



## Upper Ocklawaha Basin Management Action Plan (BMAP) Annual Meeting

**Via Webinar**  
*June 18, 2024*  
*10 AM*

Webinar Registration Link:

<https://register.gotowebinar.com/register/388880594078260975>

### **Agenda**

- Upper Ocklawaha Basin Management Action Plan (BMAP) Overview.
- Annual Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- Next Steps - BMAP Update.

Please note the FTP site for documents pertaining to the Upper Ocklawaha BMAP:

[https://publicfiles.dep.state.fl.us/DEAR/BMAP/Upper\\_Ocklawaha/](https://publicfiles.dep.state.fl.us/DEAR/BMAP/Upper_Ocklawaha/)

For more information on the Upper Ocklawaha BMAP, contact: Jessica Fetgatter, 850-245-8107,  
[Jessica.Fetgatter@FloridaDEP.gov](mailto:Jessica.Fetgatter@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.

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.

A screenshot of a webinar control panel. The top section is titled "Audio" and includes a "Sound Check" indicator. There are two radio buttons: "Computer audio" (unselected) and "Phone call" (selected, indicated by a red arrow). Below this, a microphone icon is labeled "MUTED". There are dropdown menus for "Transmit (Plantronics Savi 7xx-M)" and "Receive (Plantronics Savi 7xx-M)". A volume slider is visible. The bottom section is titled "Questions" and contains a text input field with the placeholder "[Enter a question for staff]". A red box highlights the "Phone call" radio button and the "Questions" panel. At the bottom, the text "(Example Only)" is displayed in red, followed by a "Send" button. The webinar title "Webinar Housekeeping" and ID "Webinar ID: 608-865-371" are shown, along with the "GoToWebinar" logo.



# UPPER OCKLAWAHA BASIN MANAGEMENT ACTION PLAN ANNUAL MEETING

**Jessica Fetgatter**  
Water Quality Restoration Program  
Florida Department of Environmental Protection

GoToWebinar | June 18, 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.
  - Hotspot Analysis.
  - SJR Model.



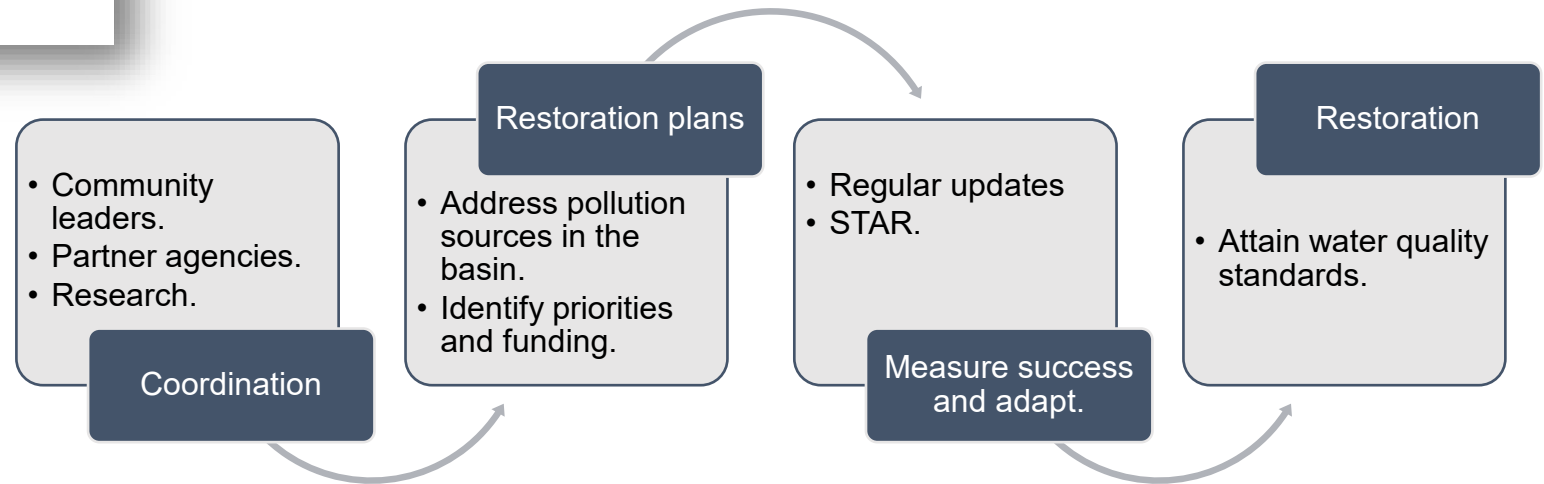
# BMAPs



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.



# STAKEHOLDERS

## Local Governments:

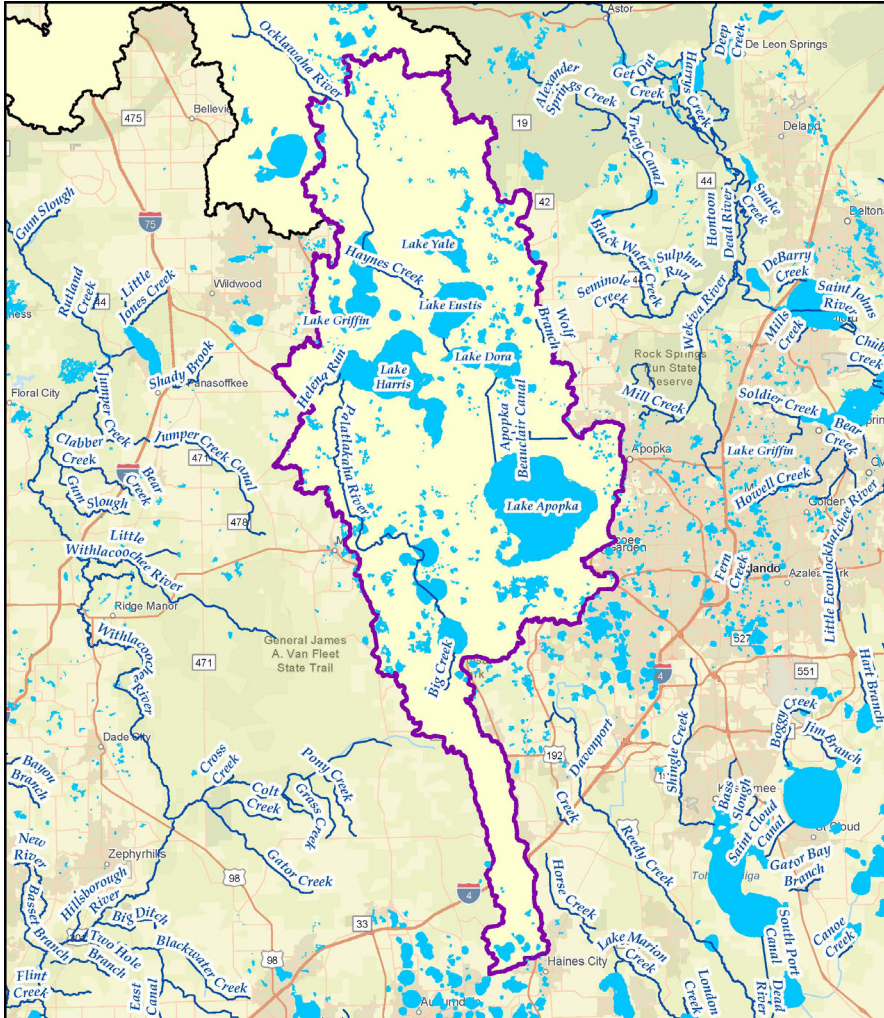
- Lake County.
  - Lake County Water Authority.
- Lake County Soil and Water Conservation District.
  - Marion County.
  - Orange County.
  - Polk County.
- Apopka.
- Astatula.
- Clermont.
- Eustis.
- Fruitland Park.
- Groveland.
- Howey-in-the-Hills.
  - Lady Lake.
  - Leesburg.
  - Mascotte.
- Minneola.
- Montverde.
- Mount Dora.
- Tavares.
- Umatilla.
- Winter Garden.
  - Oakland.
  - Ocoee.
  - Wildwood.

## Regional and State Agencies:

- SJRWMD.
  - Florida Fish and Wildlife Conservation Commission.
- Florida Department of Agriculture and Consumer Services (DACS).
- Florida Department of Transportation (DOT), District 5.
  - DEP – Central District and Tallahassee.
- Florida Department of Health in Lake County.
  - Florida Turnpike Enterprise.
  - Central Florida Expressway Authority.



# BACKGROUND



Upper Ocklawaha BMAP



This map is not for legal decision making purposes. For more information or copies, contact [deanna.frazier@floridadep.gov](mailto:deanna.frazier@floridadep.gov) or [GIS.Ronald.Hughes@floridadep.gov](mailto:GIS.Ronald.Hughes@floridadep.gov)

- Upper Ocklawaha BMAP Boundary
- Ocklawaha Basin



## Upper Ocklawaha BMAP:

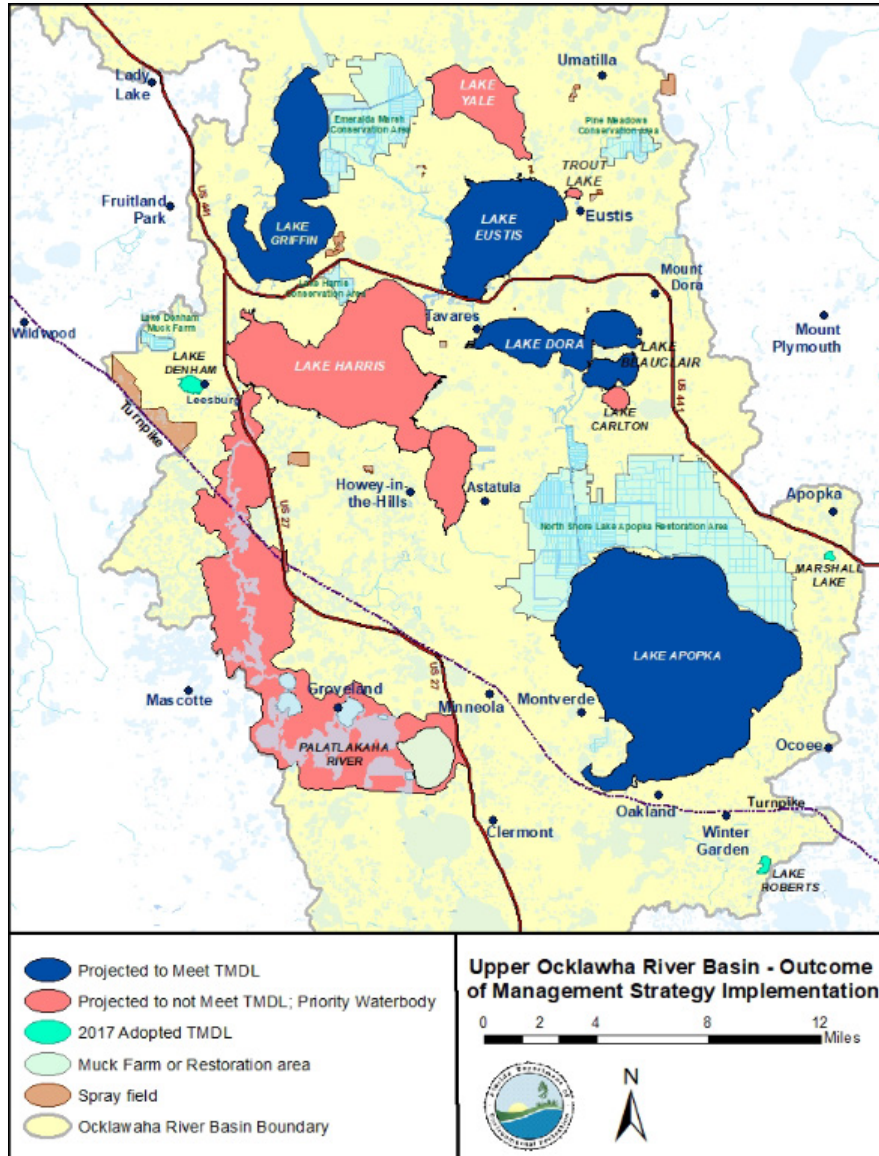
- 2007: Initial adoption.
- 2014: Phase 2.
- 2019: Amendment adoption.
- 2025: BMAP update.
- 2027: 20-year milestone.





# BACKGROUND

## TOTAL PHOSPHORUS (TP) AND TOTAL NITROGEN (TN)



Upper Ocklawaha Target Concentrations

Waterbody	TP (mg/L)	TN (mg/L)
Apopka	0.055	
Beauclair	0.032	
Carlton	0.032	
Denham	0.04	1.1
Dora	0.031	
Eustis	0.025	
Griffin	0.032	
Harris	0.026	
Marshall	0.037	0.9
Palatka	0.12*	1.54*
Roberts	0.044	1.02
Trout	0.028	0.78
Yale	0.02	

\*Numeric Nutrient Criteria (NNC)



# 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.
- Currently in the process of project updates and verification for STAR 2023.

Florida Department of Environmental Protection Statewide Annual Report 2022  
Basin Management Action Plans

Introduction	Total Maximum Daily Loads	Basin Management Action Plans	Alternative Restoration Plans	Minimum Flows & Water Levels	Recovery & Prevention Strategies	Contacts & Project Data
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How to Use This Report | What Is the STAR? | Reductions Summary | What Are Nutrients? | What Are FIB? | What Are BMAP Projects?

Nutrient BMAPs | Fecal Indicator Bacteria BMAPs | BMAP Projects | Project Table

Sorted by Alphabetical Order

- Upper Ocklawaha River Basin
- Banana River Lagoon Basin
- Caloosahatchee River and Estuary Basin
- Central Indian River Lagoon Basin
- Chassahowitzka-Homosassa Springs Basin
- DeLeon Spring Basin

Click on a point to find out more information on a specific project. Or click on the Contacts and Project Data card above for a full project list.

BMAP Projects 2022

- Stormwater
- Wastewater
- Agriculture

### All Basins TN Reductions Achieved by Completed and Ongoing Projects as of Dec. 31, 2022

Legend: In Waterbody (blue), Agriculture (red), Stormwater (green)

Units are in pounds per year.

