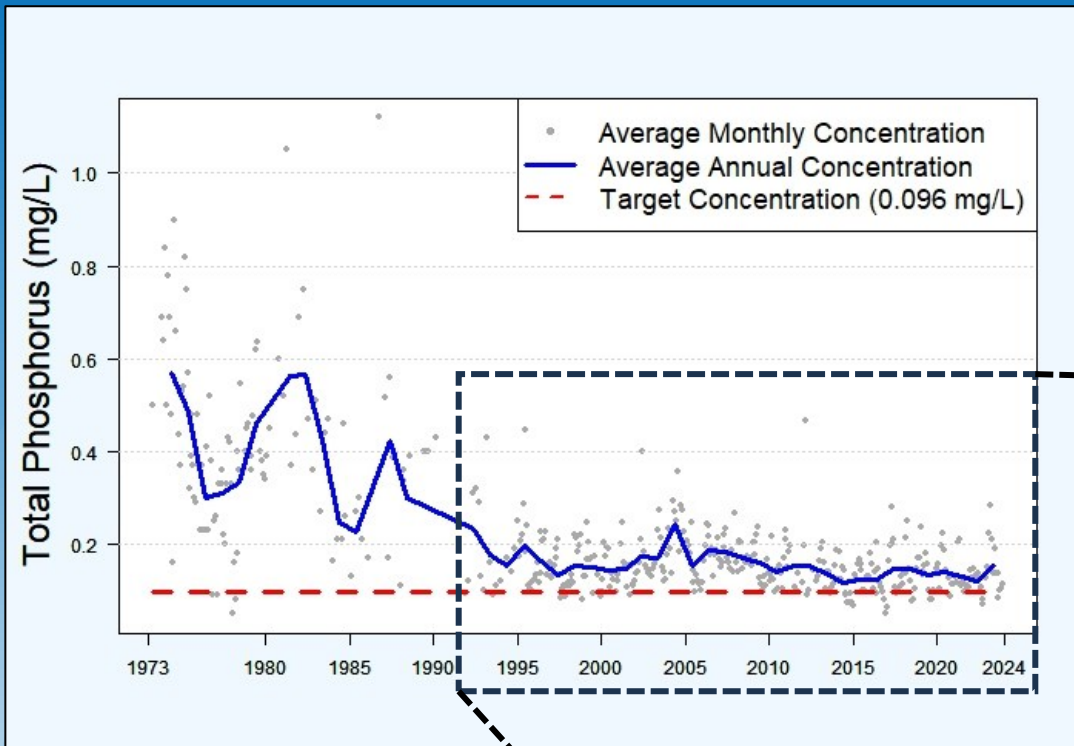


- Water quality stations in Lake Jesup from which data was used in time series plots in this presentation
- OW-CTR also is location of routine algal sampling



St. Johns River
Water Management District

Total Phosphorus

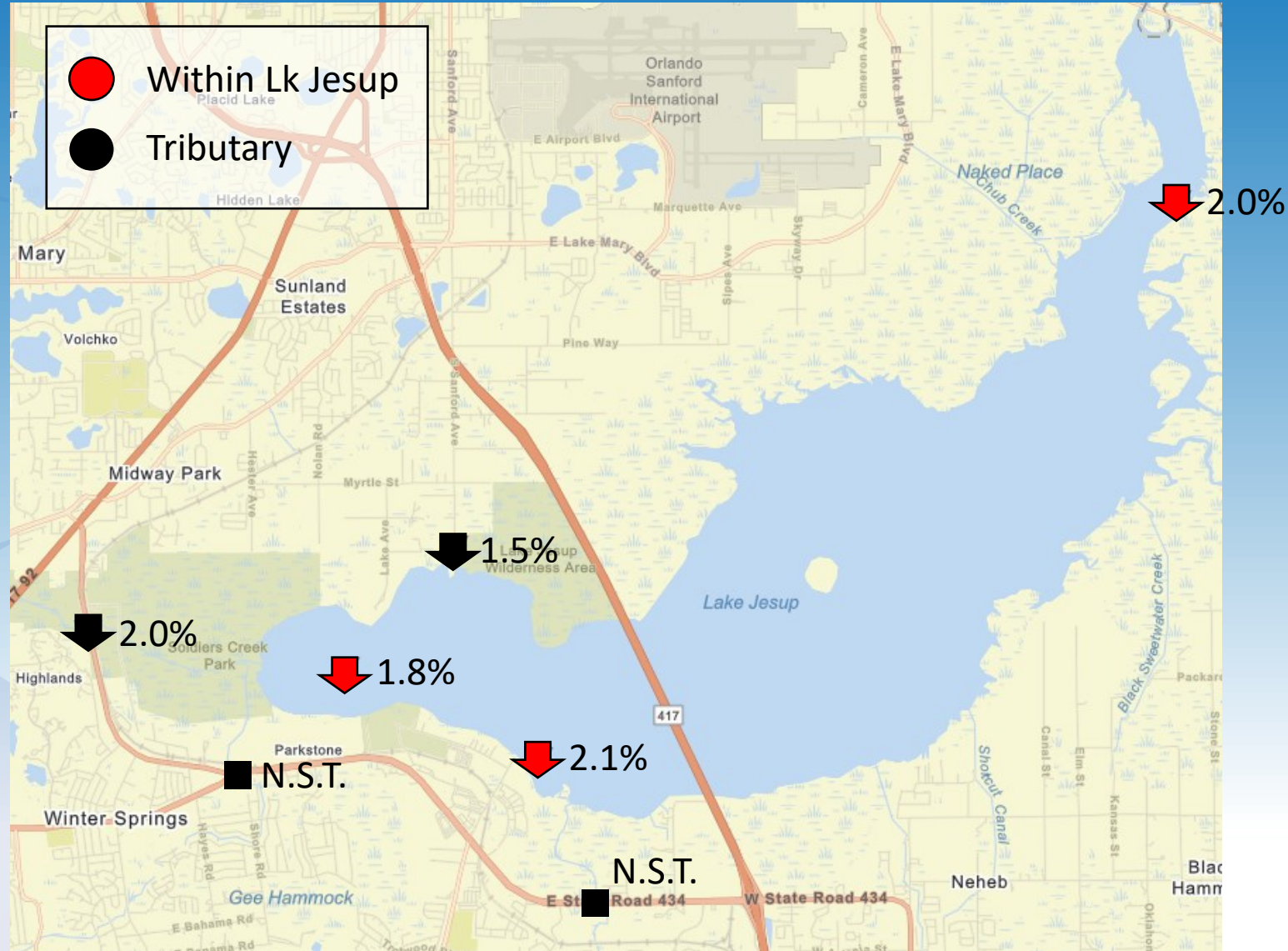


St. Johns River
Water Management District

SJRWMD's Long-Term Trend Report

Total Phosphorus

- 2008-2022 data
 - All SJRWMD sites
 - Report updated annually
-
- **N.S.T. = NO STATISTICAL TREND**

