St. Lucie River and Estuary Basin Management Action Plan (BMAP) Annual Meeting

Via Webinar
Webinar Registration Link:

https://attendee.gotowebinar.com/register/8098949228231014496

April 29, 2025
10 AM EDT

Agenda

- St. Lucie River and Estuary Basin Management Action Plan (BMAP) Background.
- Statewide Annual Report and Reduction Progress for St. Lucie River and Estuary BMAP.
- Programmatic Updates.
- Questions/Comments.
- Technical Updates.
- Look Ahead and Resources.
- Questions/Comments.

Please note the site for documents relating to the St. Lucie River and Estuary BMAP:
BMAP Public Meetings | Florida Department of Environmental Protection

For more information on the St. Lucie River and Estuary BMAP, contact: Tony Tomalewski, 850-245-8683.
Anthony.Tomalewski@FloridaDEP.gov

WEBINAR HOUSEKEEPING

Attendee Participation

Open your control panel.

Join audio:

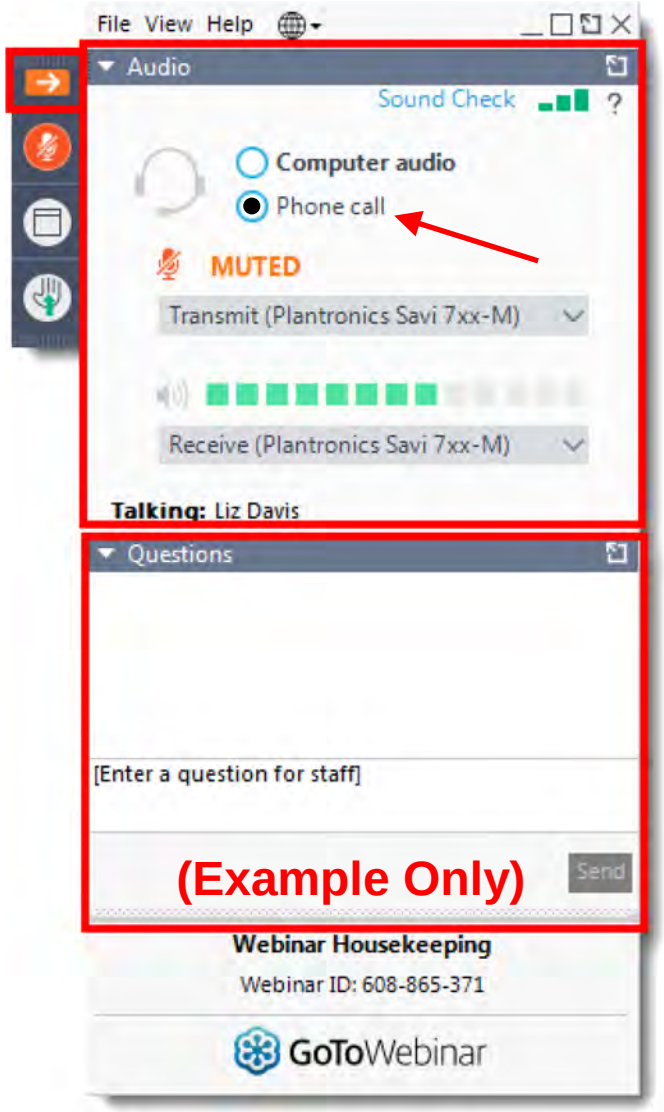
- Choose Computer Audio **or**
- Choose Phone Call and dial using the information provided with your registration.

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.



ST. LUCIE RIVER AND ESTUARY BASIN MANAGEMENT ACTION PLAN (BMAP) ANNUAL MEETING

Anthony Tomalewski
Water Quality Restoration Program
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoToWebinar | April 29, 2026