Nitrogen Reduction | Phosphorus Reduction

<https://floridadep.gov/STAR>





# STAR

## \*PRELIMINARY 2023 STATUS OF PROJECTS

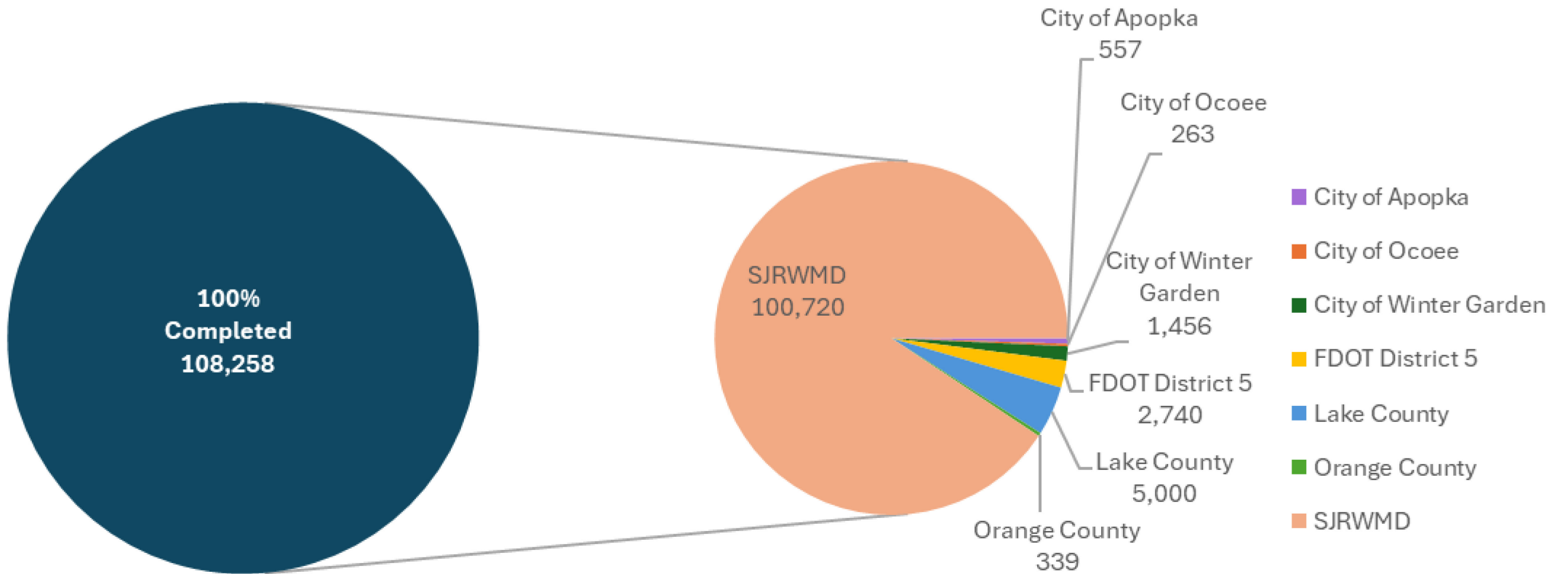
Entity	Completed	Ongoing	Planned	Underway	Total
City of Apopka	3	6			9
City of Clermont	8	3	4	1	17
City of Eustis	30	9	1	6	47
City of Fruitland Park	2	2		1	5
City of Groveland	4	2			6
City of Leesburg	16	6	2	2	29
City of Minneola	3	2			5
City of Mount Dora	24	3			28
City of Ocoee	9	1		1	12
City of Tavares	5	6			11
City of Umatilla	8	4		1	16
City of Wildwood		1			1
City of Winter Garden	7	2	1	1	11
DEP	1				1
FDACS	14	15			30
FDOT District 5	46	20			67
Howey-in-the Hills	2	1		1	4
Lake County	56	28	4		92
LCWA	7	1	1	2	12
Marion County	1	5		1	7
Orange County	18	11		5	36
SJRWMD	75	1	2	10	88
Town of Lady Lake	2	6			8
Town of Montverde		3			3
Central Florida Expressway	2				2
<b>Total</b>	<b>343</b>	<b>138</b>	<b>15</b>	<b>32</b>	<b>528</b>

As of Dec. 31, 2023, verified projects in the Upper Ocklawaha BMAP have reduced **177,932 lbs./yr.** of TP and **77,017 lbs./yr.** of TN.



# PROGRESS LAKE APOPKA

## Lake Apopka Waterbody Required Reductions (lbs-P/yr)

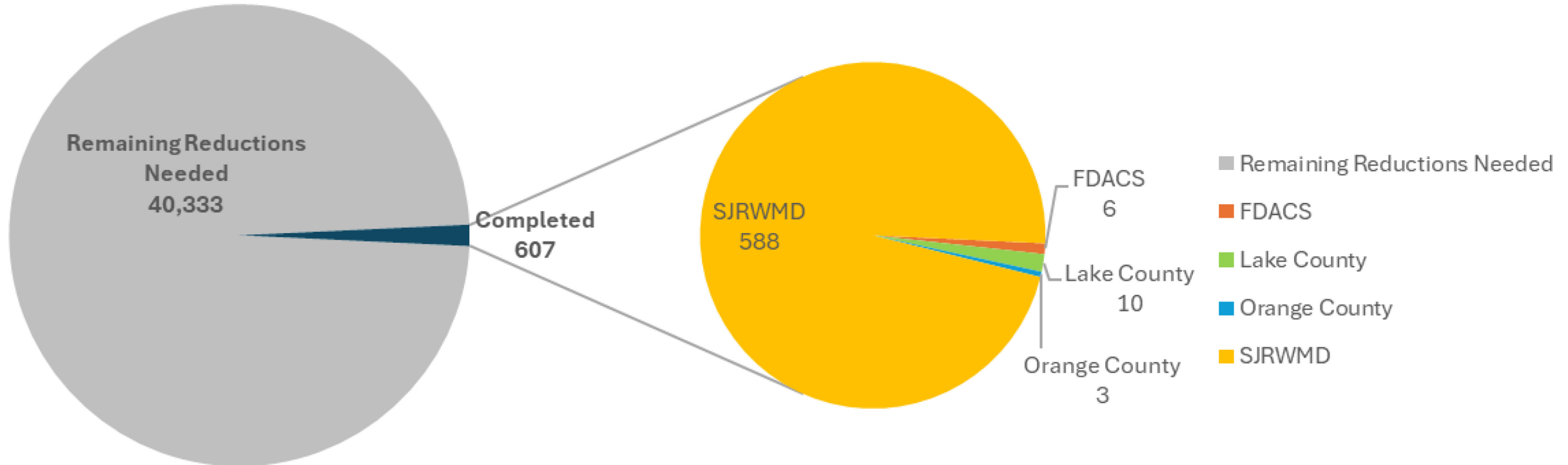


\*Entities have implemented projects resulting in reductions higher than the required reductions.



# PROGRESS LAKE BEAUCLAIR

Lake Beauclair Waterbody Required Reductions (lbs-P/yr)

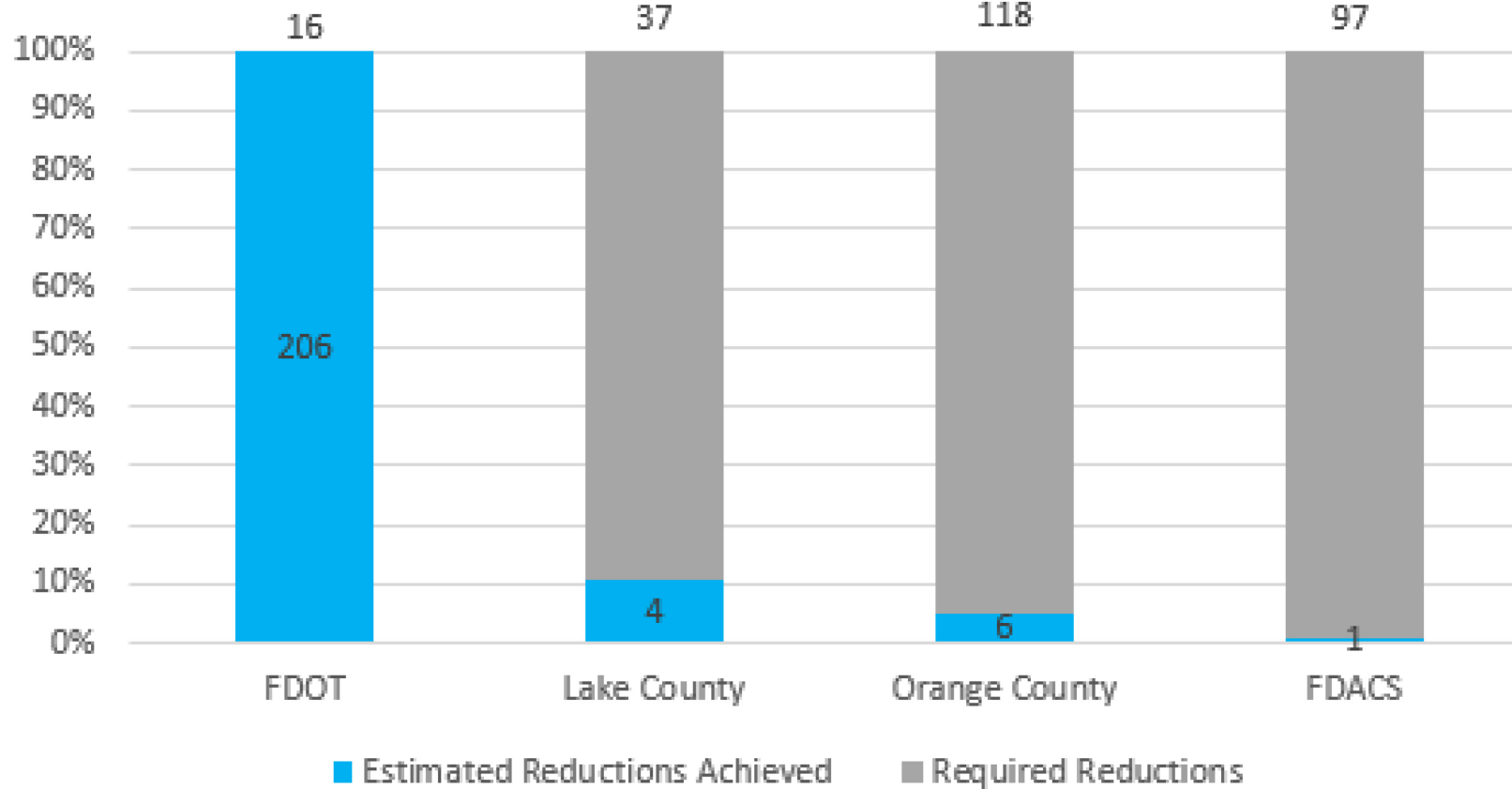






# PROGRESS LAKE CARLTON

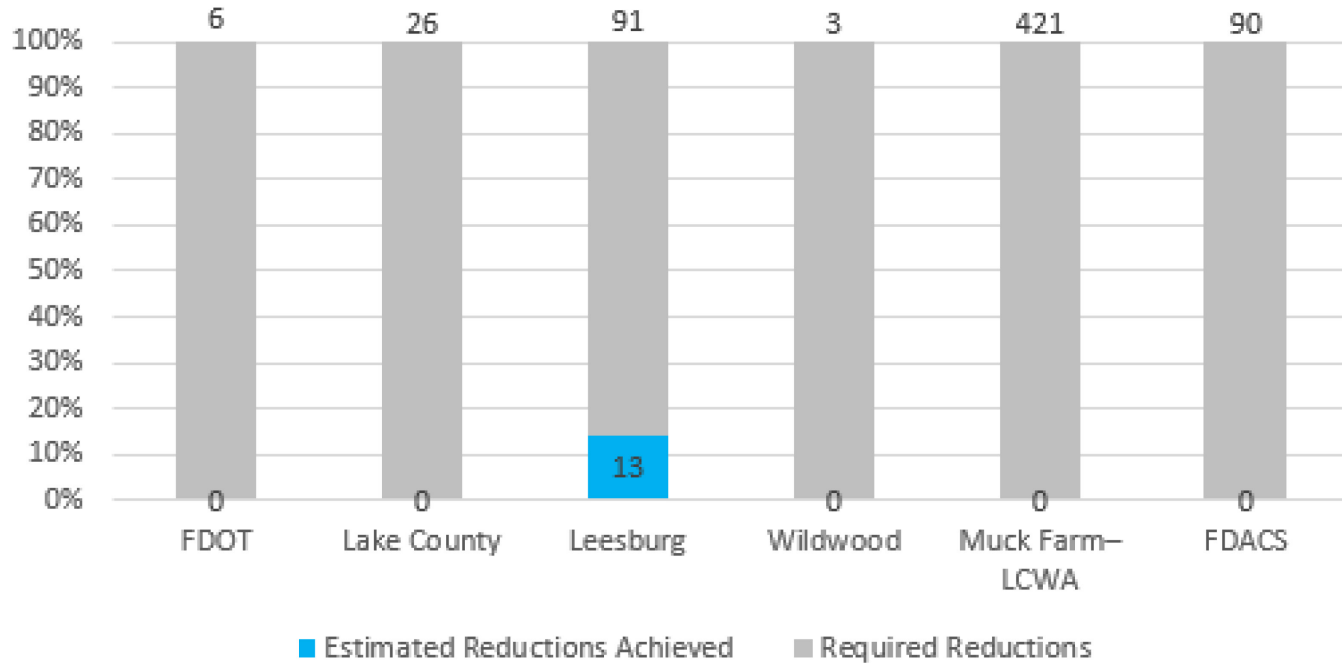
### Lake Carlton Entity Allocations (lbs-P/yr)



