



WEBINAR HOUSEKEEPING

Attendee Participation

Open your control panel.

Join audio:

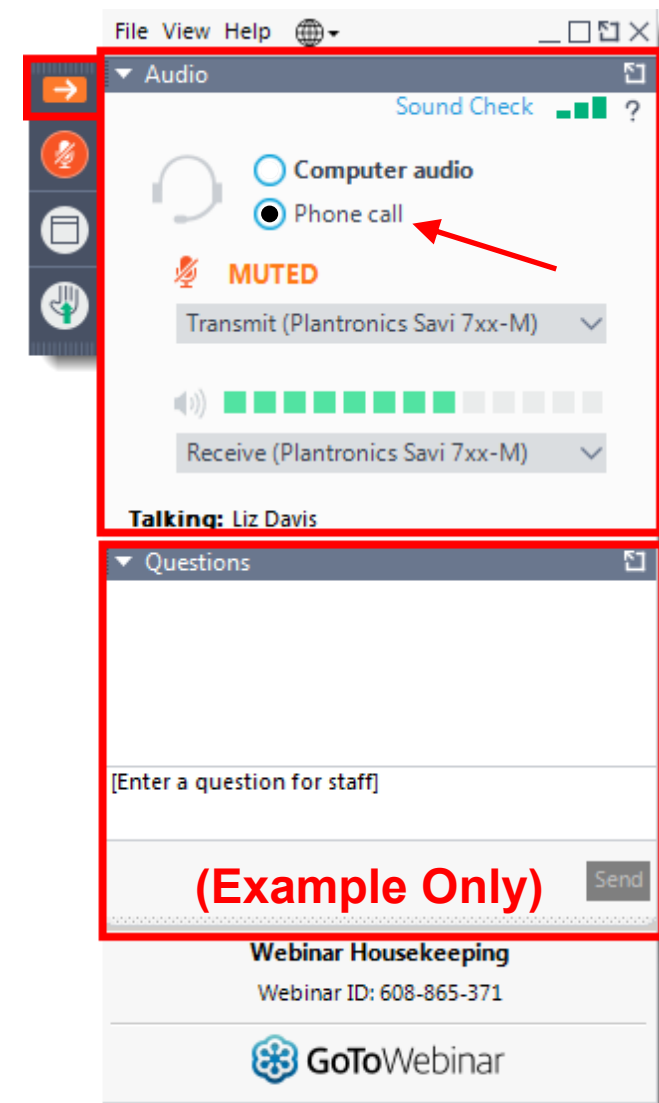
- Choose Computer Audio **or**
- Choose Phone Call and dial using the information provided with your registration.

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.





LAKES HARNEY, MONROE, MIDDLE ST. JOHNS RIVER AND SMITH CANAL BASIN MANAGEMENT ACTION PLAN ANNUAL MEETING

Evelyn Becerra

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoToWebinar | July 11, 2024



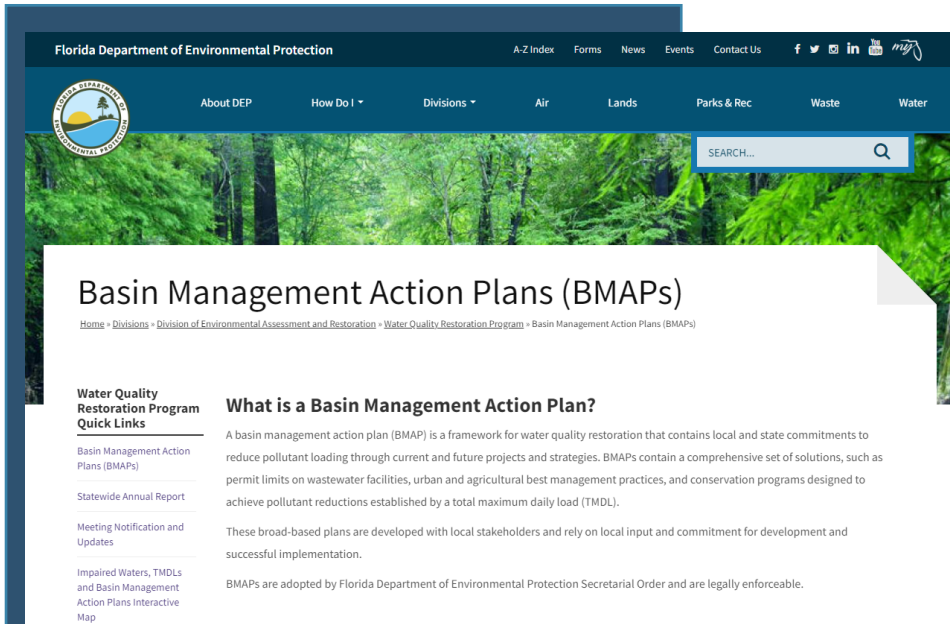
AGENDA

- 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.





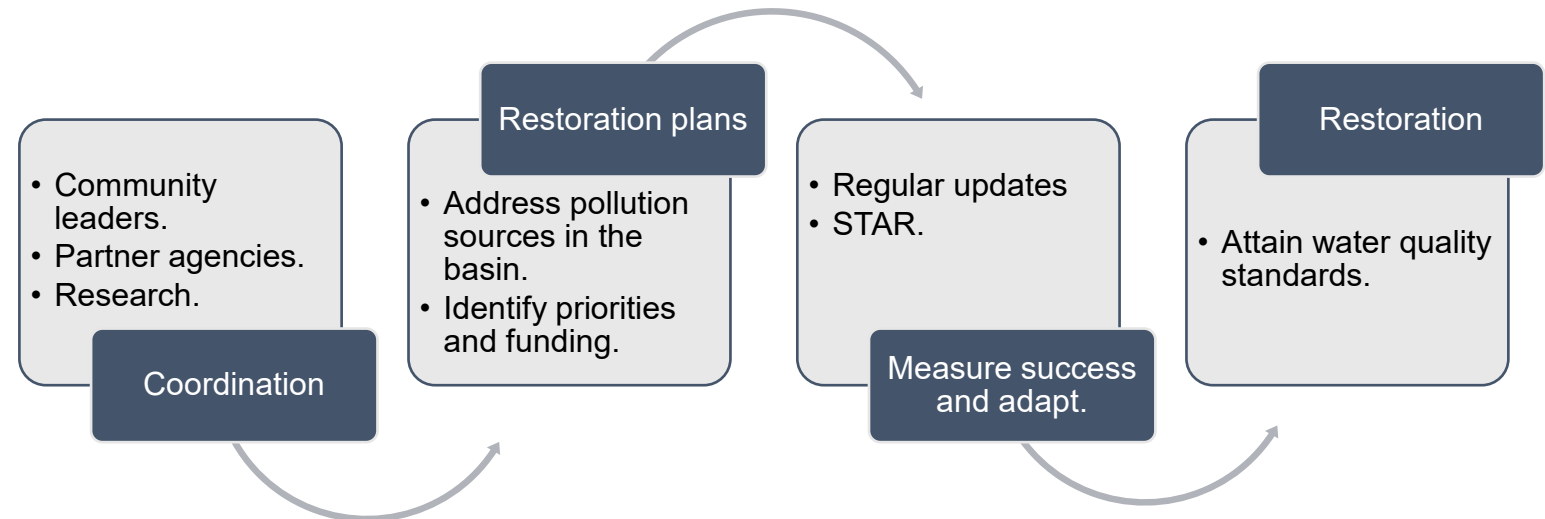
BMAPS



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.

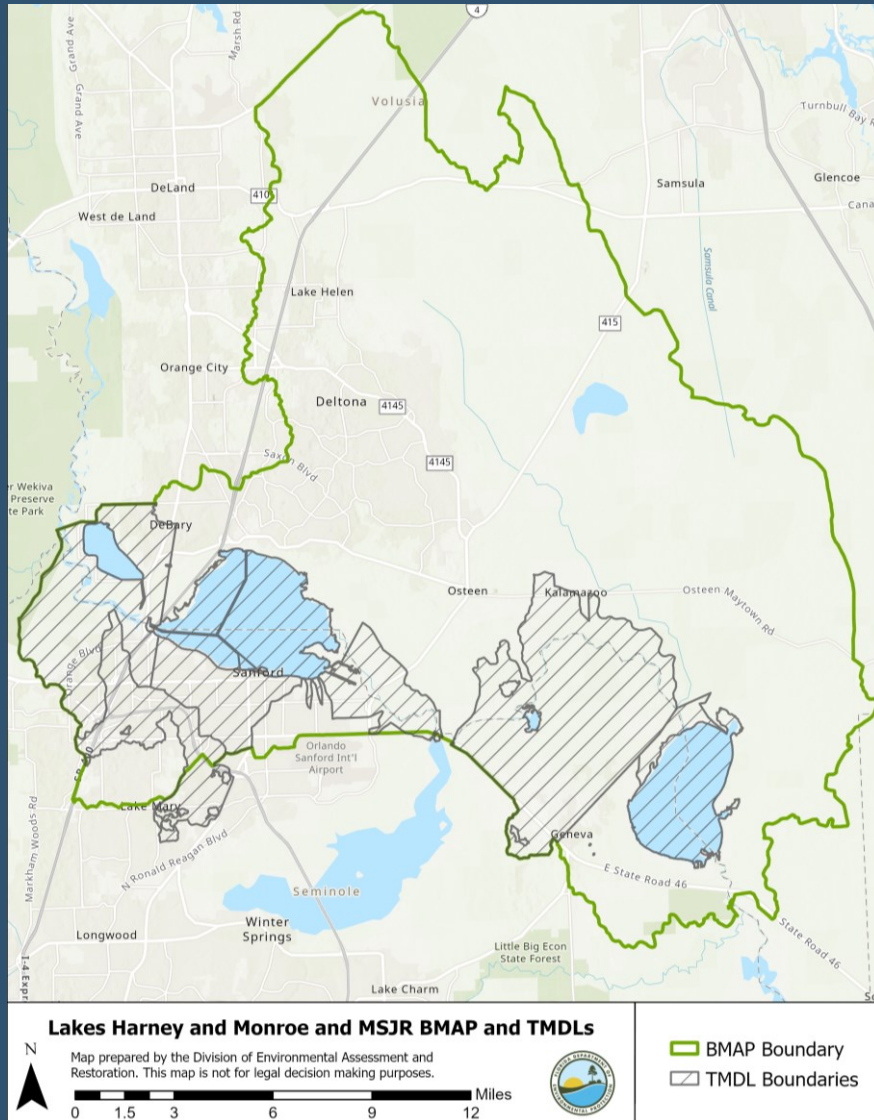
Process to assess progress toward achieving the TMDL:

