Lake Jesup Basin Management Action Plan (BMAP)
Annual Meeting

Via Webinar
Webinar Registration Link:
https://attendee.gotowebinar.com/register/4530859173753516637

May 5, 2026
1 PM EDT

Agenda

- Lake Jesup Basin Management Action Plan (BMAP) Background.
- Annual Progress Update.
- Policy & Reporting Reminders.
- St. Johns River Water Management District Updates.
- St. Johns River Model Update.

Please note the site for documents relating to the Lake Jesup BMAP:
BMAP Public Meetings | Florida Department of Environmental Protection

For more information on the Lake Jesup BMAP, contact: Evelyn Becerra, 850-245-8547,
Evelyn.Becerra@FloridaDEP.gov

WEBINAR HOUSEKEEPING

Attendee Participation

Open your control panel.

Join audio:

- Choose Computer Audio **or**
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Attendee audio will automatically be muted.

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

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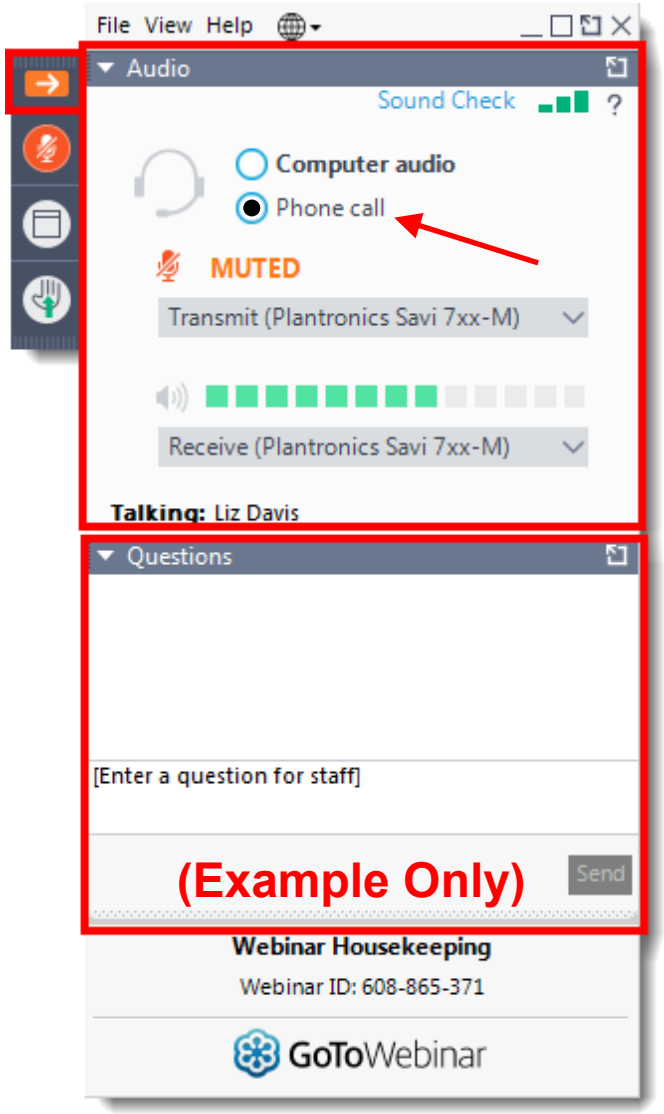
Note: Today's presentation is being recorded and will be provided after the webinar.



LAKE JESUP BASIN MANAGEMENT ACTION PLAN (BMAP) ANNUAL MEETING

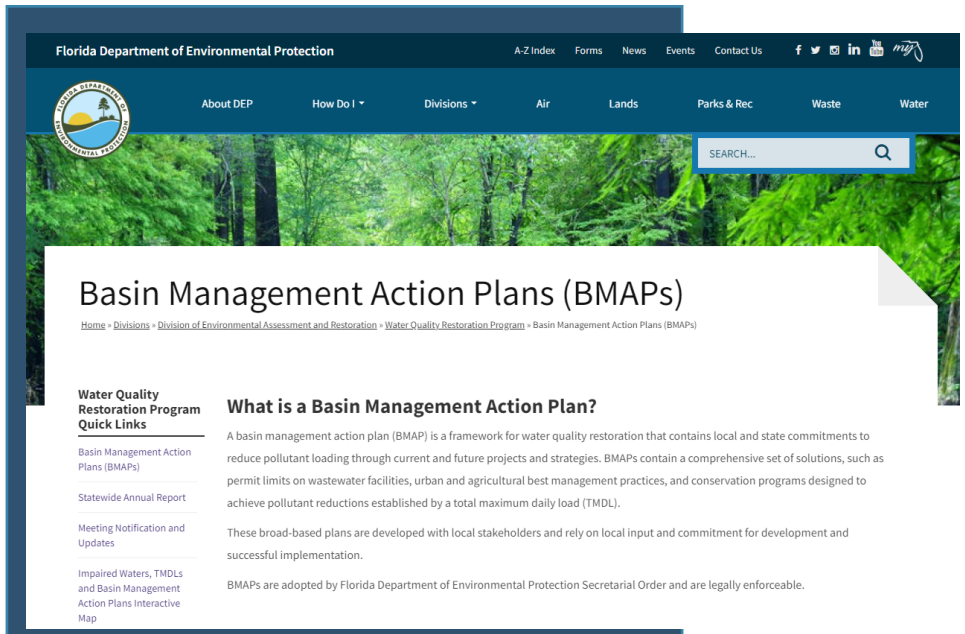
Evelyn Becerra
Water Quality Restoration Program
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoToWebinar | May 5, 2026

AGENDA

- Basin Management Action Plan Overview.
- Policy and Reporting Reminders.
- Statewide Annual Report (STAR)
- Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- St. Johns River (SJR) Model Update.

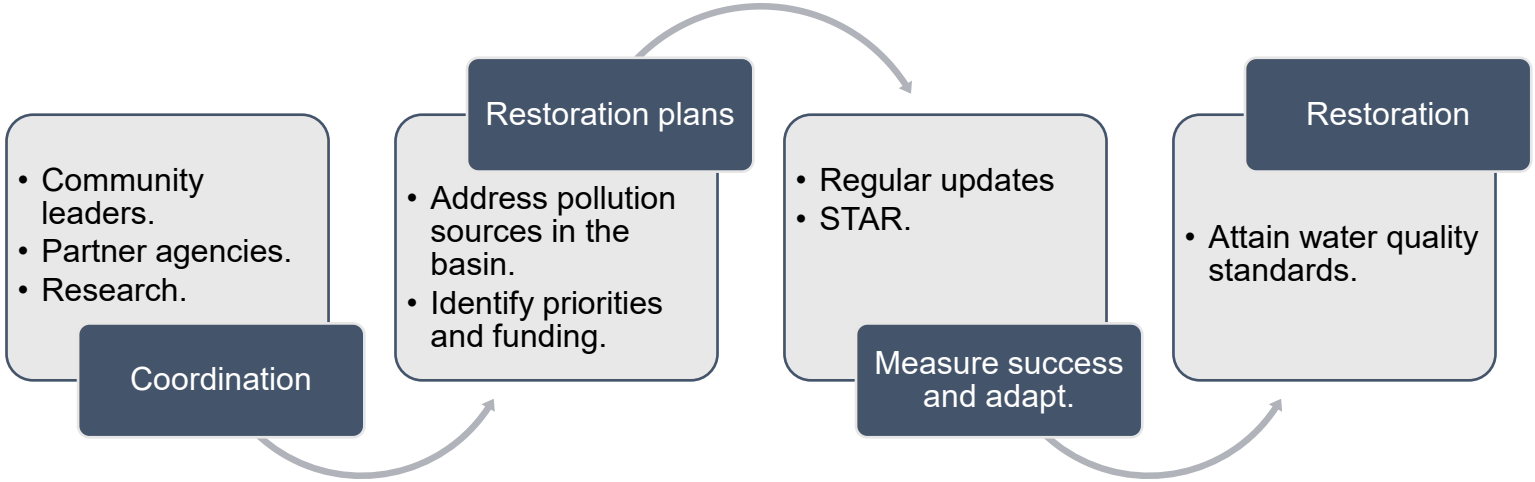
BMAPs



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 TMDL:

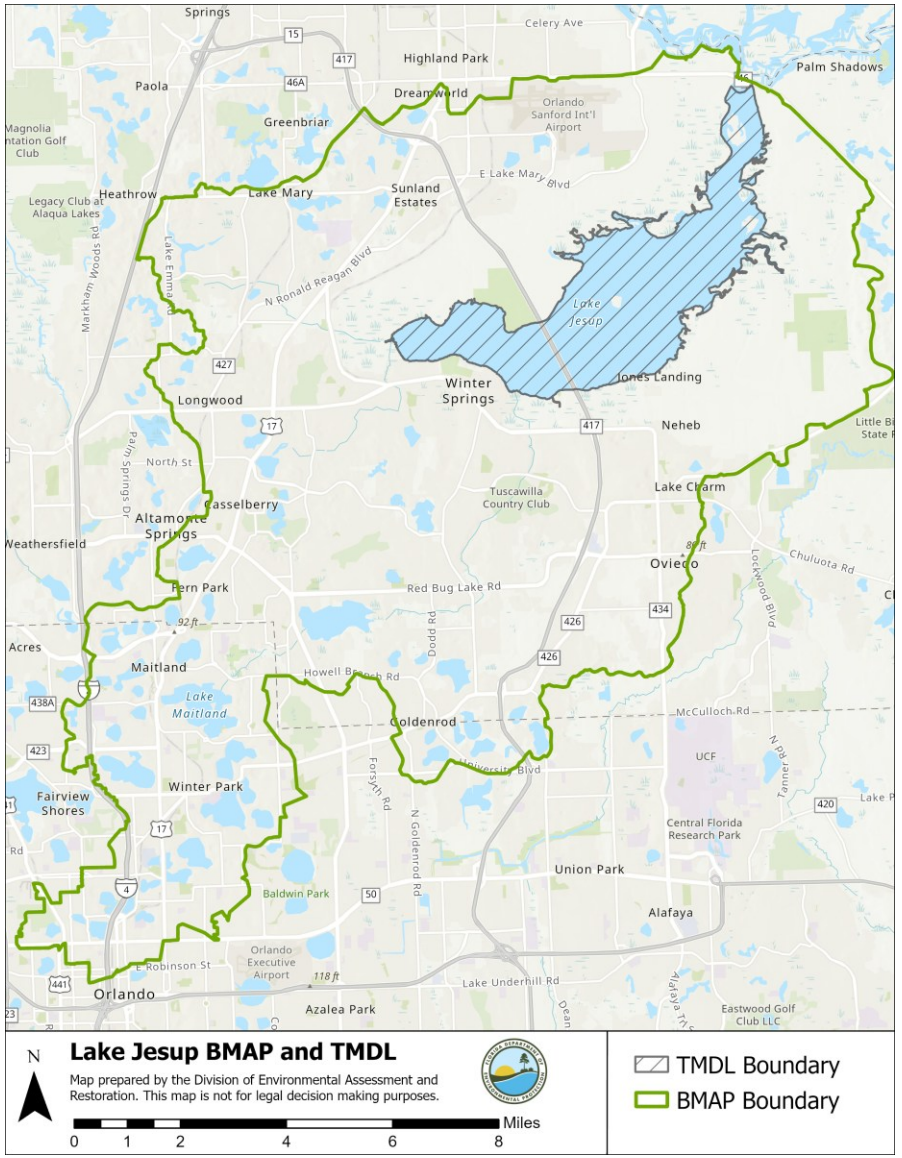
- Adopted 2006 for total phosphorus (TP) and total nitrogen (TN).

Lake Jesup BMAP:

- Initially adopted April 2010 to implement the Lake Jesup TMDLs.
- BMAP Amendment adopted in 2019 provided new loading information.
- BMAP update adopted in 2025 to include new legislation.

- Total required reductions:
  - 11,019 pounds per year (lbs/yr) TP.
  - 55,013 lbs/yr TN.

lbs/yr = pounds/year



BMAP
STAKEHOLDERS

Type of Organization/Entity	Name
Responsible Entities	Agriculture Orange County Seminole County 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 Town of Eatonville
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection (DEP) Florida Department of Transportation (DOT) District 5 Florida Turnpike Enterprise SJRWMD
Other Interested Stakeholders	Agricultural Producers Citizens/Homeowners East Central Florida Regional Planning Council Florida Farm Bureau Florida Onsite Wastewater Association Septic System Contractors

POLICY & REPORTING REMINDERS

Source	Topic	Requirement
Wastewater	Wastewater Effluent Limits	Where the law does not provide effluent limits or a compliance timeframe, new effluent standards **will take effect at the time of permit renewal or no later than five years after BMAP adoption**, whichever is sooner. Tables 12 and 13 in the BMAP document.
	Connection to Sewer	**Beginning February 2026 and every two years thereafter**, utilities with sewer lines in BMAPs must provide DEP a list of properties with existing OSTDS where sewer is available (as defined in 381.0065, F.S.) but have not connected.
Agriculture	Concentrated animal feeding operations (CAFOs) - Dairies	To minimize infiltration of liquid manure, if a dairy uses a clay liner or some other type of engineered waste storage pond system, **within two years of BMAP adoption,** the dairy must submit to DEP an evaluation identifying the environmental, technical, and economic feasibility of upgrading to a concrete or geosynthetic liner.

POLICY AND REPORTING REMINDERS
CONTINUED

Source	Topic	Requirement
Sports Turf	Golf Courses	Draft nutrient management plan (NMP): **Due June 27, 2026.** Final NMP: **Due June 27, 2027**.
		Golf Course superintendents for publicly-owned courses (those owned/operated by local governments: counties, municipalities, CDDs...) must have obtained UF-IFAS Golf Course Best Management Practices Program certification by **Dec 31, 2026**.
		Annual reporting begins **November 2028 - January 2029**.

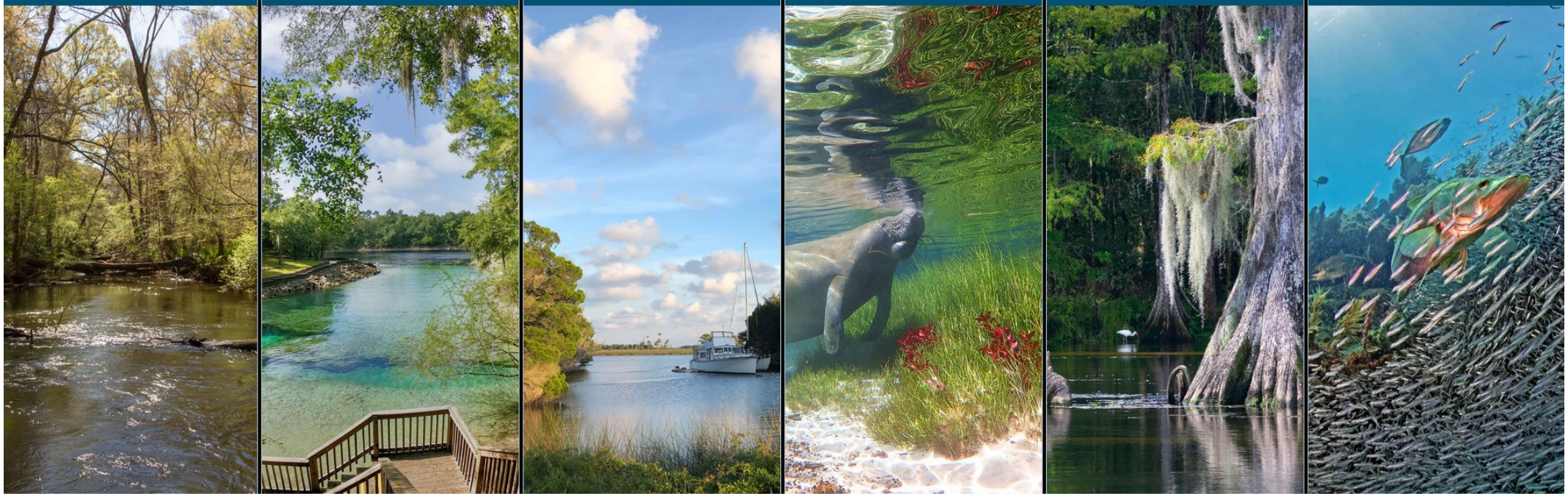
STATEWIDE ANNUAL REPORT (STAR)

OVERVIEW

The Statewide Annual Report 2024

The state of Florida is prioritizing the protection and restoration of our waterways by implementing sound, science-based solutions to current and future environmental challenges. Under the leadership of Governor Ron DeSantis, the Florida Department of Environmental Protection (DEP) is working with local, state and federal partners on short- and long-term strategies to protect water quality and quantity, including investment in long-term restoration projects. DEP has prepared the 2024 Statewide Annual Report (STAR) to detail the status of many of these strategies in an interactive application format, which is best viewed on a desktop computer screen using Google Chrome or Microsoft Edge. This application does not scale well on mobile devices and is optimized for viewing on larger format screens.