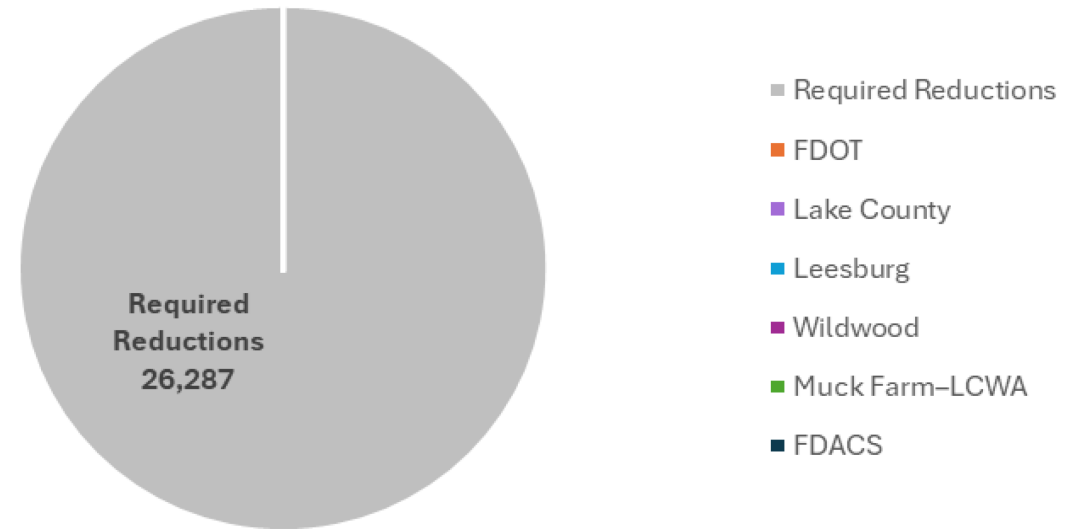


# PROGRESS LAKE DENHAM

### Lake Denham Entity Allocations (lbs-P/yr)



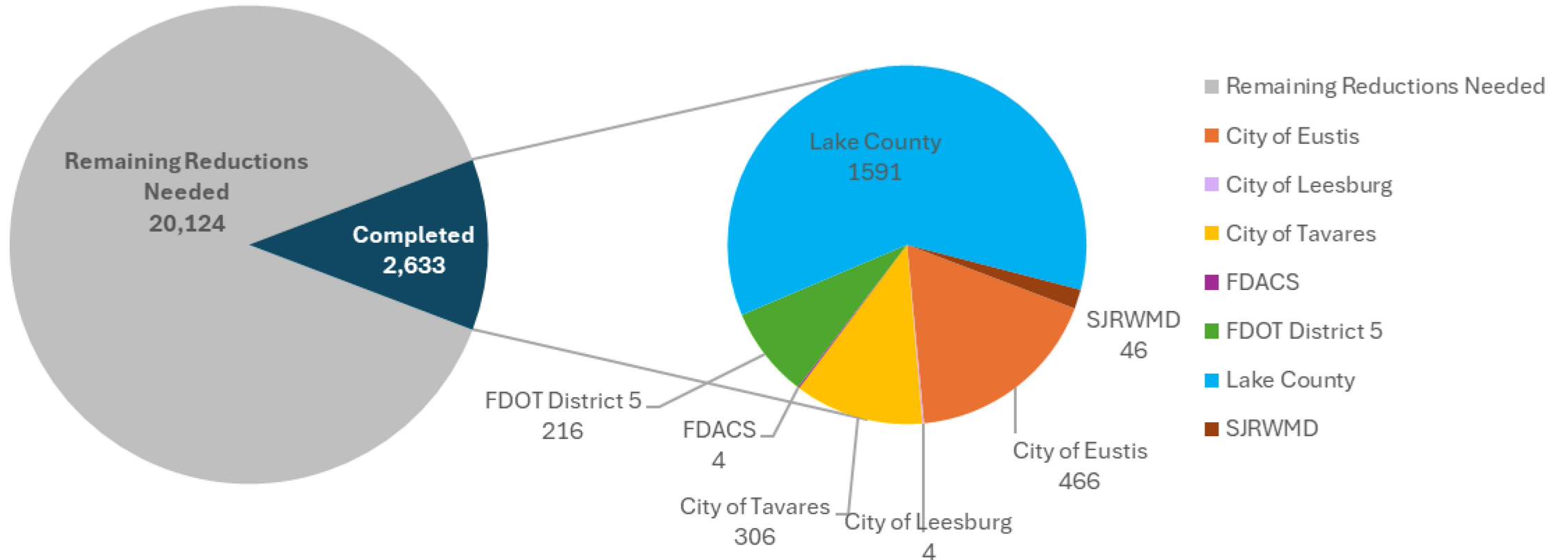
### Lake Denham Waterbody Required Reductions (lbs-N/yr)





# PROGRESS LAKE EUSTIS

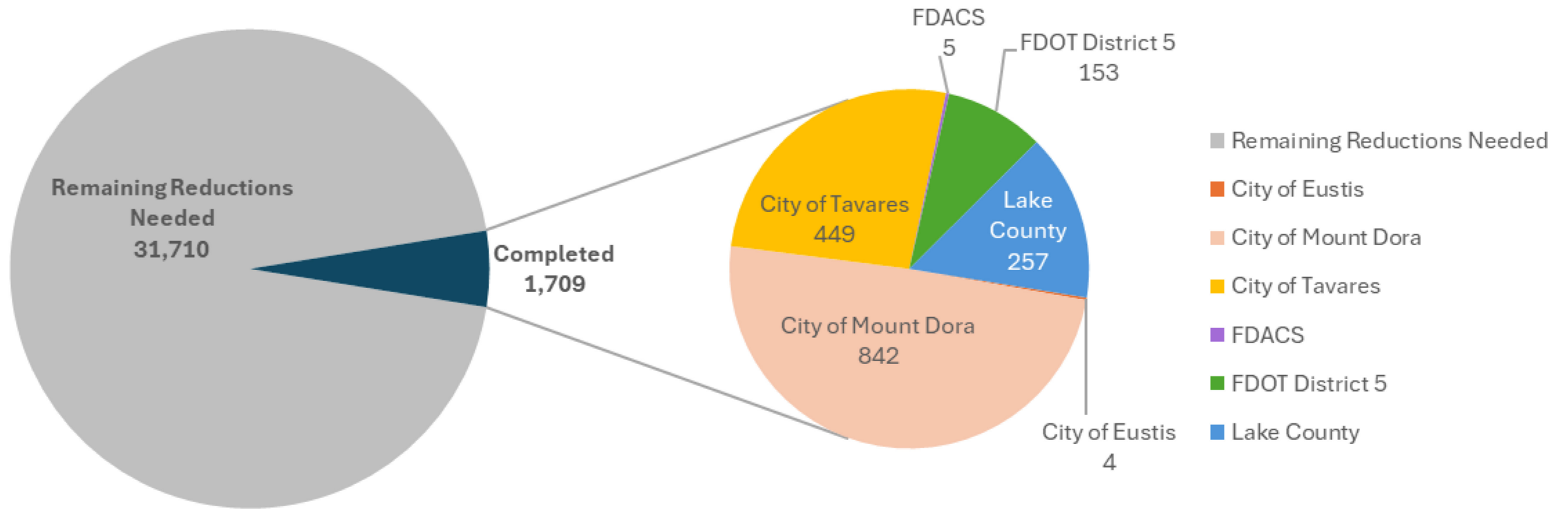
## Lake Eustis Waterbody Required Reductions (lbs-P/Yr)





# PROGRESS LAKE DORA

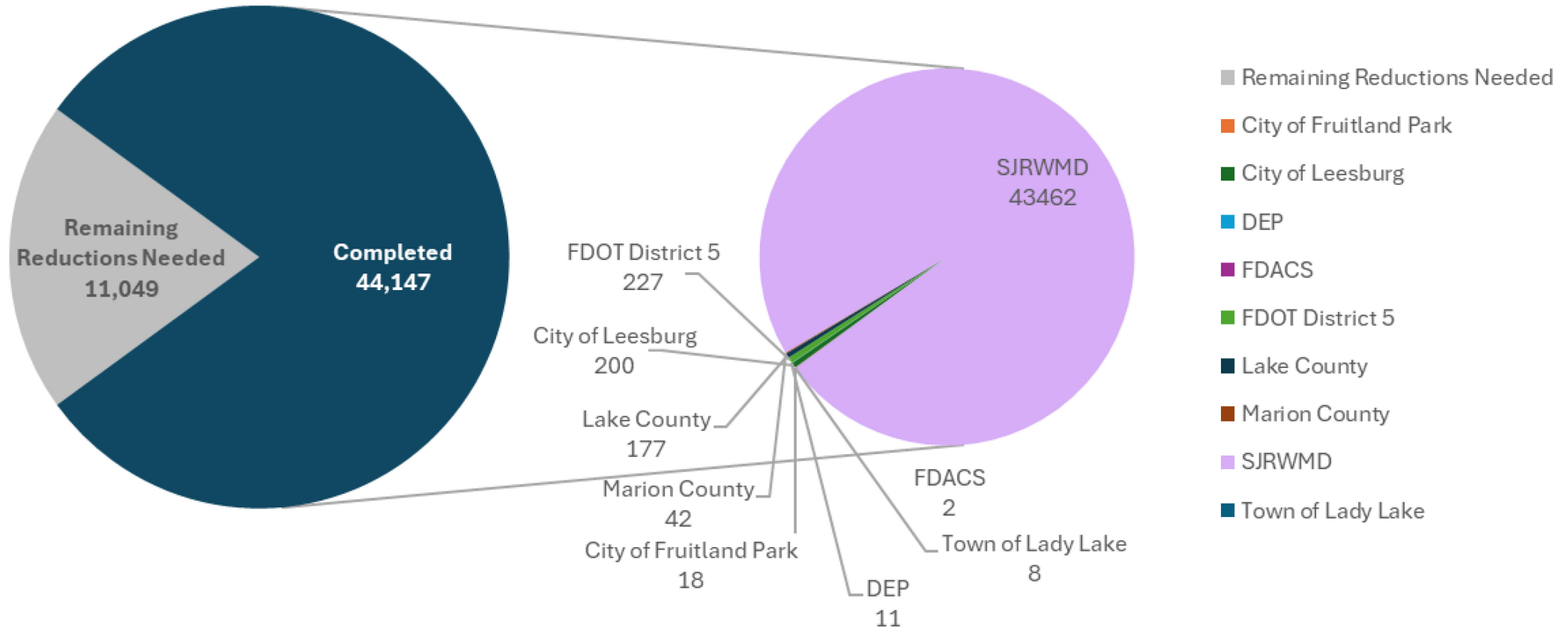
## Lake Dora Waterbody Required Reductions (lb-P/yr)





# PROGRESS LAKE GRIFFIN

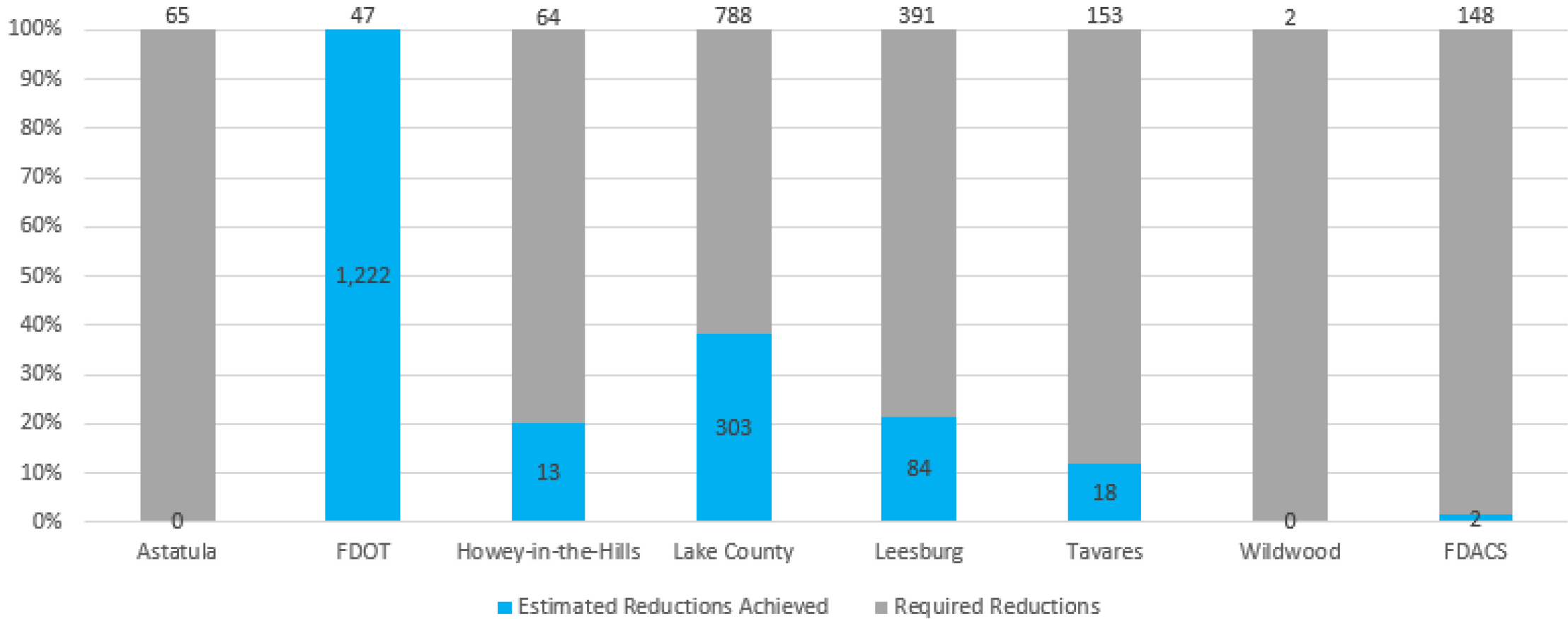
Lake Griffin Waterbody Required Reductions (lbs-P/Yr)





# PROGRESS LAKE HARRIS

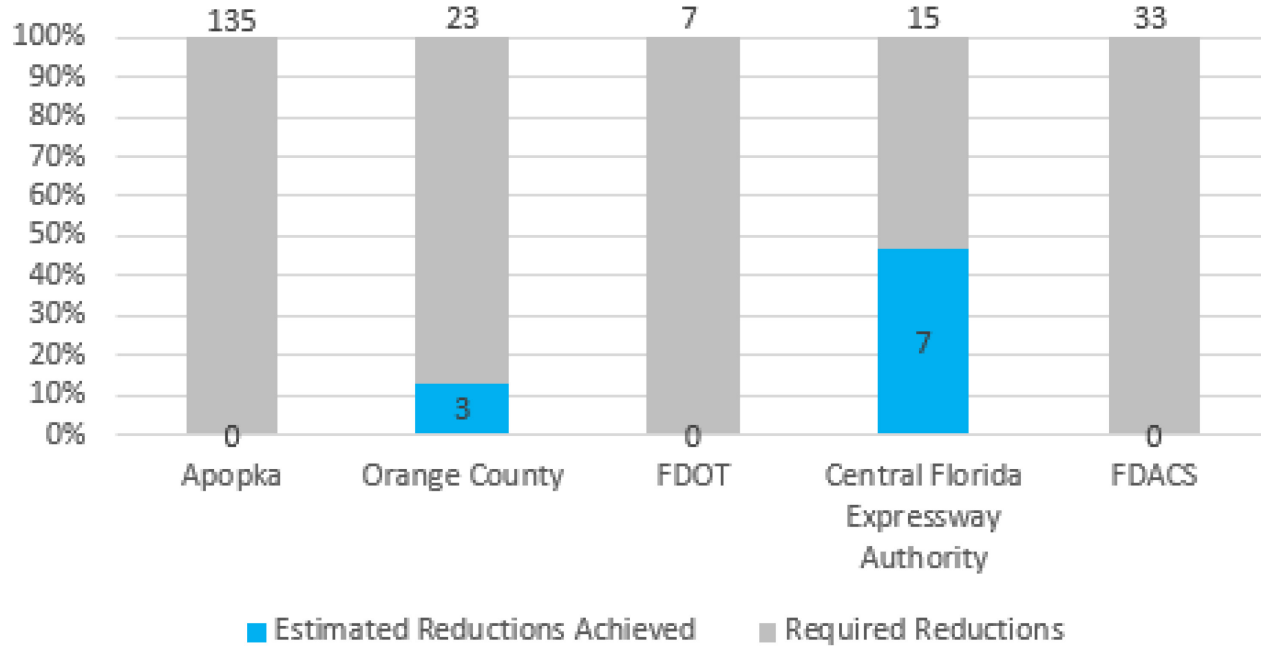
Lake Harris Entity Allocations (lbs-P/yr)