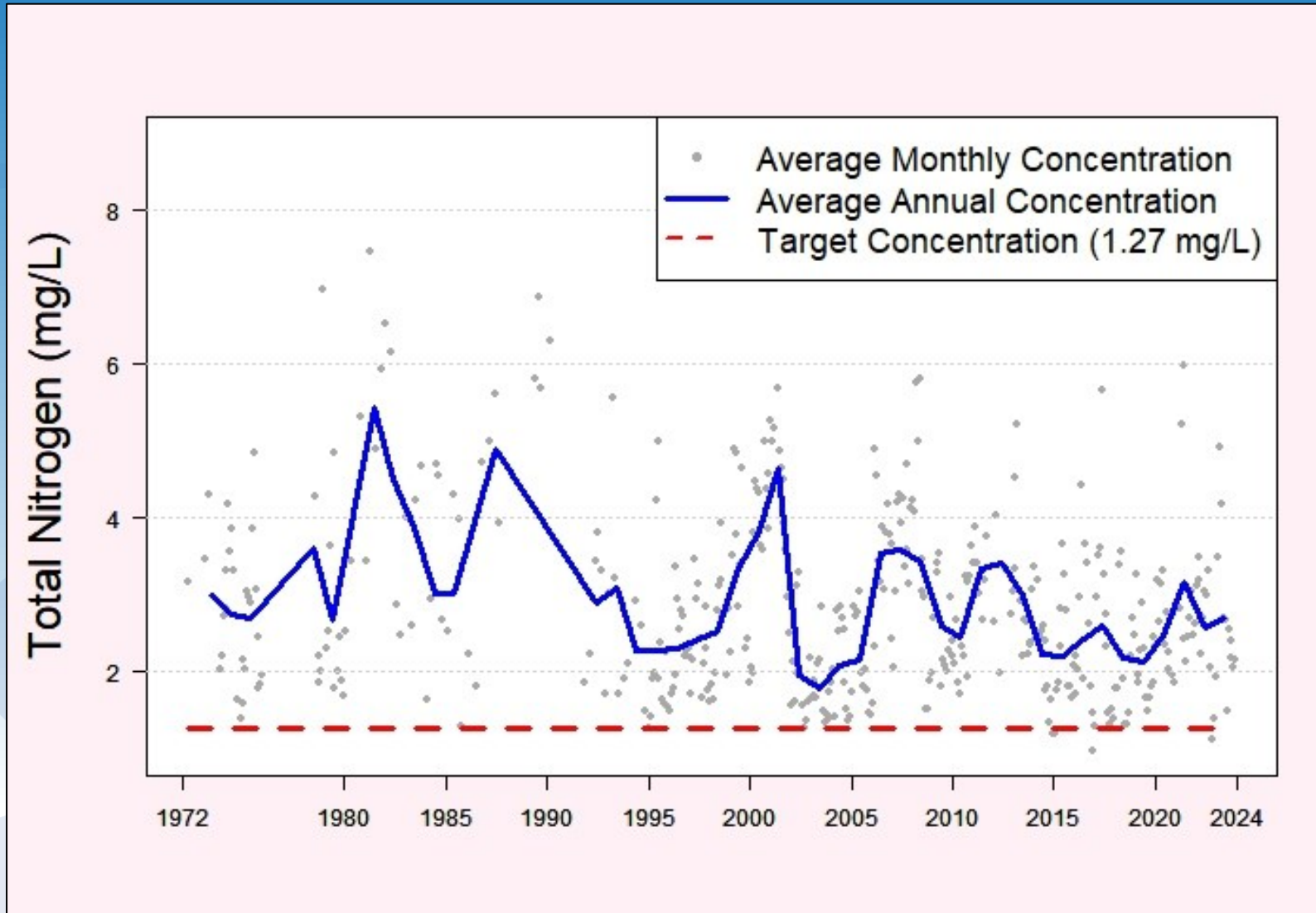


St. Johns River
Water Management District

SJRWMD Status and Trends reports:

www.sjrwmd.com/data/water-quality/#status-trends

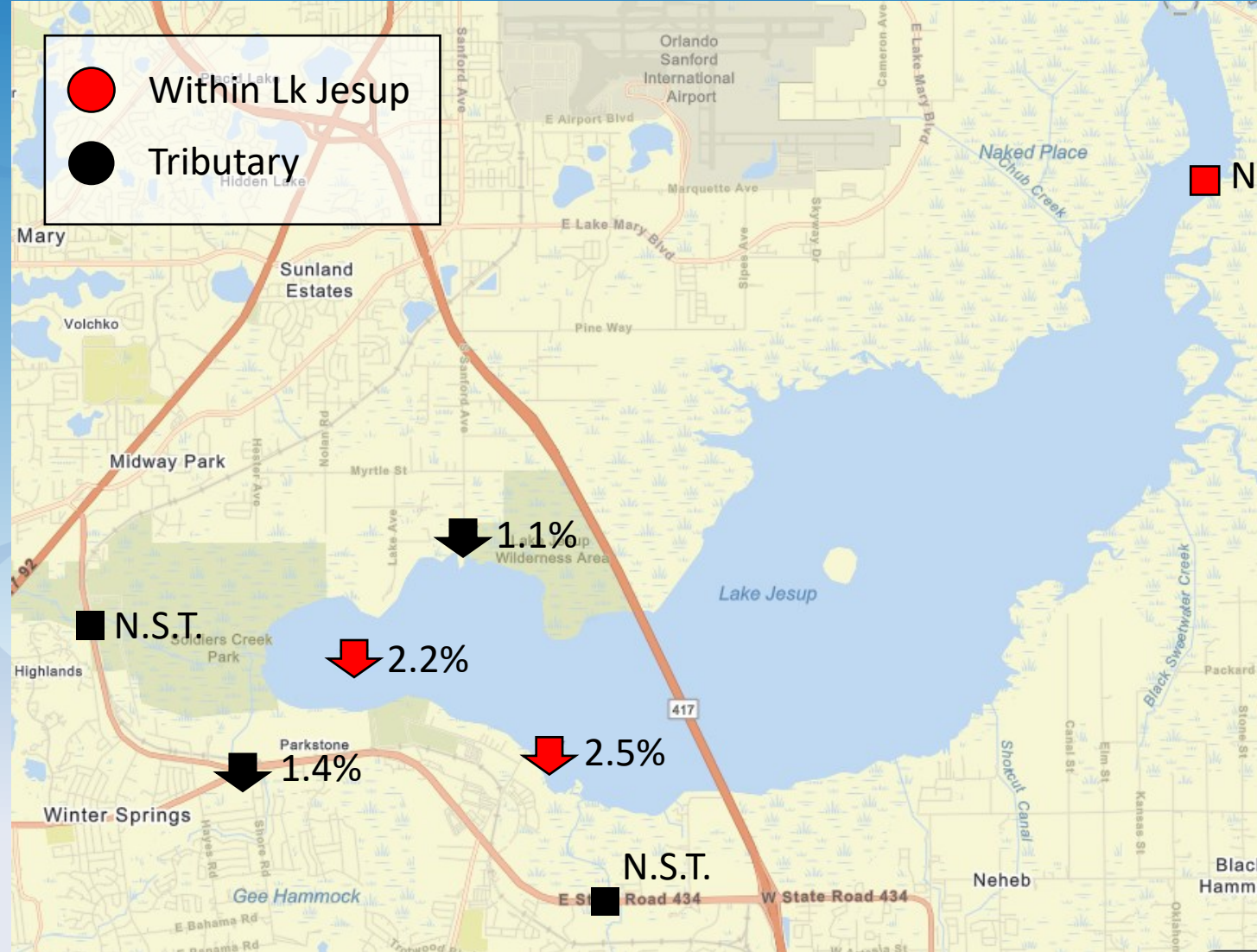
Total Nitrogen



SJRWMD's Long-Term Trend Report

Total Nitrogen

- 2008-2022 data
- All SJRWMD sites
- Report updated annually
- **N.S.T. = NO STATISTICAL TREND**