Total Maximum Daily Loads	Basin Management Action Plans	Alternative Restoration Plans	Minimum Flows and Water Levels	Recovery and Prevention Strategies	Contacts and Project Data

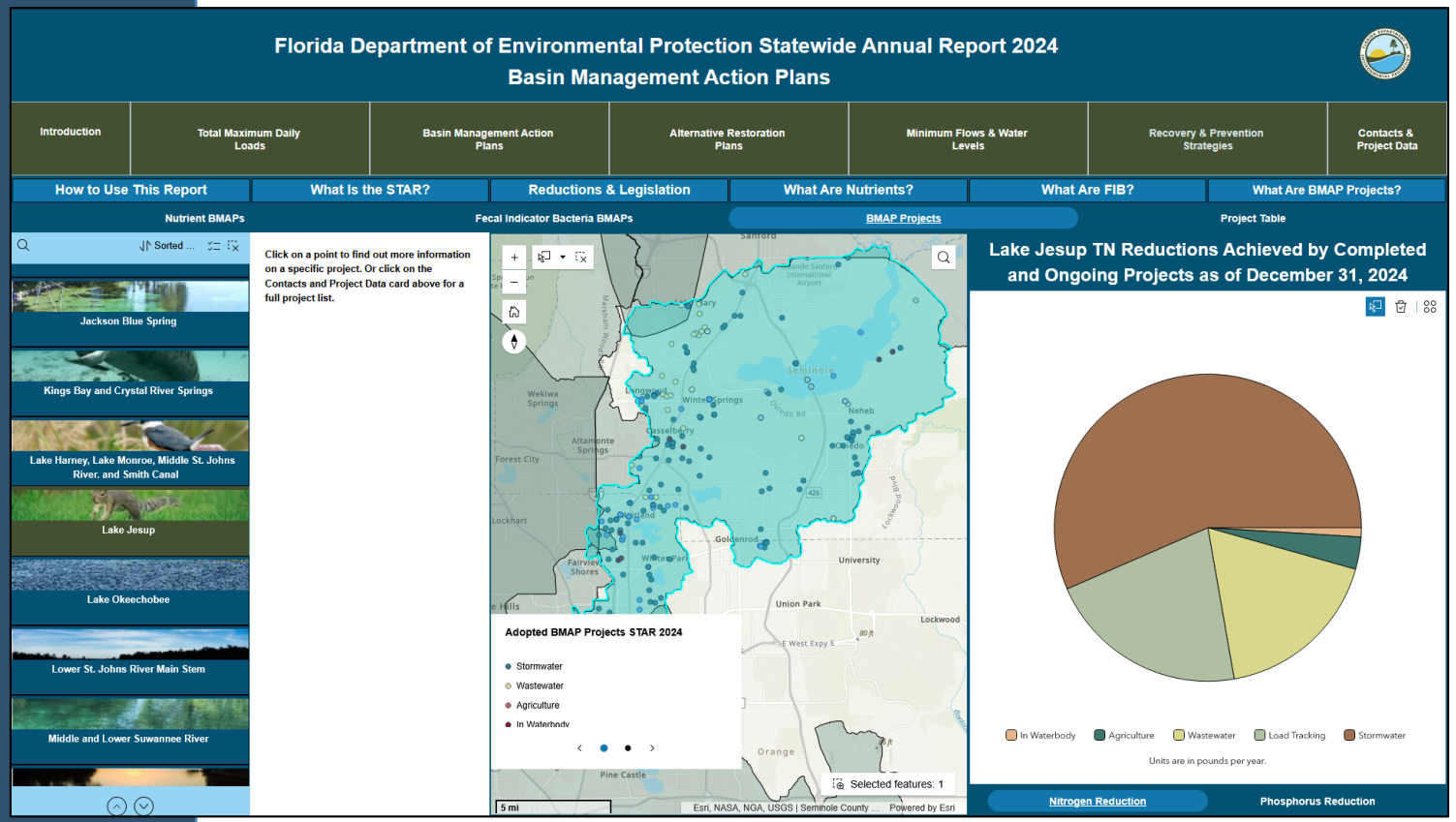


https://floridadep.gov/STAR

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.
- Currently in the process of project updates and verification for STAR 2025.
  - Projects reported through Dec. 31, 2025.

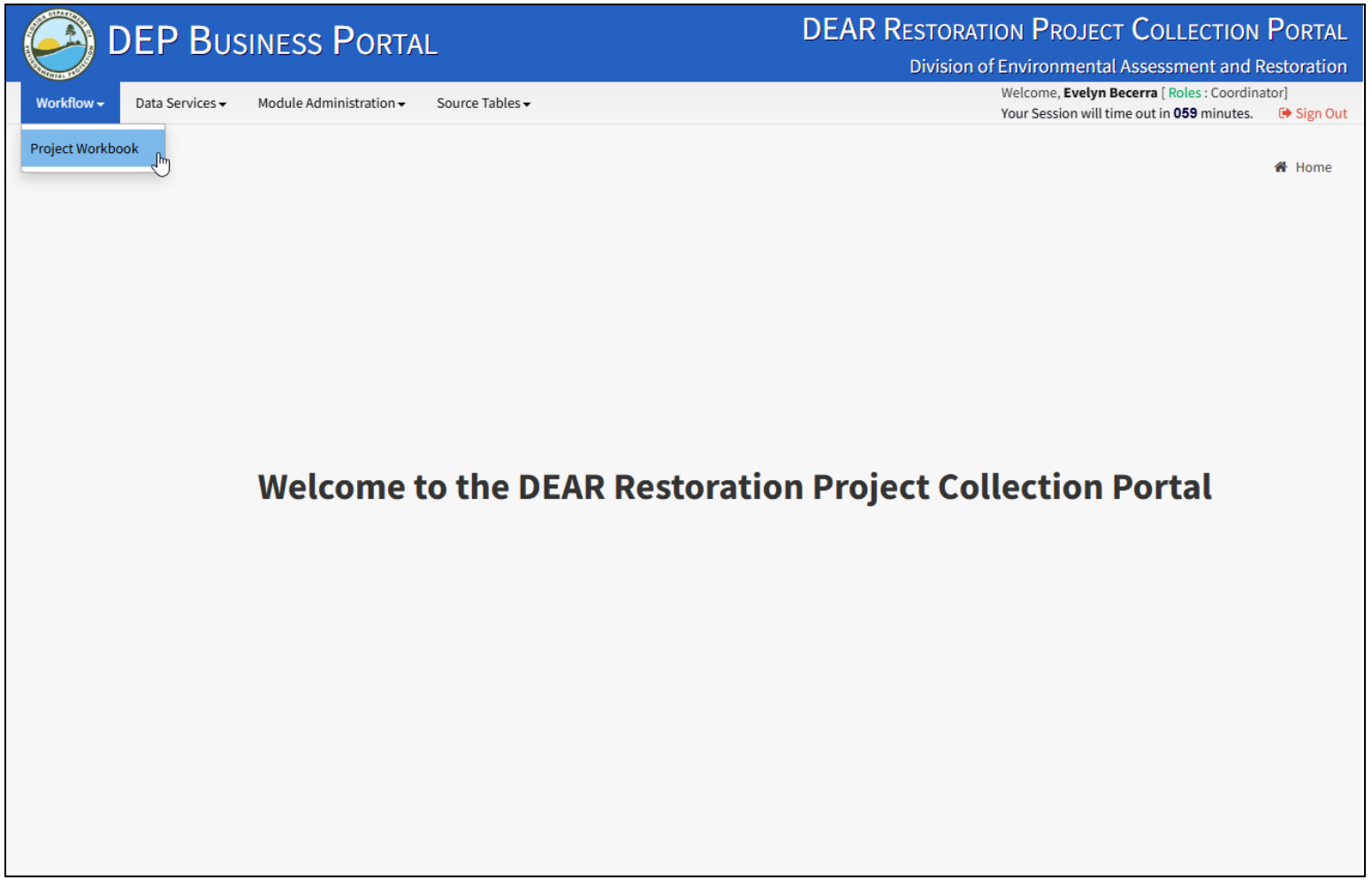


https://floridadep.gov/STAR

STAR

PROJECT COLLECTION

- Notify your BMAP coordinator if changes in access to project list are needed.



STAR PROGRESS

PRELIMINARY 2025 STAR UPDATES

Projects by Entity through Dec. 31, 2025

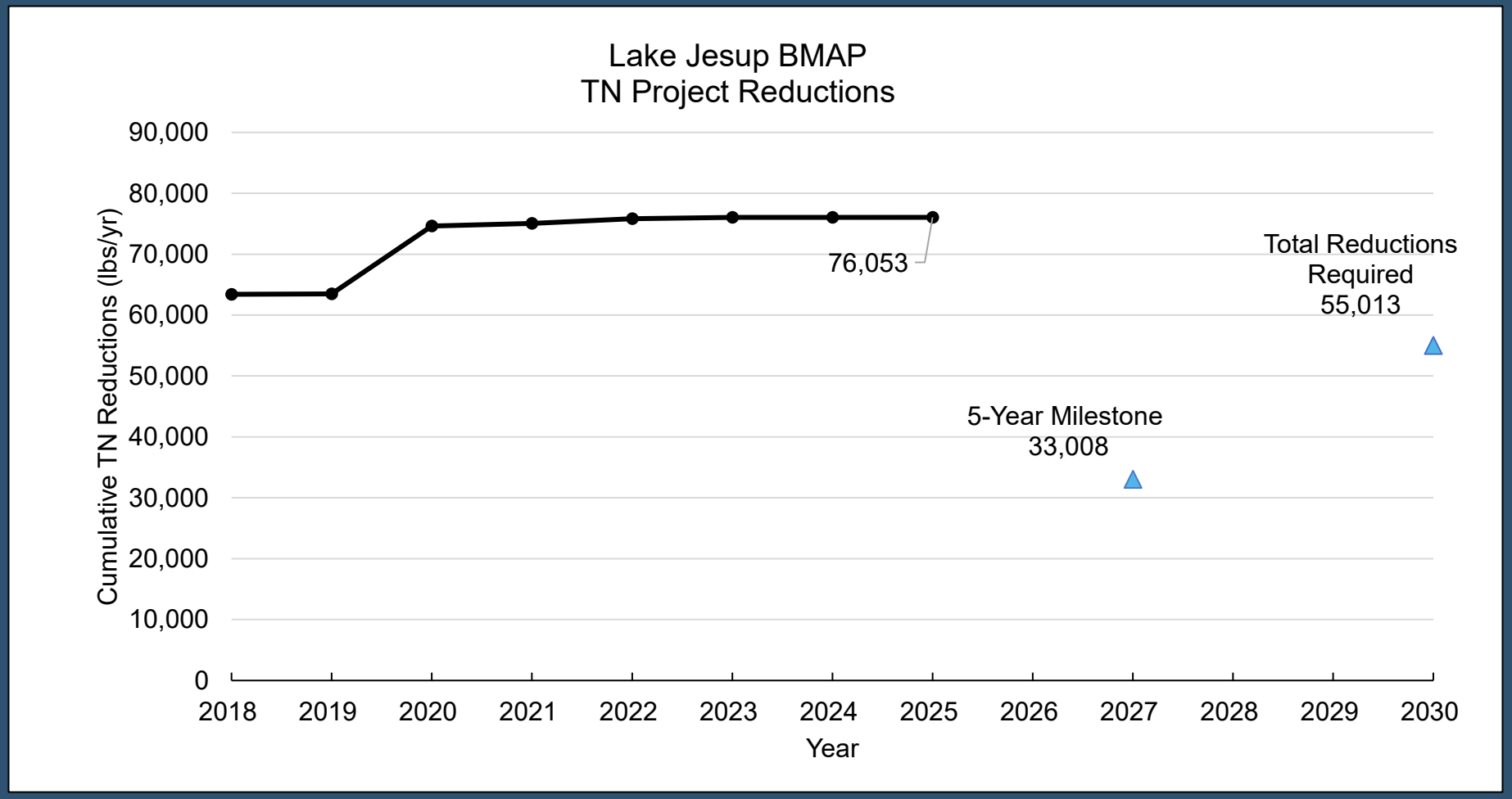
Lead Entity	Completed	Ongoing	Planned	Underway	Total
City of Altamonte Springs	3	3	0	1	**7**
City of Casselberry	13	4	1	3	**21**
City of Lake Mary	1	3	14	0	**18**
City of Longwood	15	6	4	2	**27**
City of Maitland	7	4	3	2	**16**
City of Orlando	9	5	4	3	**21**
City of Oviedo	6	4	9	1	**20**
City of Sanford	2	2	2	0	**6**
City of Winter Park	10	2	4	2	**18**
City of Winter Springs	9	8	3	2	**22**
DACS	1	1	0	1	**3**
DOT District 5	13	2	0	0	**15**
Orange County	5	4	0	1	**10**
Seminole County	11	4	15	3	**33**
Site 10	1	0	0	0	**1**
Town of Eatonville	1	2	0	0	**3**
Turnpike Enterprise	1	2	0	0	**3**
SJRWMD	2	0	2	1	**5**
Grand Total	**110**	**56**	**61**	**22**	**249**

As of Dec. 31, 2025, verified projects in the BMAP have reduced **76,053 lbs/yr TN** and **12,769 lbs/yr TP**.