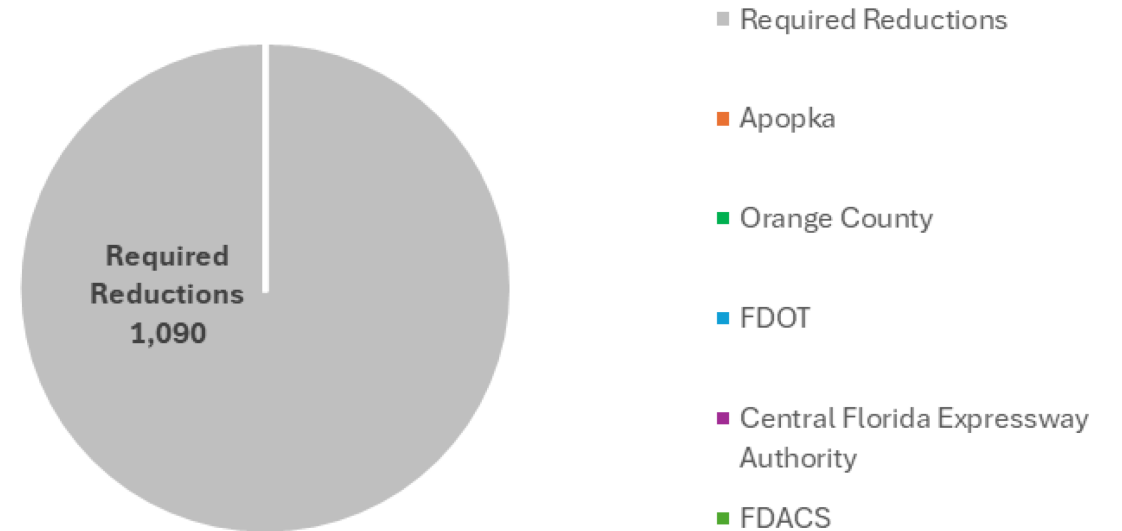


# PROGRESS MARSHALL LAKE

### Marshall Lake Entity Allocations (lbs-P/yr)



### Marshall Lake Waterbody Required Reductions (lbs-N/yr)

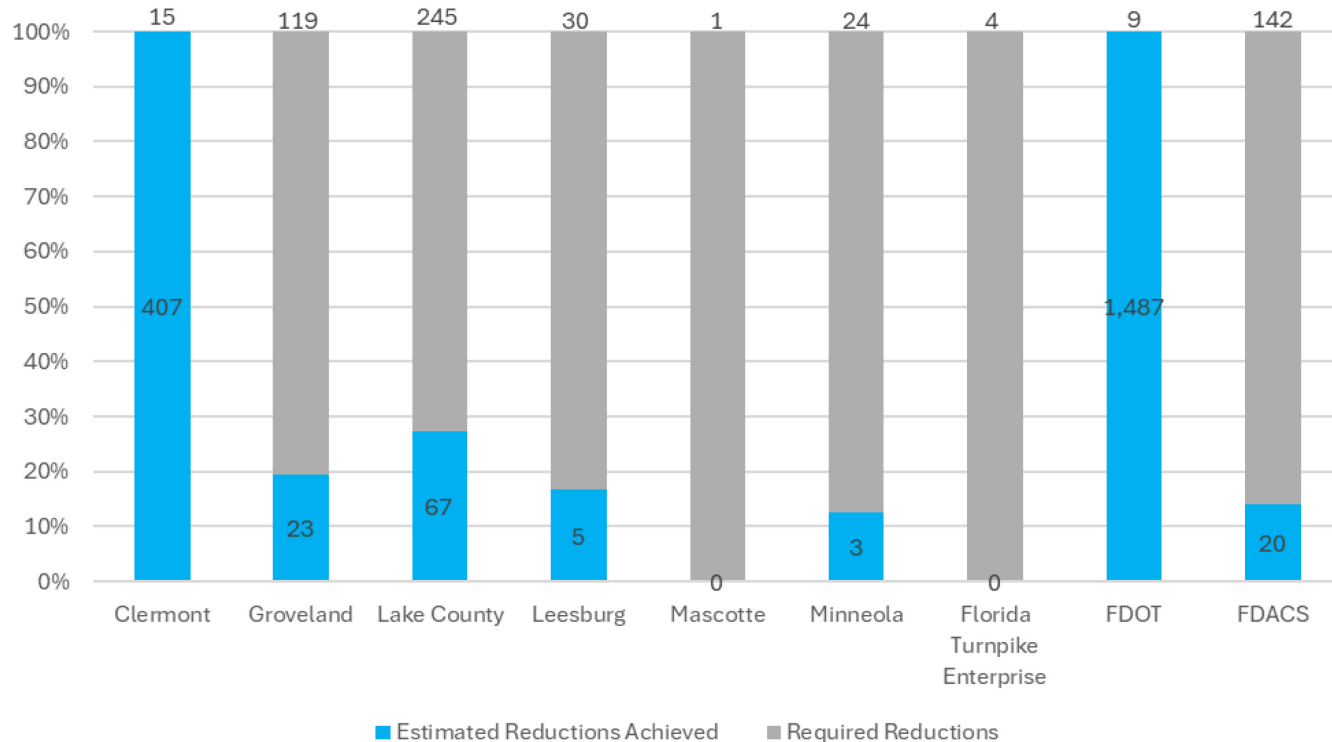




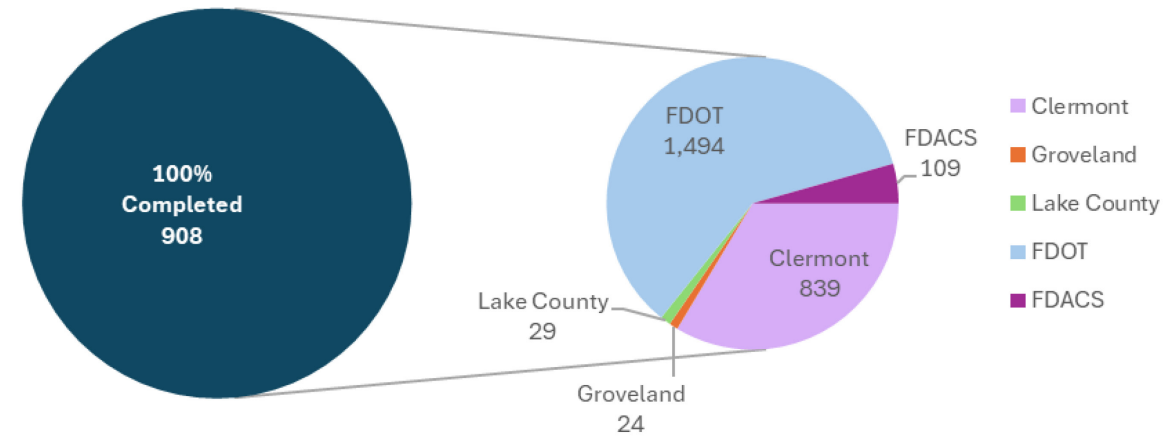
# PROGRESS

## PALATLAKAHA RIVER

Palatlakaha River Entity Allocations (lbs-P/yr)



Palatlakaha River Waterbody Required Reductions (lbs-N/yr)



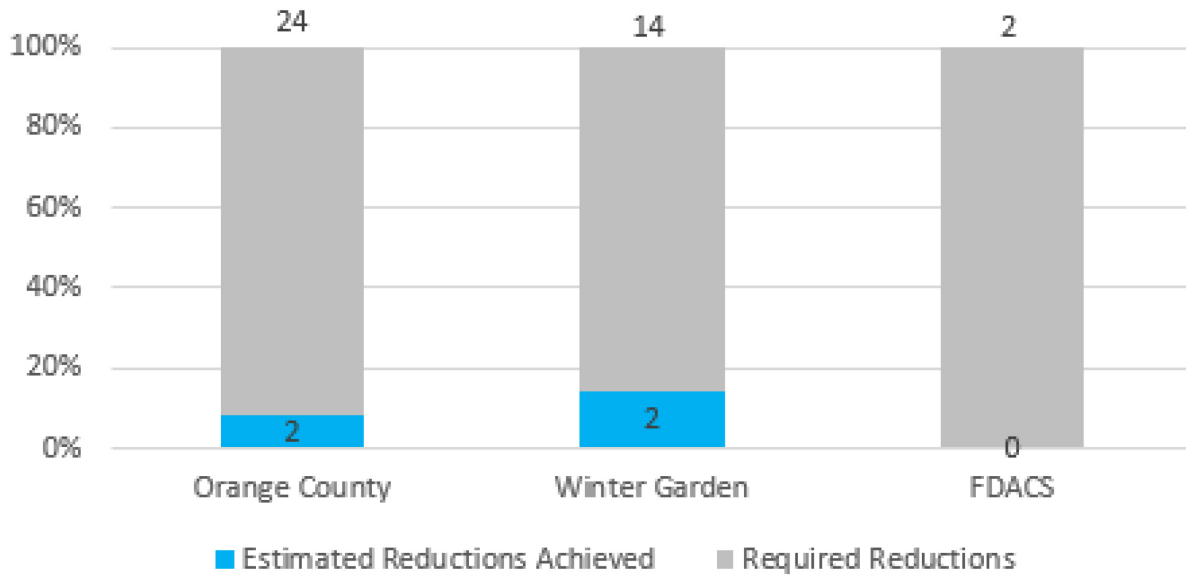
\*Entities have implemented projects resulting in reductions higher than the required reductions.



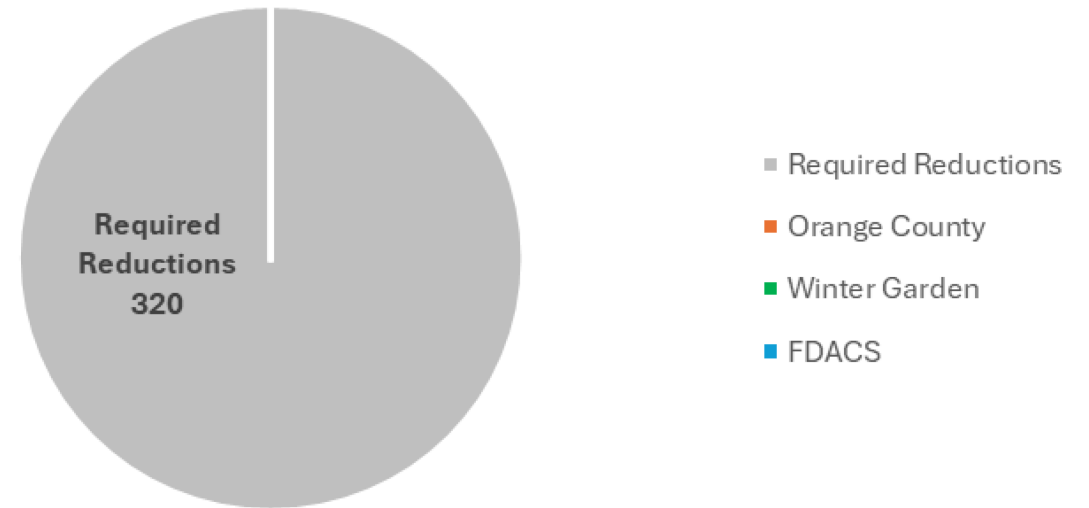


# PROGRESS LAKE ROBERTS

### Lake Roberts Entity Allocations (lbs-P/yr)



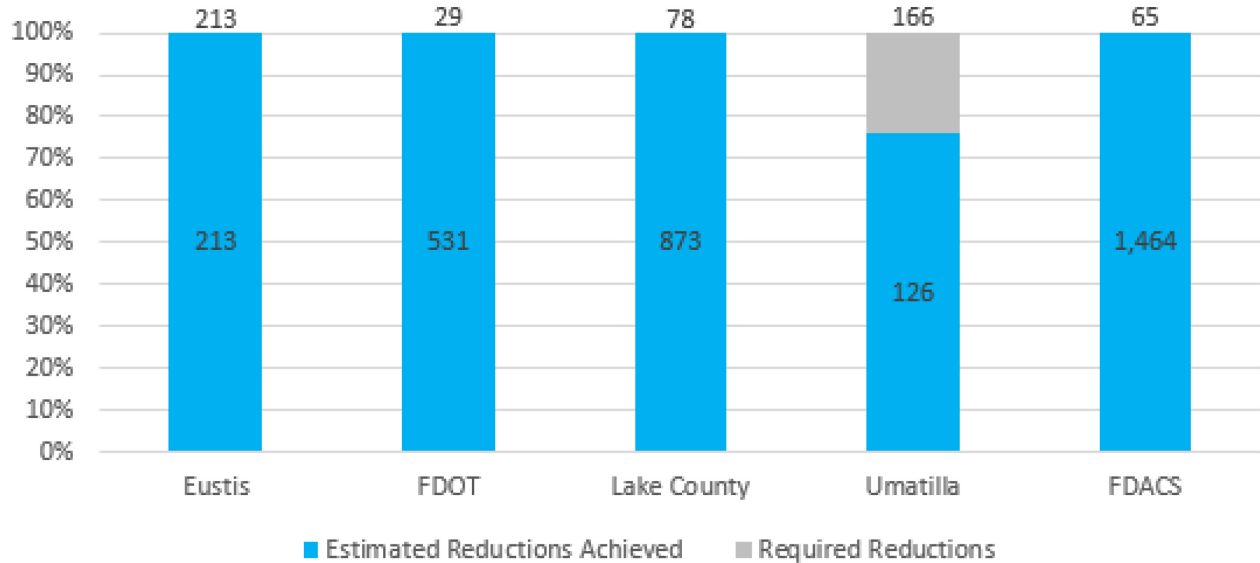
### Lake Roberts Waterbody Required Reductions (lbs-N/yr)