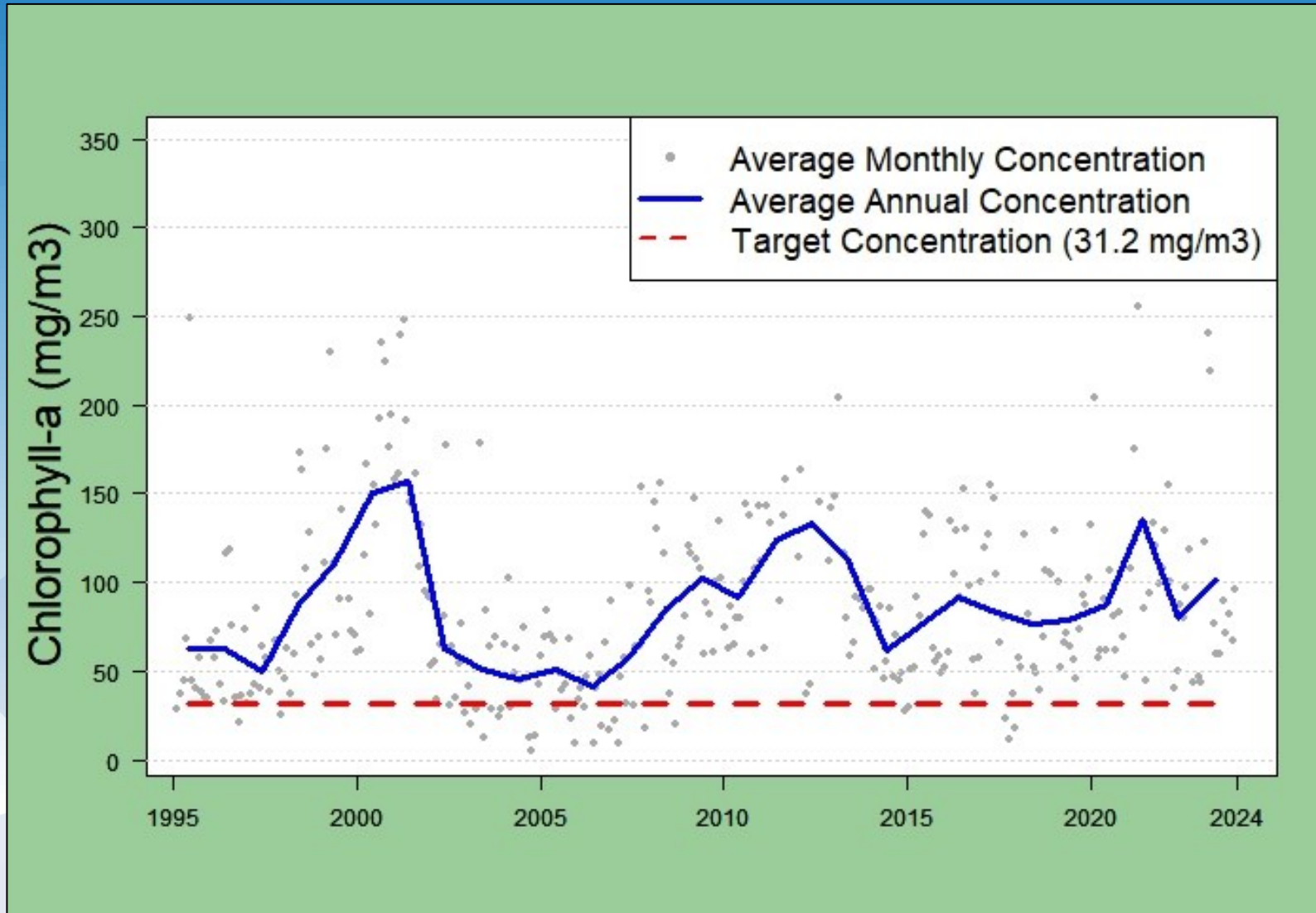


St. Johns River
Water Management District

SJRWMD Status and Trends reports:

www.sjrwmd.com/data/water-quality/#status-trends

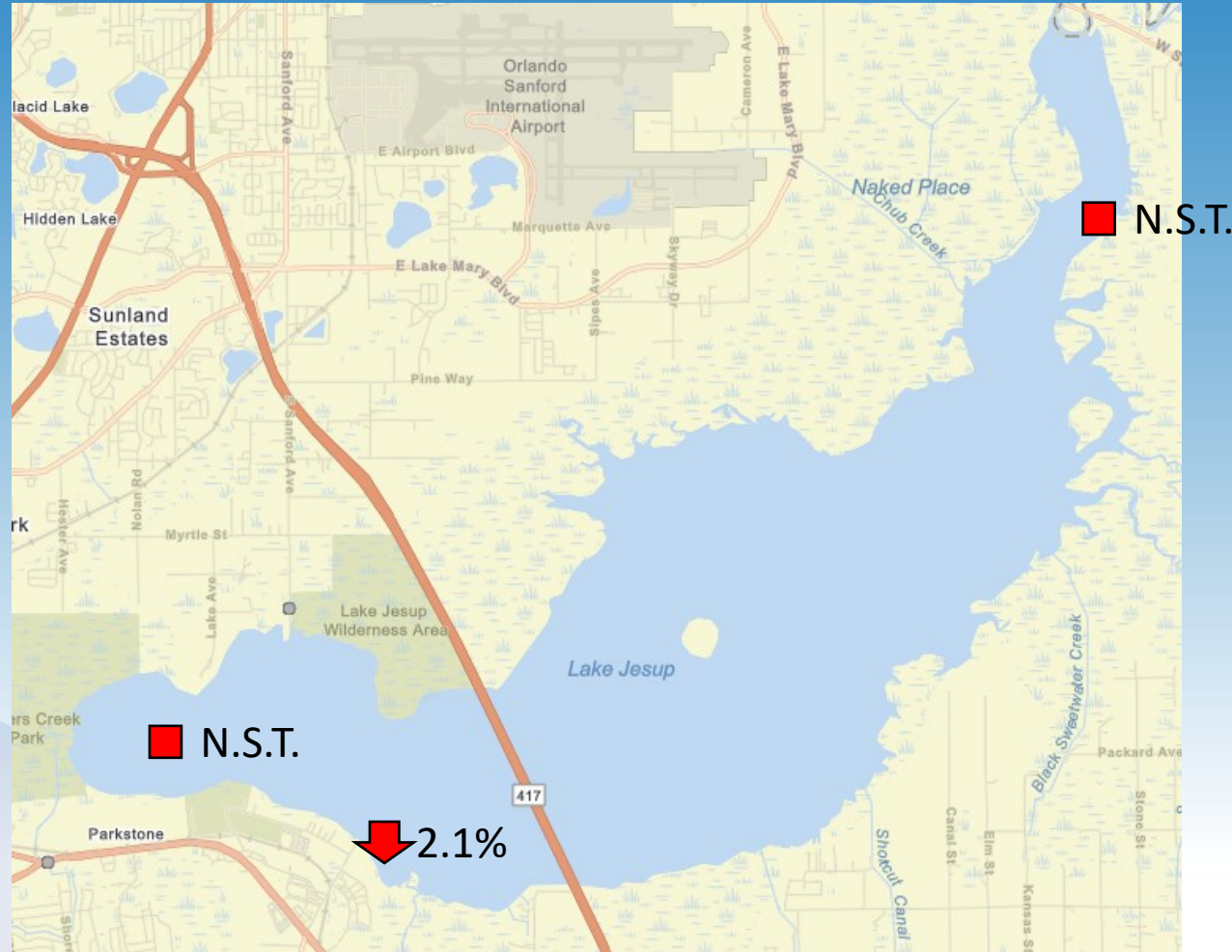
Chlorophyll-a (Chl-a)



SJRWMD's Long-Term Trend Report

Chlorophyll-*a*

- 2008-2022 data
- All SJRWMD sites
- Report updated annually
- **N.S.T. = NO STATISTICAL TREND**

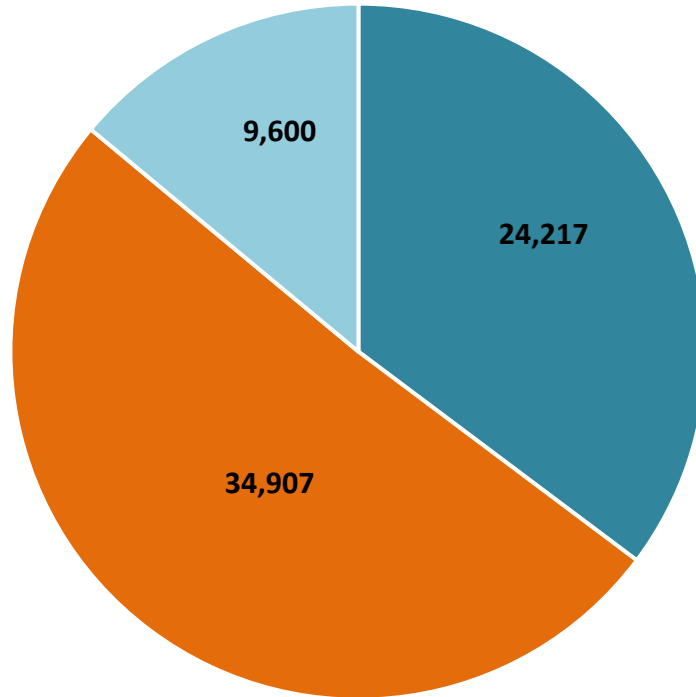


St. Johns River
Water Management District

SJRWMD Status and Trends reports:
www.sjrwmd.com/data/water-quality/#status-trends