STAR PROGRESS

PRELIMINARY 2025 STAR UPDATES

TN Reductions Achieved through Dec. 31, 2025



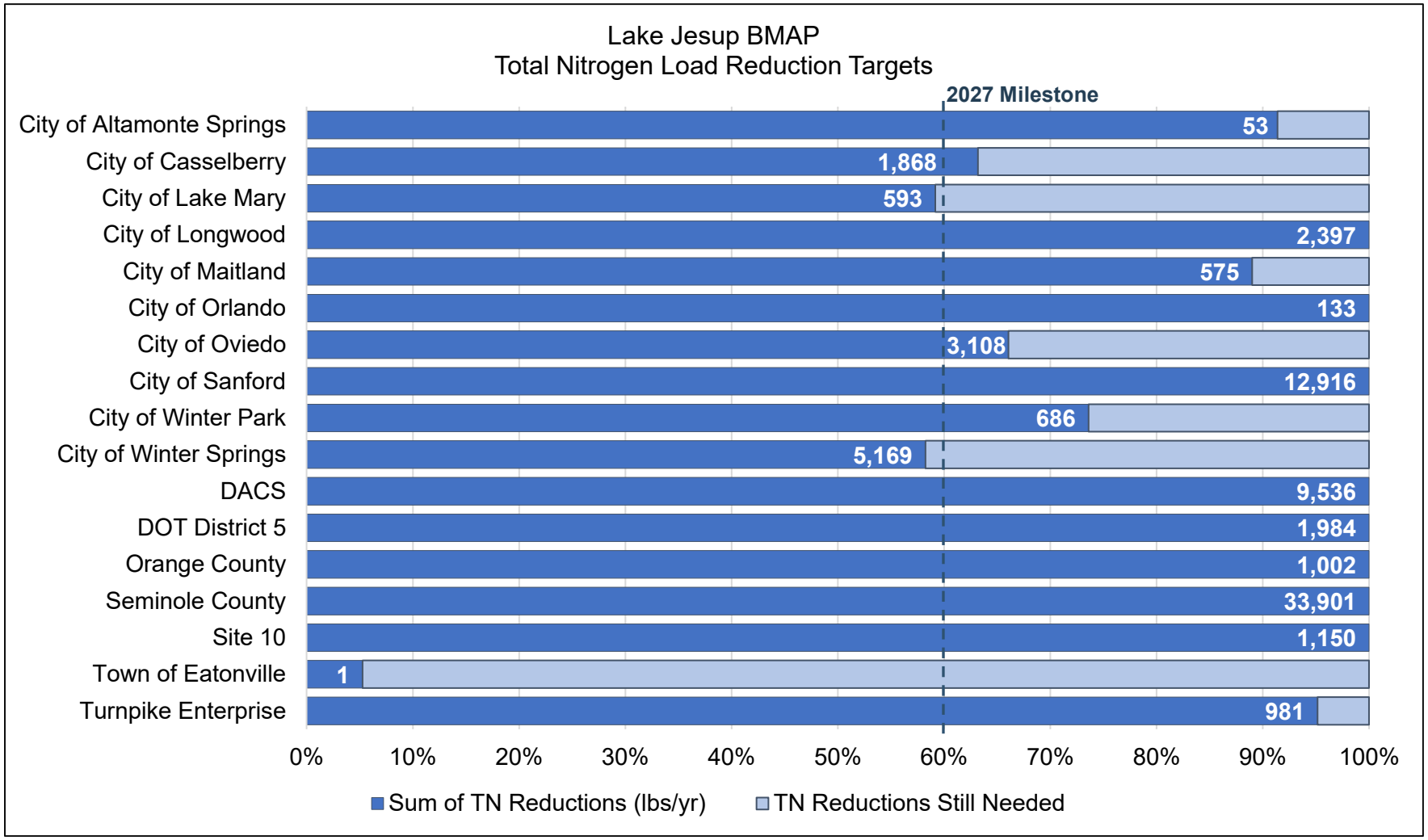
Completed and ongoing projects only.

STAR PROGRESS

PRELIMINARY 2025 STAR UPDATES

% TN Reductions Achieved by Entity through Dec. 31, 2025

Completed and ongoing projects only

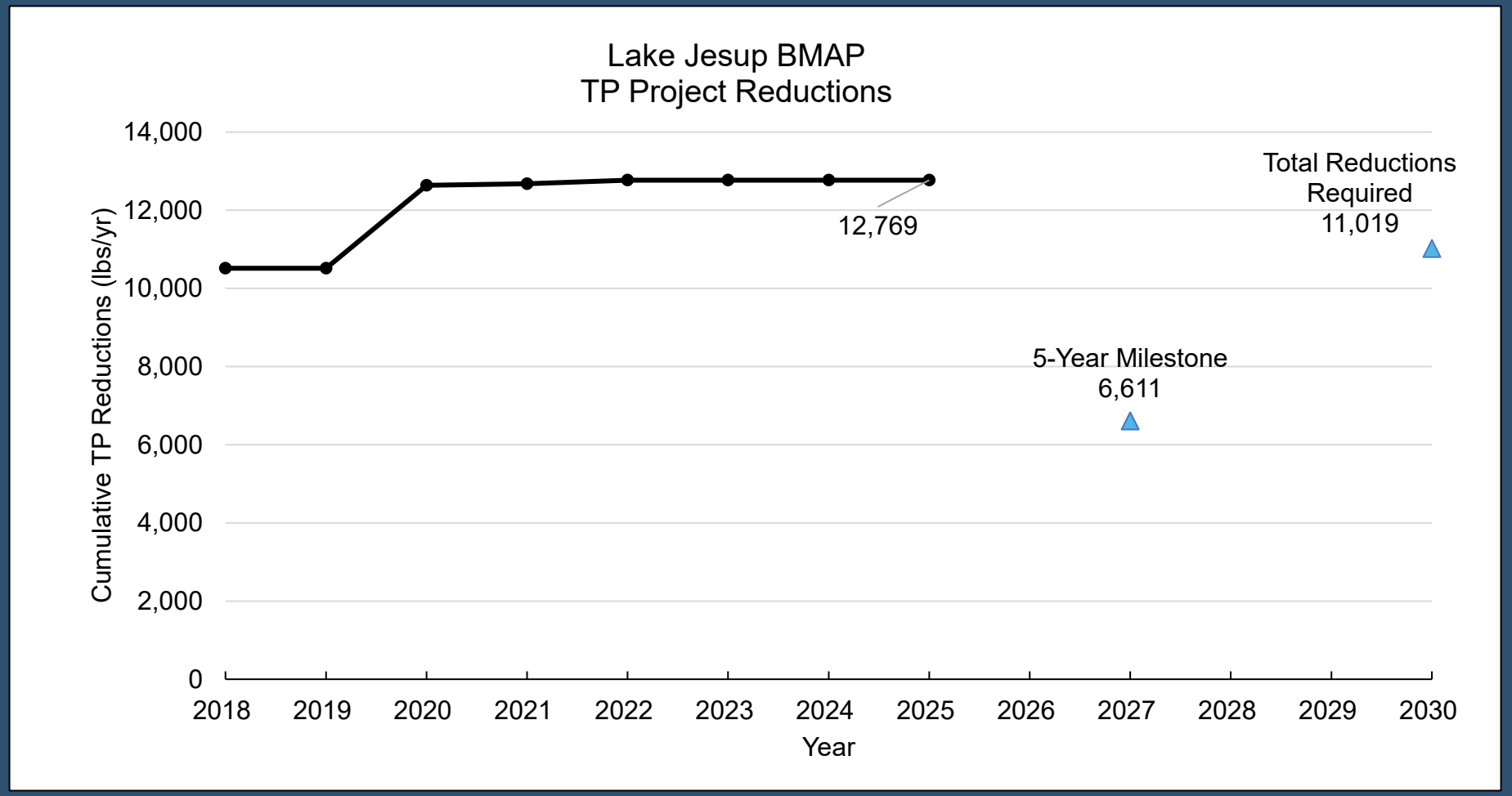


- Underway and Planned projects in the BMAP have an additional estimated **17,106 lbs/yr TN**.
- Underway and Planned projects need to be **completed** and **verified** to count towards TN achieved.

STAR PROGRESS

PRELIMINARY 2025 STAR UPDATES

TP Reductions Achieved through Dec. 31, 2025



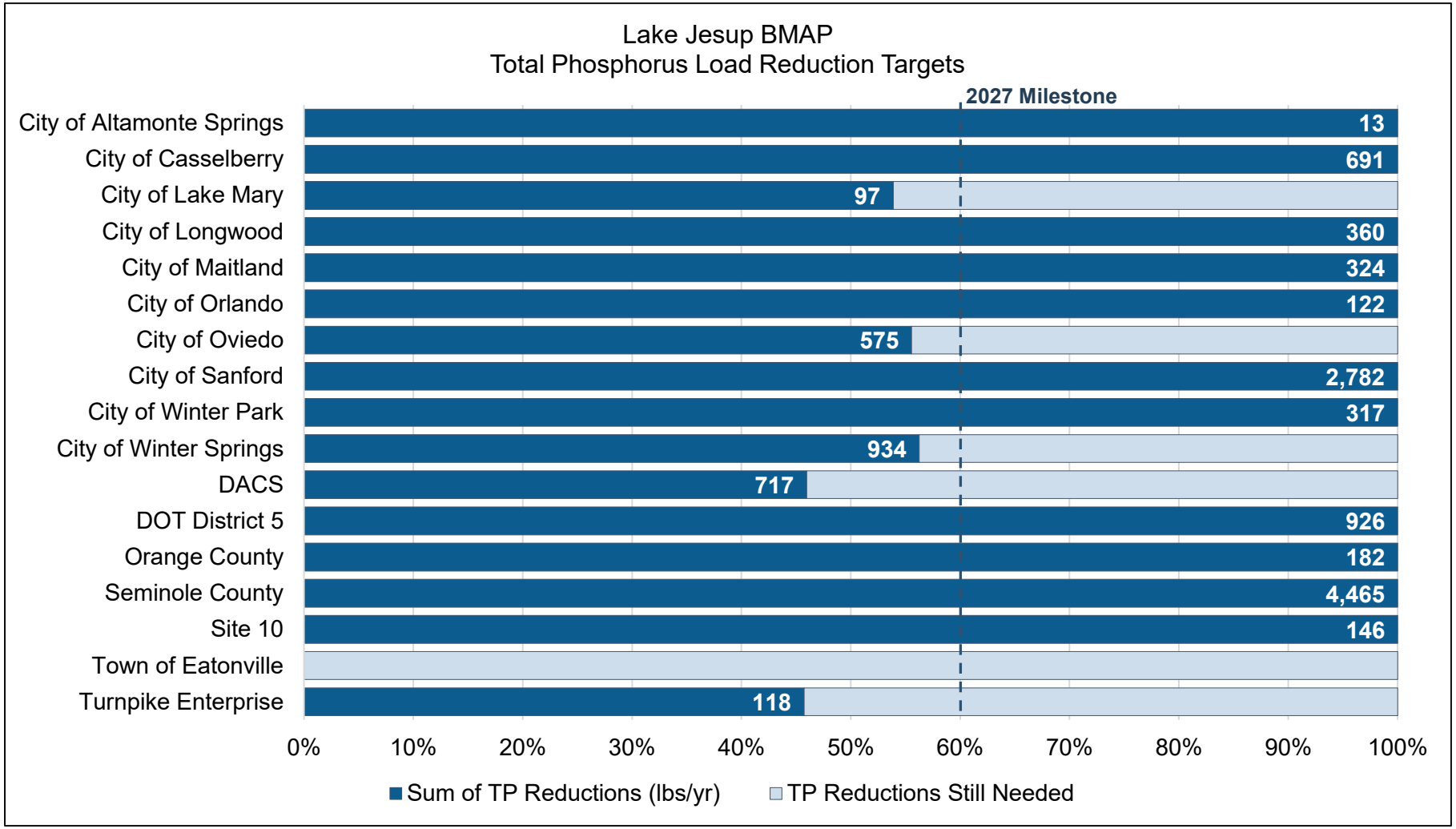
Completed and ongoing projects only.

STAR PROGRESS

PRELIMINARY 2025 STAR UPDATES.

% TP Reductions Achieved by Entity through Dec. 31, 2025

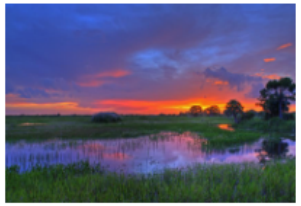
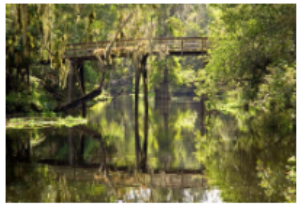
Completed and ongoing projects only



- Underway and Planned projects in the BMAP have an additional estimated **1,365 lbs/yr TP**.
- Underway and Planned projects need to be **completed** and **verified** to count towards TP achieved.

RESOURCES
BMAP WEBSITE AND STORYMAPS

[Basin Management Action Plans (BMAPs) | Florida Department of Environmental Protection]

Nutrient BMAPs	Springs BMAPs	Fecal Bacteria Impaired BMAPs
		
Nutrient 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	Springs BMAPs identify the sources of nutrient pollution, list the specific projects and programs necessary to reduce nutrient pollution, and establish priority focus areas where statutory prohibitions on certain activities apply (such as installation of new conventional septic systems).	Bacteria basin management action plans (BMAPs) include management strategies or projects, to be implemented by local stakeholders, that aim to eliminate and prevent the release of waste, containing pathogens, to natural waterbodies.

RESOURCES
FUNDING OPPORTUNITIES

Florida Department of Environmental Protection
Funding Opportunities

FloridaDEP.gov/Funding

SUBSCRIBER PAGE

HOW TO CONTACT US

BMAPProgram@FloridaDEP.gov

Lake Jesup Basin Management Action Plan Update

Shannon Salvatori, Environmental Scientist III

Division of Water Resources

Bureau of Environmental Sciences

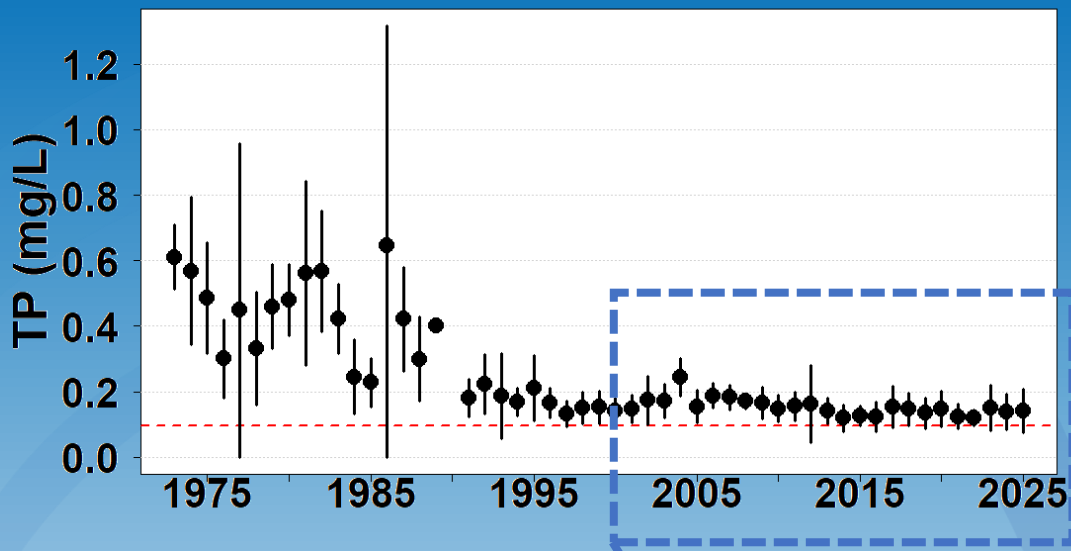
St. Johns River
Water Management District