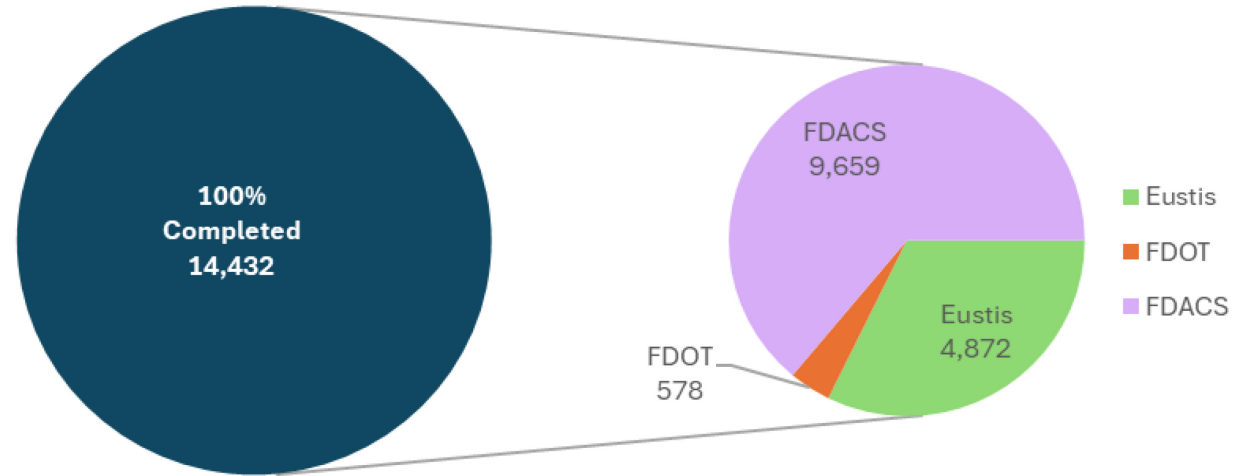


# PROGRESS TROUT LAKE

### Trout Lake Entity Allocations (lbs-P/yr)



### Trout Lake Waterbody Required Reductions (lbs-N/yr)



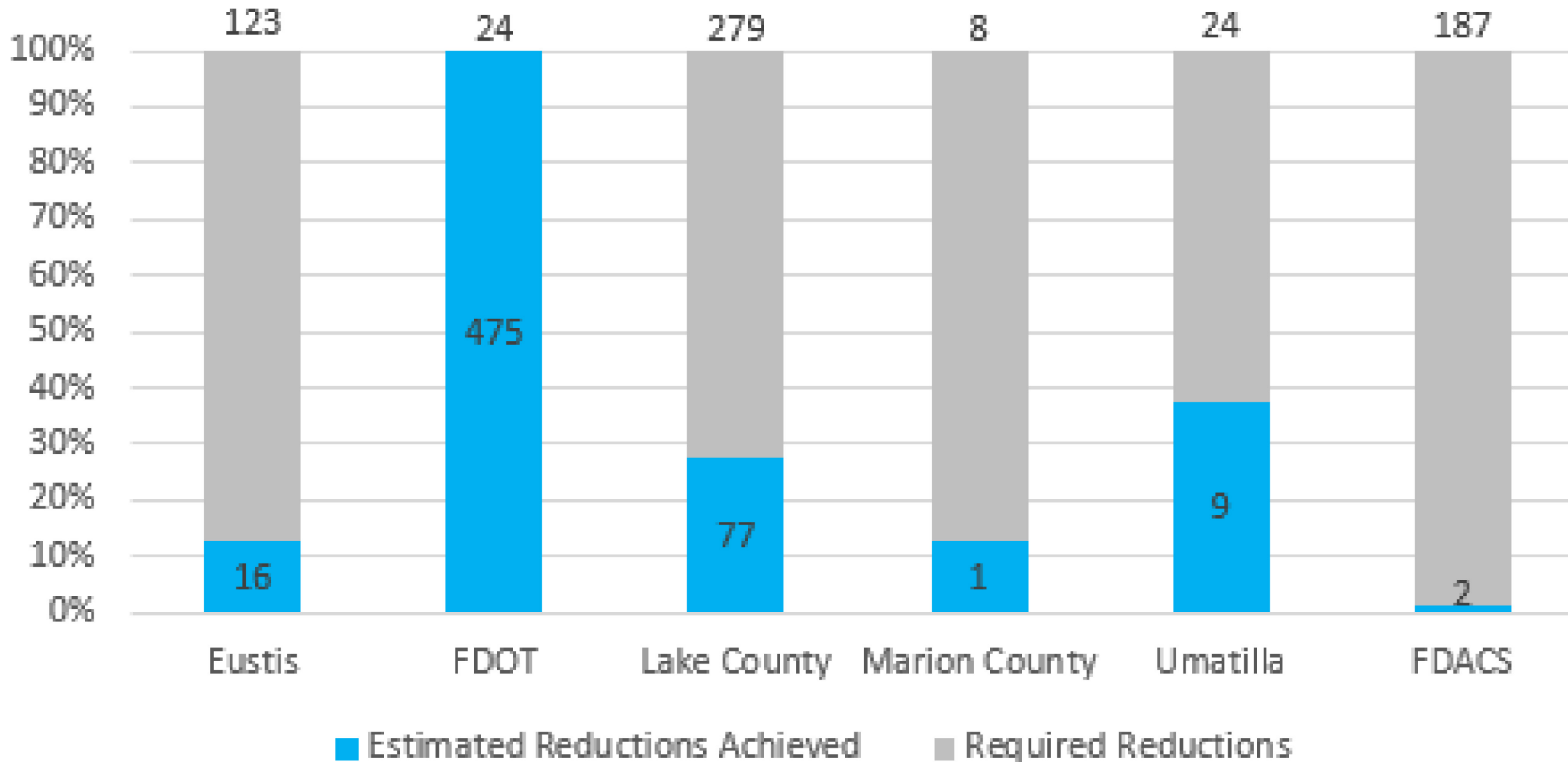
\*Entities have implemented projects resulting in reductions higher than the required reductions.



# PROGRESS

## LAKE YALE

### Lake Yale Entity Allocations (lbs-P/yr)





# PROGRESS

## OTHER REDUCTION CONTRIBUTIONS

Upper Ocklawaha BMAP	
TP (lbs-P./yr.)	TN (lbs-N./yr.)
10,997	18,520



# DATA UPLOAD

## WATERSHED INFORMATION NETWORK (WIN)

- Through both 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 Division of Environmental Assessment and Restoration and other 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	<a href="mailto:Justin.M.Nelson@FloridaDEP.gov">Justin.M.Nelson@FloridaDEP.gov</a>
Casey Marston	South, Southwest	850-245-8049	<a href="mailto:Casey.Marston@FloridaDEP.gov">Casey.Marston@FloridaDEP.gov</a>
Lisa Schwenning	SPA (STORET Public Access), WQX (U.S. EPA Water Quality Exchange)	850-245-8509	<a href="mailto:Lisa.Schwenning@floridaDEP.gov">Lisa.Schwenning@floridaDEP.gov</a>
Jason Storrs	Central, Statewide	850-245-8467	<a href="mailto:Jason.Storrs@FloridaDEP.gov">Jason.Storrs@FloridaDEP.gov</a>

# **Nutrient loading and water quality in 11 Upper Ocklawaha River Basin lakes**

**Jian Di**

**Bureau of Environment Sciences  
St. Johns River Water Management District  
Palatka, Florida  
June 18 2024**



**St. Johns River**  
Water Management District

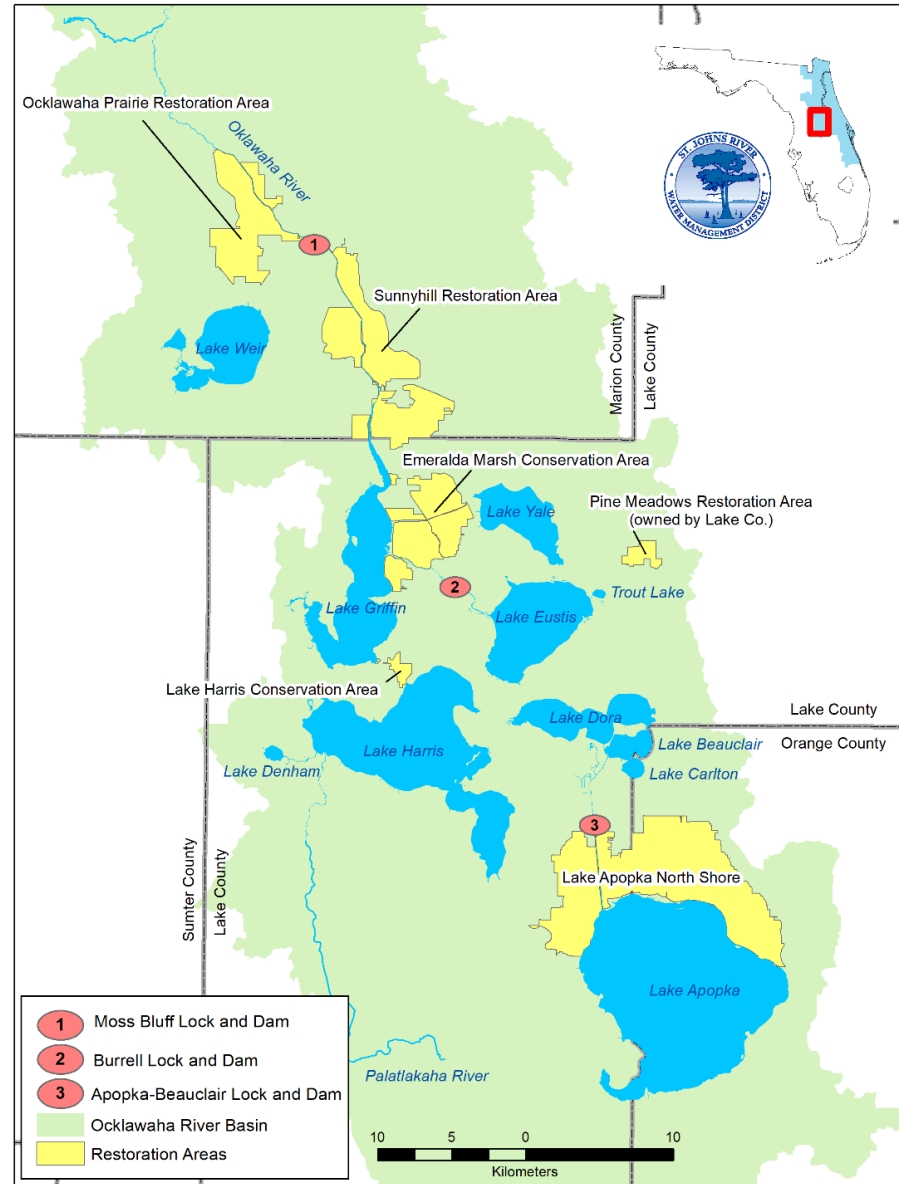
# Upper Ocklawaha River Basin (UORB) TMDL Lakes and Restoration Areas

Total Phosphorus (TP) and  
Total Nitrogen (TN) annual  
loading calculation and  
monthly water quality  
monitoring

Apopka  
Beauclair  
Carlton  
Dora  
Eustis  
Harris  
Griffin  
Yale  
Weir

Monthly water quality  
monitoring only

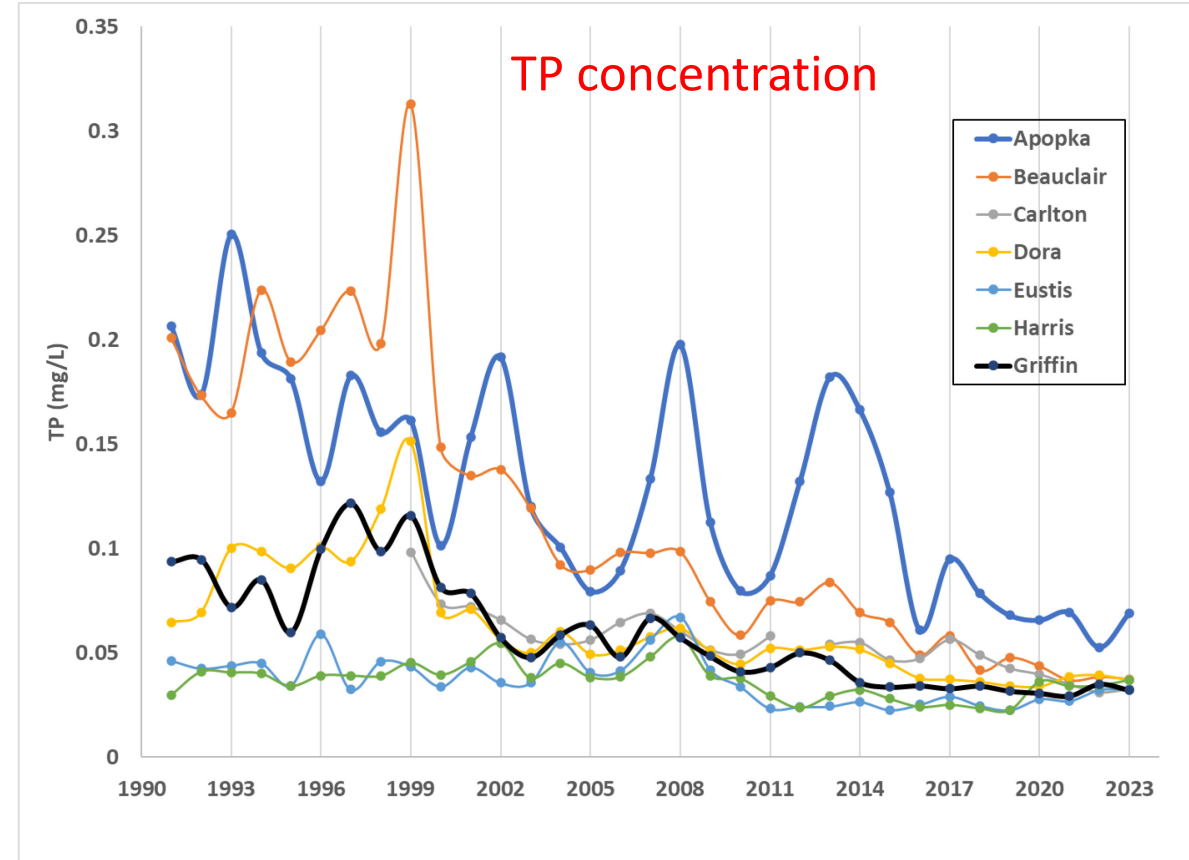
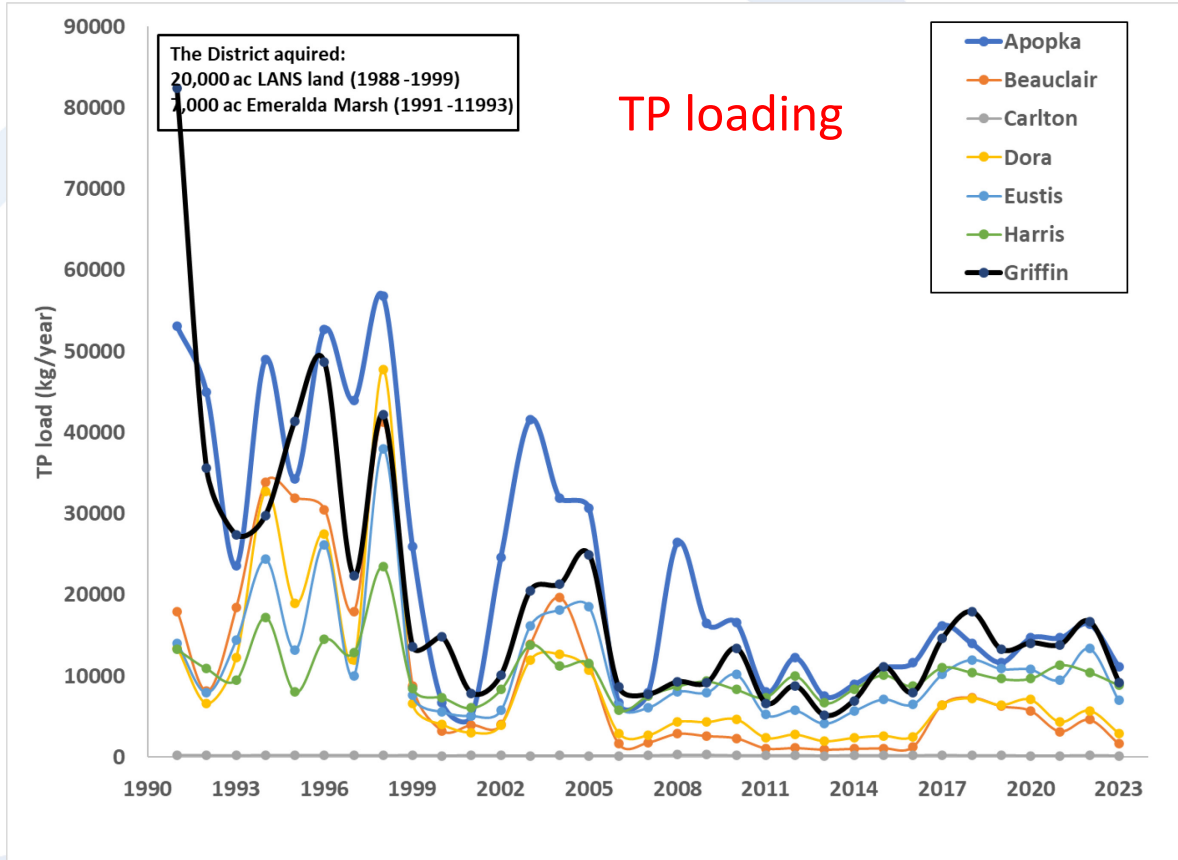
Denham  
Trout