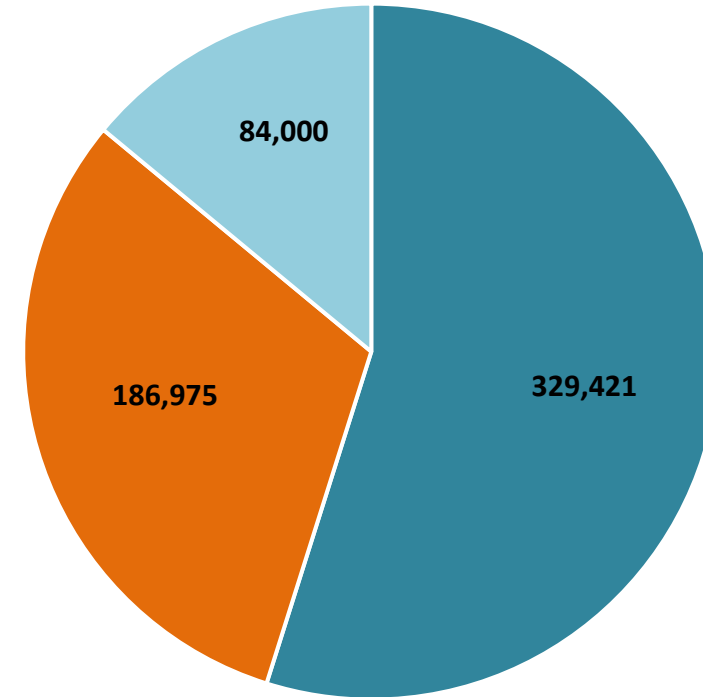
Nutrient Load Sources

Phosphorus (lbs/year)



- Watershed Load
- Sediments and Seepage
- Atmospheric Deposition

Nitrogen (lbs/year)



- Watershed Load
- Sediments and Seepage
- Atmospheric Deposition



Harmful Algal Blooms

- 18 samples taken in total on Jesup in 2023
- 13 samples with toxin detection
 - Max Cylindrospermopsin = 0.70 µg/L
 - Max Microcystin = 1.40 µg/L
 - 1 Anatoxin detection = 0.52 µg/L
 - No Nodularin detections
- All reported toxin detections were below EPA's recommended recreational limits:
 - 8 µg/L for Microcystins
 - 15 µg/L for Cylindrospermopsin
- Most common taxa
 - *Microcystis aeruginosa*
 - *Raphidiopsis (Cylindrospermopsis) raciborskii*
 - *Planktolyngbya limnetica*
- DEP Algal Bloom Dashboard:
<https://floridadep.gov/AlgalBloom>