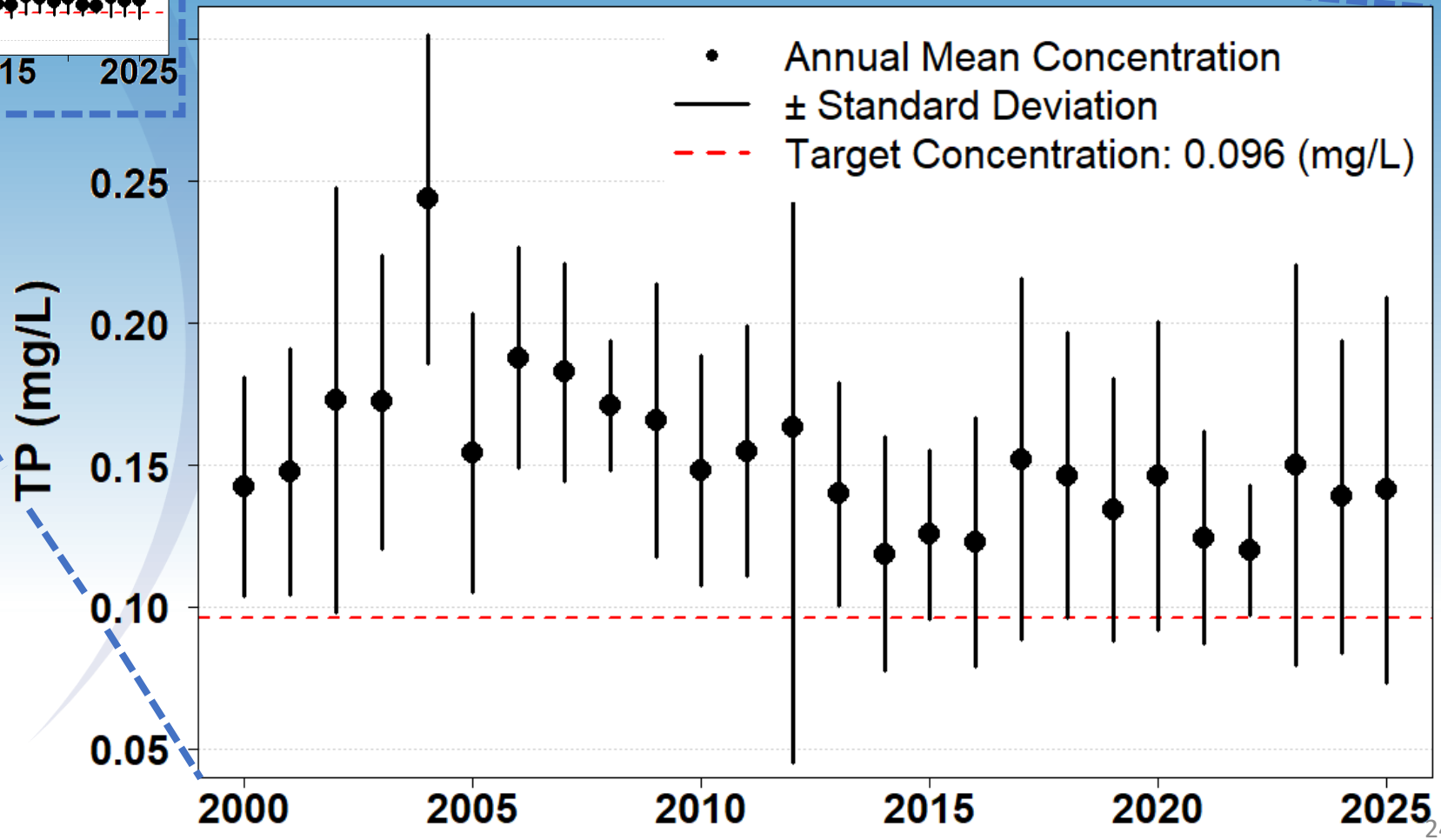
Water Quality Update

- Lake Jesup impaired for **total phosphorus (TP)**, **total nitrogen (TN)**, and **un-ionized ammonia (NH_3)**
- Total Maximum Daily Loads (TMDL) adopted for TP and TN
  - TP TMDL: **41,888 lbs/yr**
  - TN TMDL: **545,203 lbs/yr**
- Target lake concentrations
  - Target TN: **1.27 mg/L**
  - Target TP: **0.096 mg/L**
  - Target Chlorophyll-*a* (Chl-*a*): **31.2 µg/L**

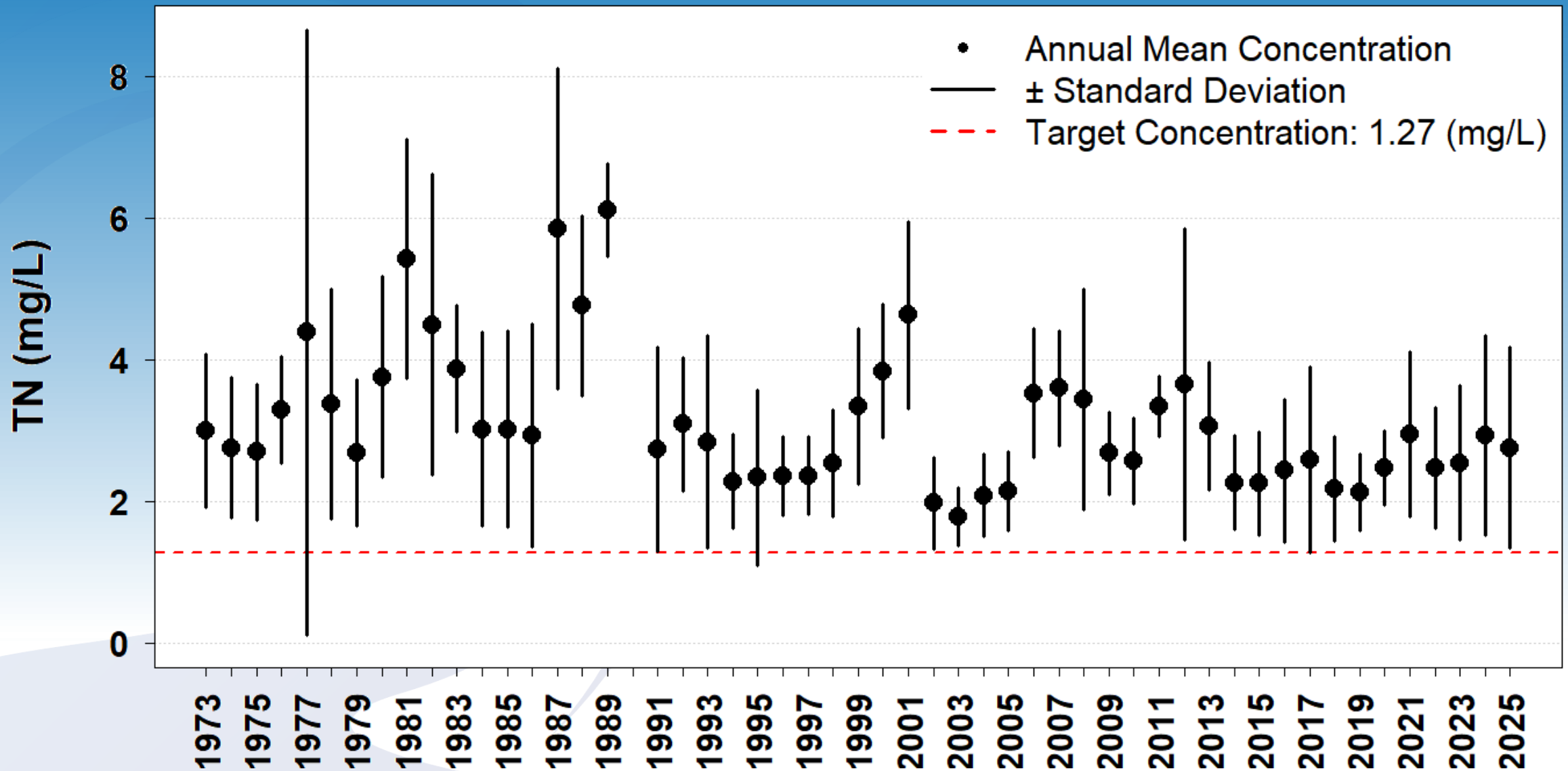
Lake Jesup Water Quality Stations

Lake Jesup Annual TP Concentrations

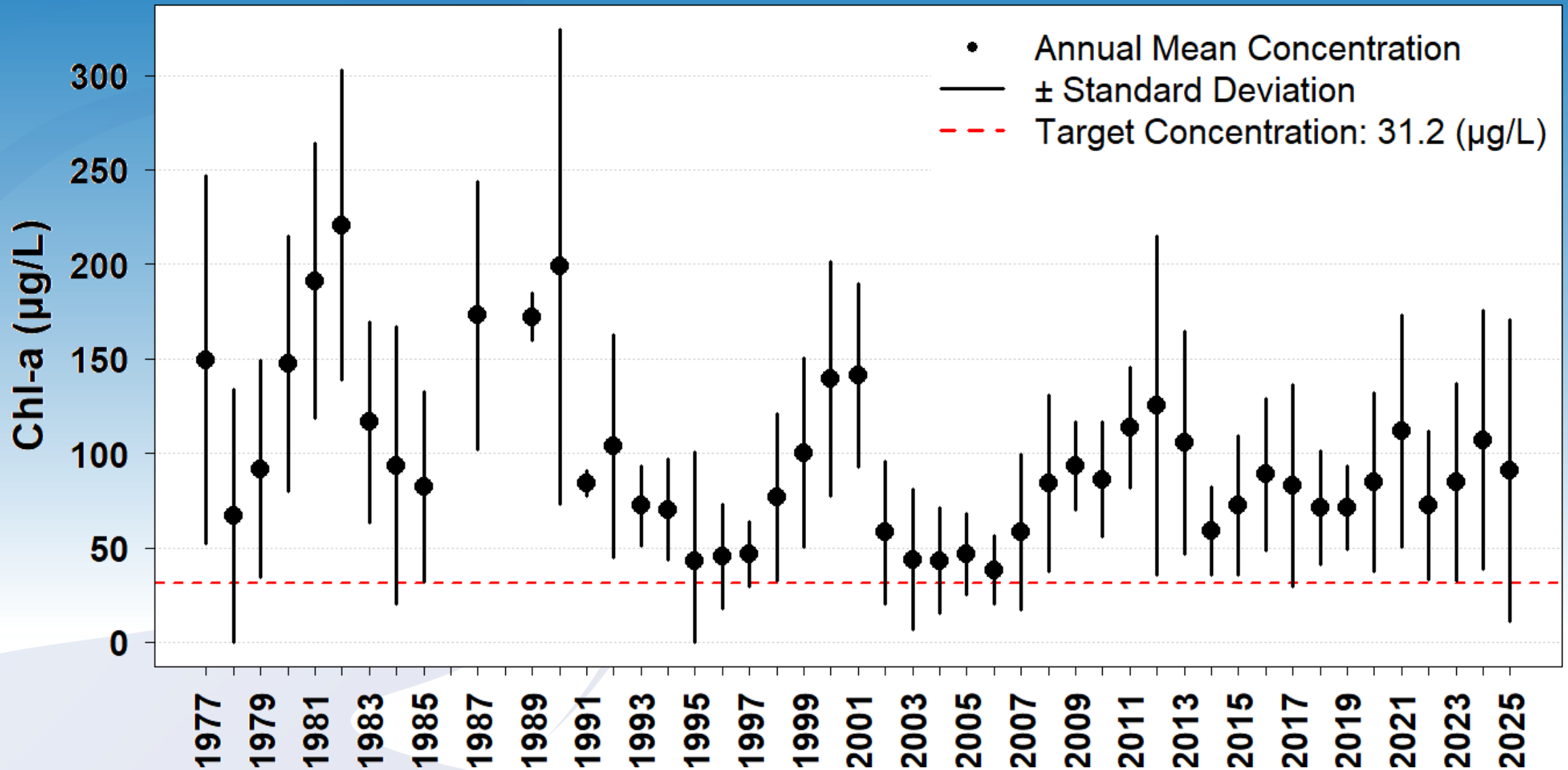




Lake Jesup TN Annual Concentrations

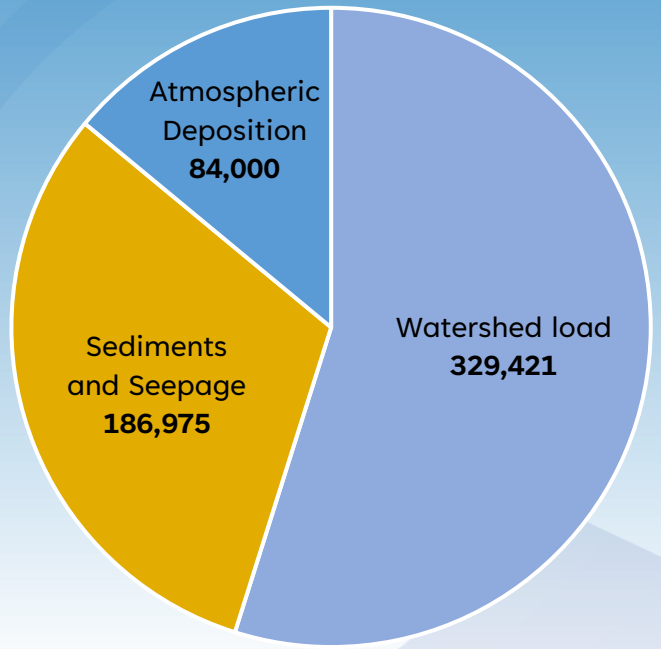


Lake Jesup Chl-*a* Annual Concentrations



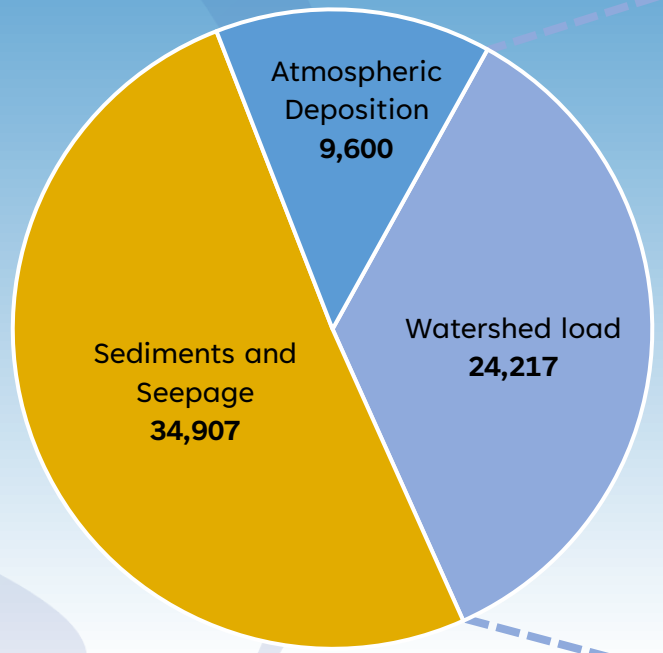
Nutrient Sources

Nitrogen Loads (lbs/year)
(2003-2014)