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



BACKGROUND

LAKES HARNEY, MONROE, MSJ RIVER AND SMITH CANAL (HAMO) BMAP



Stakeholders

City of DeBary

City of DeLand

City of Deltona

City of Lake Helen

City of Lake Mary

City of Orange City

City of Sanford

Seminole County

Volusia County

Turnpike Enterprise

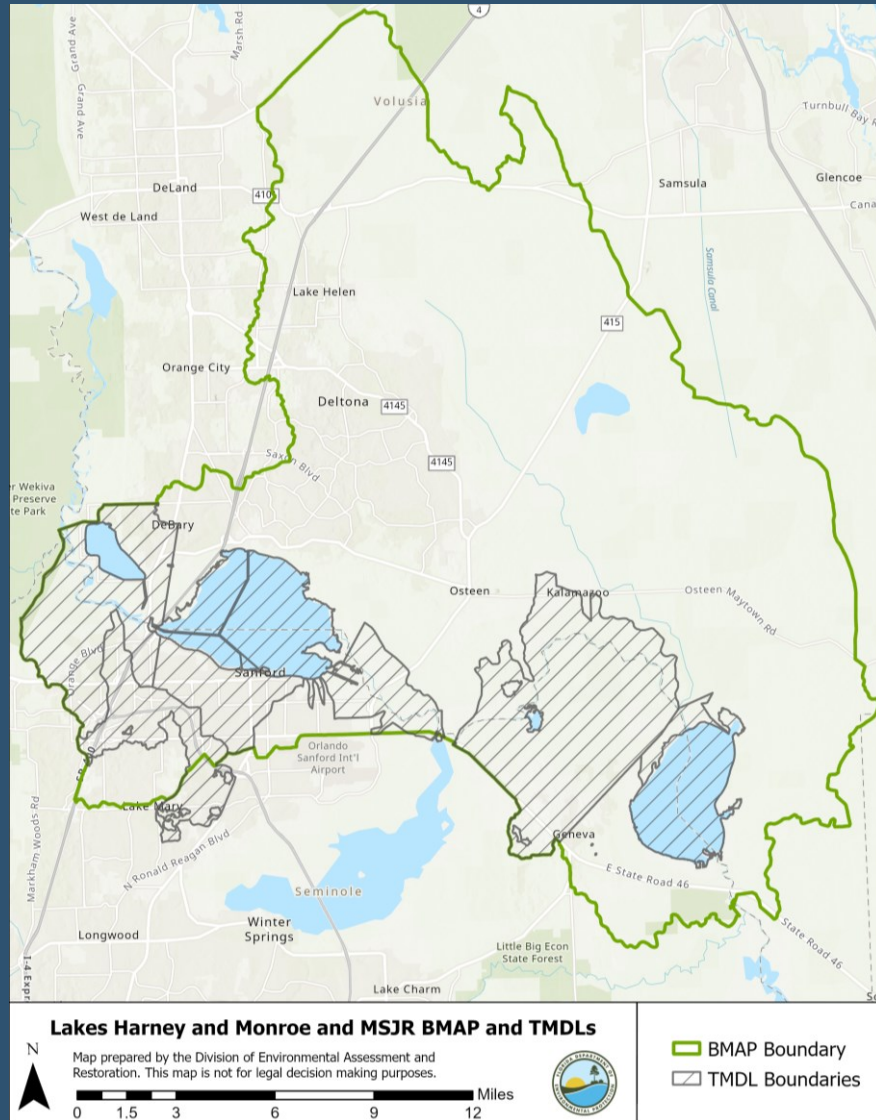
Florida Department of Transportation (DOT), District 5

Florida Department of Agriculture and Consumer Services (DACS)



BACKGROUND

LAKE HARNEY, MONROE, MIDDLE ST. JOHNS (MSJ) RIVER AND SMITH CANAL (HAMO) BMAP



HAMO TMDLs:

- Adopted 2009 for total phosphorus (TP) and total nitrogen (TN) for lakes and river segments.

HAMO BMAP:

- Adopted April 2012 to implement the TMDL.
- Total required reductions:
 - 17,710 lbs./yr. TP.
 - 87,656 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.



HOUSE BILL (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

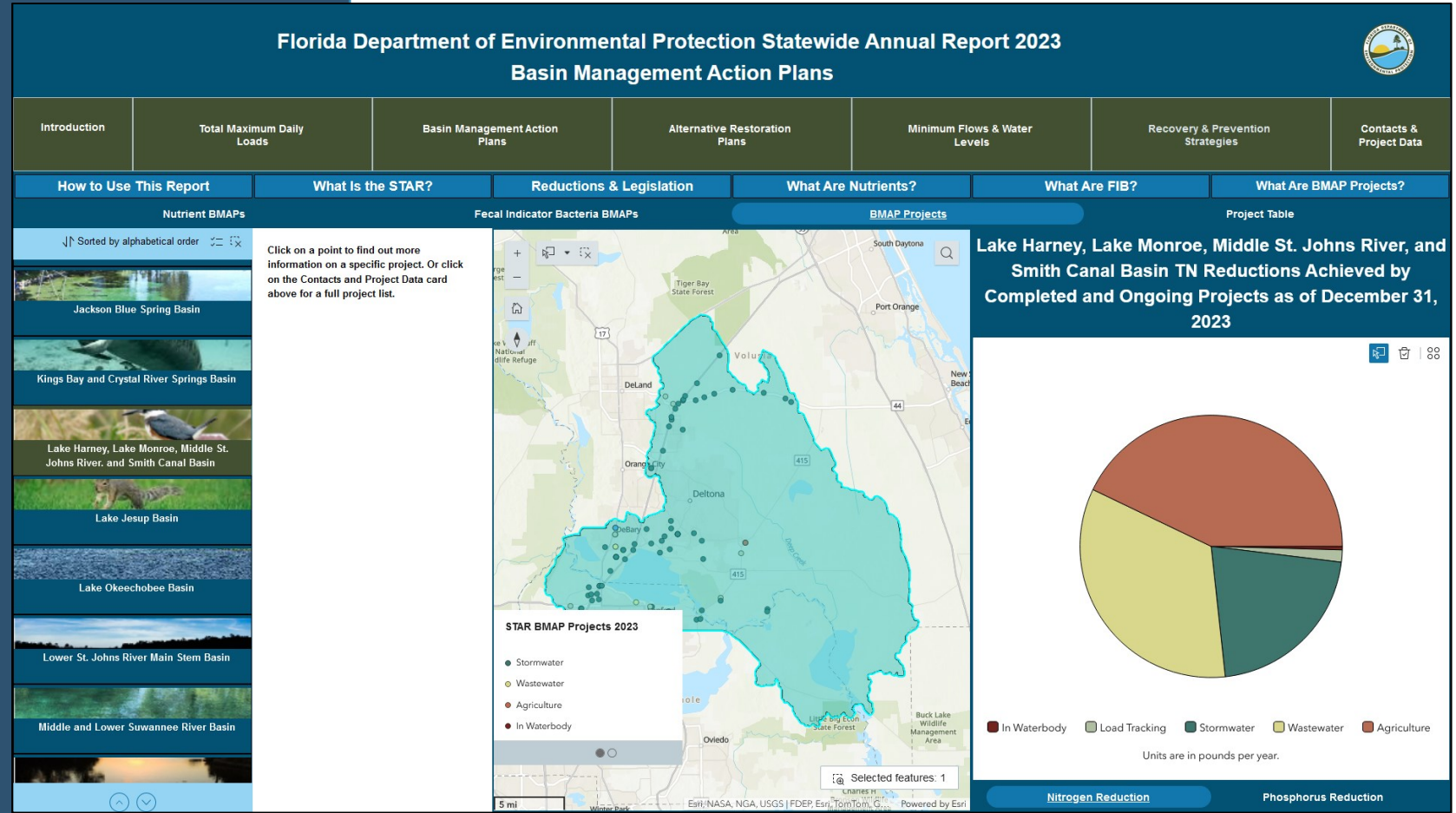
Creates a program to expeditiously review new and innovative enhanced nutrient-reducing OSTDS to reduce the nutrients entering Florida's waterways.



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

HAMO BMAP STATUS OF PROJECTS

Projects through Dec. 31, 2023.

Lead Entity	Completed	Ongoing	Planned	Underway	Total
City of DeBary	2	4			6
City of DeLand		1			1
City of Deltona	8	2	3		13
City of Lake Helen	3	1			4
City of Lake Mary		2			2
City of Orange City		2			2
City of Sanford	5	2		1	8
DACS	2	1			3
DOT District 5	46	2			48
Seminole County	6	3	1	2	12
Turnpike Enterprise		2			2
Volusia County	7	4	1	2	14
Grand Total	79	26	5	5	115

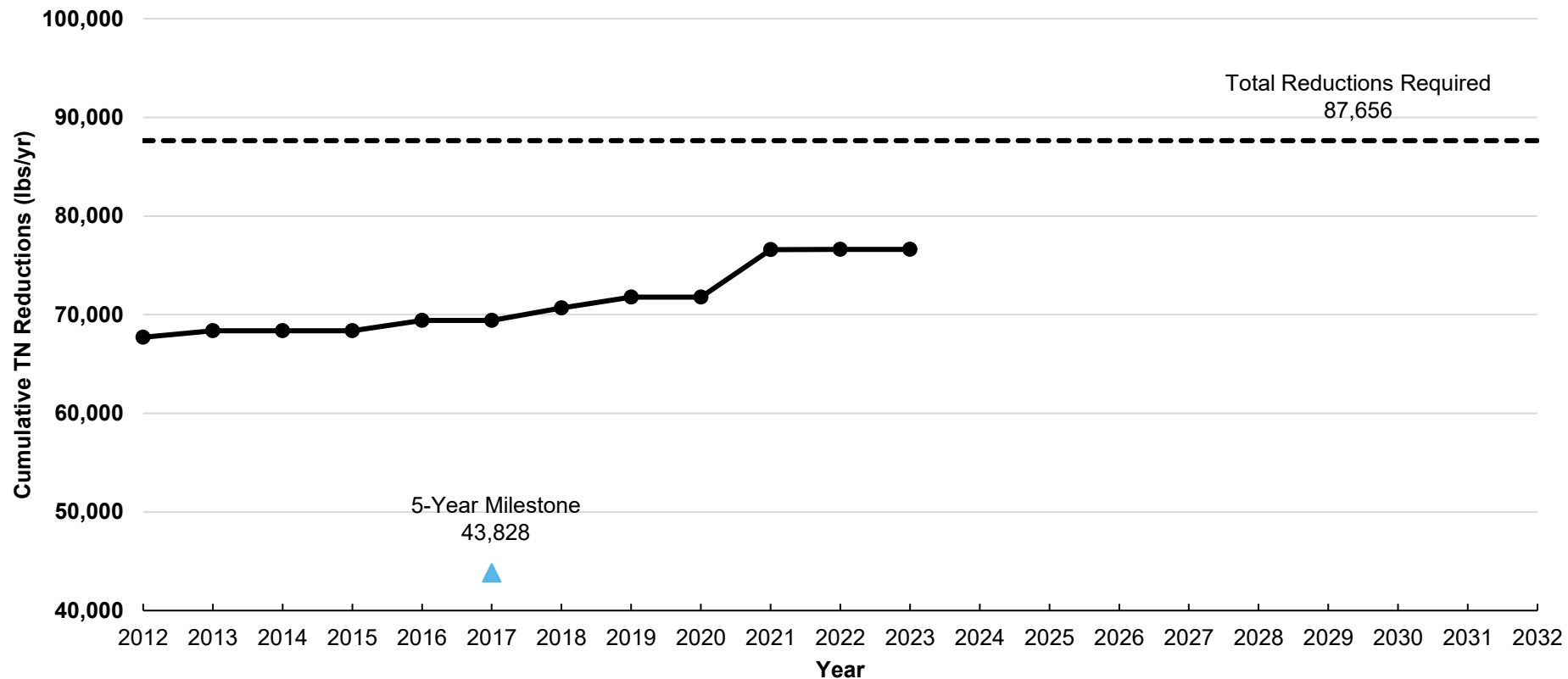
As of Dec. 31, 2023, verified projects in the Lakes Harney, Monroe, MSJ and Smith Canal BMAP have reduced **76,635 lbs./yr. of TN** and **18,617 lbs./yr. of TP**.