Photo taken by samplers at OW-CTR on 4/27/2023



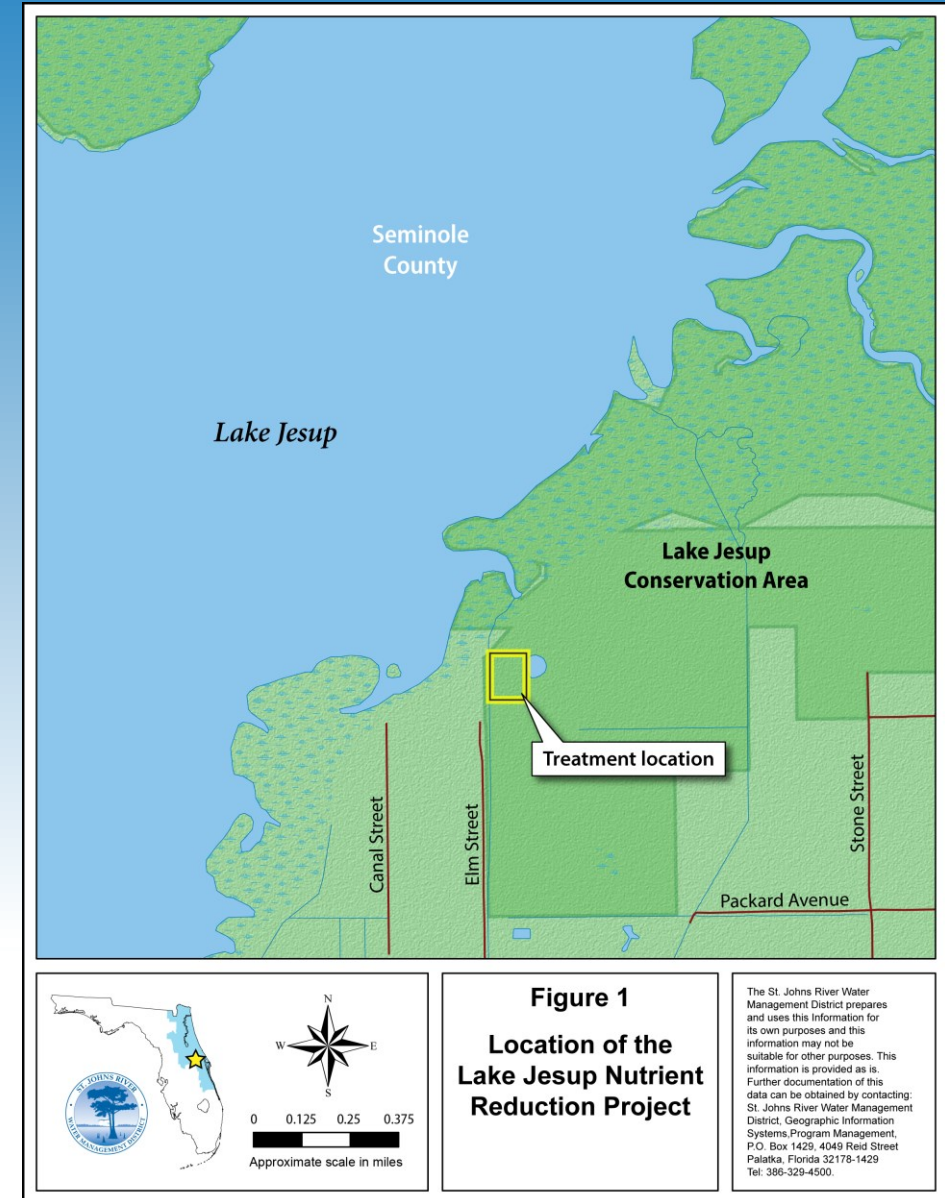
Upcoming Projects

- Nutrient reduction system
- Acquisition of the adjacent floodplain



Lake Jesup Nutrient Reduction System

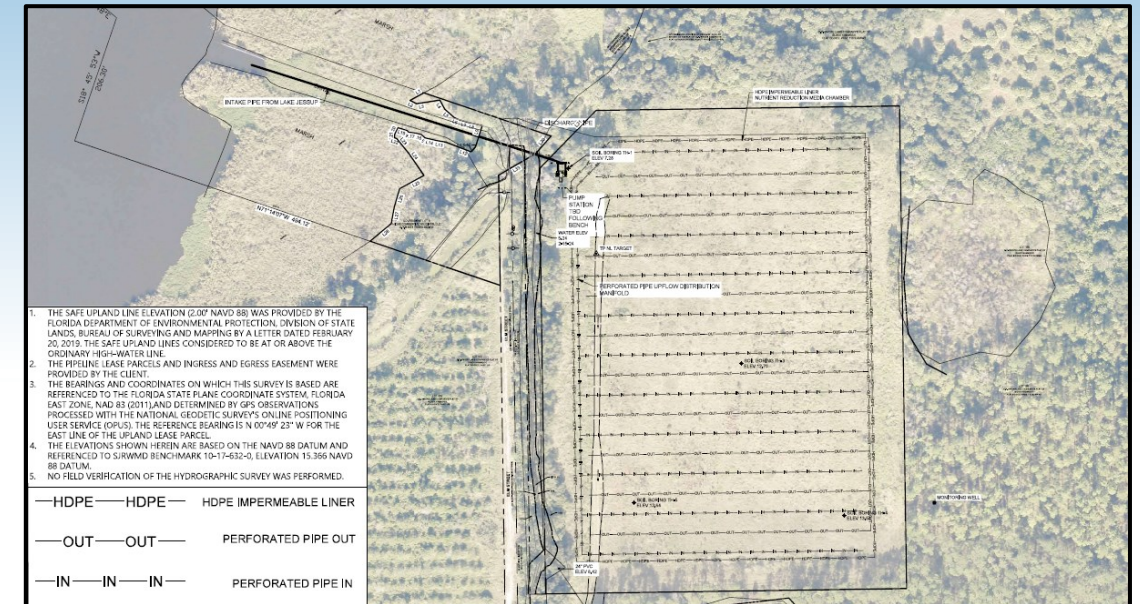
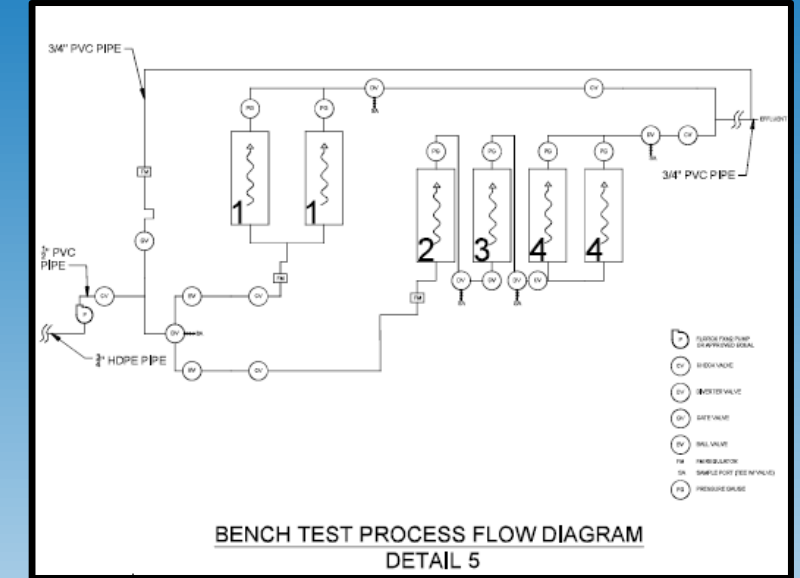
- Development of a full-scale nutrient removal system
 - Pump raw water from Lake Jesup
 - Treat on the 9.7-acre upland District property
- Anticipated nutrient reduction from the lake
 - 50,000-80,000 lbs/year total nitrogen
 - 5,000-6,000 lbs/year total phosphorus
- In January 2024, the District went under contract with Tetra Tech for the design and permitting of the full-scale project.
 - Target completion date is September 2026
 - Includes a 12-month benchtop-scale pilot project



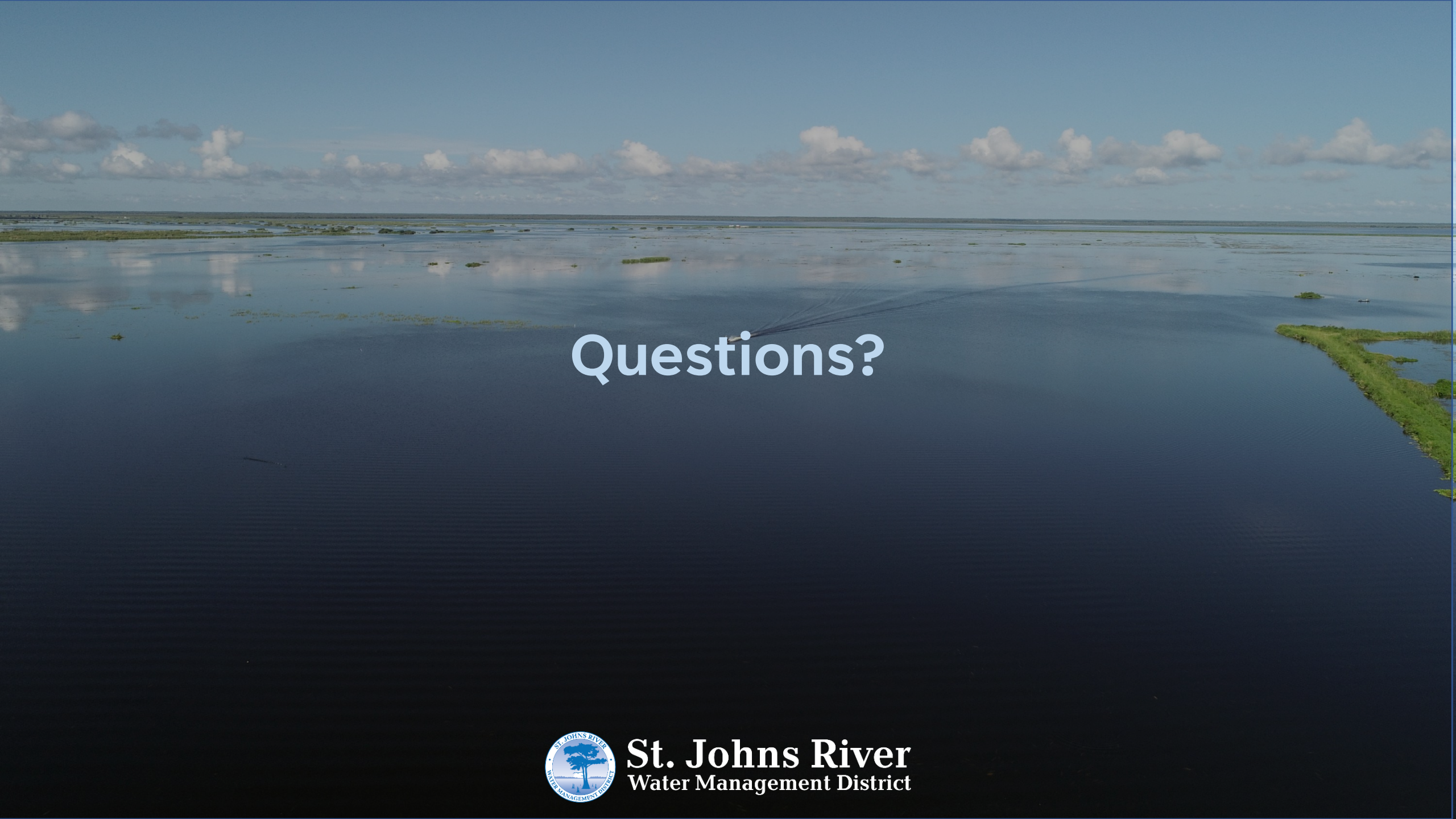
St. Johns River
Water Management District

Project Status

- Pilot Project Status
 - Draft Benchtop-scale Design
 - Draft Nutrient Reduction Media Tech Memo
 - **12-month study is expected to begin in September**
- Full-scale Project Design Status
 - Site Survey
 - Wetland and Biological Survey
 - Draft Conceptual Design
 - Geotechnical Evaluation



St. Johns River
Water Management District

An aerial photograph of a vast, calm body of water, likely a bay or a large river. The water is a deep blue, reflecting the sky. A long, narrow strip of green grassy land extends from the right side into the water. In the distance, a small boat is visible, leaving a white wake behind it. The sky is a clear, light blue with scattered white clouds.

Questions?