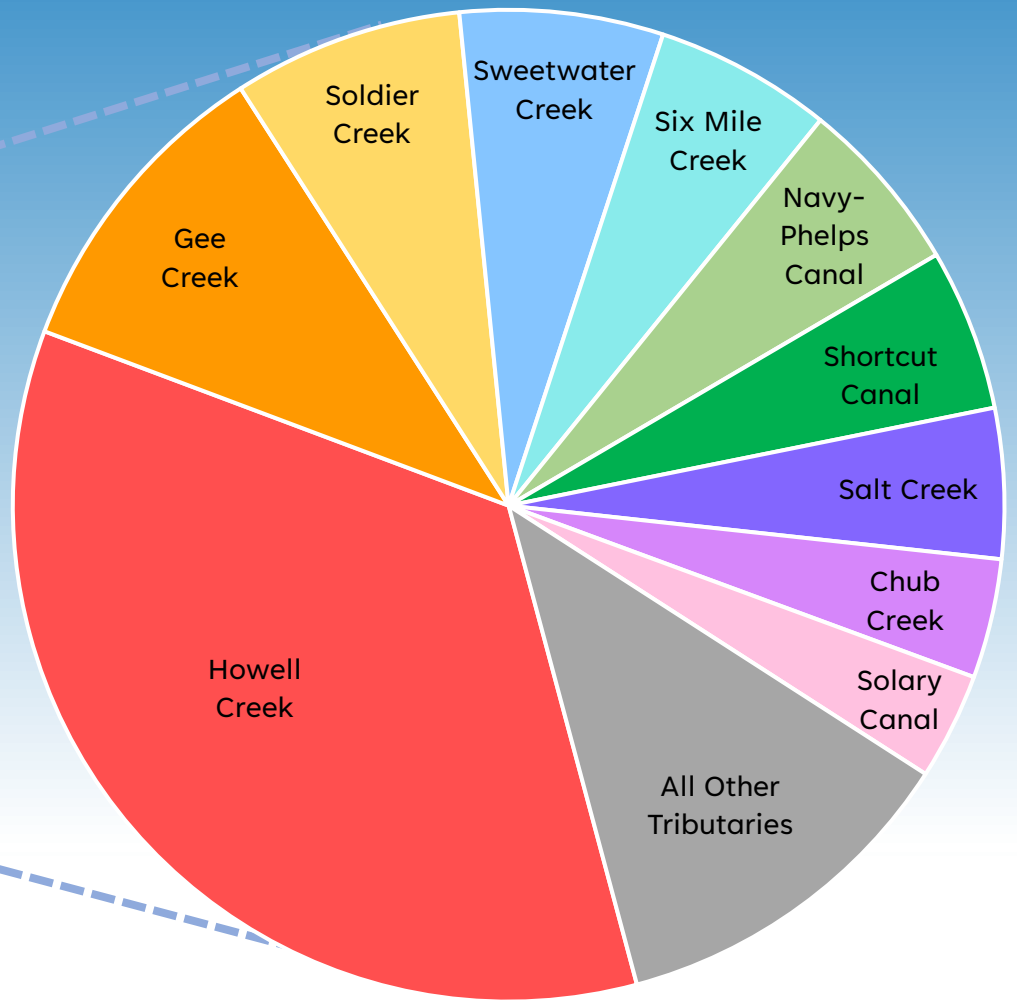
(DEP, 2019)

Phosphorus Loads (lbs/year)
(2003-2014)



(DEP, 2019)

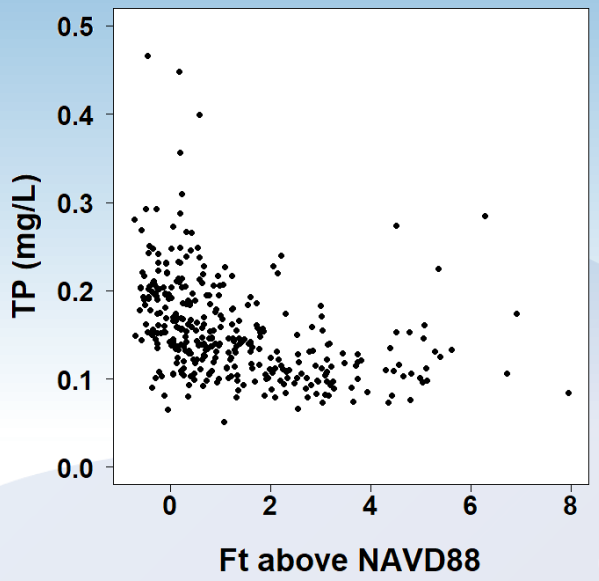
Phosphorus Watershed Load by Tributary
(2020-2024)



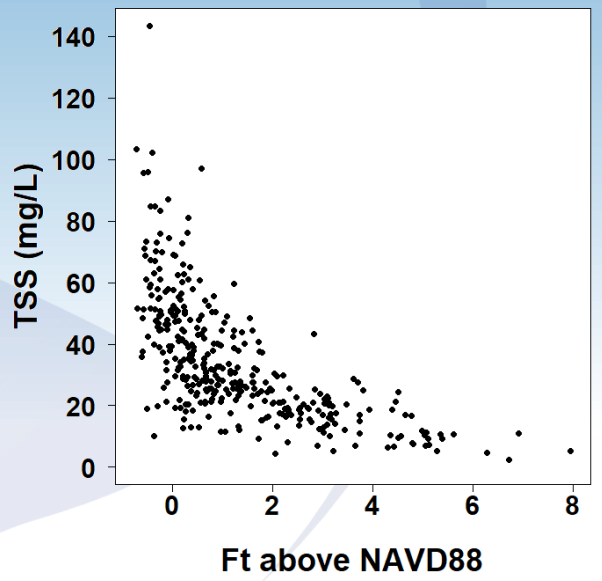
Stage-Driven Water Quality Patterns

- Lake nutrients and suspended solids are highest when stage is low
- Low stage occurs when watershed discharge inputs are low
- With low watershed load contribution, sediments are likely the primary source of nutrients during low stage

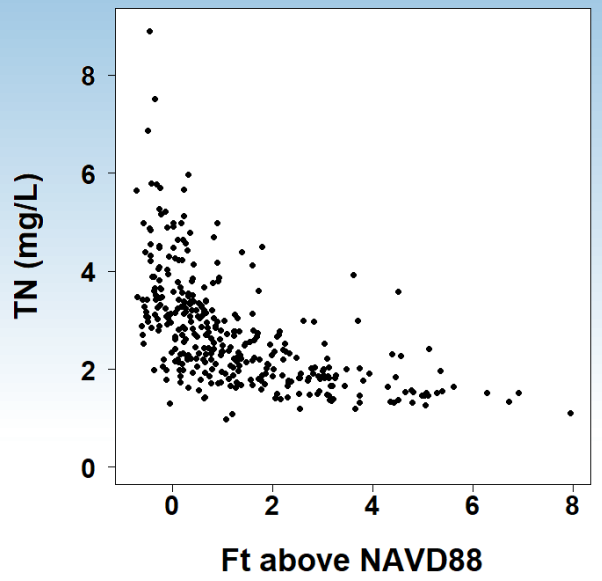
Total Phosphorus



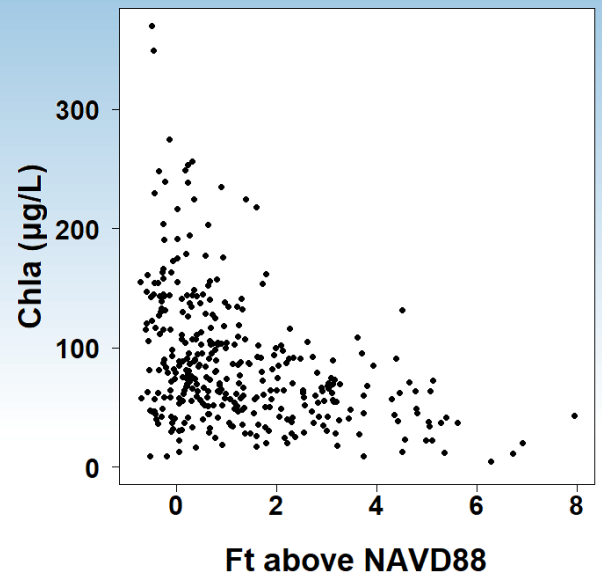
Total Suspended Solids



Total Nitrogen



Chlorophyll-*a*



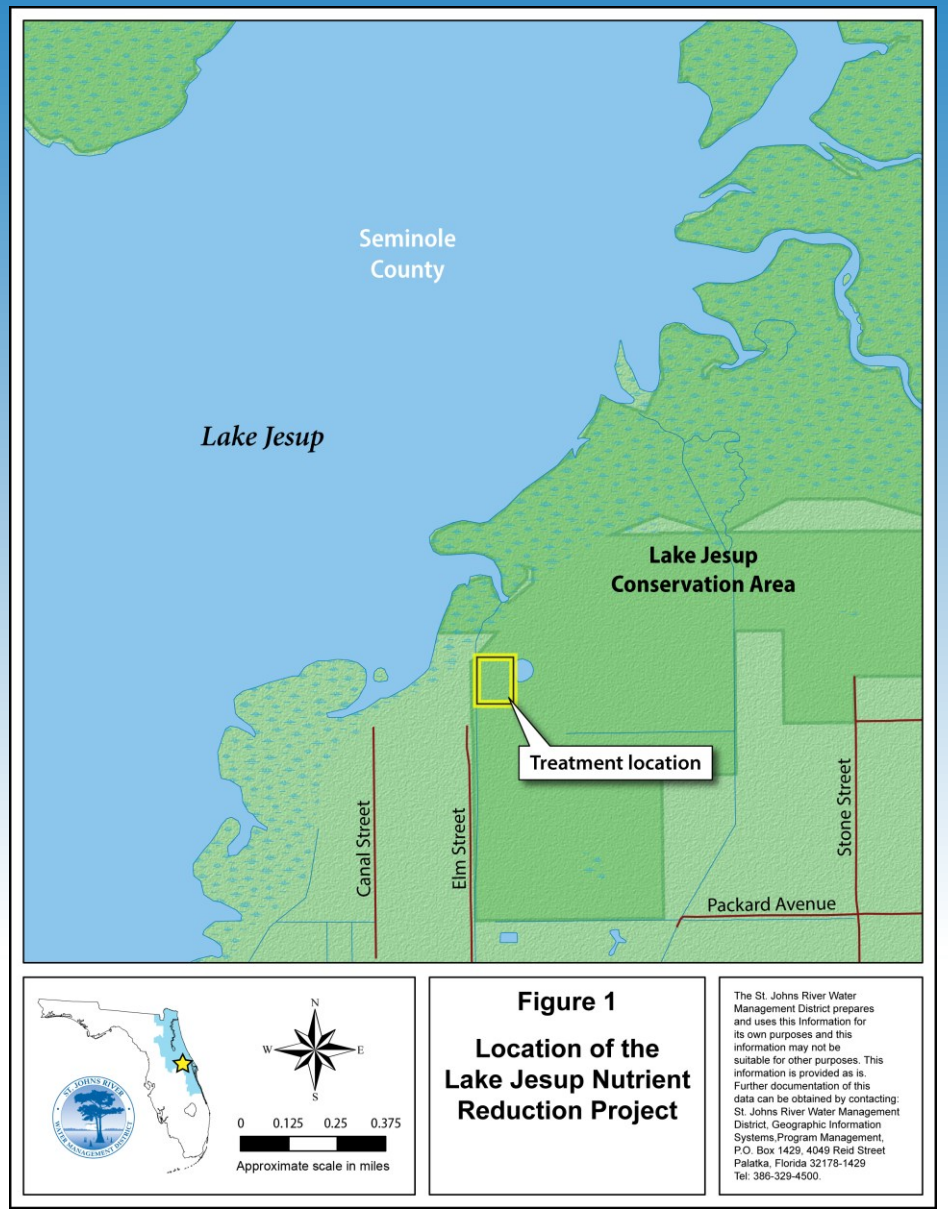
Harmful Algal Blooms

- **19** samples taken on Jesup for algae and toxin analysis in 2025
- **8** samples with toxin detection
  - Max Cylindrospermopsin = **0.54 µg/L**
  - No Microsystin, Anatoxin, Saxitoxin, or Nodularin detections
- All toxin detections were well below EPA's recommended recreational limits:
  - **8 µg/L** for Microcystins
  - **15 µg/L** for Cylindrospermopsin
- Cyanobacterial dominance all year
- Blooms observed throughout all seasons
- Most common taxa
  - *Microcystis aeruginosa*
  - *Raphidiopsis raciborskii*
  - *Planktolyngbya sp.*
- DEP Algal Bloom Dashboard: https://floridadep.gov/AlgalBloom

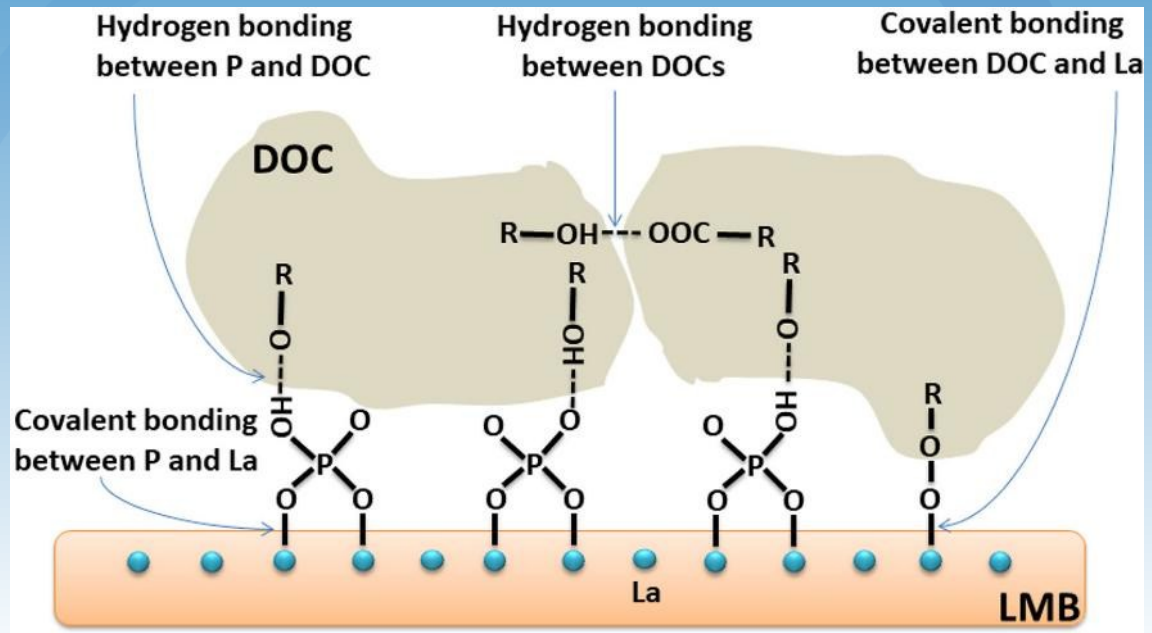
Photo taken by samplers at OW-CTR on 10/21/2025

Lake Jesup Offline Media-based Water Quality Improvement Project

- Nutrient removal system to pump raw water from Lake Jesup, treat on the upland property, and discharge back to the lake
- Pilot study currently in progress
  - Design began in 2024
  - Testing and sampling: July 2025- Aug. 2026
  - Testing three treatment media types
- Full-scale project design and permitting to begin Nov. 2026



Lake Jesup Sediment Phosphorus Inactivation Project



- Large scale application of lanthanum modified bentonite clay (LMB)
- Goal is to reduce internal sediment phosphorus recycling
- LMB designed to increase sediment phosphorus-sorption capacity
- Has been shown to significantly reduce water column TP, soluble reactive phosphorus, chlorophyll-*a*, and increase Secchi depth

(Li et al, 2020; Meis et al, 2012; Spears et al, 2015)