PROGRESS

HAMO BMAP- TN

Lakes Harney, Monroe, MSJ River, and Smith Canal TN Project Reductions

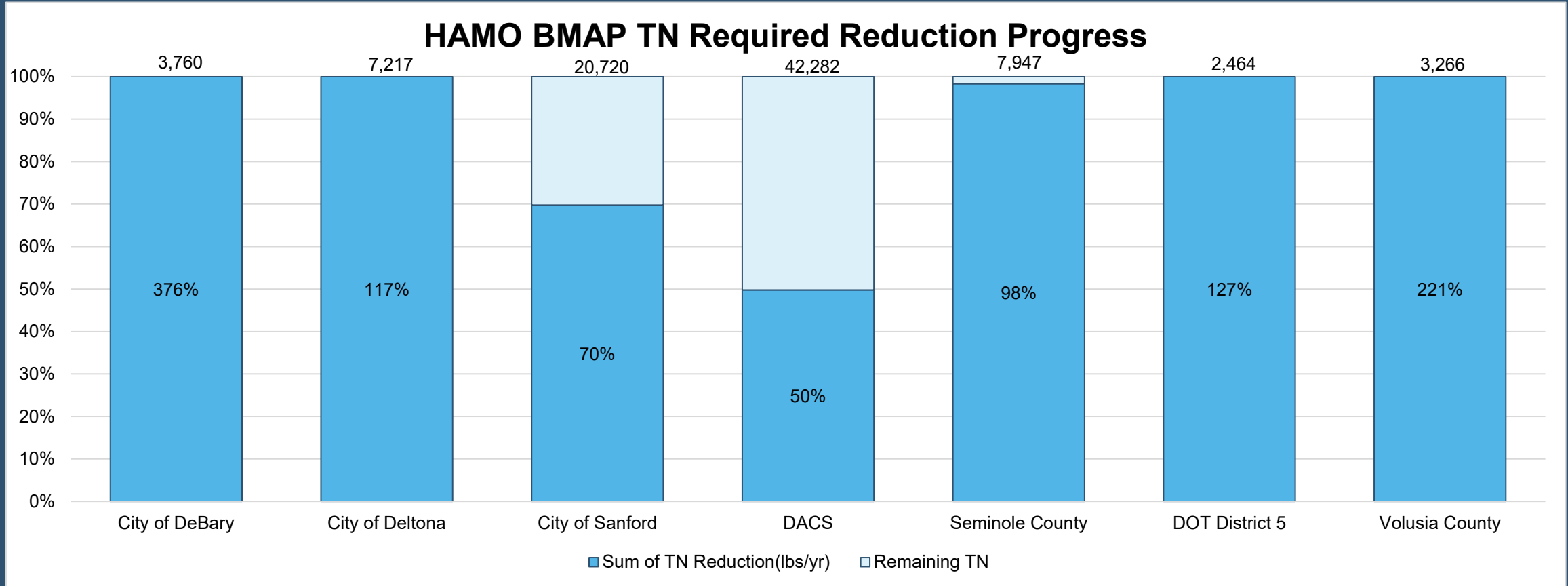


***Completed
and ongoing
projects only.***



PROGRESS

ENTITY PROGRESS- TN



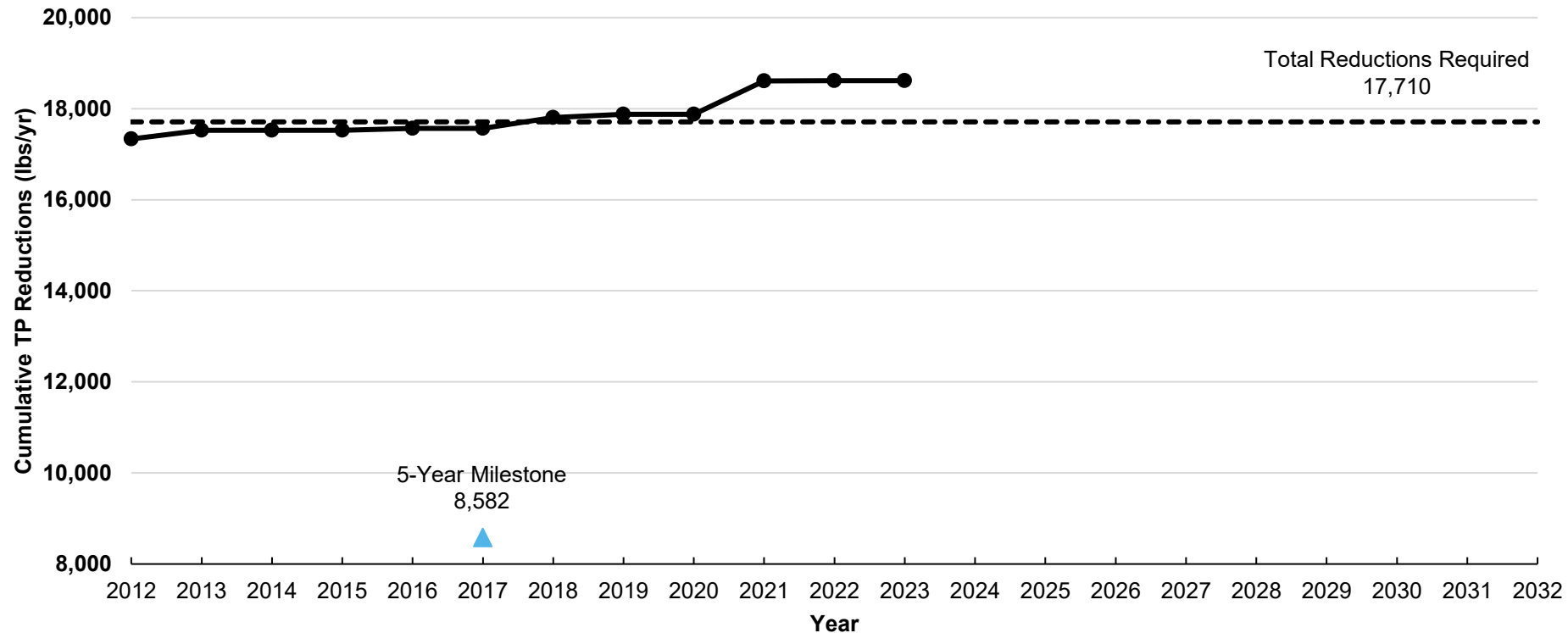
Completed and ongoing projects only.



PROGRESS

HAMO BMAP-TP

Lakes Harney, Monroe, MSJ River, and Smith Canal TP Project Reductions

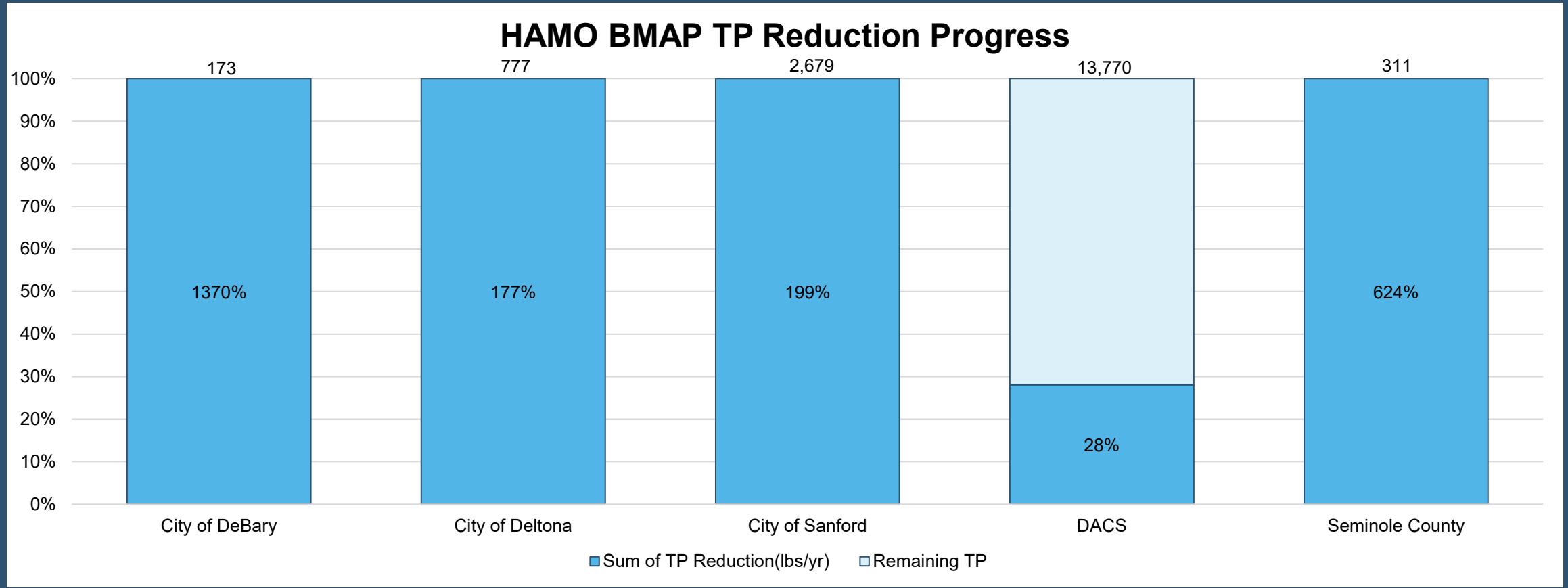


***Completed
and ongoing
projects only.***



PROGRESS

ENTITY PROGRESS-TP



Completed and ongoing projects only.