St. Johns River
Water Management District



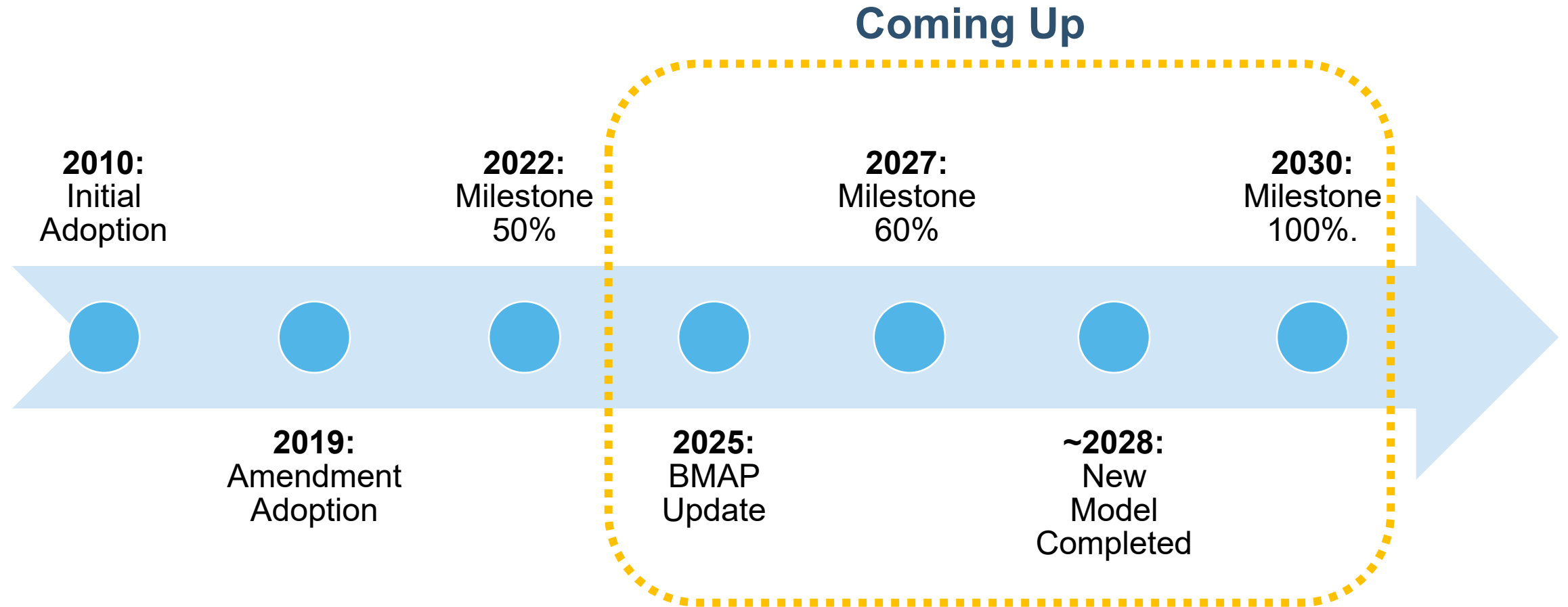
UPCOMING

2025 BMAP UPDATE COMPONENTS

- Establish entity milestones.
- Wastewater effluent limits based on size of facility and effluent disposal method utilized.
- OSTDS requirements for new systems on lots one acre or less.
- Inclusion of a hot spot analysis.
- Evaluation of the monitoring network.
- Inclusion of regional projects.
- Addition of future growth estimates.
- Inclusion of the Clean Waterways Act requirements.



BMAP TIMELINE AND MILESTONES





HOT SPOT ANALYSIS DEVELOPMENT OVERVIEW

Purpose:

- To find more specific areas to focus restoration activities.
- To highlight areas where projects might have stronger results.
- To highlight areas where more investigation is needed.

Analysis is NOT to determine BMAP or TMDL compliance.



HOT SPOT ANALYSIS DEVELOPMENT

COMPONENTS OF THE HOT SPOT INDEX

These four statistics calculated for the BMAP overall and used to compare against each station average:

- TN or TP concentration average.
- TN or TP 90th percentile.
- TN or TP Standard Deviation (SD).
- TN or TP Percent Frequency of Samples over Threshold.

BMAP Threshold:

- Lake Jesup Basin:
 - TN – 1.27 mg/L.
 - TP – 0.096 mg/L.



HOT SPOT ANALYSIS DEVELOPMENT

INDEX RANKING APPROACH

Station Concentration Average Rank

Compare to BMAP Threshold and overall BMAP average.

Rank 0: Station average below BMAP threshold.

Rank 1: Station average above threshold but below BMAP average.

Rank 2: Station average 2x above BMAP average.

Percentiles Rank

Compare to BMAP Threshold and 90th percentile for the whole BMAP.

Rank 0: Station average below BMAP threshold.

Rank 1: Station average above threshold but below 90th percentile.

Rank 2: Station average above 90th percentile.

SD Rank

Compare to overall BMAP SD.

Rank 0: Station average below BMAP average + 0.5 SD.

Rank 1: Station average at or above average + 0.5 SD but less than BMAP average + 1 SD.

Rank 2: Station average at or above BMAP average + 1 SD.

Frequency Rank

Compare to BMAP Threshold.

Rank 0: Station percent exceedance below 5% of samples.

Rank 1: Station exceedances between 5% and 49% of samples.

Rank 2: Station exceedances over 50% of samples.



HOT SPOT ANALYSIS DEVELOPMENT

FINAL OVERALL RANK

Average Rank
+
Percentile Rank
+
SD Rank
+
Frequency Rank

=

Total Index Rank

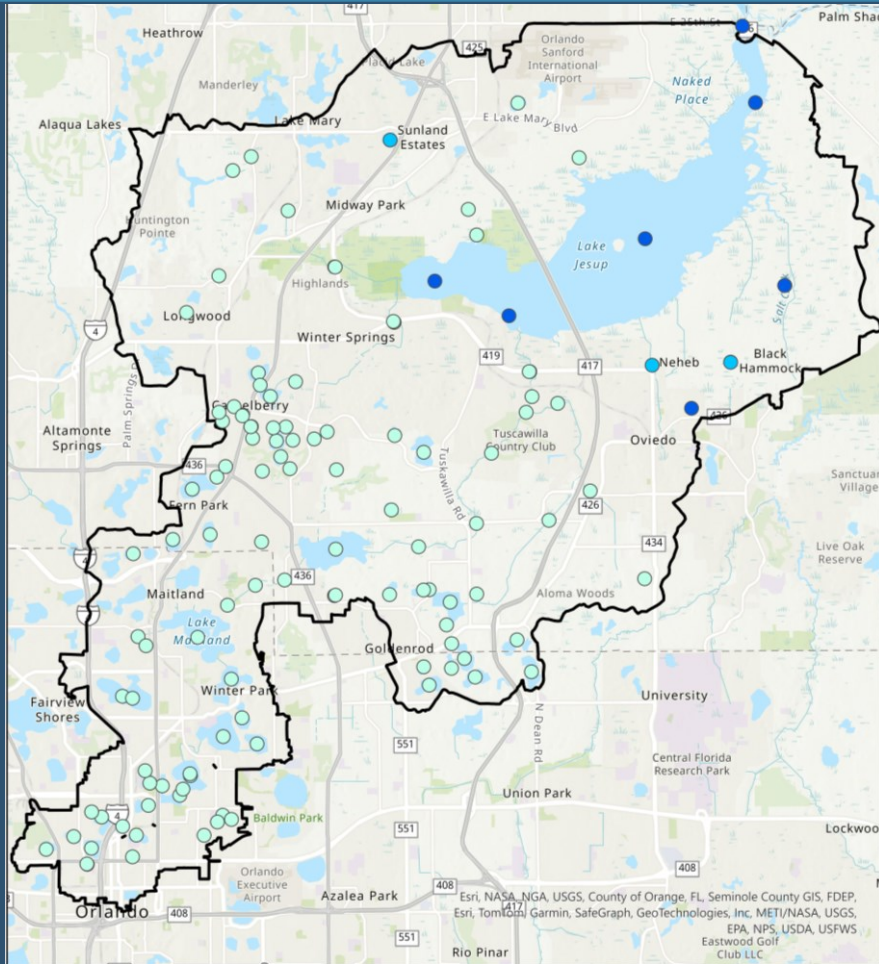
Rank 0 = Least Concern
Rank 8 = High Concern



HOTSPOT ANALYSIS RESULTS DRAFT

LAKE JESUP BMAP

TN:



Lake Jesup BMAP

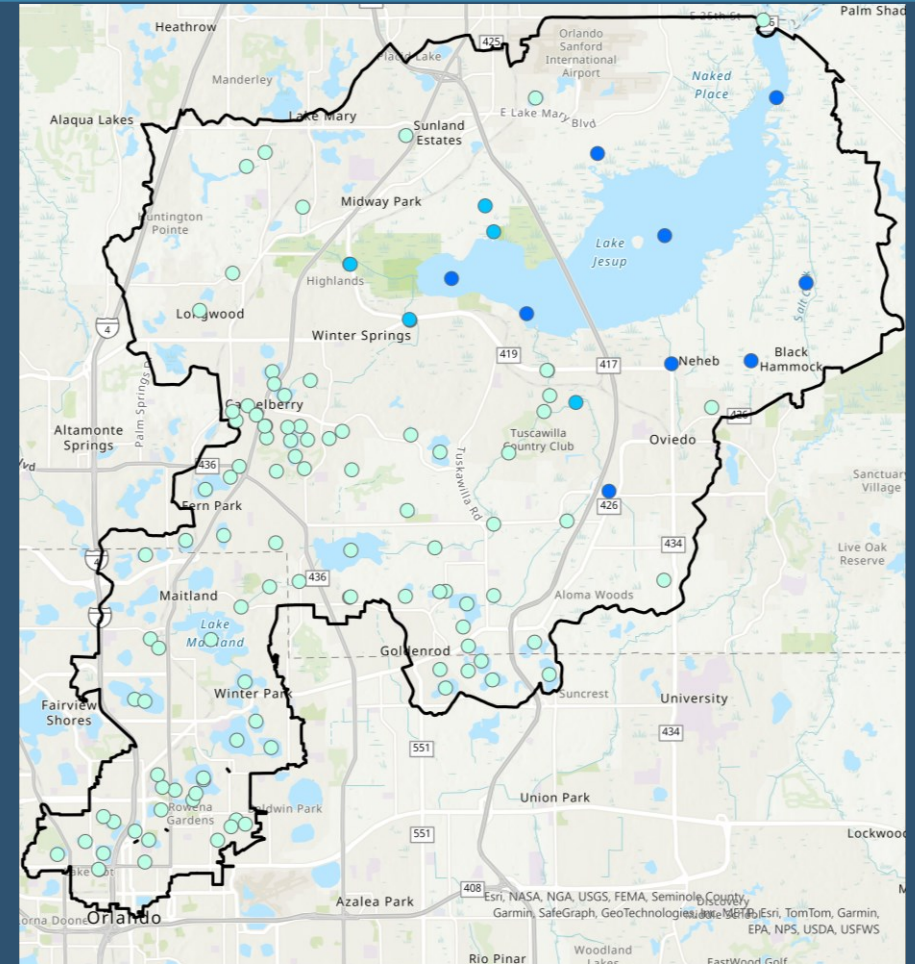
Map prepared by the Division of Environmental Assessment and Restoration.
This map is not for legal decisions making purposes.
Created: 05-25-2024



TN Total Rank
● Low
● Medium
● High

■ Lake Jesup BMAP Boundary

TP:



Lake Jesup BMAP

Map prepared by the Division of Environmental Assessment and Restoration.
This map is not for legal decisions making purposes.
Created: 05-25-2024



TP Total Rank
● Low
● Medium
● High

■ Lake Jesup BMAP Boundary



AGRICULTURAL COOPERATIVE ELEMENT (ACE)

- Cooperative Agricultural Regional Water Quality Improvement elements will establish a collaborative framework for identifying, prioritizing, and implementing regional projects that address nutrient loading from agricultural operations in Florida's waterways.
- These elements establish a structured framework efforts among key stakeholders, including:
 - DEP.
 - DACS.
 - Water management districts (WMDs).
 - Agricultural producers.
 - Local communities.



AGRICULTURAL COOPERATIVE ELEMENT (ACE)

- Engaging producers in the decision-making process is key to this element and ensures that projects are practical, feasible and tailored to the needs and realities of agricultural operations.
- Partner agencies work in annual cycles to provide technical support, regulatory guidance and funding opportunities, enhancing the implementation and success of regional water quality improvement initiatives.



FUTURE GROWTH

Domestic Wastewater Projections:

- Use wastewater to estimate future growth projections.
- Start with population growth for each county from Bureau of Economic and Business Research:
 - 2040 Medium Growth Projections.
- Proportion growth for each entity based on land area.
- Distinguish the future population expected to be served by sewer versus those with OSTDS based on the most recent Florida Water Management Inventory for each BMAP county.
- Use per person calculations to estimate future loads from wastewater treatment facility (WWTF) and OSTDS.

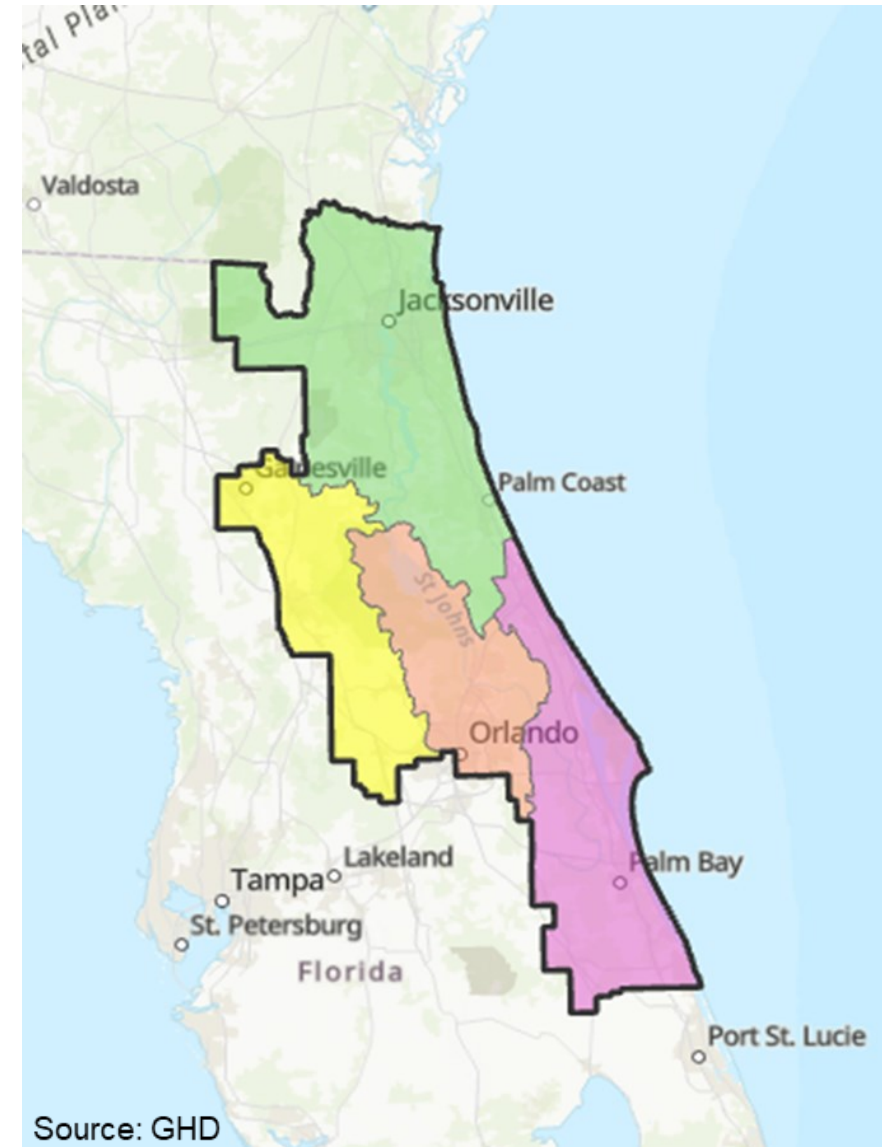
Agriculture Projections:

- Exploring different tools to estimate future changes in agricultural acreage in the BMAPs to estimate changes in agricultural loading.



SJR MODEL UPDATE

- Public meeting was held on March 12, 2024.
- Meeting materials are available at this [link](#) or the QR code below.