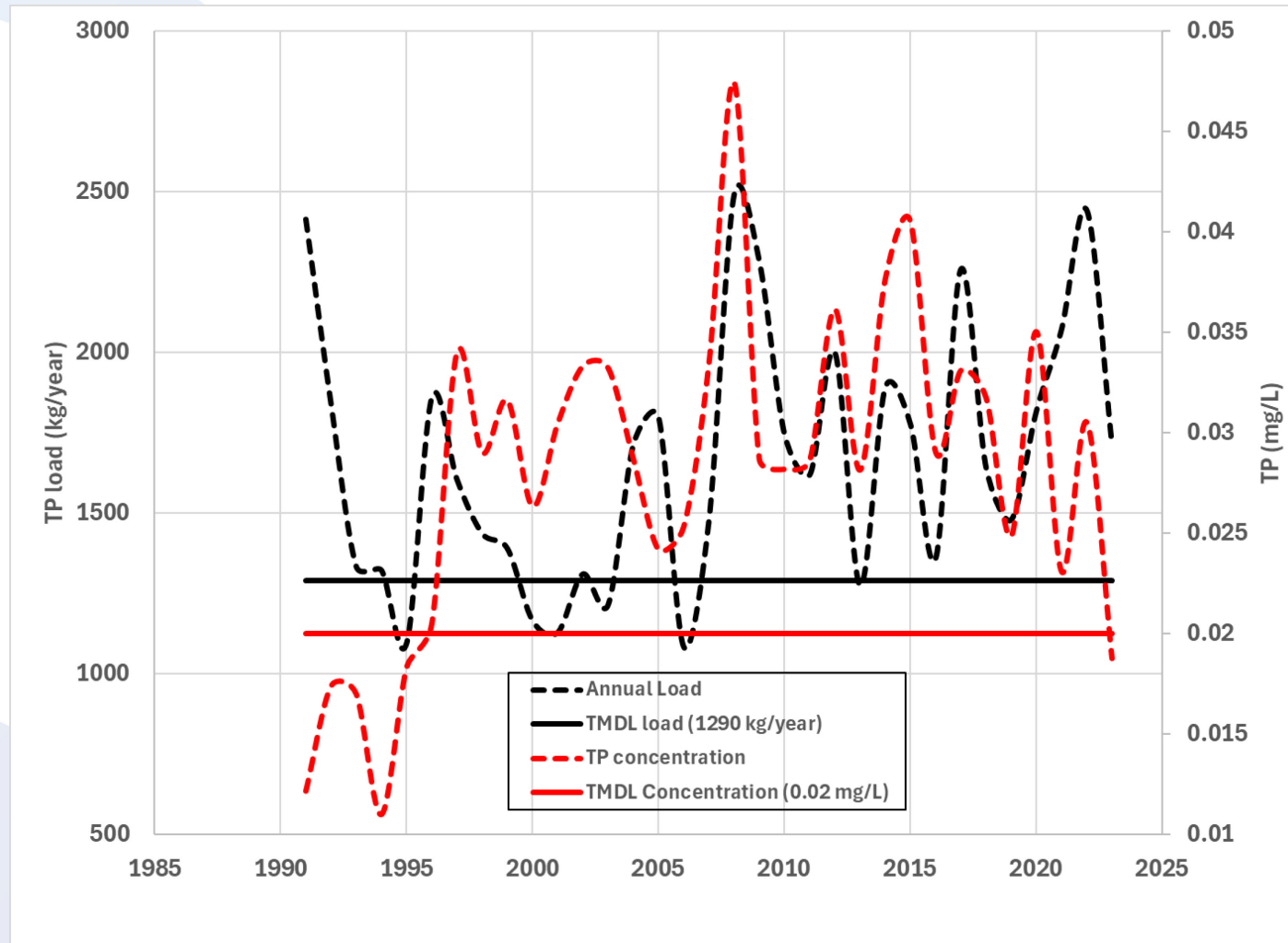
**St. Johns River**  
Water Management District



# TP loads and concentrations



# Lake Yale TP concentration and load

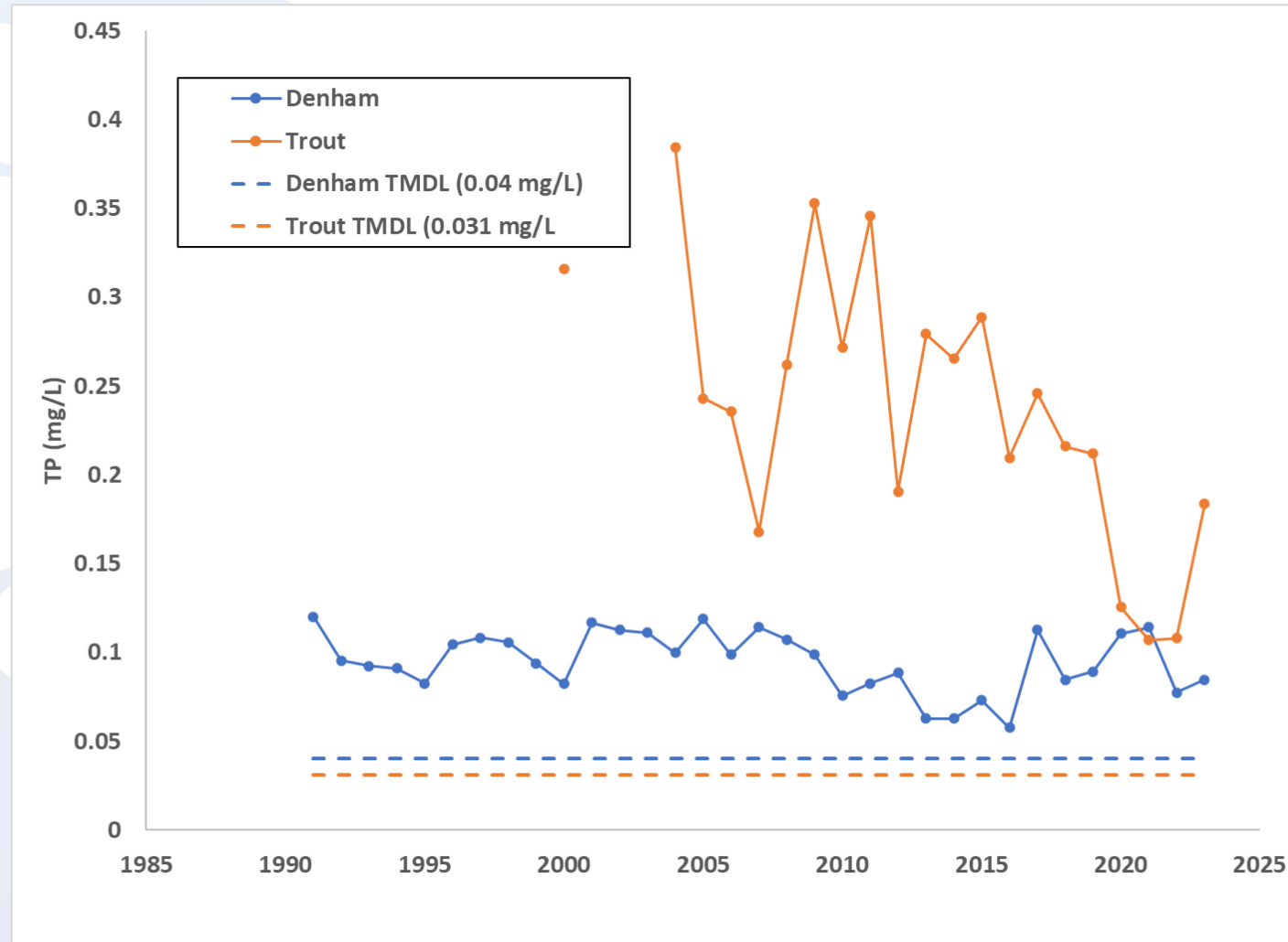


# Lake Weir TP concentration and load



**St. Johns River**  
Water Management District

# TP concentration in Lake Denham and Trout Lake



# TP loading to the UORB lakes and their TMDL loading targets

Lake	TP annual loading (kg/year)		
	TMDL	2023	2019-2023 average
Apopka	15,900	11,090	13,691
Beauclair	3,200	1,650	4,264
Carlton	88	171	180
Dora	6,000	2,914	5,274
Eustis	9,200	6,985	10,310
Griffin	12,200	9,169	13,596
Harris	8,300	8,878	9,994
Weir	1,667	1,629	1,784
Yale	1,290	1,713	1,905

Green number indicates met TMDL loading target

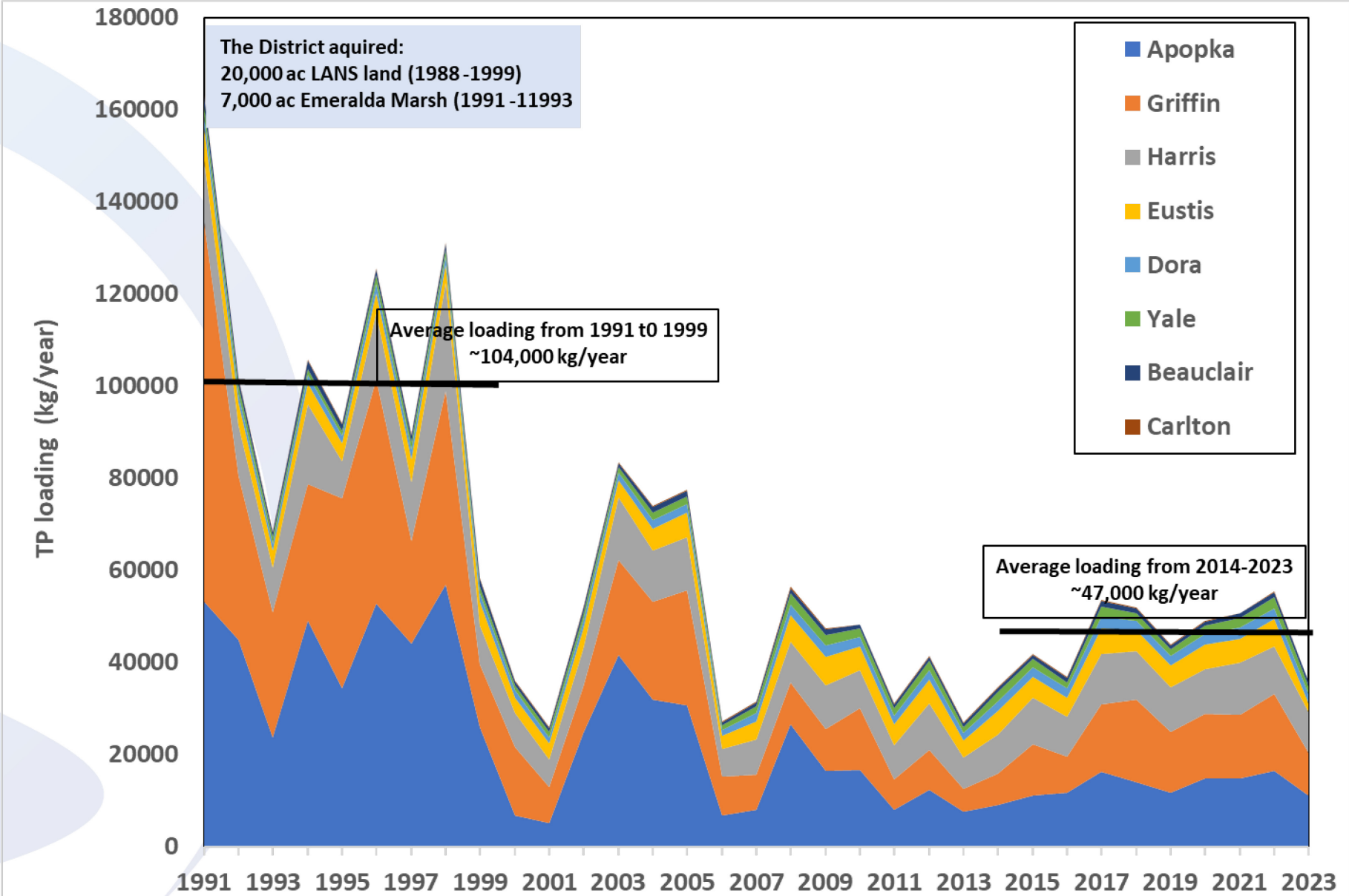


# TP concentrations in UORB lakes and their TMDL targets

Lake	TP concentration (µg/L)			Met TMDLs loading based on recent 5 years average
	TMDL	2023	2019-2023 average	
Apopka	55	69	65	Yes
Beclair	32	37	41	No
Carlton	32	33	36	No
Dora	31	37	37	Yes
Eustis	25	32	28	No
Griffin	32	32	32	No
Harris	26	34	33	No
Weir	10	10.7	16	No
Yale	20	19	26	No
Denham	40	85	95	NA
Trou	31	184	147	NA