References

- Florida Department of Environmental Protection (2019) *Lake Jesup Basin Management Action Plan Amendment*. https://floridadep.gov/sites/default/files/Final_Order_Amending_the_Lake_Jesup_BMAP%2C_OGC_19-0434_wFO%23.pdf
- Li, X., Chen, J., Zhang, Z., Kuang, Y., Yang, R., & Wu, D. (2020). Interactions of phosphate and dissolved organic carbon with lanthanum modified bentonite: Implications for the inactivation of phosphorus in lakes. *Water Research, 181*. https://doi.org/10.1016/j.watres.2020.115941
- Meis, S., Spears, B.M., Maberly, S.C., O'Malley, M.B., Perkins, R.G. (2012). Sediment amendment with Phoslock® in Clatto Reservoir (Dundee, UK): Investigating changes in sediment elemental composition and phosphorus fractionation. *Journal of Environmental Management*. *93*(1), 185–193. https://doi.org/10.1016/j.jenvman.2011.09.015
- Spears, B.M., et al. (2015). A meta-analysis of water quality and aquatic macrophyte responses in 18 lakes treated with lanthanum modified bentonite (Phoslock®). *Water Research*. http://dx.doi.org/10.1016/j.watres.2015.08.020

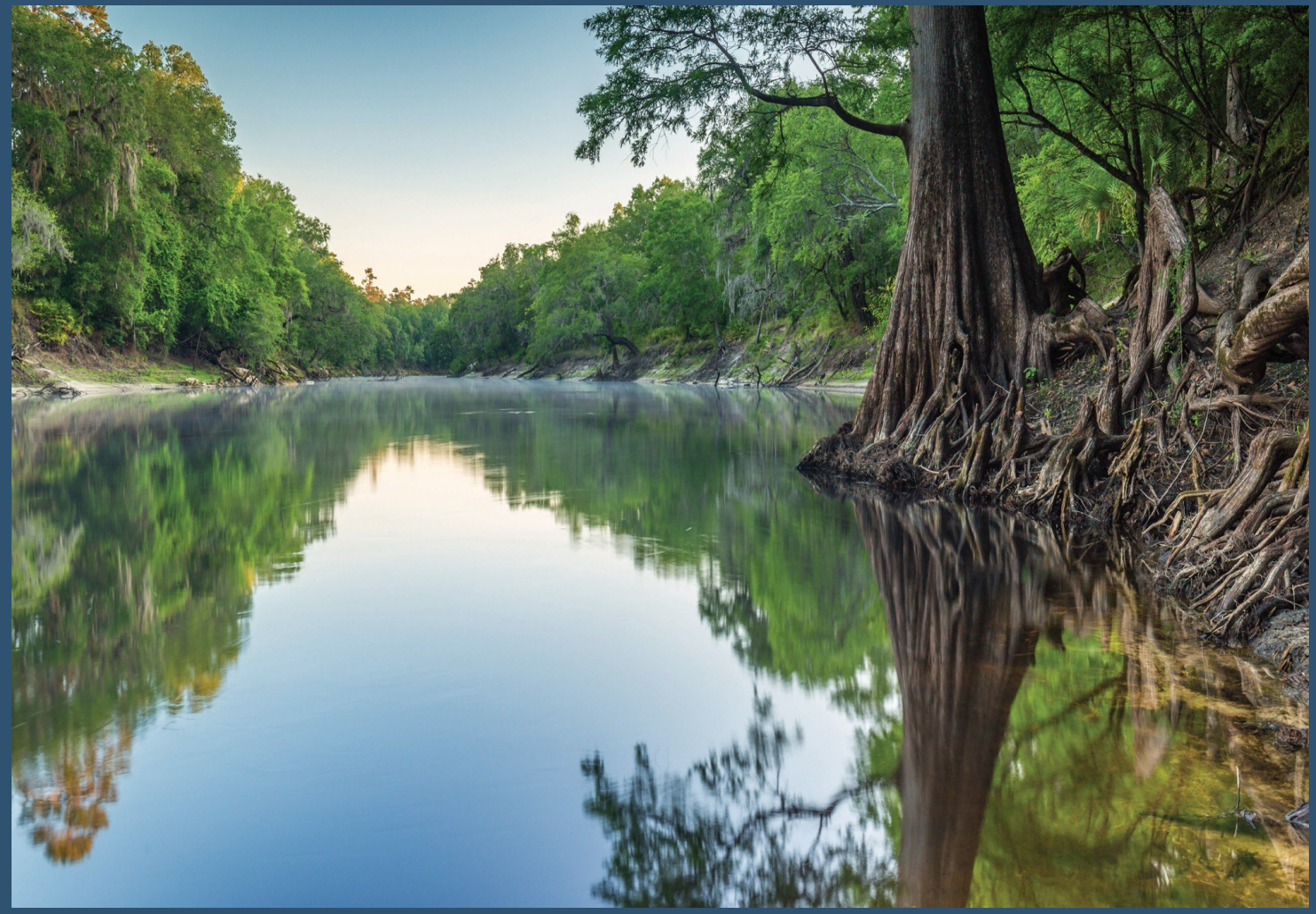
ST. JOHNS RIVER MODEL UPDATE- Lake Jesup Basin

Ray Pribble and Megan Johnston
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

May 5, 2026

AGENDA

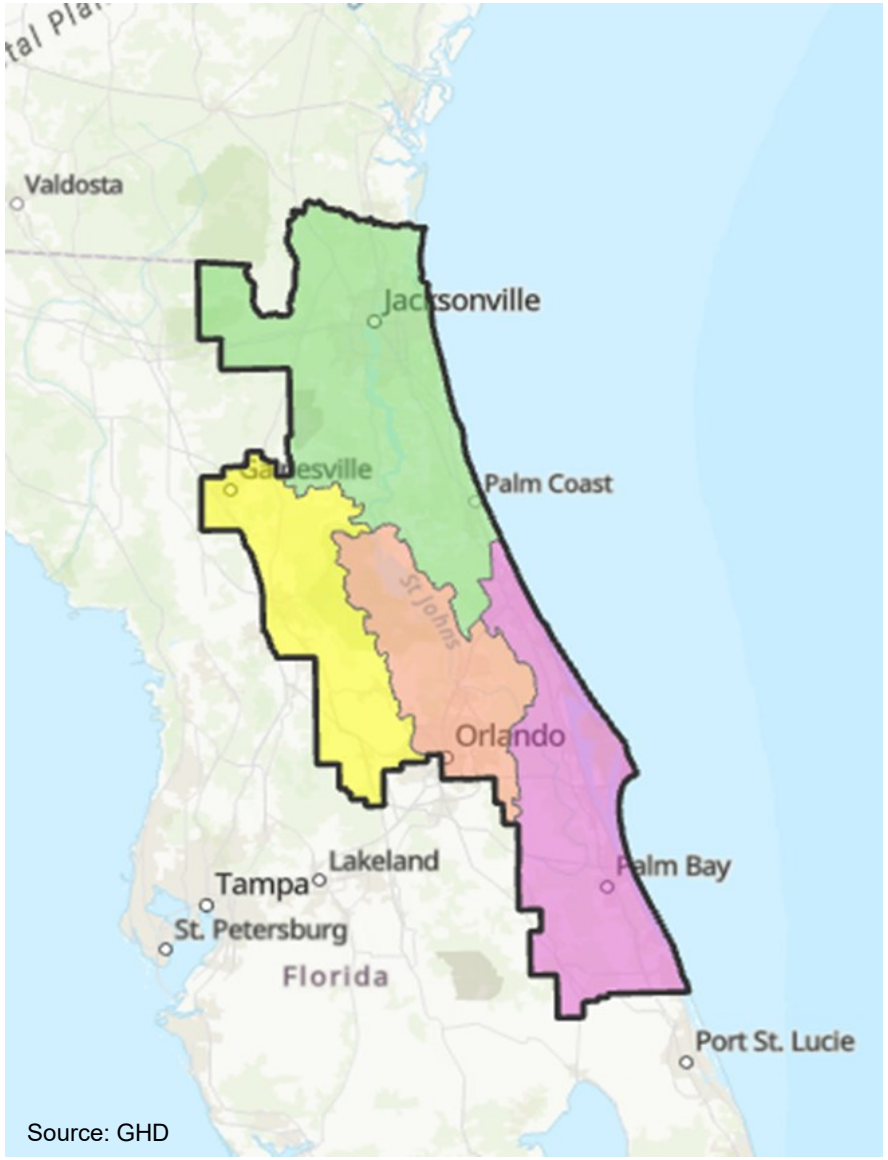
- Project Background.
  - Project Team.
  - Overview of Project.
- Project Schedule.
- Data Sharing and Knowledge.
  - Current Data Inventory.
- Model Details/Workflow.
- Current Status.
- Questions.



PROJECT BACKGROUND: OVERVIEW

Project overview:

- Sponsors:
  - Florida Department of Environmental Protection (DEP).
  - St. Johns River Water Management District (SJRWMD).
- Consulting team:
  - Environmental Science Associates (ESA).
  - GHD.
  - Wildwood Consulting.
- Phases of the project:
  - Phase I.
  - Phase II.



Source: GHD

PROJECT SCHEDULE

Completed: Modeling Document/Quality Assessment (QA) Plan

July 2026: Update HSPF Model

July 2026: Update EFDC Model

July 2027: Build WASP Model

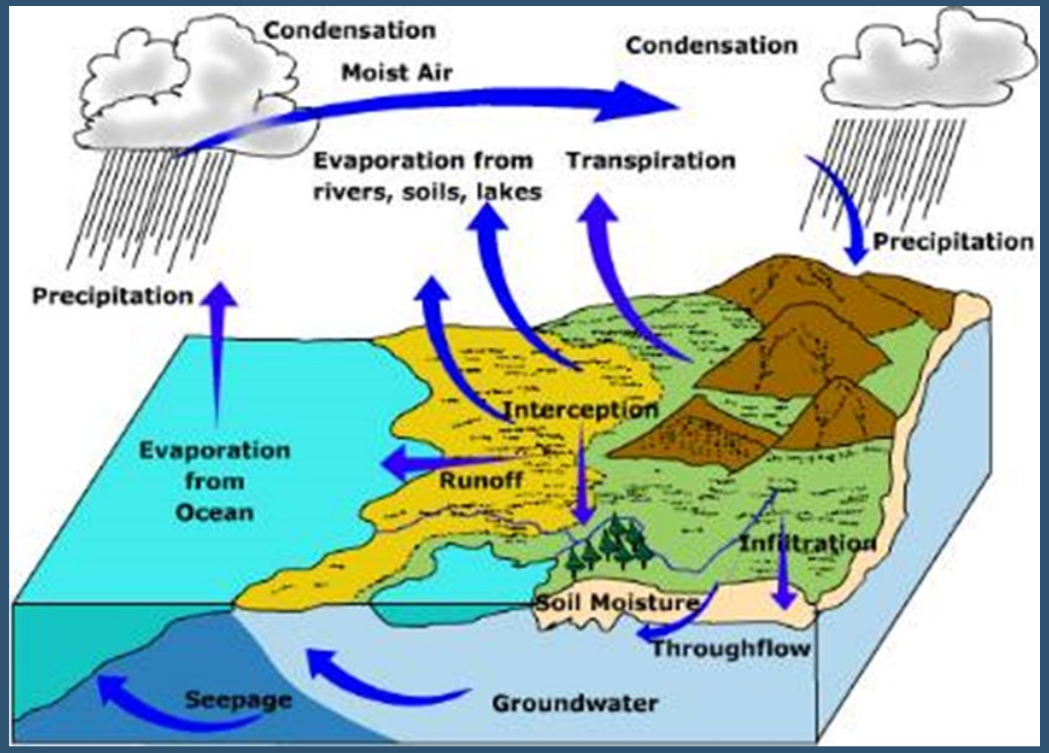
HSPF: Hydrologic Simulation Program FORTRAN
EFDC: Environmental Fluid Dynamics Code
WASP: Water Quality Analysis Simulation Program

CURRENT DATA INVENTORY

Land Cover	Florida Land Cover Classification System (FLUCCS) 2014 & 2020
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

HSPF WATERSHED MODEL

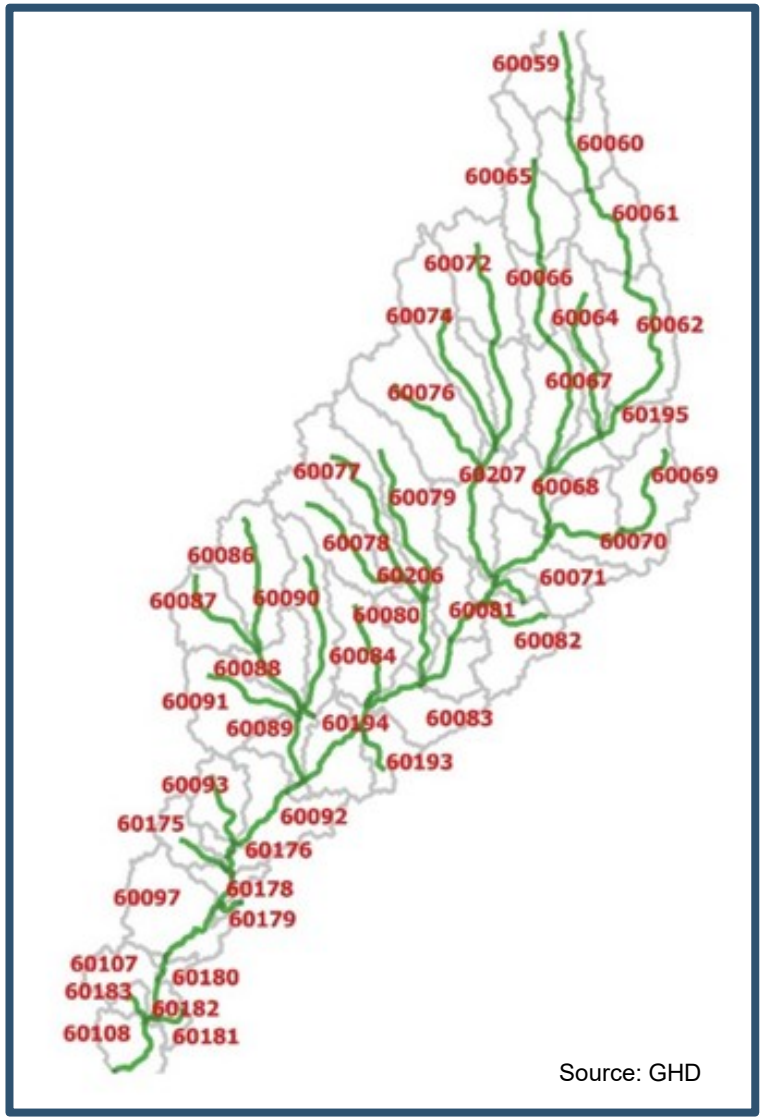


Source: Ritter, Michael E. The Physical Environment: an Introduction to Physical Geography.