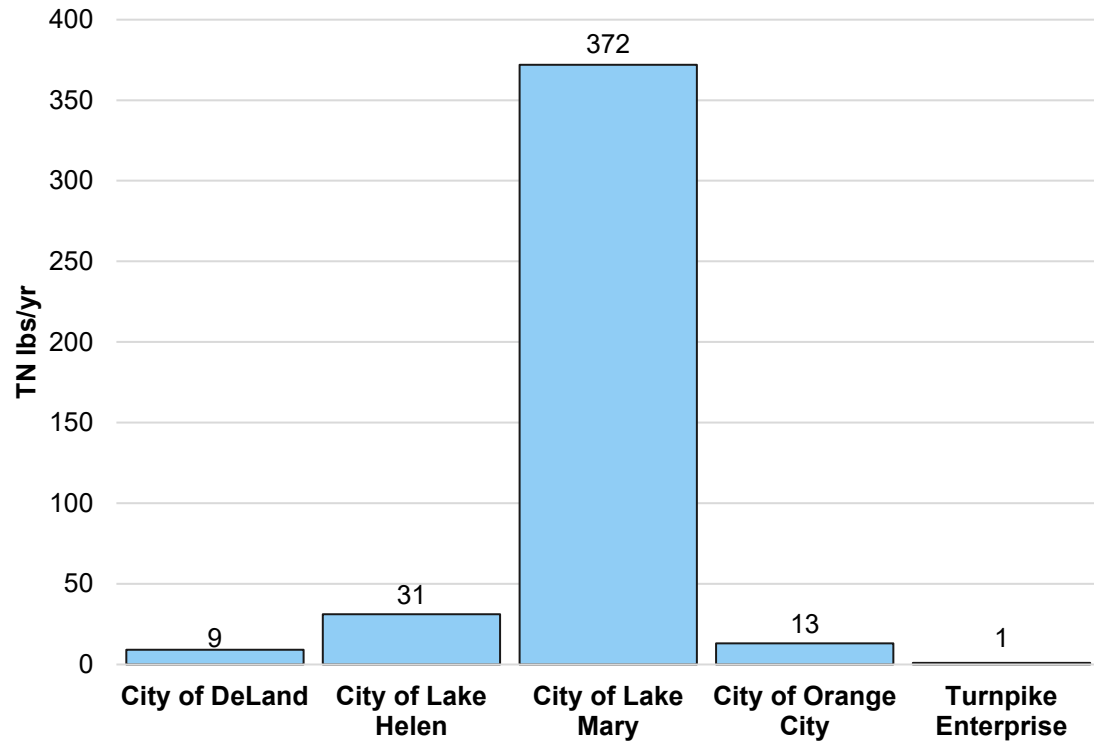


PROGRESS

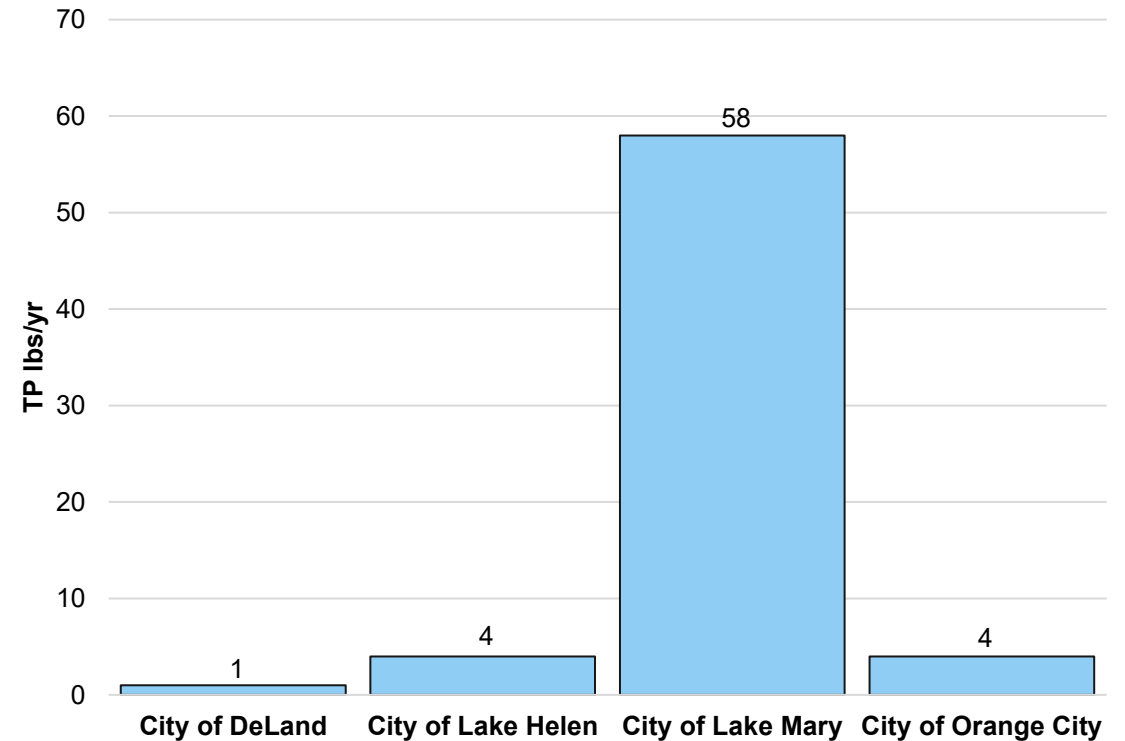
HAMO BMAP

Other Entities with Reductions:

**HAMO BMAP TN Reduction Progress
for Other Entities**



**HAMO BMAP TP Reduction Progress
for Other Entities**



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://prodenvironmental.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

Lakes Harney and Monroe BMAP Update

Shannon Salvatori, SJRWMD



St. Johns River
Water Management District

Water Quality Update

- Monroe and Harney impaired for total nitrogen (TN), total phosphorus (TP), and chlorophyll-*a* (Chl-*a*)
 - Target TN: **1.18 mg/L**
 - Target TP: **0.07 mg/L**
 - Target Chlorophyll-*a*:
 - Harney: **9.1 mg/m³**
 - Monroe: **5.8 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 Update