# Annual TP loads from watersheds (not including input from upstream lakes)



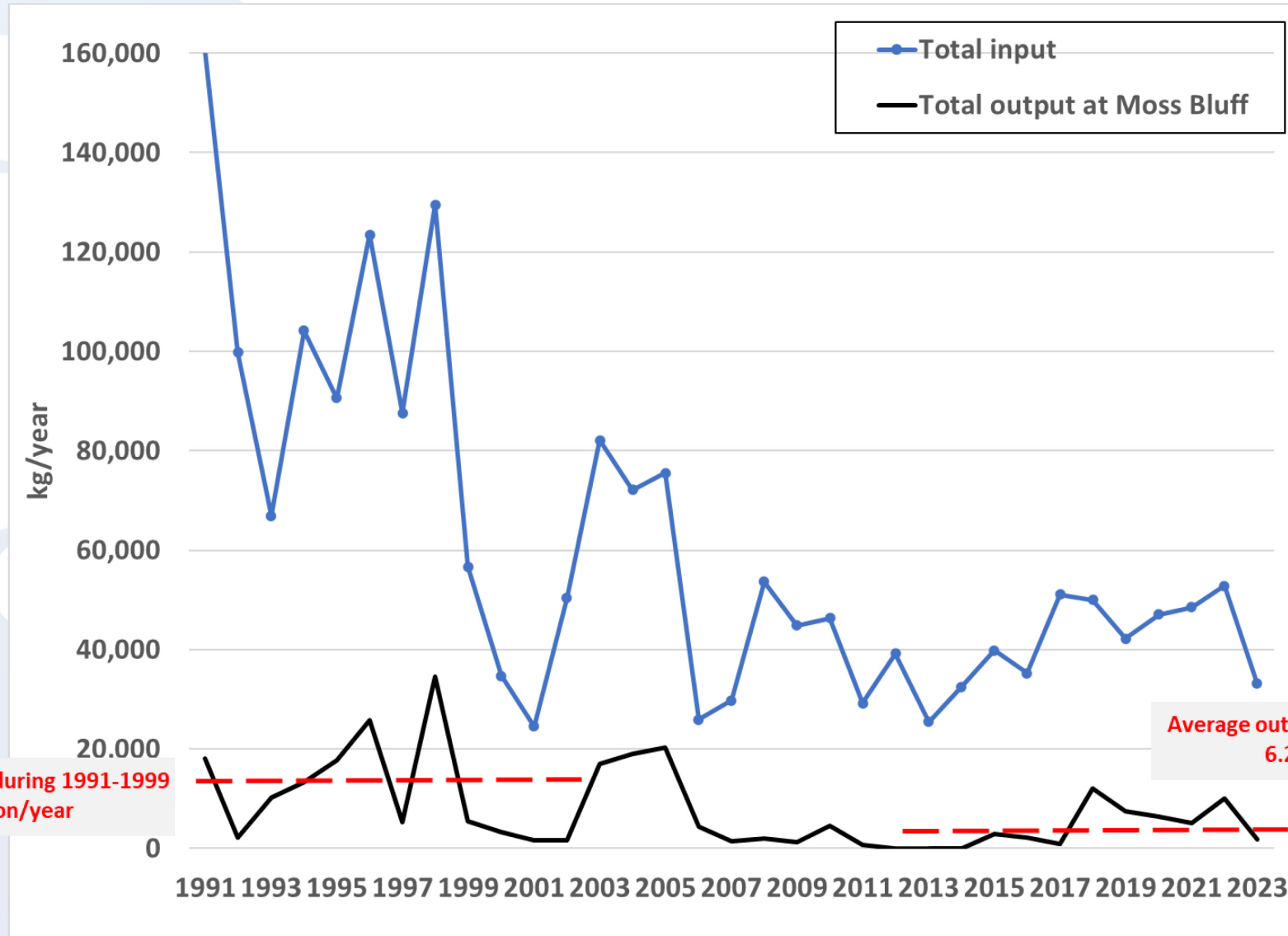
# Top two TP loading sources to UORB lakes in the recent 10 years

Lake	Highest loading source		2 <sup>nd</sup> highest loading source	
	Source	Percent (%)	Source	Percent (%)
<b>Apopka</b>	Atomspheric	43	Stormwater Runoff	24
<b>Harris</b>	Atomspheric	34	Stormwater Runoff	31
<b>Weir</b>	Atomspheric	62	Stormwater Runoff	18
<b>Carlton</b>	Stormwater Runoff	56	Atomspheric	29
<b>Yale</b>	Stormwater Runoff	48	Atomspheric	38
<b>Beauclair</b>	Upstream	75	Stormwater Runoff	16
<b>Dora</b>	Upstream	54	Stormwater Runoff	23
<b>Eustis</b>	Upstream	45	Stormwater Runoff	26
<b>Griffin</b>	Upstream	39	Atomspheric	27





# Annual TP input to Harris Chain of Lakes and output at Moss Bluff Lock and Dam from 1991 to 2023



Average output during 1991-1999  
~15 mton/year

Average output during 2019-2023  
6.2 mton/year

# Summary

- Average TP loading in the recent 5 years (2019–2023) to most of the lakes in the basin exceed their TMDL loading targets, except Lake Apopka and Lake Dora.
- Average TP concentrations in the recent 5 years (2019–2023) exceeded their respective TP TMDL concentration targets in all the lakes, except in Lake Griffin.
- TP loading to the Apopka, Beauclair, Dora, Eustis, Harris, and Griffin reduced from about 104 mton/year in the 1990s to about 47 mton/year in the recent 10 years, which is about 55% of reduction to the lakes.
- About 89% of the P loading to the Harris Chain of Lakes retained in the lakes, 11% of the TP loading to the lakes was exported over the Moss Bluff Dam to downstream.
- Average output at Moss Bluff was about 15 mton/year in 1990s, and it was about 6.2 mton/year in recent 5 years, which is about 59% reduction to the Ocklawaha River.
- The District is planning to update land use data next year.

**Thank You!**

**Questions?**



**St. Johns River**  
Water Management District



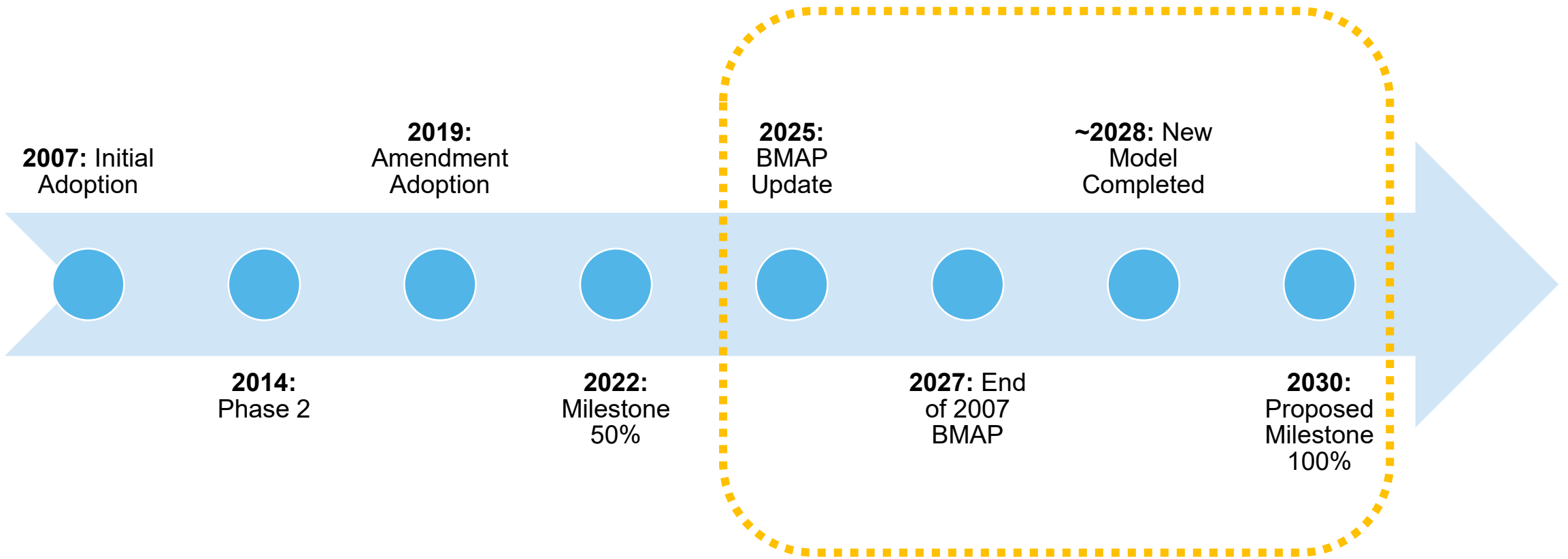
# UPCOMING BMAP UPDATE COMPONENTS

- 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





# 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:**

- Upper Ocklawaha:
  - TN – 0.78 mg/L.
  - TP – 0.02 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 90<sup>th</sup> percentile for the whole BMAP.

- Rank 0:** Station average below BMAP threshold.
- Rank 1:** Station average above threshold but below 90<sup>th</sup> percentile.
- Rank 2:** Station average above 90<sup>th</sup> 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

$$\begin{aligned} &\text{Average Rank} \\ &+ \\ &\text{Percentile Rank} \\ &+ \\ &\text{SD Rank} \\ &+ \\ &\text{Frequency Rank} \end{aligned} =$$

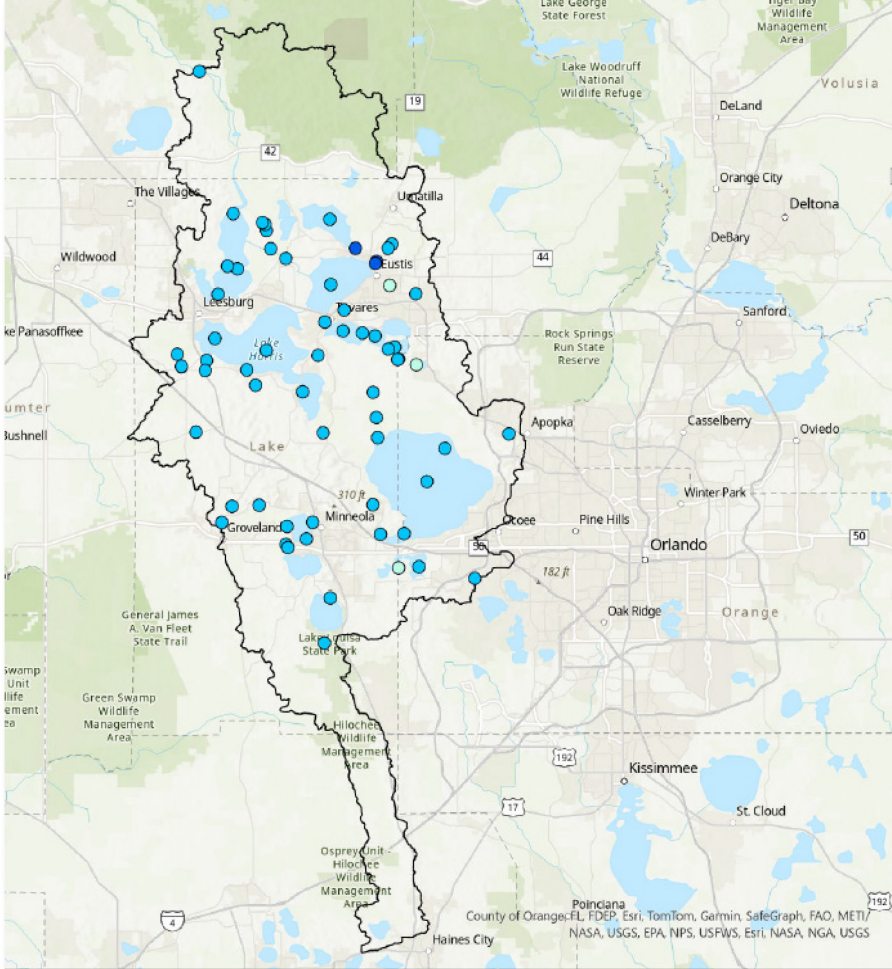
**Total Index Rank**

Rank 0 = Least Concern  
Rank 8 = High Concern


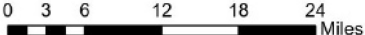



# HOT SPOT ANALYSIS RESULTS DRAFT

## UPPER OCKLAWAHA



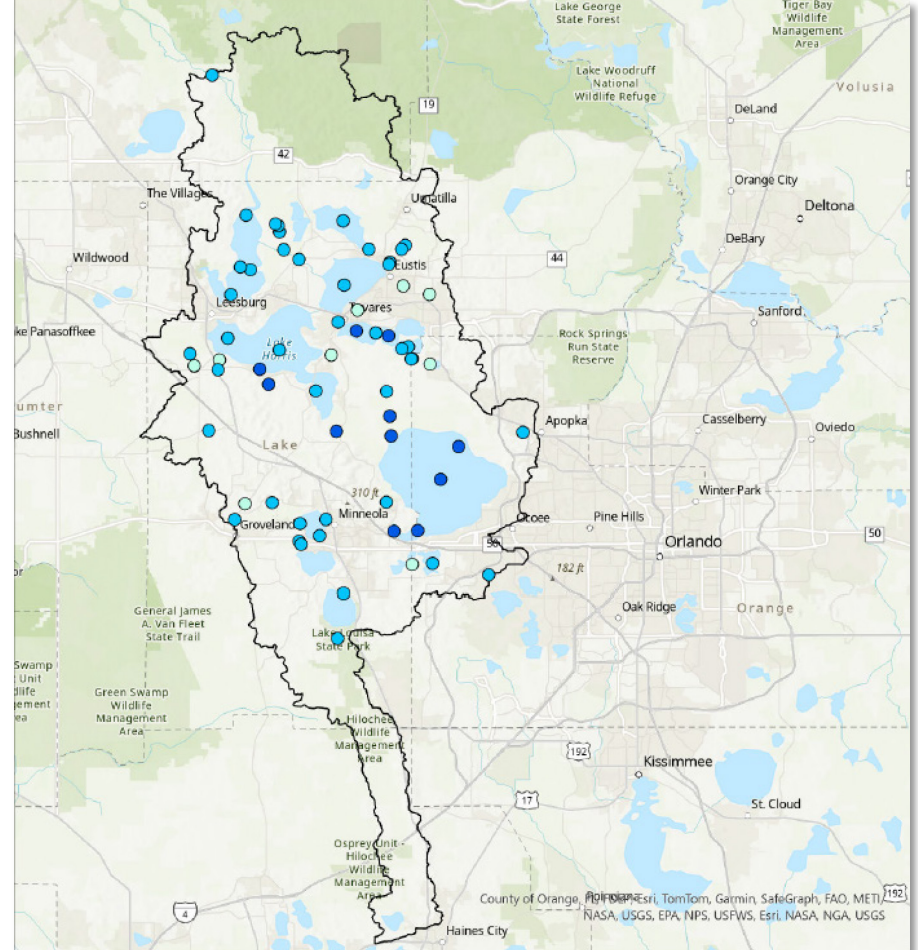
**Upper Ocklawaha**  
Map prepared by Division of Environmental Assessment and Restoration.  
This map is not for legal decision making purposes.  
Created 2024-01-16




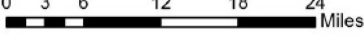

**TP Total Rank**

- 0 - 2
- 3 - 5
- 6 - 8

Upper Ocklawaha BMAP



**Upper Ocklawaha**  
Map prepared by Division of Environmental Assessment and Restoration.  
This map is not for legal decision making purposes.  
Created 2024-01-16