- SJRWMD HSPF Models:
  - Calibrated for flow.
- Model extends in time through 2023.
  - Updated meteorological data.
  - Point source flow data.
  - Re-calibrate flow.
- Pollutant Contribution from land surface added.
  - Temperature, total nitrogen (TN), total phosphorus (TP), carbonaceous biochemical oxygen demand (CBOD), dissolved oxygen (DO), sediment

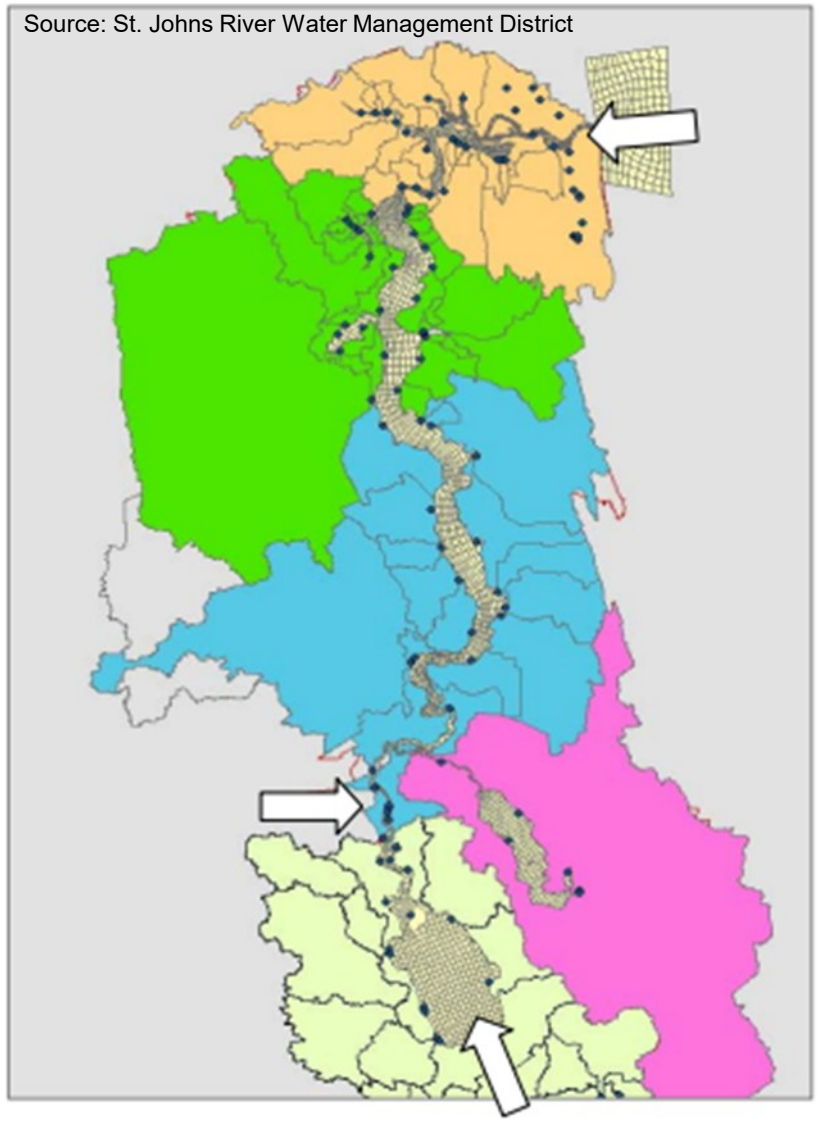
WASP RECEIVING WATERBODY MODEL

- Implement U.S. Environmental Protection Agency's (EPA) WASP Model.
- Develop WASP model network consistent with HSPF Reach Network.
- Develop WASP Models for major basins and tributaries.
- Integrate the flows and loads simulated by HSPF to predict water quality conditions as a function of varying meteorological conditions.



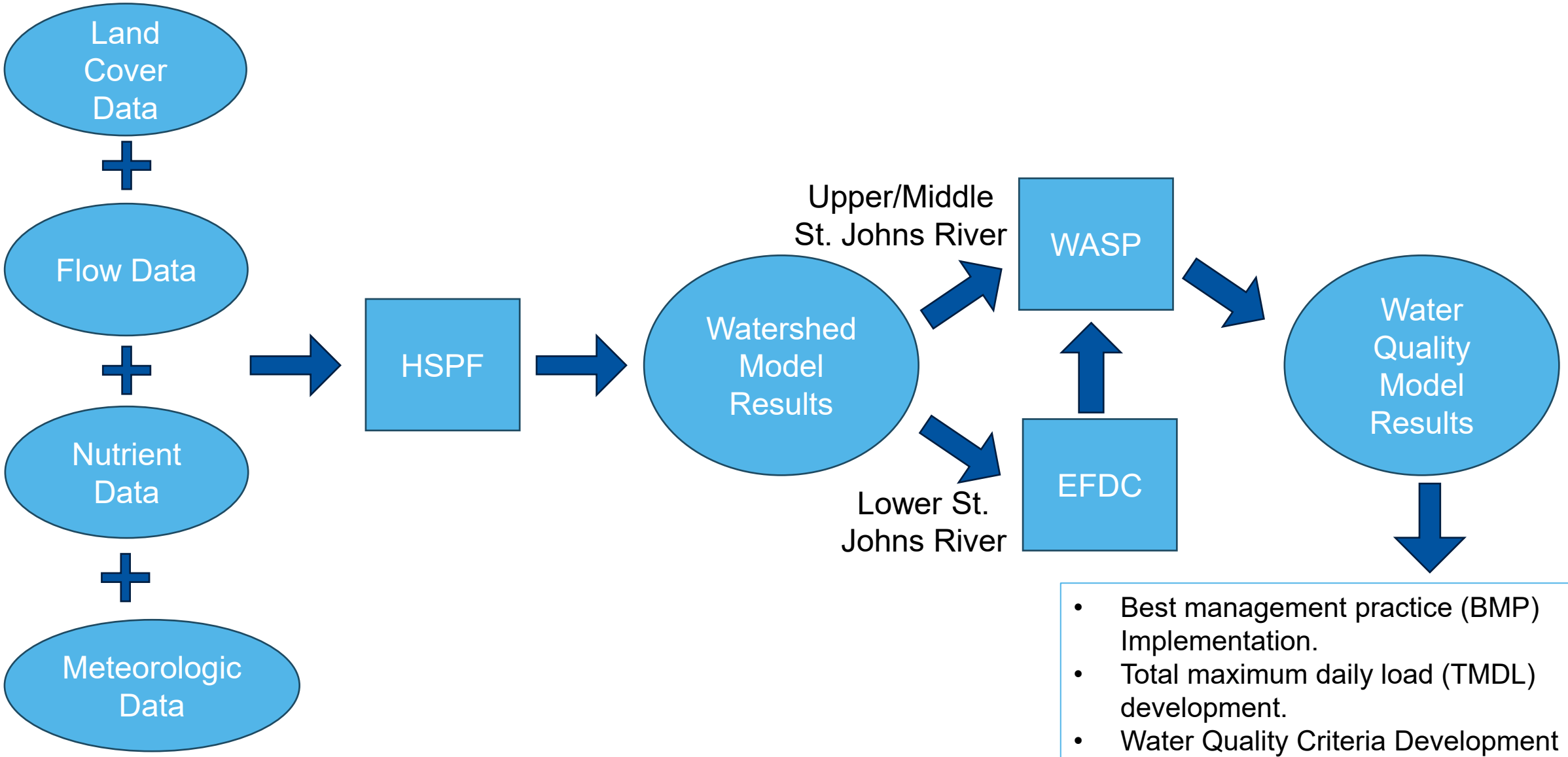
Source: GHD

EFDC HYDRODYNAMIC MODEL



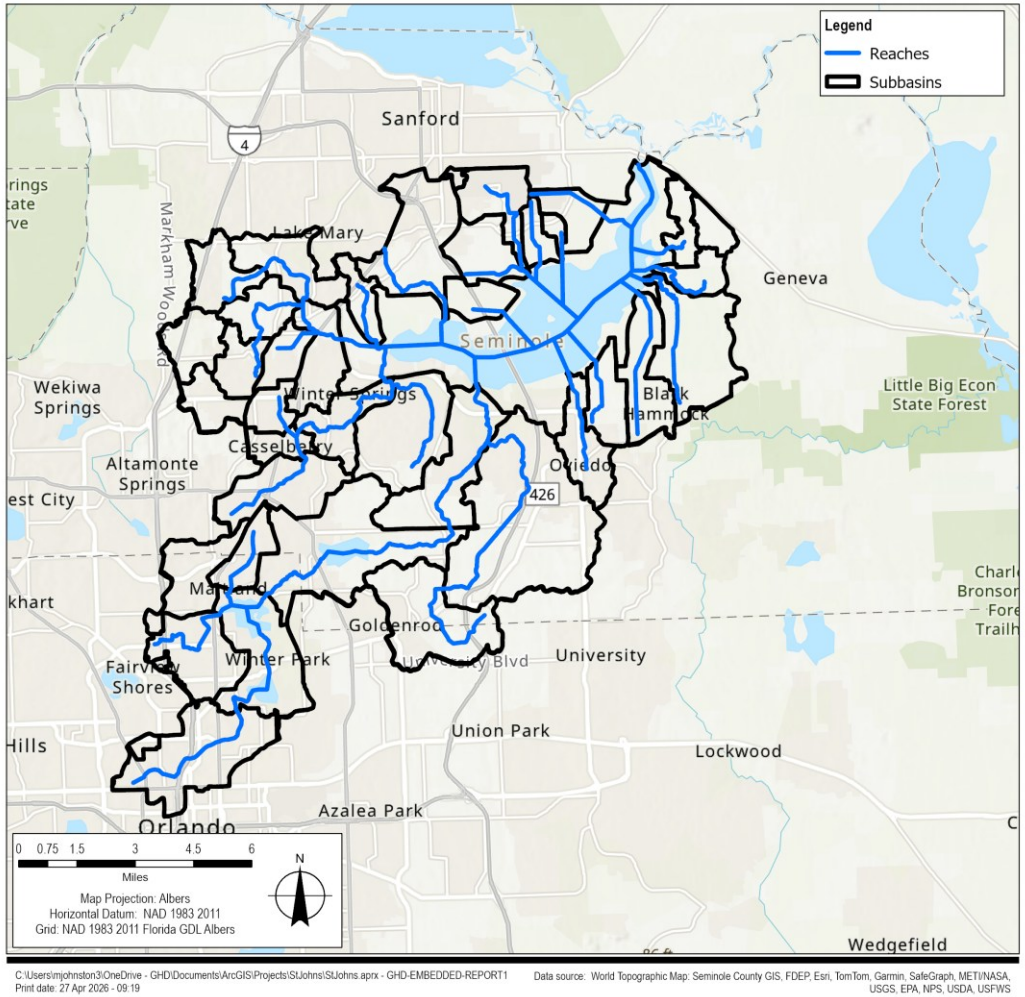
- Evaluated SJRWMD version of EFDC.
  - Updated to current version of EFDC.
- Extended EFDC through 2023.
- Add point source contributions.
- Update flows and loads from HSPF/WASP models from the upstream basins.

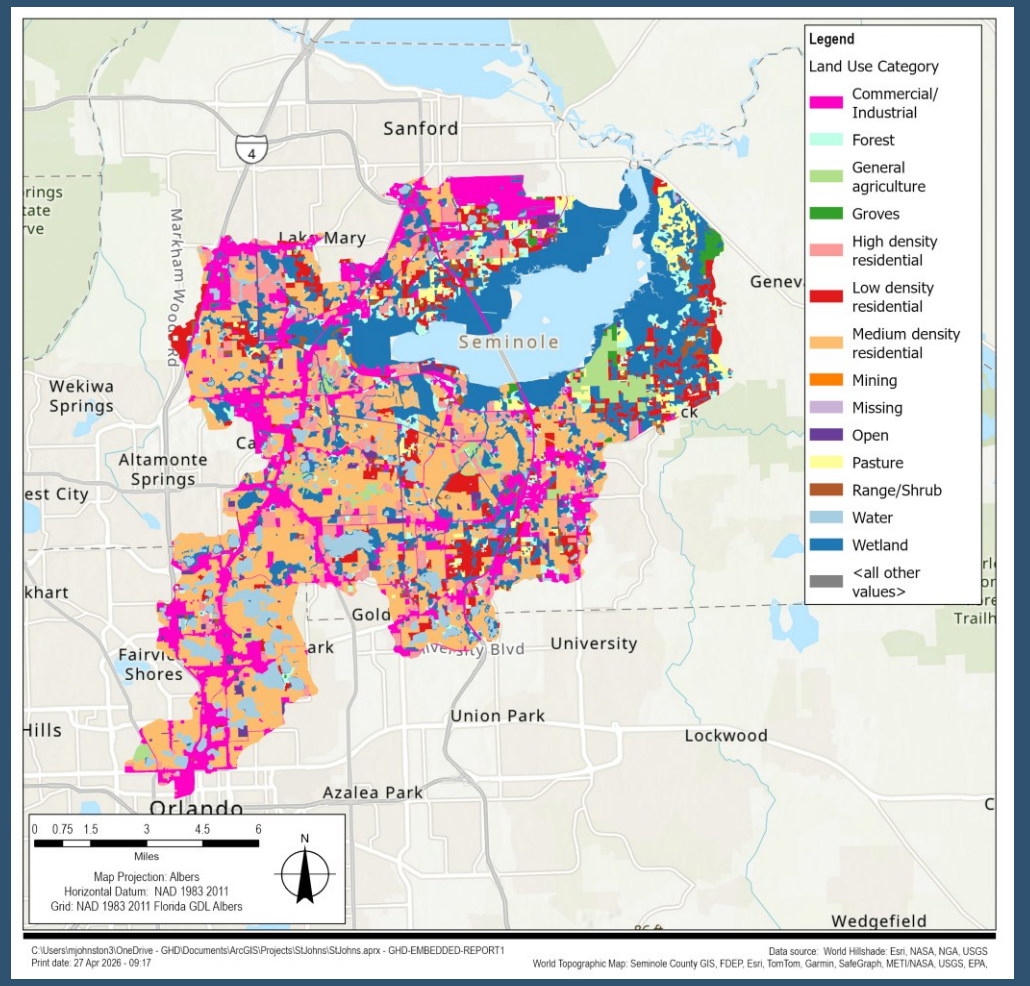
MODELING WORKFLOW



- Best management practice (BMP) Implementation.
- Total maximum daily load (TMDL) development.
- Water Quality Criteria Development