- SJRWMD water quality monitoring stations



Lake Harney

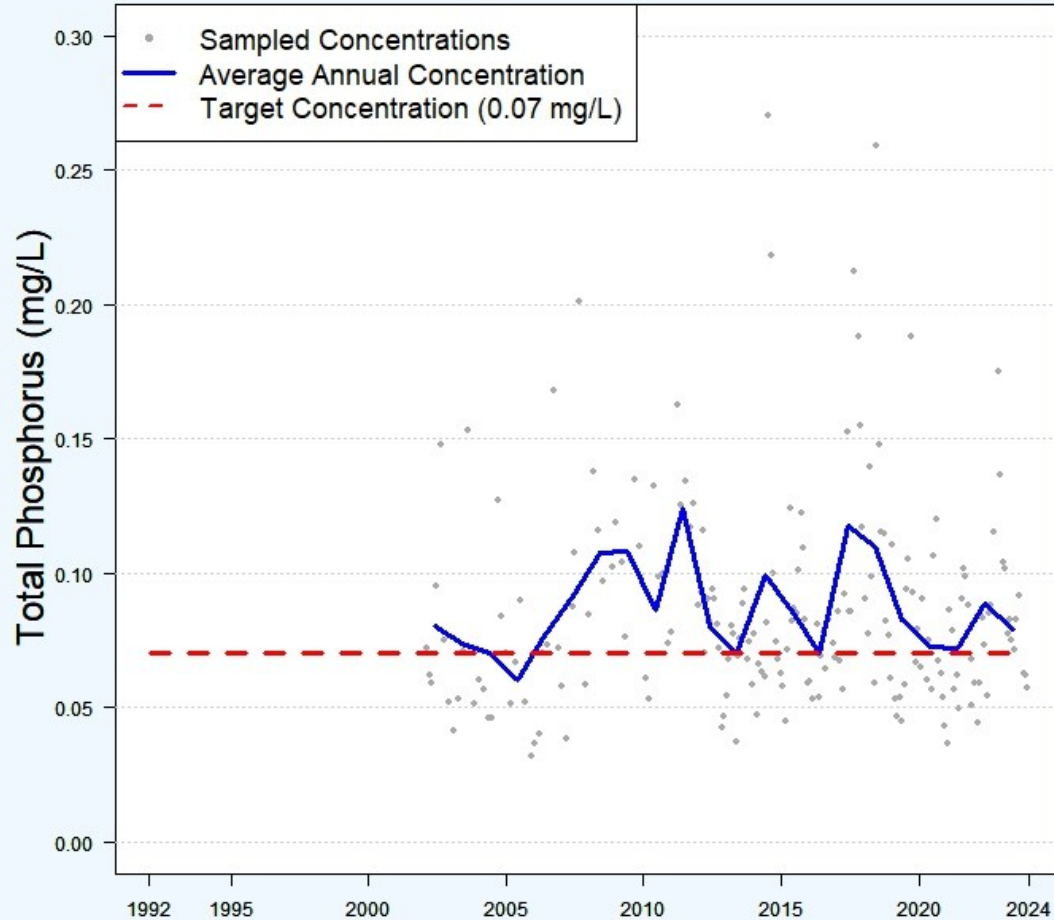


Lake Monroe

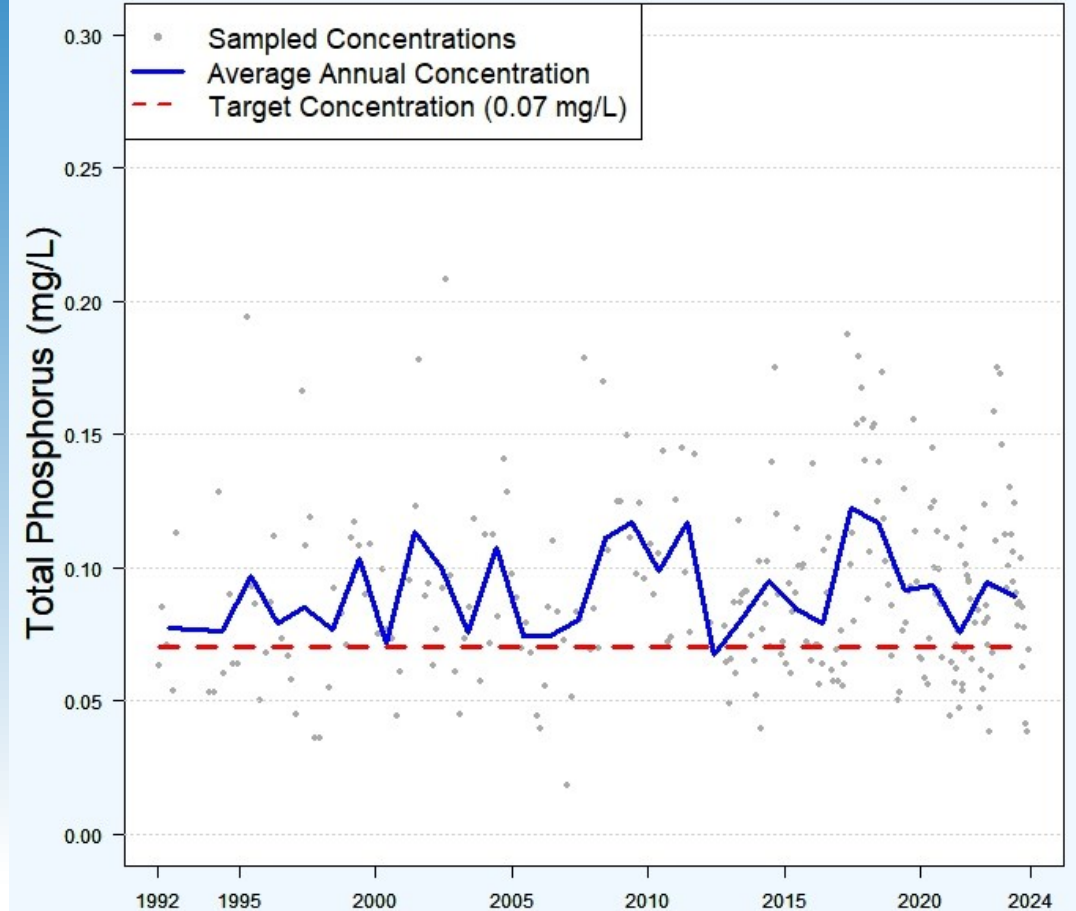


Total Phosphorus

Harney: Station CLH

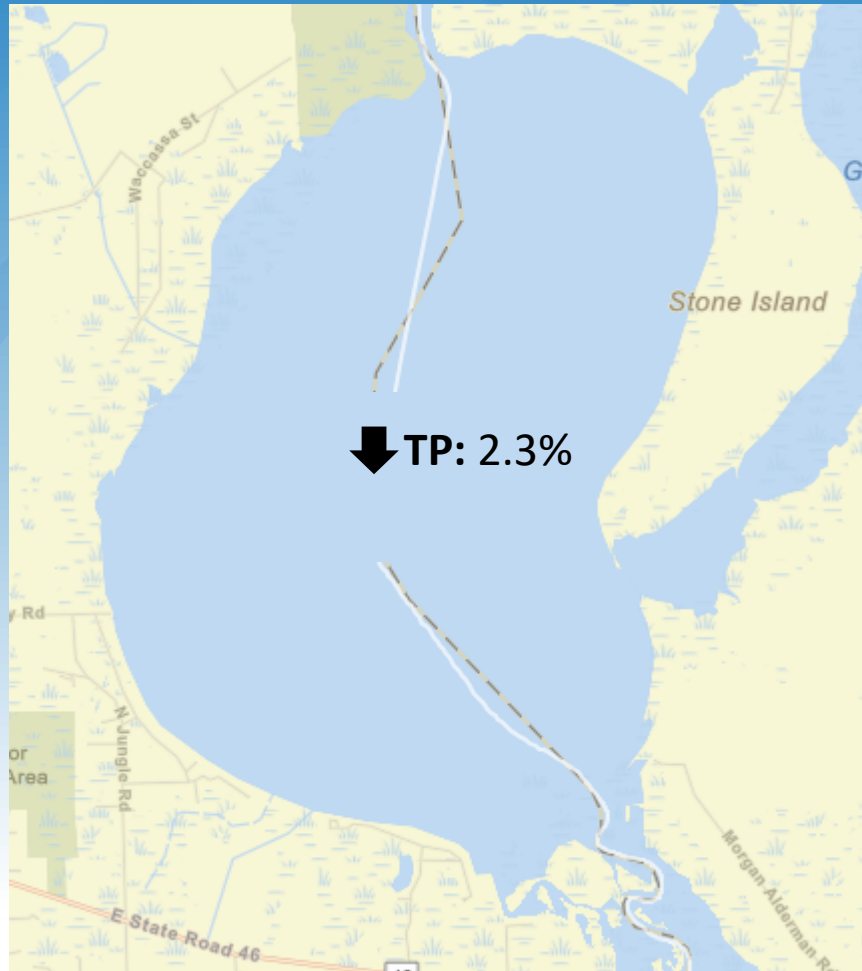


Monroe: Station LMAC



SJRWMD's Long-Term Trend Report

Harney – Station CLH



Monroe – Station LMAC



Total Phosphorus, 2008-2022 data



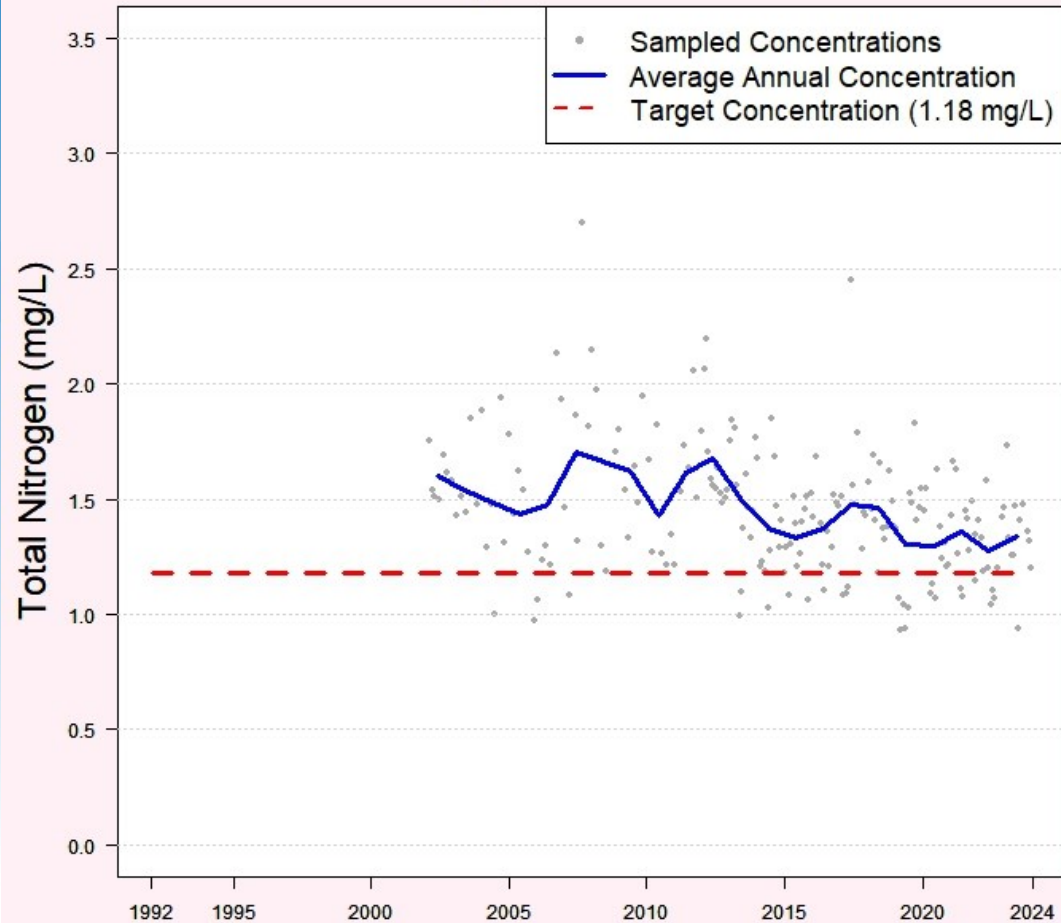
St. Johns River
Water Management District

SJRWMD Status and Trends report (updated annually):

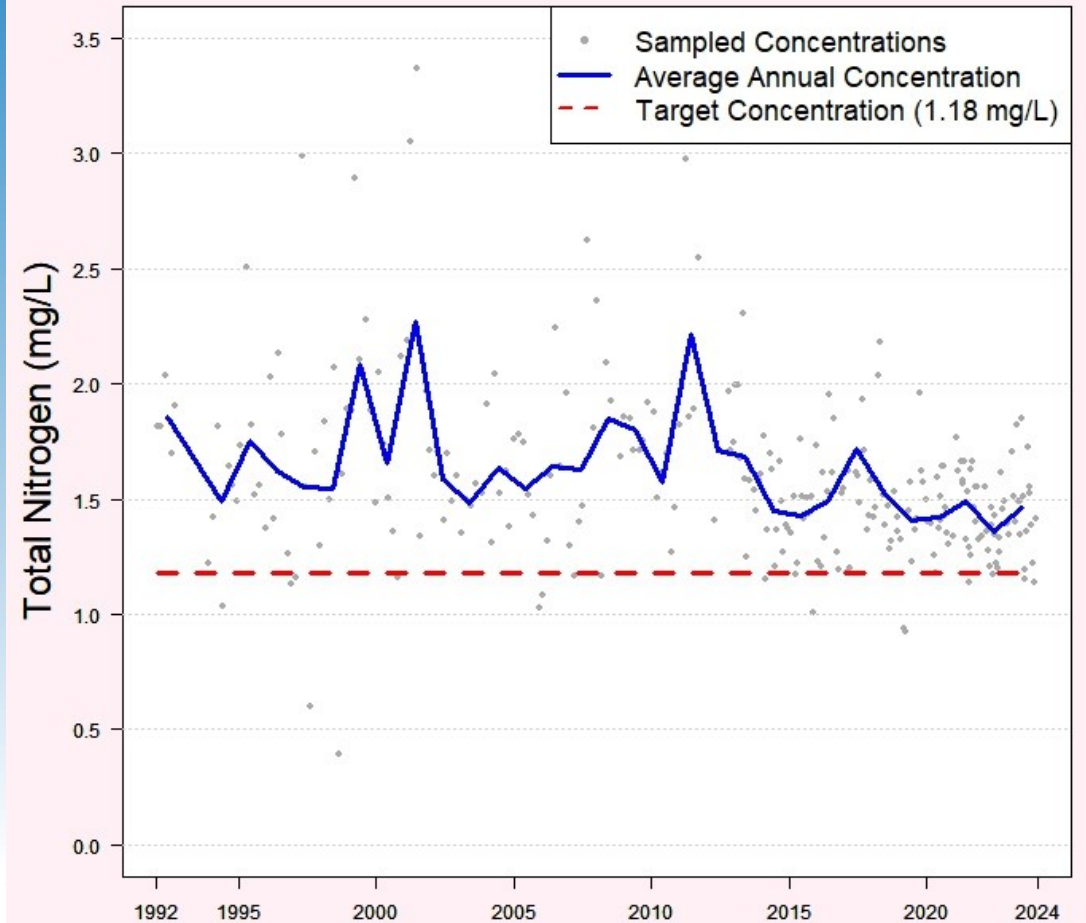
www.sjrwmd.com/data/water-quality/#status-trends