**TN Total Rank**

- 1 - 2
- 3 - 5
- 6 - 8

Upper Ocklawaha BMAP



# 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.



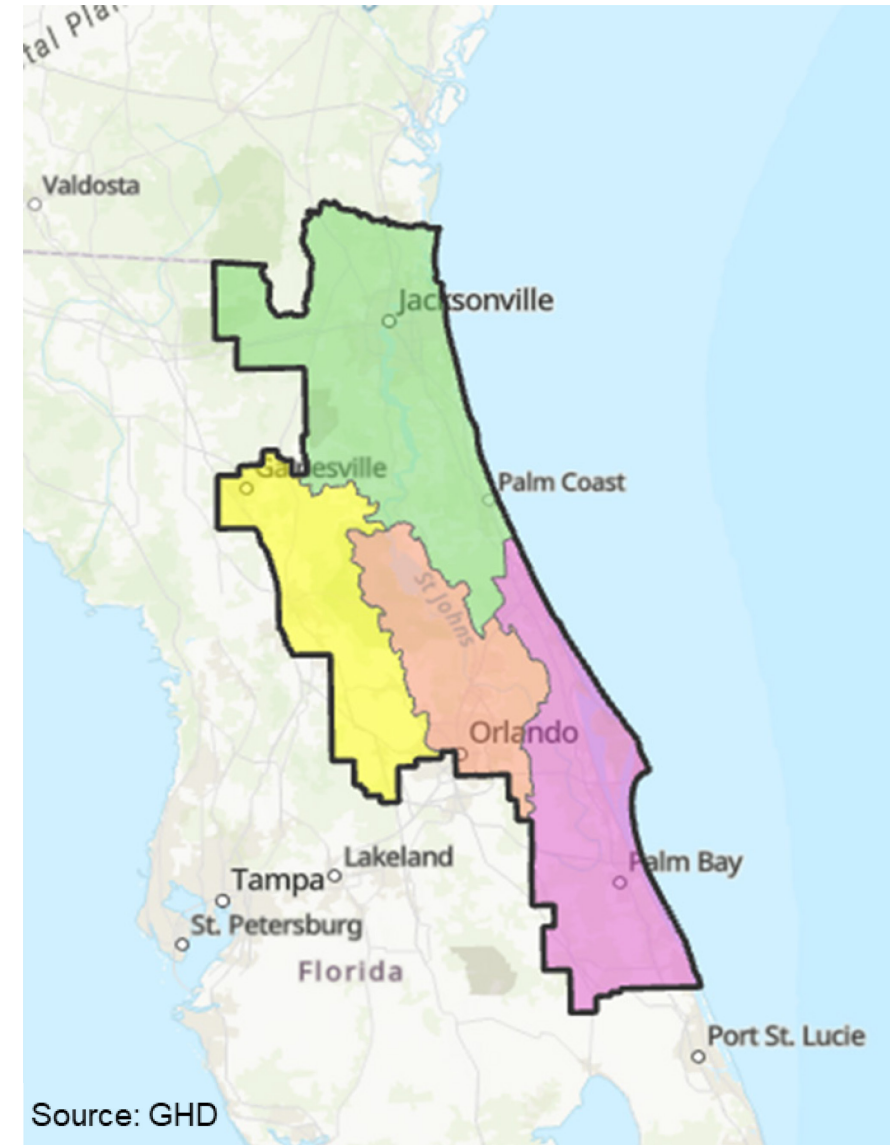
# FUTURE GROWTH

- **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 and OSTDS.
- **Agriculture Projections:**
  - Exploring different tools to estimate future changes in agricultural acreage in the BMAPs to estimate changes in agricultural loading.



# ST. JOHNS RIVER MODEL UPDATE

- Public meeting was held on March 12, 2024.
- Meeting materials are available at the QR code below.





# ST. JOHNS RIVER MODEL UPDATE

## PROJECT SCHEDULE

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

**July 2025:**  
EFDC Model

**March 2025:**  
HSPF Model

**June 2026:**  
WASP Model

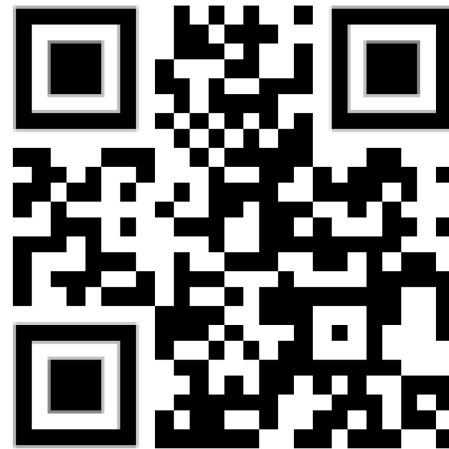
**HSPF:** Hydrologic Simulation Program FORTRAN  
**EFDC:** Environmental Fluid Dynamics Code  
**WASP:** Water Quality Analysis Simulation Program



# ST. JOHNS RIVER 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](mailto:Admin@WildwoodConsulting.net).
  - Or visit the website (QR code below), go to the “Contact” tab and enter your contact information.







# ST. JOHNS RIVER MODEL UPDATE

## DATA SHARING: OPPORTUNITIES TO ENGAGE



Source: Plexel

- Provide additional data for the EFDC Model by Aug. 1, 2024.
- To share data, questions or concerns, please contact [StJohnsRiverData@ghd.com](mailto: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.\*



# ST. JOHNS RIVER 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.

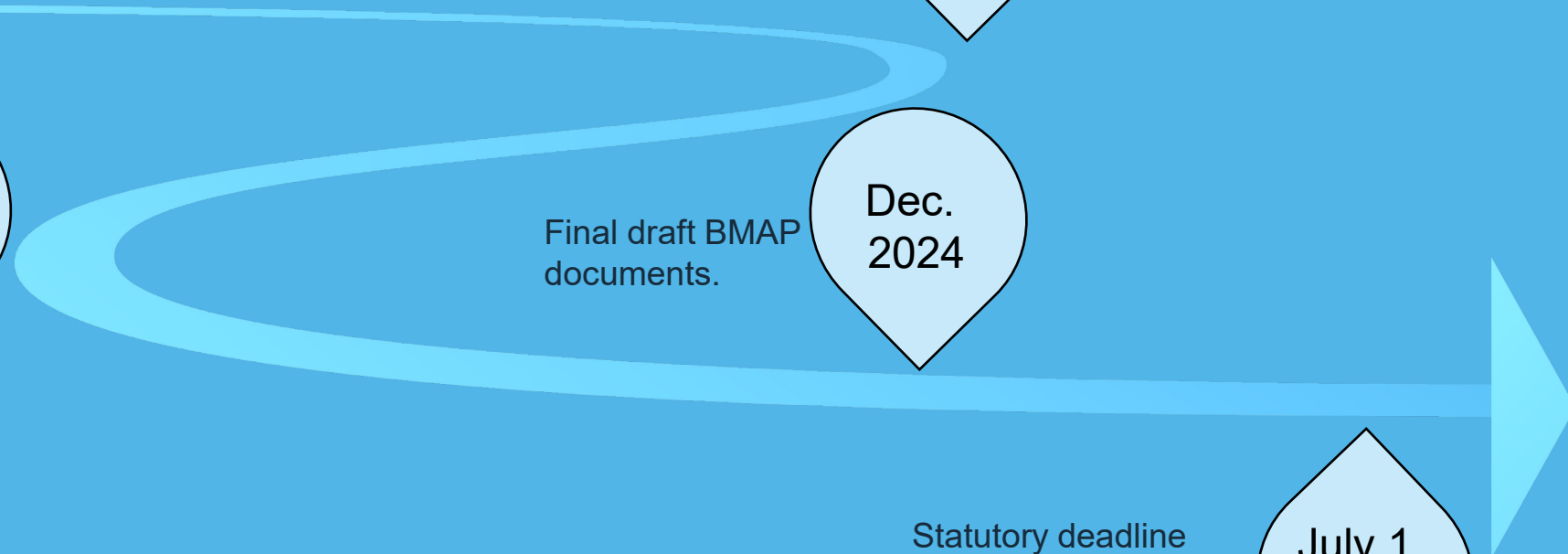
Aug. 1,  
2024

Final draft BMAP documents.

Dec.  
2024

Statutory deadline for updated nutrient BMAPs.

July 1,  
2025





# RESOURCES

## BMAP WEBSITE AND STORYMAP



### Basin Management Action Plan

[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 management that reduces pollutant loading through current and future projects and permit limits on wastewater facilities, urban and agricultural best management practices, and other measures. BMAPs help achieve pollutant reductions established by a total maximum daily load (TMDL) and rely on local input and commitment for development. BMAPs are developed in accordance with Florida Department of Environmental Protection Secretarial Order and a

#### Water Quality Protection Grants

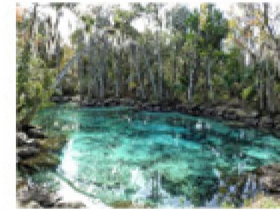
DEP has launched an [online grant portal](#) to provide eligible entities with a streamlined process for applying for grants. Eligible entities include local governments, academic institutions, and non-profit organizations. The [application portal](#) opened July 5, 2023. Closing dates for individual grant programs are listed on the [portal](#). The posted date for each grant program. Applicants are encouraged to apply early.



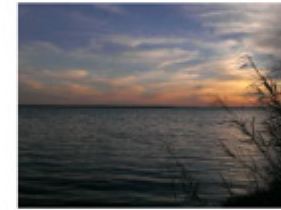
Collection

## Surface Water Nutrient Basin Management Action Plans (BMAPs)

[Get started](#)



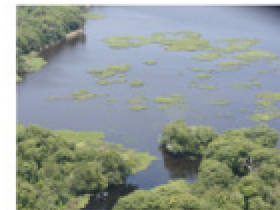
1 Legislative Requirements



2 (COPY) Lake Harney, Lake Monroe, Middle St. Johns Riv...



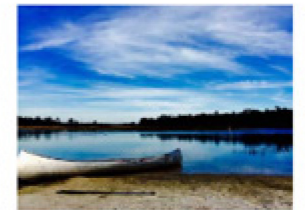
3 (COPY) Everglades West Coast Basin Management Action Plan



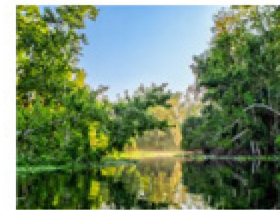
4 (COPY) Lake Jesup Basin Management Action Plan



5 (Copy) Orange Creek Basin Management Action Plan



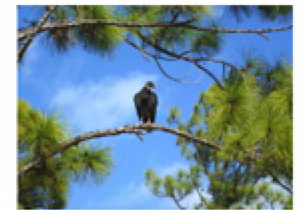
6 (Copy) Lower St. Johns Main Stem Basin Management Actio...



7 (COPY) Wekiva River, Rock Springs Run, and Little Wekiv...



8 (COPY) Upper Ocklawaha Basin Management Action Plan



9 (COPY) Long Branch Basin Management Action Plan



# RESOURCES

## FUNDING OPPORTUNITIES



Florida Department of Environmental Protection  
Funding Opportunities  
[FloridaDEP.gov/Funding](https://www.floridadep.gov/funding)





# SUBSCRIBER PAGE

## HOW TO CONTACT US



[BMAPPProgram@FloridaDEP.gov](mailto:BMAPPProgram@FloridaDEP.gov)



# THANK YOU

**Jessica Fetgatter**

Division of Environmental Assessment and Restoration  
Florida Department of Environmental Protection

Contact Information:

850-245-8107

[Jessica.Fetgatter@FloridaDEP.gov](mailto:Jessica.Fetgatter@FloridaDEP.gov)





**Questions & Answers Summary**  
**Upper Ocklawaha Basin Management Action Plan (BMAP) Annual Meeting**  
**Florida Department of Environmental Protection (DEP)**  
**June 18, 2024, via GoToWebinar**

**10:00 am – 11:29 am**

**Attendees**

Suzanne Archer, SJRWMD	Laila Hudda, EPA
Lisa Bally, ATM	Bryan Hummel, EPA
Vanessa Bauzo, FDACS	Roxanne Jones, Citizen
Sean Beaudet, Lake County	Lawrence Keenan, Citizen
Evelyn Becerra, DEP	Tracy Kelley, City of Wildwood
Adam Blalock, DEP	Kevin Koehler, Dewberry
Eric Blount, City of Palm Bay	Joy Kokjohn, SJRWMD
Julie Bortles, Orange County	Maryann Krisovitch, Surface Water Professionals
Karl Bursa, Lake County	Jeff Littlejohn, Onsyte
Tiffany Busby, Wildwood Consulting	Celeste Lyon, RES
Trevor Campbell, AECOM	Erich Marzolf, SJRWMD
Andy Canon, SJRWMD	Lori McCloud, SJRWMD
Stacy Cecil, SJRWMD	Daniel Millan, City of Eustis
Carolin Ciarlariello, DEP	Jessica Mostyn, DEP
Veronica Dau, Lake County	Daryl Myers, Hanson Professional Svcs
Susan Davis, SJRWMD	Mark Nelson, Jones Edmunds
Jian Di, SJRWMD	Kevin O'Donnell, DEP
Dean Dobberfuhr, SJRWMD	Michael Olka, Lake County
Yesenia Escribano, FDACS	Josh Papacek, SJRWMD
Randy Fink, SJRWMD	Jim Peterson, SJRWMD
Melissa Fuller, City of Eustis	Nicolas Pisarello, ATM
Roxanne Groover, FOWA	Wendy Poag, Lake County
Jim Gross, Florida Defenders	Marty Proctor, Citizen
Justin Grubich, Pew Charitable Trusts	Jerome Ryan, SWIG
Chris Guth, Federico & Associates, Inc.	Stacey Simmons, FDACS
Samuel Hankinson, DEP	Tiffany Simpson, DEP
Kira Hansen, Kimley-Horn	Carol Sundberg, Citizen
Madeline Hart, FDACS	James Thompson, City of Clermont
Ron Hart, Surface Water Professionals	Diana Turner, DEP
Janet Hearn, ATM	Unknown, The Florida Channel
Rob Heaviside, City of Winter Garden	Lisa Van Houdt, DEP
Margarita Hernandez, DEP	Tim Waln, SJRWMD
Stefanie Herrera, Richardson Soils	

## Questions and Answers

Q: What was “operating on Lake Apopka in the 1990s” that is not there now?

A: There were several muck farm operations along the lake during the 1990s. The St. Johns River Water Management District (SJRWMD) purchased some of the land and converted the muck farms to wetland treatment systems, which accounts for a large load reduction to Lake Apopka.

Q: If the SJRWMD currently uses 2014 land use for the loading estimates and you update the data to use 2024 land use, should we expect to see a bump in loading next year?

A: The SJRWMD is unsure if the land use changes since 2014 will result in an increased loading estimate or not.