Source: GHD



SJR MODEL UPDATE

PROJECT SCHEDULE

April 2024:
Modeling
Document/Quality
Assessment (QA)
Plan

July 2025:
EFDC Model

March 2025:
HSPF Model

June 2026:
WASP Model

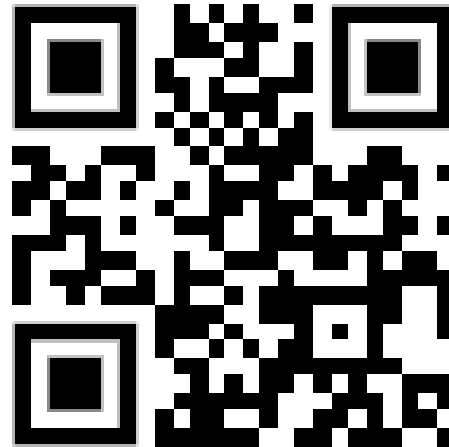
HSPF: Hydrologic Simulation Program FORTRAN
EFDC: Environmental Fluid Dynamics Code
WASP: Water Quality Analysis Simulation Program



SJR MODEL UPDATE

STAKEHOLDER COORDINATION

- Periodic project updates will be sent via email.
- The project email list will be used for sending updates.
- To be added to the project email list, send your contact information:
 - Admin@WildwoodConsulting.net.
 - Or visit the [website](#) (QR code below), go to the “Contact” tab and enter your contact information.





SJR MODEL UPDATE

DATA SHARING: OPPORTUNITIES TO ENGAGE



Source: Pexels

- Provide additional data for the EFDC Model by Aug. 1, 2024.
- To share data, questions or concerns, please contact StJohnsRiverData@ghd.com
- Data must:
 - Meet the requirements of DEP's Standard Operating Procedures (SOP).
 - When sharing data, please include:
 - Name.
 - Organization/Company.
 - Role.

We will make every effort to include data which meet these standards. However, due to necessary consistency across districts and/or other concerns, not all provided data may be utilized.



SJR MODEL UPDATE

DATA INVENTORY

Land Cover

Florida Land Cover Classification System (FLUCCS) 2014

Meteorological

NCDC, NEXRAD, Rain Gages and other local data from SJRWMD

Boundaries (Planning Units, Subbasins, etc.)

SJRWMD Geospatial Open Data

Water Quality Ambient Data

Impaired Waters Rule (IWR) Database, Run 63

Flow Data

USGS, DEP and SJRWMD

NCDC: National Climatic Data Center

NEXRAD: Next Generation Weather Radar

USGS: U.S. Geological Survey



UPCOMING SCHEDULE

Feb.
2024

Draft wastewater and OSTDS plans due from stakeholders.

Feb. -
Dec. 2024

Stakeholder meetings/draft document.

June –
July
2024

Individual meetings on allocations and milestones with stakeholders.

Final wastewater and OSTDS plans due from stakeholders.

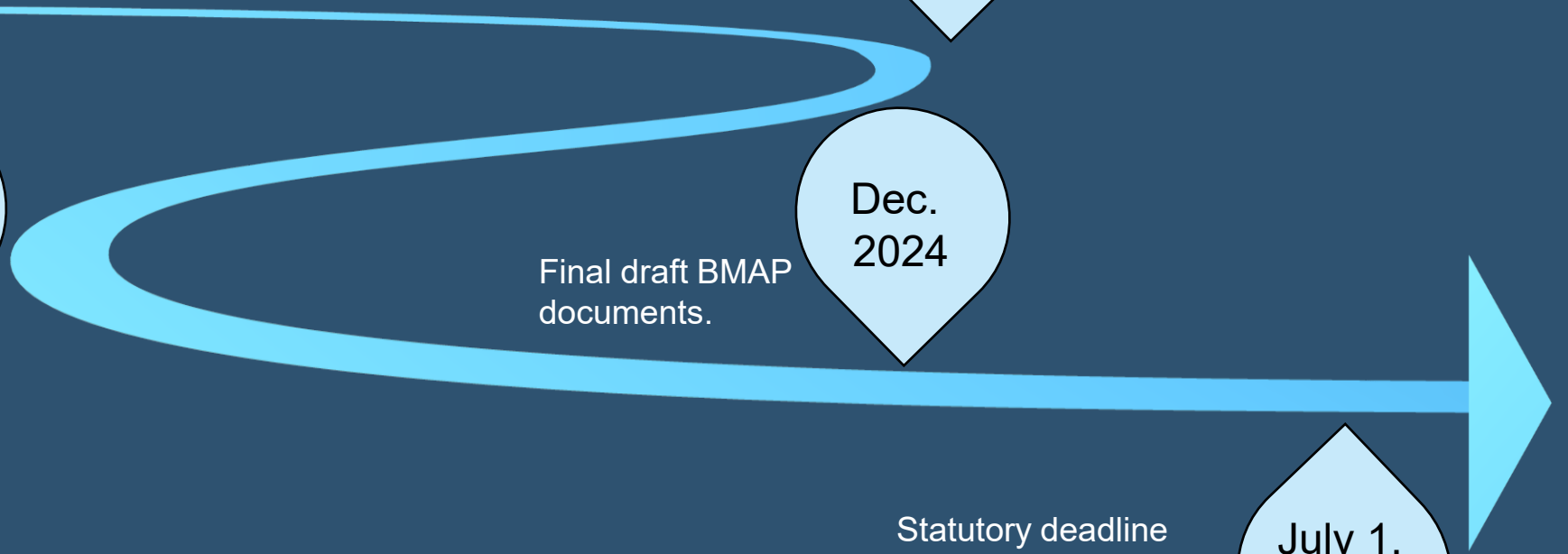
Aug.1,
2024

Final draft BMAP documents.

Dec.
2024

Statutory deadline for updated nutrient BMAPs.

July 1,
2025





RESOURCES

BMAP WEBSITE AND STORYMAP

Basin Management Action Plans (BMAP)

[Home](#) » [Divisions](#) » [Division of Environmental Assessment and Restoration](#) » [Water Quality Restoration Program](#) » Basin Management Action Plans

Water Quality Restoration Program Quick Links

[Basin Management Action Plans \(BMAPs\)](#)

[Statewide Annual Report](#)

[Water Quality Grant Opportunities 2023-24](#)

[BMAP Public Meetings](#)

[Impaired Waters, TMDLs and Basin Management Action Plans Interactive Map](#)

[Tools and Guidance for](#)

What is a Basin Management Action Plan?

A basin management action plan (BMAP) is a framework for water quality restoration to reduce pollutant loading through current and future projects and strategies. BMAPs contain permit limits on wastewater facilities, urban and agricultural best management practices to achieve pollutant reductions established by a total maximum daily load (TMDL). These plans are developed with local stakeholders and rely on local input and commitment for development and successful implementation. BMAPs are adopted by Department of Environmental Protection Secretarial Order and are legally enforceable.

Water Quality Protection Grant Portal for Fisheries

DEP has launched an [online grant portal](#) to provide eligible entities the opportunity to apply for grant funding. Eligible entities include local governments, academic institutions, and non-profit organizations. The [application portal](#) opened July 5, 2023. Closing dates for individual grant programs vary by the posted date for each grant program. Applicants are encouraged to submit proposals by the deadline.



Story logo

Collection

Surface Water Nutrient Basin Management Action Plans (BMAPs)

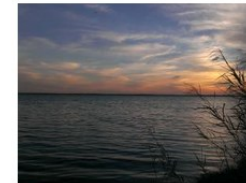
Get started

A basin management action plan (BMAP) is a framework for water quality restoration, containing 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 reduction 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 DEP Secretarial Order and are legally enforceable.



1 Legislative Requirements



2 Lake Harney, Lake Monroe, Middle St. Johns River and...



3 Everglades West Coast Basin Management Action Plan



4 Lake Jesup Basin Management Action Plan



5 Orange Creek Basin Management Action Plan



6 Lower St. Johns Main Stem Basin Management Action Plan



7 Wekiva River, Rock Springs Run, and Little Wekiva Canal...



8 Upper Ocklawaha Basin Management Action Plan



9 Long Branch Basin Management Action Plan



RESOURCES

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THANK YOU

Evelyn Becerra and Lauren Campbell, Ph.D.

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Contact Information:

Evelyn Becerra

850-425-4587

Evelyn.Becerra@FloridaDEP.gov

Lauren Campbell

850-245-8083

Lauren.Campbell@FloridaDEP.gov