Total Nitrogen

Harney: Station CLH

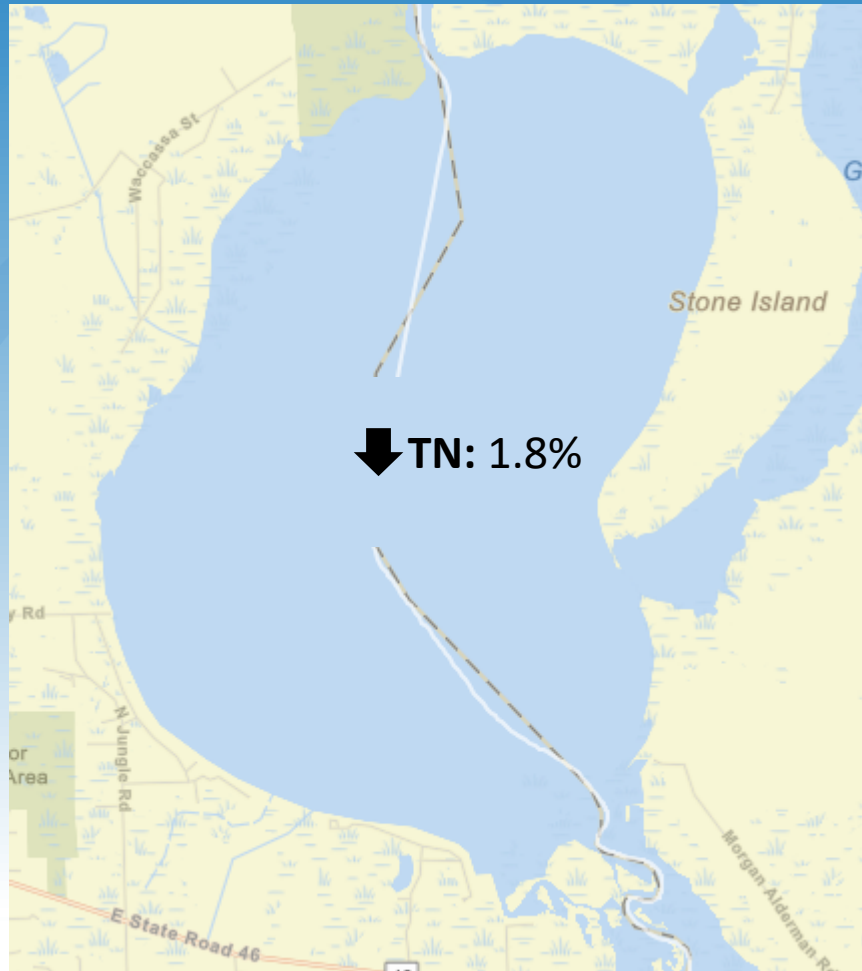


Monroe: Station LMAC

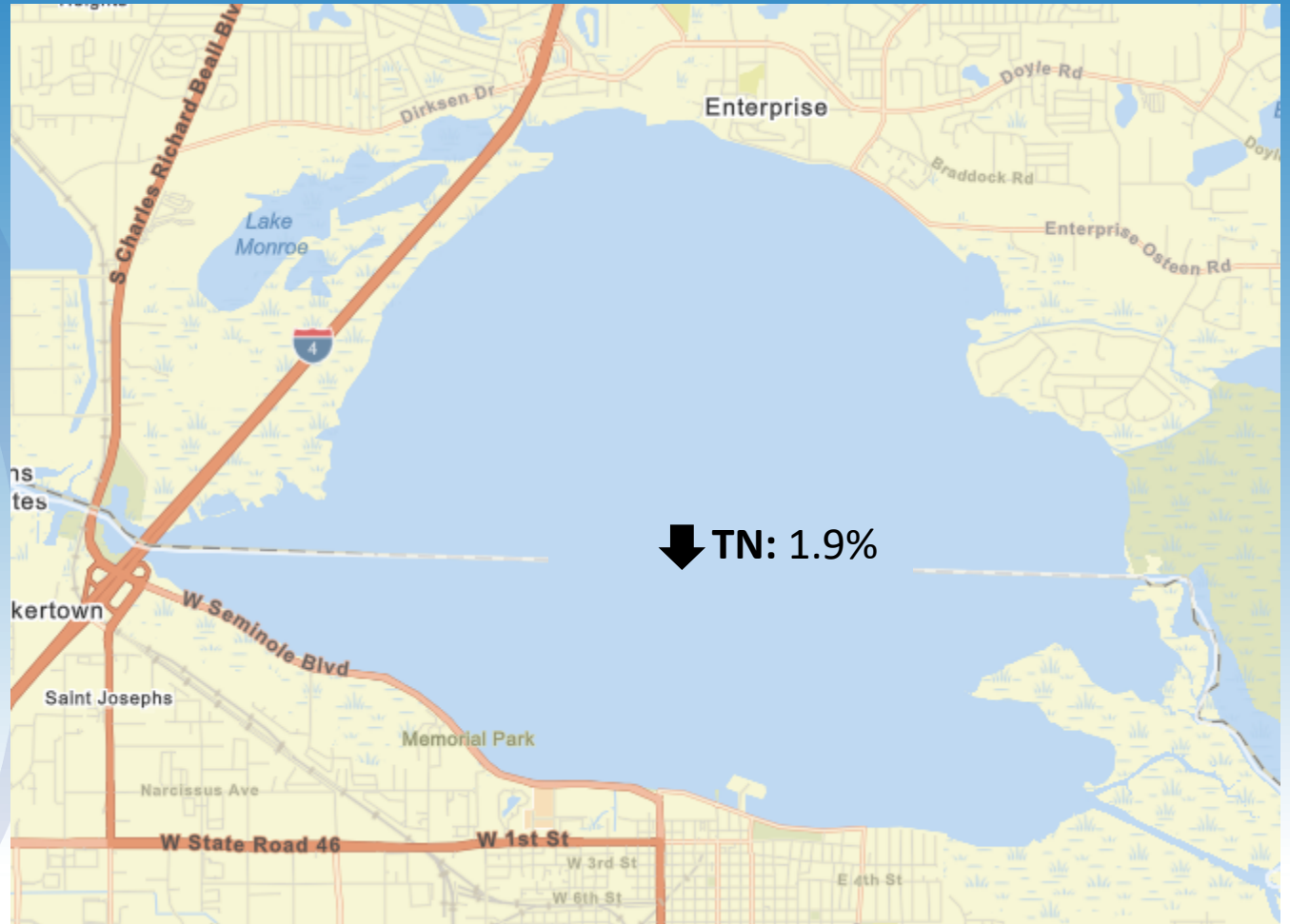


SJRWMD's Long-Term Trend Report

Harney – Station CLH



Monroe – Station LMAC



Total Nitrogen, 2008-2022 data



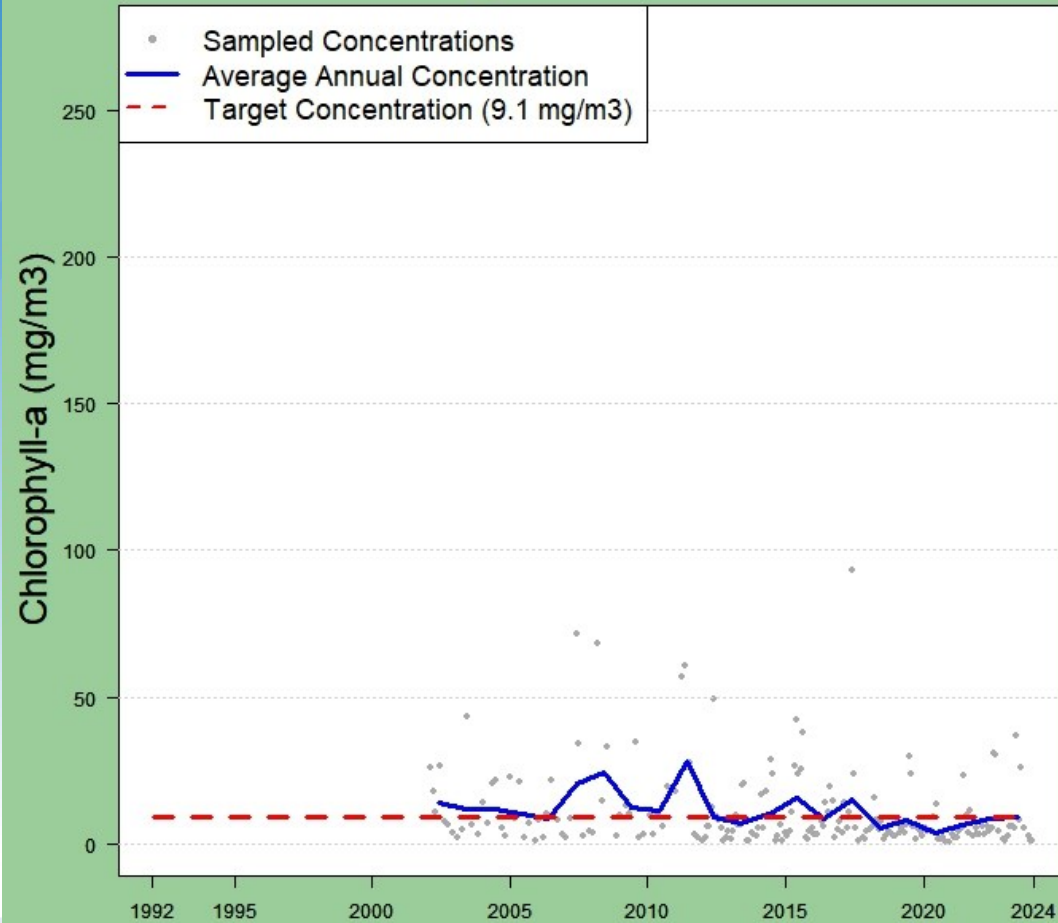
St. Johns River
Water Management District

SJRWMD Status and Trends report (updated annually):

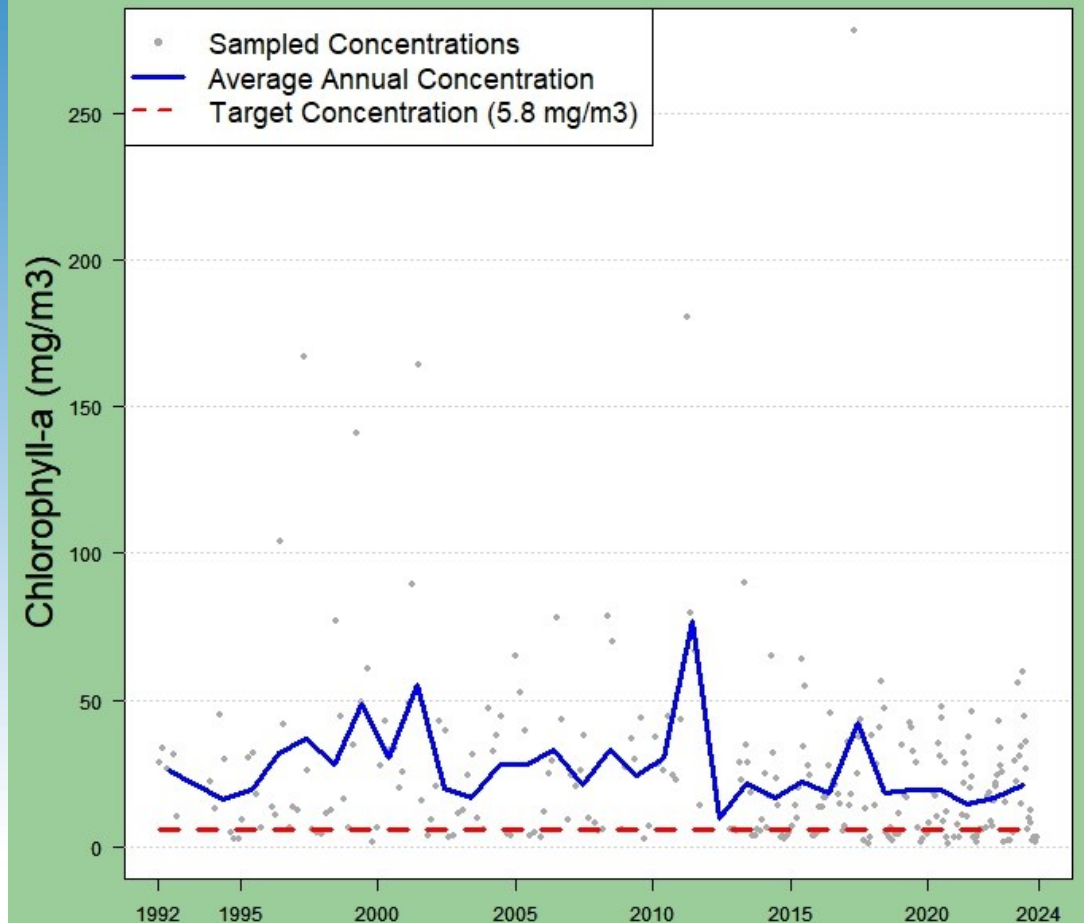
www.sjrwmd.com/data/water-quality/#status-trends

Chlorophyll-a (Chl-a)