LAKE JESUP (4C) BASIN

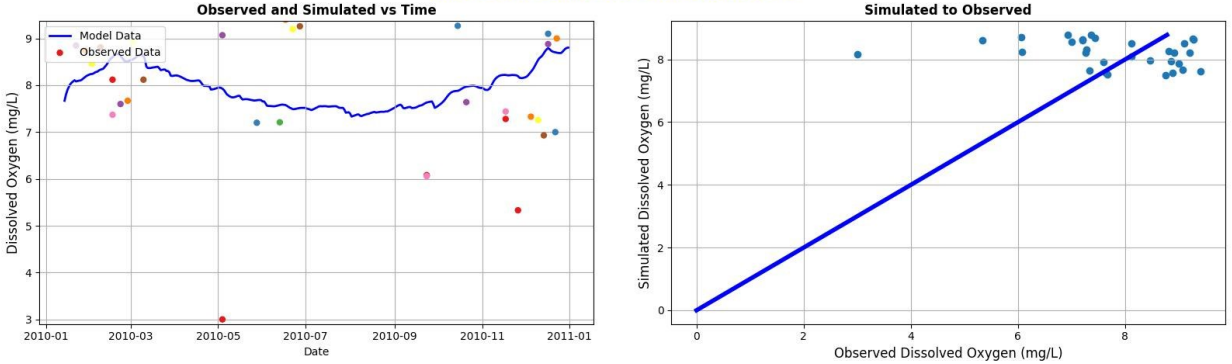




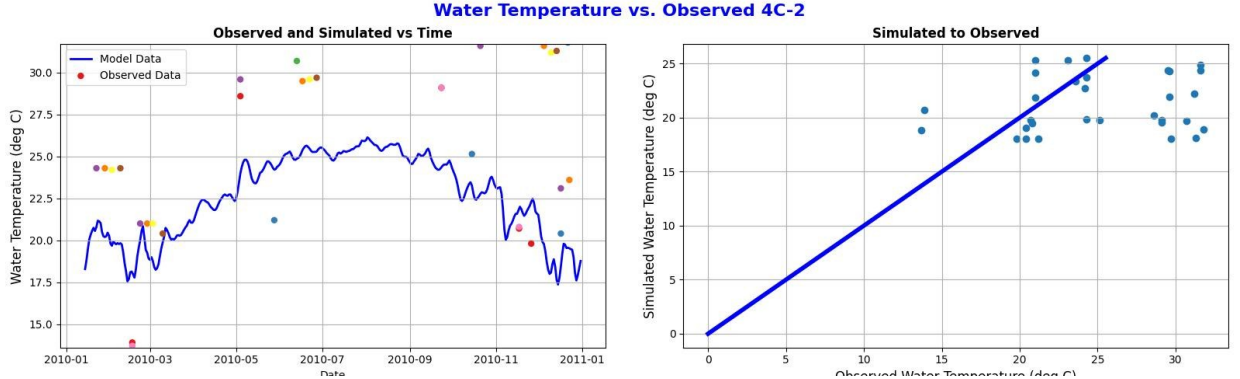
Source: GHD

LAKE JESUP (4C) BASIN- HSPF RESULTS

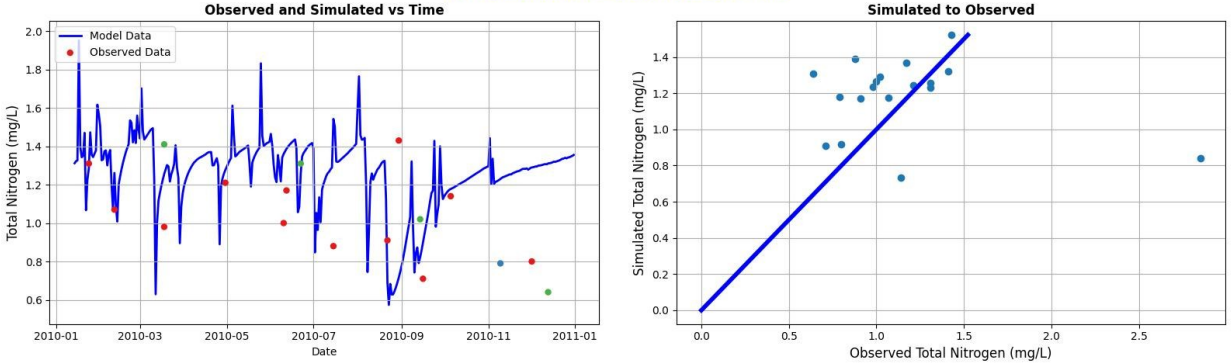
Dissolved Oxygen vs. Observed 4C-2

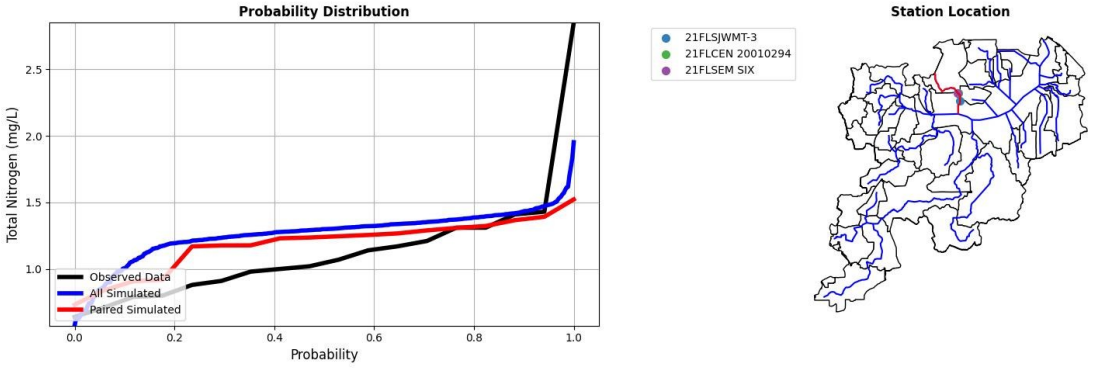


Water Temperature vs. Observed 4C-2

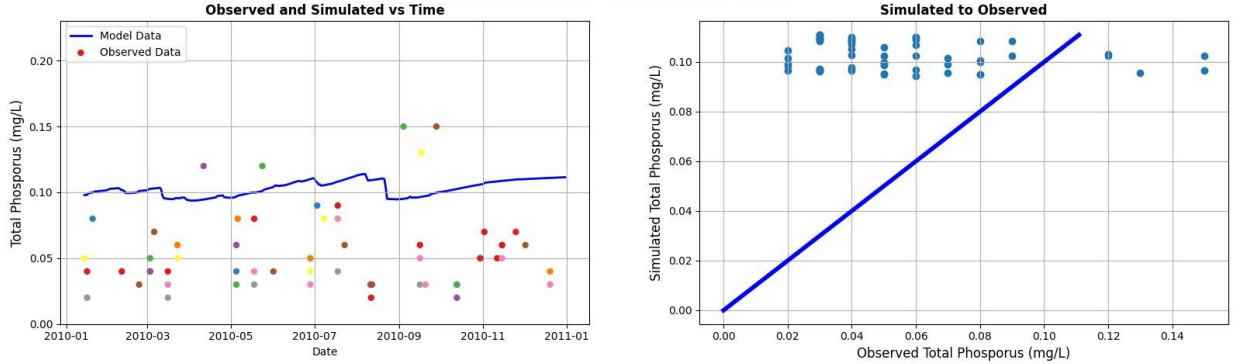


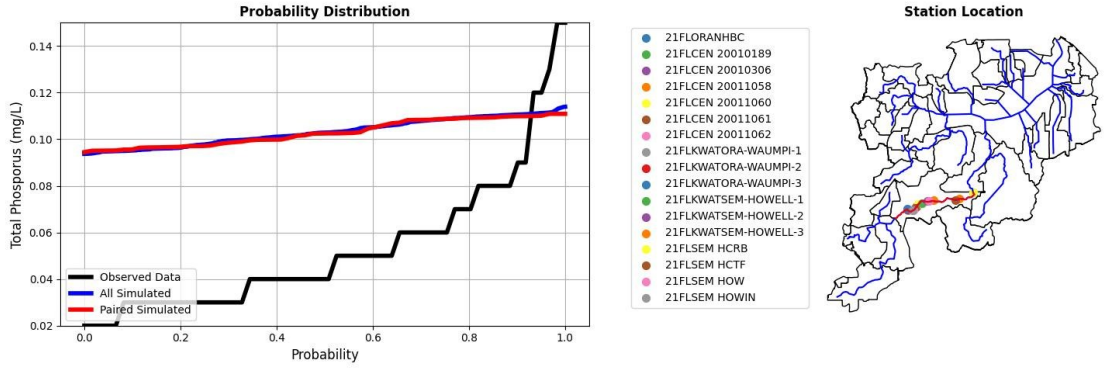
Total Nitrogen vs. Observed 4C-25





Total Phosporus vs. Observed 4C-6






FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
QUESTIONS?

THANK YOU

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THANK YOU

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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Annual Meeting Summary – Lake Jesup Basin Management Action Plan (BMAP)

Florida Department of Environmental Protection (DEP)

May 5, 2026, via GoToWebinar

1:00 pm – 2:20 pm

Attendees

Jeffrey Abbott, Citizen
Libby Abney, Lakeland
Chad Albritton, Citizen
Cora Aossey, DEP
Lisa Bally, Geosyntec
Amanda Barroso, USF
Evelyn Becerra, DEP
Craig Bostic, BCC Engineering
Kellie Bracht, Altamonte Springs
Jazmyn Broxton, DEP
Victoria Bruce, Winter Springs
Tiffany Busby, Wildwood Consulting
Hannah Byers, Sanford
Andy Canion, SJRWMD
Keeli Carlton, Seminole County
Carolin Ciarlariello, DEP
Nick Cooper, Casselberry
Patricia Cruz, Orange County
Charles Curtis, Burgess Niple
Chad Day, Seminole County
Briston De Armas, FDOT
Cammie Dewey, SJRWMD
Dean Dobberfuhl, SJRWMD
Lauren Dorval, FDACS
Amanda Exposito, FDOT
Chris Farrell, Florida Audubon
Jessica Fetgatter, DEP
Agustin Francisco, FDACS
Pedro Galarreta, Sanford
Branislav Gjorcevski, Core Systems
Carl Greene, FWC
Sharon Guaderrama, SJRWMD
Raichel Gulde, Res
Cheyenne Hammell, Seminole County
Samuel Hankinson, DEP
Jacob Hara, Pioneer Florida
Jennifer Johnson, FDOT
Megan Johnston, GHD
Katie Joseph, Prime Plumbing
Eugene Kelly, FNPS
Erin Klores, Molear
Joseph Kovah, Casselberry Golf
Natalie Kraft, FPL
Victoria (Vicki) Kroger, SJRWMD
Emily Lawson, Orange County
Heather Lindell, Orange County
Don Marcotte, Winter Park
Rachel Martella, Seminole County
Erich Marzolf, SJRWMD
Lori McCloud, SJRWMD
Karen McCullen, Maitland
Sarah Menz, DEP
Susana Michaud, Orlando
Gabrielle Milch, Citizen
Jennifer Mitchell, SJRWMD
Shannon Monahan, Winter Park
Jessica Mostyn, DEP
Casey Mullen, Seminole County
Alejandra Nirenberg, Criadv
Kevin O'Donnell, DEP
Brandon Ortiz, Citizen
Josh Papacek, SJRWMD
Joe Parish, Seminole County
Ben Pernezny, Ardurra

Nicolas Pisarello, ATM
Robert Potts, Geosyntec
Ray Pribble, ESA
Tony Prieto, Citizen
Callie Register, SJRWMD
Dale Rios, Citizen
Katherine Rogers, Orange County
Ellen Rogers, Florida Senate
Leylah Saavedra, Pegasus Engineering
Shannon Salvator, SJRWMD
Charline Santos, Citizen
Lindsey Shapiro, Applied Ecology
Michelle Shelton, Seminole County
Jennifer Spain, Volusia County
The Florida Channel, WFSU-TV
Tony Tomalewski, DEP
David Tomasko, ESA
Zoe Tressel, St. Johns Riverkeeper
Thomas Waite, Citizen
Johnathan Weisiger, FDOT
Shannon Wetzel, Seminole County
Jesse Wineberg, Orange County
Erin Yao, FDOT

Questions and Answers (Q&A)

Lake Jesup BMAP Updates

Q: If the bar chart for statewide annual report (STAR) looks like the entity has met 100% reduction, meaning the blue line is seemingly completely full, is there a chance that the entity is still needing to meet their reduction goals? Is there a tiny percentage that would make the bar chart look like the entity has achieved 100% reductions but are, in fact, just a tiny bit short?
A: The bar chart reflects the current completion status of the milestones, by entity. If anyone has questions about the exact status of an entity's total reductions, please reach out to Evelyn Becerra (**Evelyn.Becerra@FloridaDEP.gov**).

Q: For a golf course in the City of Oviedo, would the STAR figures would include the reporting from the golf course?
A: The reporting information for golf courses will not be reflected in the 2025 STAR.

Q: Do we have a model for the recovery timeline by milestone? If so have we been assessing recovery effectiveness by that timeline?
A: DEP is constantly assessing water quality progress, in addition to the restoration projects. In the past, DEP has presented different analyses related to water quality results, such as the hot spot analysis. That analysis highlighted areas that are still demonstrating high nutrient concentrations. It does take time for the water quality benefits to be discernable after a project has come online.

Q: Given that total nitrogen (TN) and total phosphorus (TP) load reduction targets have already been met through the projects, is there reason to wonder if the adopted total maximum daily loads (TMDLs) weren't sufficiently ambitious?
A: The TMDL determined the lake's assimilative capacity and set target concentrations in the lake. We are still not meeting the target concentrations, so the TMDLs have not been met. In the

model updates that are currently underway, the current loading information will be updated. Based on that information, DEP can reassess the loading and consider adjustments to the loading allocations/reductions that are needed to meet the assimilative capacity and the target lake concentrations. The target concentrations must be met.

Q: If Lake Jesup is recovering to its designated water quality use for swimming and fishing (eating the fish) and we have advisories from the Florida Health Department (signage) advising about not letting pets drink or swim what can we do? Are the toxins hurting people even with the advisories? How can we be sure we are talking enough about the public health issues with many waterbodies in the basin?
A: We recommend reaching directly to the Florida Department of Health in Seminole County and Seminole County with this question.

Q: Nitrogen fixation by cyanobacteria has been measured in hypereutrophic lakes, including (I believe) Lake Jesup. Are rates of nitrogen (N)-fixation included in TN loads for the TMDL, and if so, were they included in any load reduction scenarios used in the BMAP? Those N-loads were very significant for Lake Hancock for example. The BMAP does not seem to show N-fixation as a load, but the TMDL said it could be up to 45%?
A: In the 2019 Lake Jesup BMAP Amendment there is information about how the modeling was done and how nitrogen fixation within the lake was considered. The BMAP allocations focus on reductions to the watershed loading, to reduce new loads coming into the lake. There is a discussion of nitrogen fixation in the TMDL document in Section 6.5.2.

St. Johns River Water Management District Updates

Q: Is the lanthanum project across the whole lake or targeted?
A: The plan is for the application to be lake wide. There may be some limitations with applications in very shallow areas and those situations will be worked out with the selected contractor.

Q: Are there toxicity concerns about the use of lanthanum?
A: The lanthanum is meant to be safe. The lanthanum phosphate bond is an insoluble bond in the conditions that we expect in Lake Jesup, so the risk is very low for any ecological health implications.

Q: The pie chart of the BMAP loads does not seem to show N-fixation as a load, but the TMDL said it could be up to 45% of the total nitrogen budget?
A: The pie chart information in the presentation came from the 2019 Lake Jesup BMAP Amendment, which was based on the prior modeling. As previously mentioned by Evelyn Becerra, there is a discussion in the 2019 Amendment that outlined the data limitations why it could not be well-quantified in the model. However, N-fixation is still an important consideration. We hope that reducing the watershed loads to the lake will reduce the opportunities for algae to grow and fix the atmospheric nitrogen.

St. Johns River Model Update

Q: Previous St. Johns River BMAP meetings in April (e.g., Orange Creek) showed the WASP model listed as being done in July 2027, This timeline shows it as July 2028. Is this part of the model development different for this BMAP from others or are all St. Johns River BMAPs going to have the WASP model updated in July 2028?
A: Thank you for noticing that typo. The slide should have said July 2027 for the WASP Model completion. We will make that correction before we post the presentation. The meeting slides from the April annual meetings such as Orange Creek were correct.

Q: Can you explain in more detail why the WASP Model is used for the Upper & Middle St. Johns River Basins, while the EDFC Model is being used for the Lower Basin?
A: The WASP Model is used for the whole area, including in the Lower Basin. However, a larger portion of the waterbody area in the Lower Basin is modeled with EFDC compared to the other basins. The EFDC is a better tool to use with deeper waters and WASP is better to use with shallow or small stream segments. So, the main stem of the St. Johns River is largely modeled with EFDC in the Middle and Upper Basins. Then in the Lower Basin, where there are more deep waters as well as the ocean outfall, the EFDC is applied more extensively than the WASP Model. These determinations of where to utilize EFDC were previously made by the St. Johns River Water Management District. The current effort by the DEP contractors is to update those models.

Q: What's the rational for using Impaired Waters Rule (IWR) Run 63 data rather than more up-to-date water quality data (i.e., more recent) IWR runs?
A: When we started the calibration process, Run 63 was the most recent available. To be efficient, the team does not keep revisiting the calibration data every time a new run becomes available. They have used some additional data to fill in data gaps, when newer data became available (e.g., the biochemical oxygen demand data), but only in limited circumstances. The scope is to update the model runs through the year 2023, so using the Run 63 is appropriate.