Harney: Station CLH



Monroe: Station LMAC

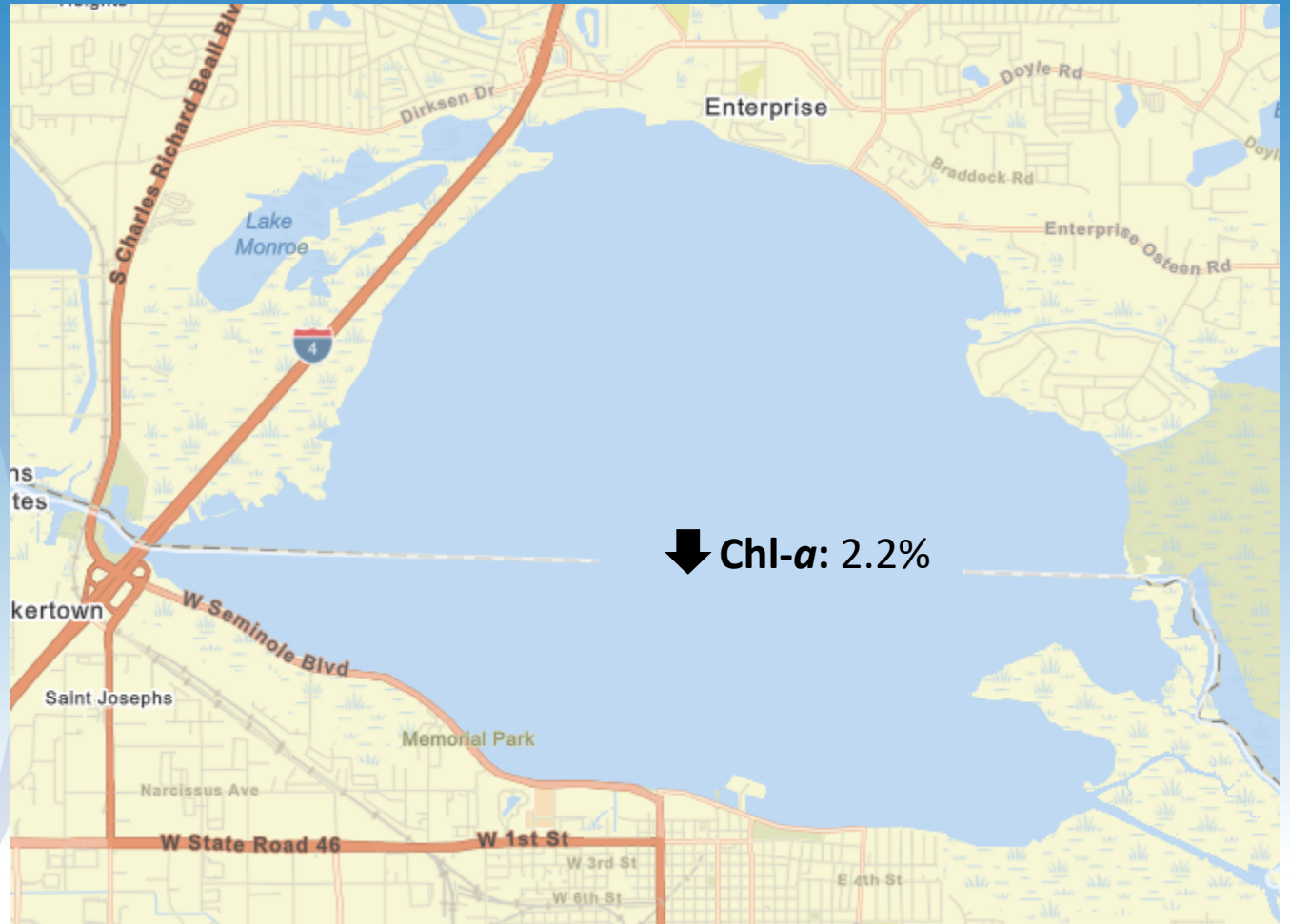


SJRWMD's Long-Term Trend Report

Harney – Station CLH



Monroe – Station LMAC



Chlorophyll-*a*, 2008-2022 data



St. Johns River
Water Management District

SJRWMD Status and Trends report (updated annually):

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

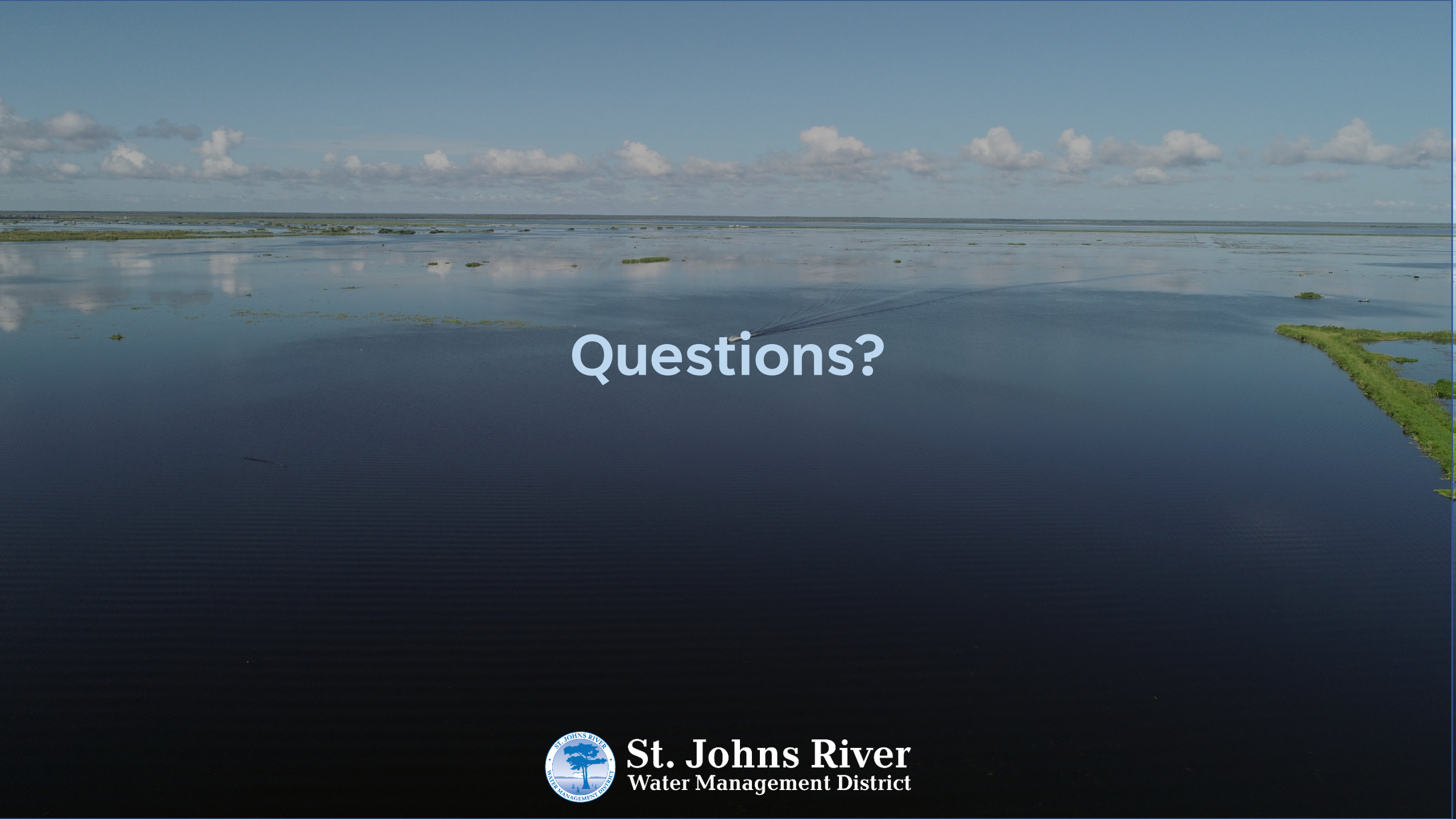
Harmful Algal Blooms

- 20 samples taken in total on Monroe in 2023, none on Harney
- No blooms were observed at the times of sampling
- 3 samples with toxin detection
 - Max Cylindrospermopsin = 0.16 µg/L
 - 1 Microcystin detection = 0.26 µg/L
 - No Anatoxin or Nodularin detections
- All reported toxin detections were below EPA's recommended recreational limit
 - 8 µg/L for Microcystins
 - 15 µg/L for Cylindrospermopsin
- Two samples with dominant *Microcystis aeruginosa*, rest are mixed algae
- DEP Algal Bloom Dashboard:
<https://floridadep.gov/AlgalBloom>



Photo taken by samplers at LMAC on 12/21/2023



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

Coming Up

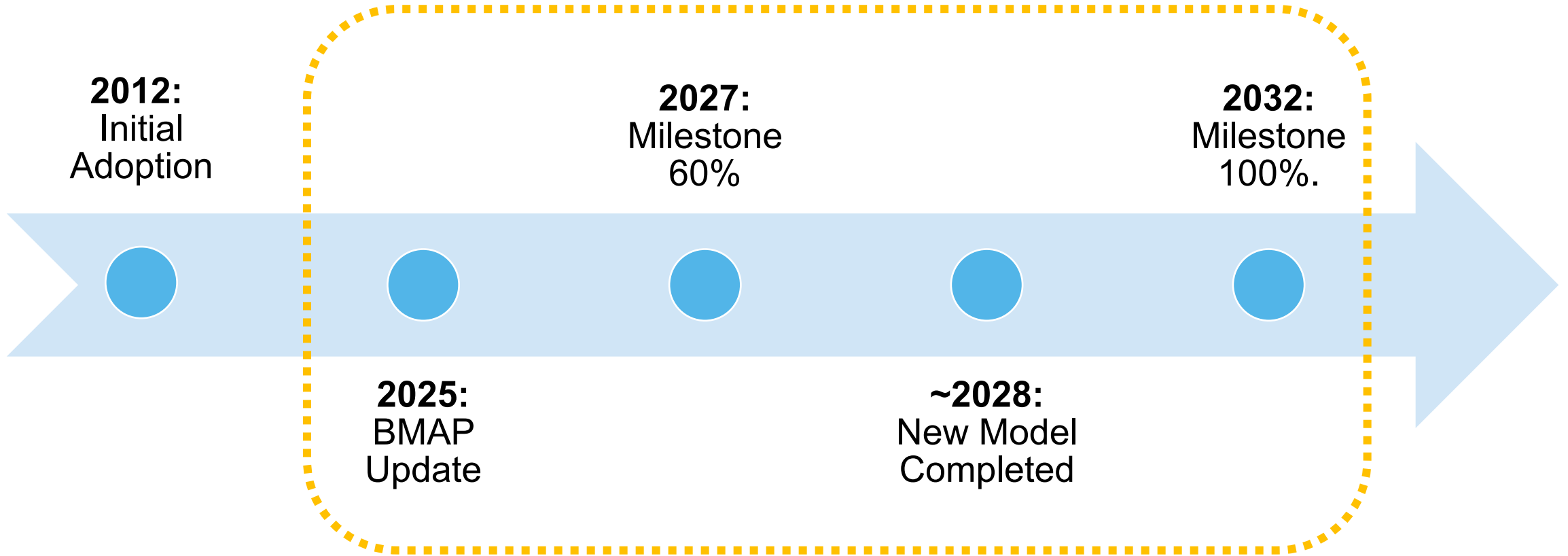
2012:
Initial
Adoption

2027:
Milestone
60%

2032:
Milestone
100%.

2025:
BMAP
Update

~2028:
New Model
Completed





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:

- Lakes Harney, Monroe, MSJ and Smith Canal Basin:
 - TN – 1.18 mg/L.
 - TP – 0.07 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

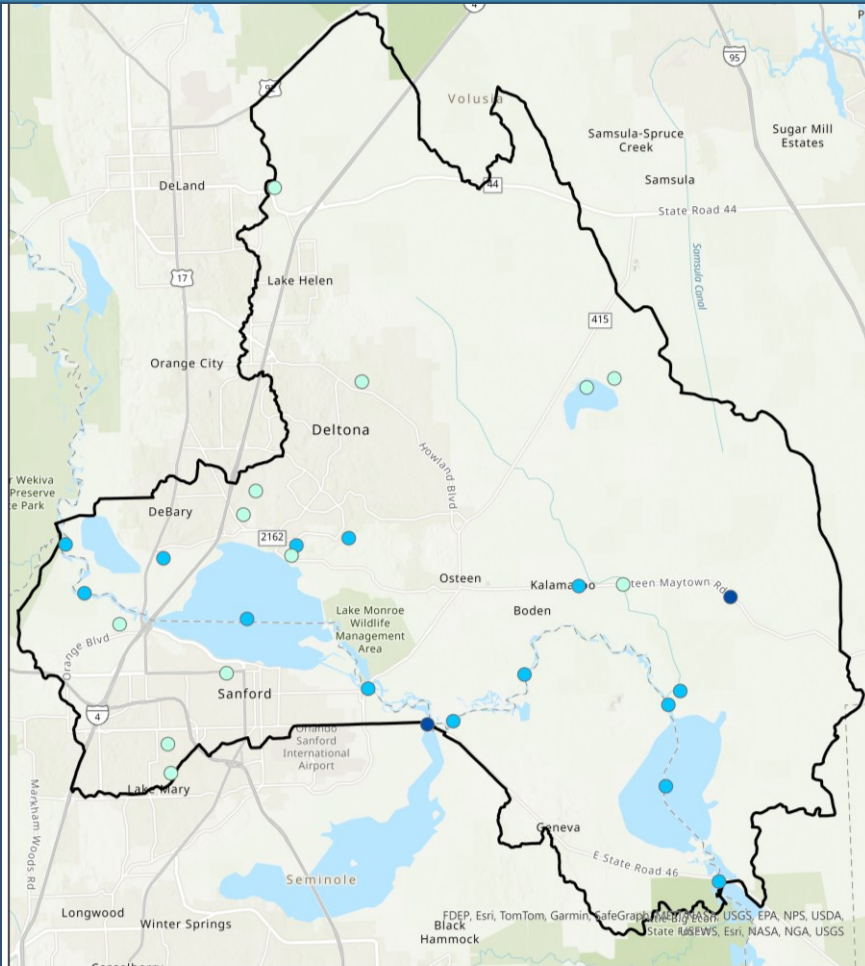
Rank 0 = Least Concern
Rank 8 = High Concern



HOT SPOT ANALYSIS RESULTS DRAFT

HAMO BMAP

TN:



Lakes Harney, Monroe, MSJR, and Smith Canal BMAP

Map prepared by the Division of Environmental Assessment and Restoration.
This map is not for legal decisions making purposes.
Created: 06-14-2024

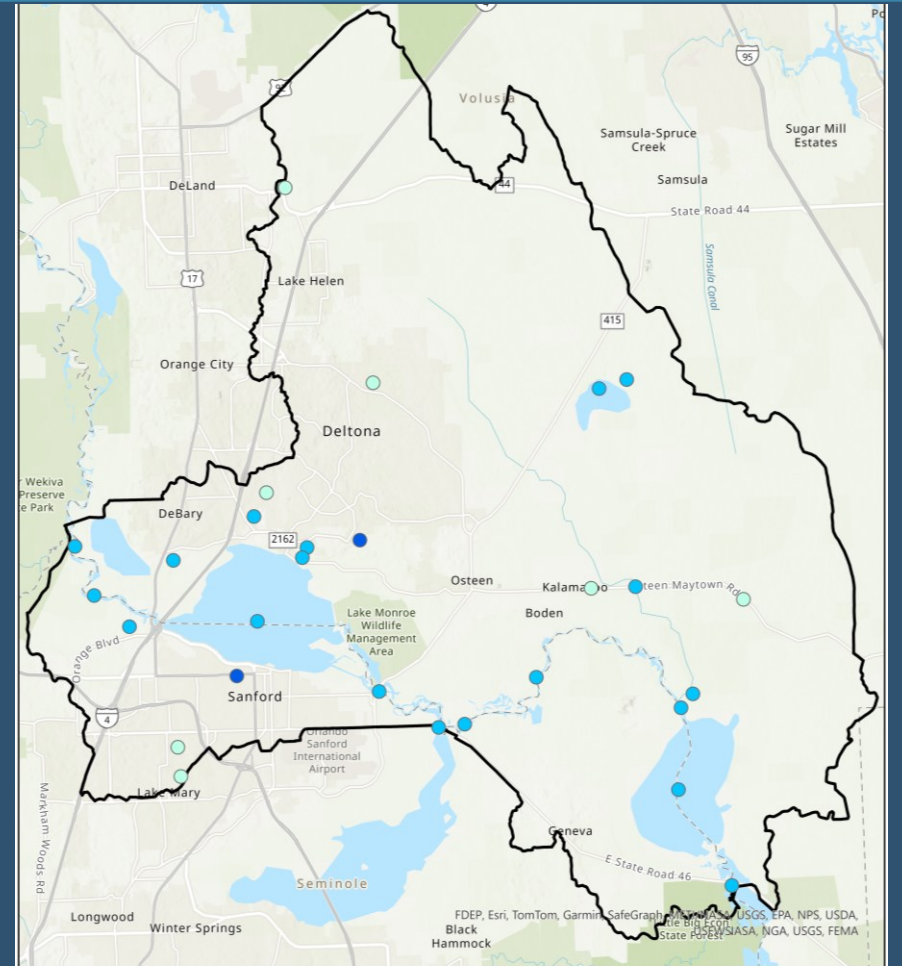
0 1 2 4 6 8 Miles



TN Total Rank
● Low
● Medium
● High

Harney-Monroe BMAP Boundary

TP:



Lakes Harney, Monroe, MSJR, and Smith Canal BMAP

Map prepared by the Division of Environmental Assessment and Restoration.
This map is not for legal decisions making purposes.
Created: 06-13-2024

0 1 2 4 6 8 Miles



TP Total Rank
● Low
● Medium
● High

Harney-Monroe 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.
 - 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.

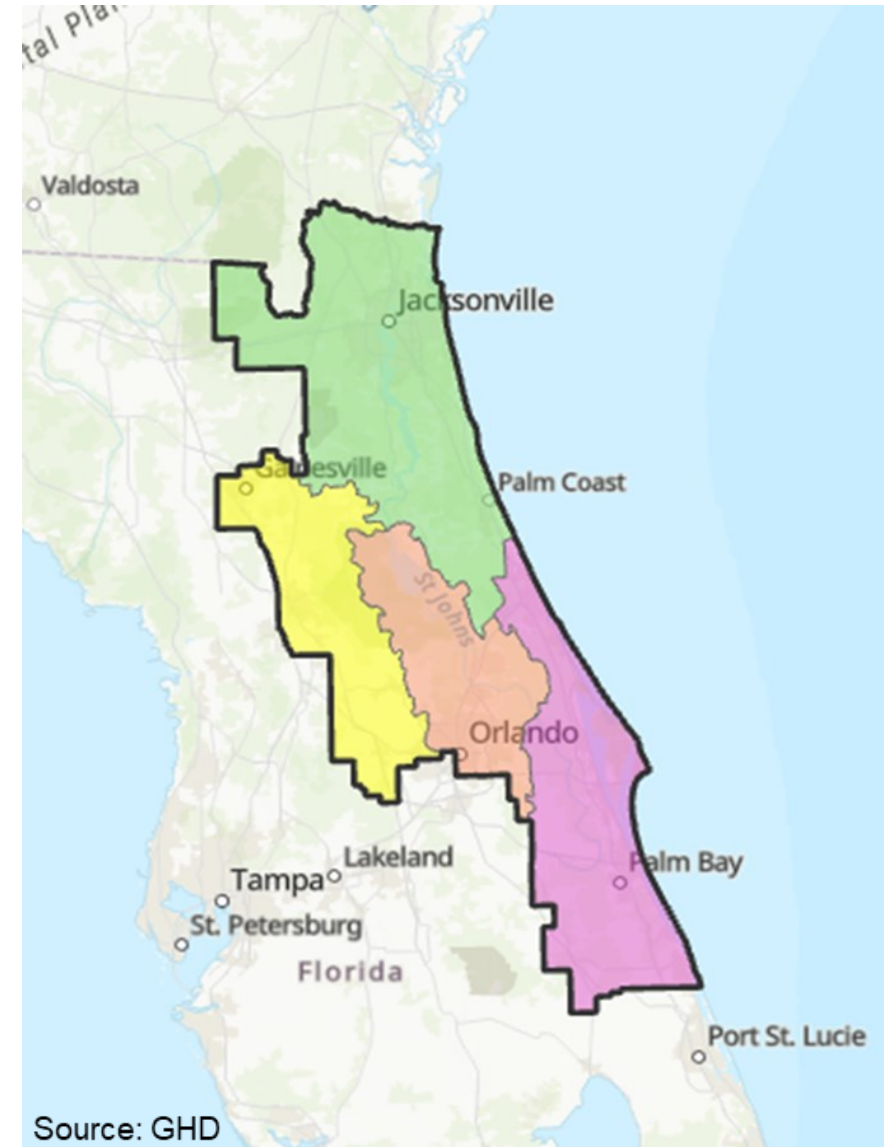
Agriculture Projections:

- 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.





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

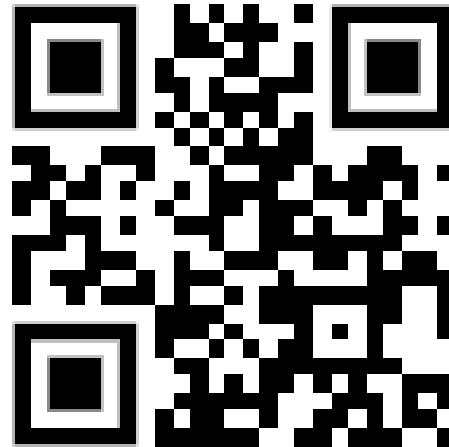
HSPF: Hydrologic Simulation Program FORTRAN
EFDC: Environmental Fluid Dynamics Code
WASP: Water Quality Analysis Simulation Program



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.

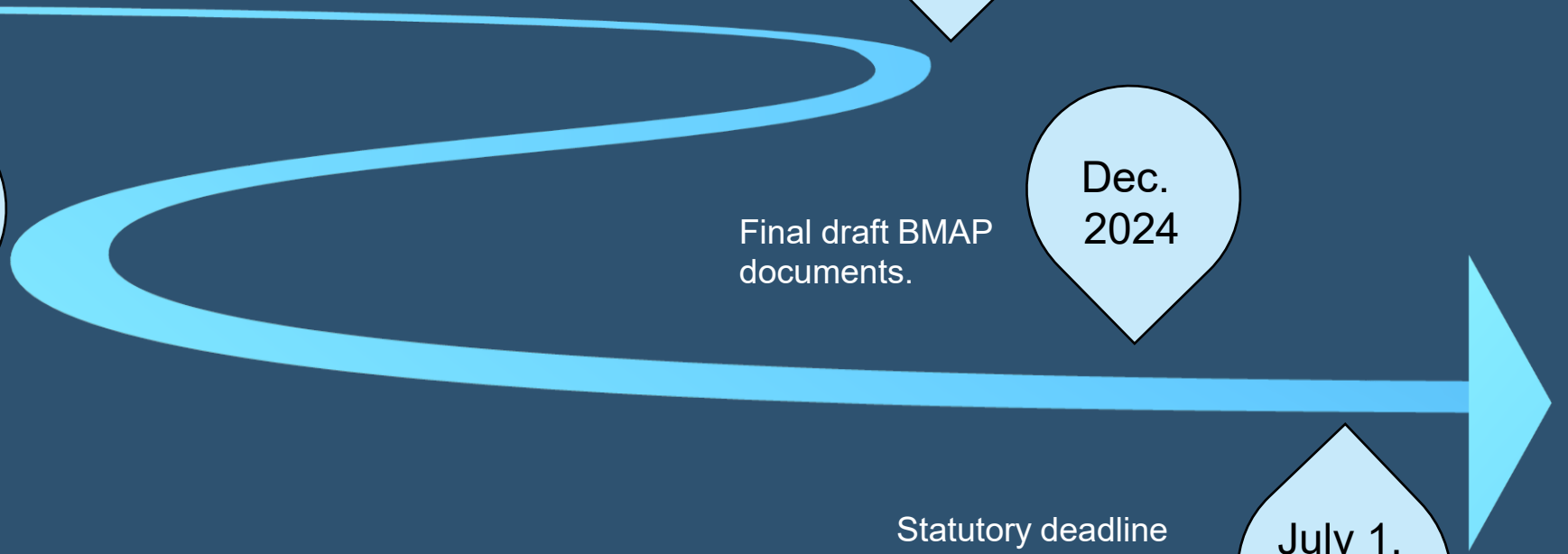
Aug. 1,
2024

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)

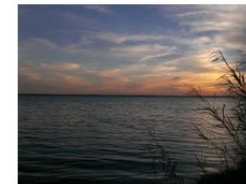
Get started

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

FUNDING OPPORTUNITIES



Florida Department of Environmental Protection
Funding Opportunities

FloridaDEP.gov/Funding





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