Photo Credit: SFWMD

ANNUAL MEETING AGENDA

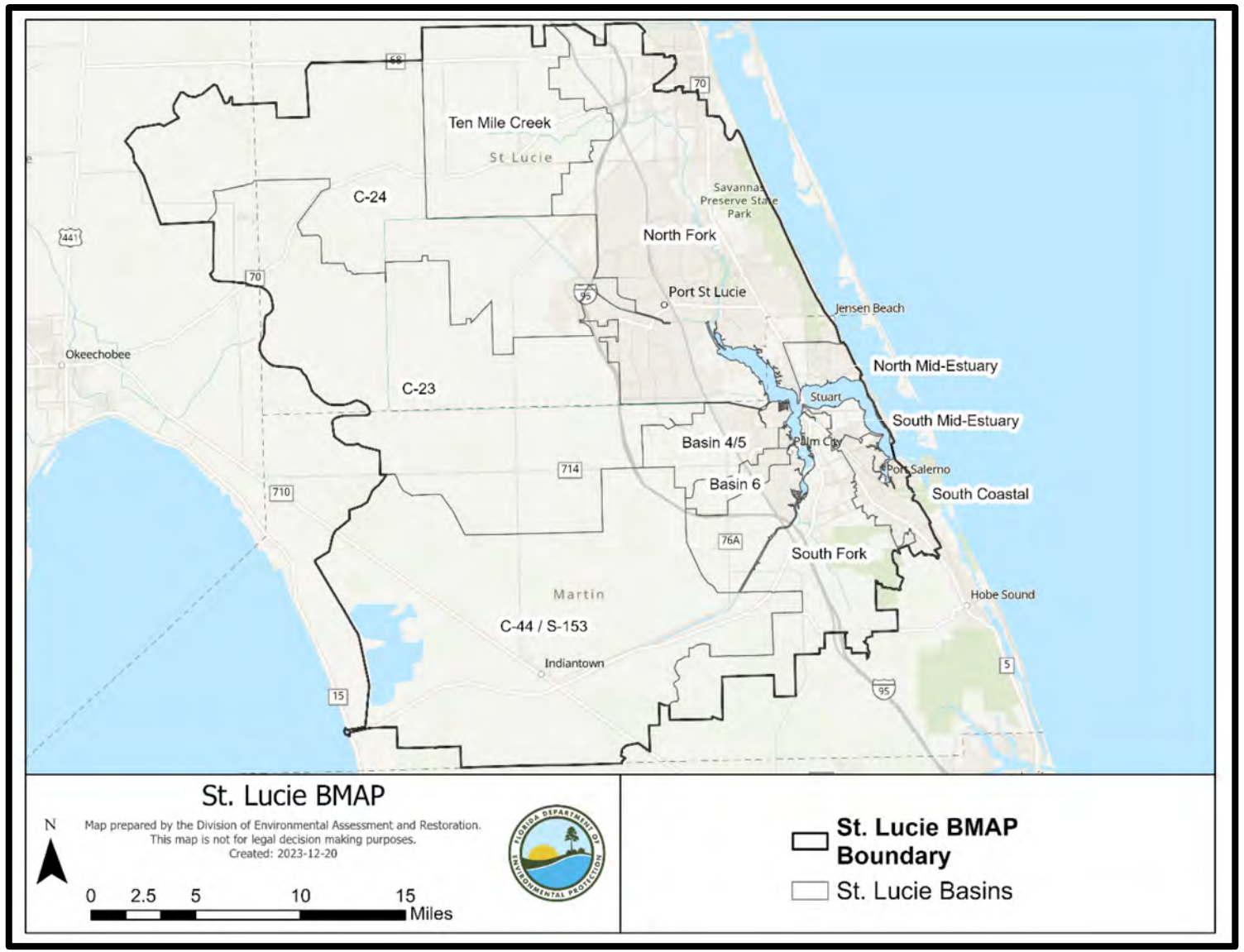
Agenda

- Preliminary Statewide Annual Report (STAR) 2025.
- Florida Department of Environmental Protection (DEP) Year in Review.
- Stakeholder Project Highlight.
- South Florida Water Management District (SFWMD) Updates.
- Florida Department of Agriculture and Consumer Services (DACS) Updates.
- Water Quality Analysis Results.
- Model Updates.
- Looking Ahead.

Photo Credit: DEP

ST. LUCIE RIVER AND ESTUARY BMAP

BACKGROUND



Total Maximum Daily Loads (TMDL):

- Developed in 2009 to address Total Nitrogen (TN) and Total Phosphorus (TP) in the estuary.

BMAP:

- Adopted in 2013, then updated in 2020 and 2025 as required by Executive Order 19-12.

ST. LUCIE RIVER AND ESTUARY BMAP
STAKEHOLDERS

Type of Organization/Entity	Name
Responsible Entities	Agriculture Martin County Okeechobee County St. Lucie County City of Fort Pierce City of Port St. Lucie City of Stuart Town of Sewall's Point Village of Indiantown Copper Creek Community Development District (CDD) Creekside CDD Portofino Isles CDD River Place CDD Southern Grove CDD St. Lucie West Service District Tesoro CDD Tradition CDD Veranda CDD Verano CDD Hobe St. Lucie Conservancy District North St. Lucie River Water Control District St. Lucie West Service District Pal Mar Water Control District Troup-Indiantown Water Control District
Responsible Agencies	County Health Departments DACS DEP Florida Department of Transportation (DOT) District 4 Florida DOT District 1 Florida Turnpike Enterprise SFWMD

ST. LUCIE RIVER & ESTUARY BMAP
STORYMAP

Overview

The **St. Lucie River and Estuary BMAP** was first adopted in June 2013 to implement the total nitrogen (TN) and total phosphorus (TP) TMDLs in the watershed. Executive Order 19-12 required an update to this BMAP in 2020. In 2023, House Bill 1379 added the additional requirement that BMAPs be assessed and updated every five years. The most recent 5-Year Review, completed in 2022, informed the latest BMAP update adopted on June 27, 2025. The BMAP includes management strategies or projects to be implemented by the responsible stakeholders that aim to reduce elevated levels of nitrogen and phosphorus in the estuary.

Quick Facts:

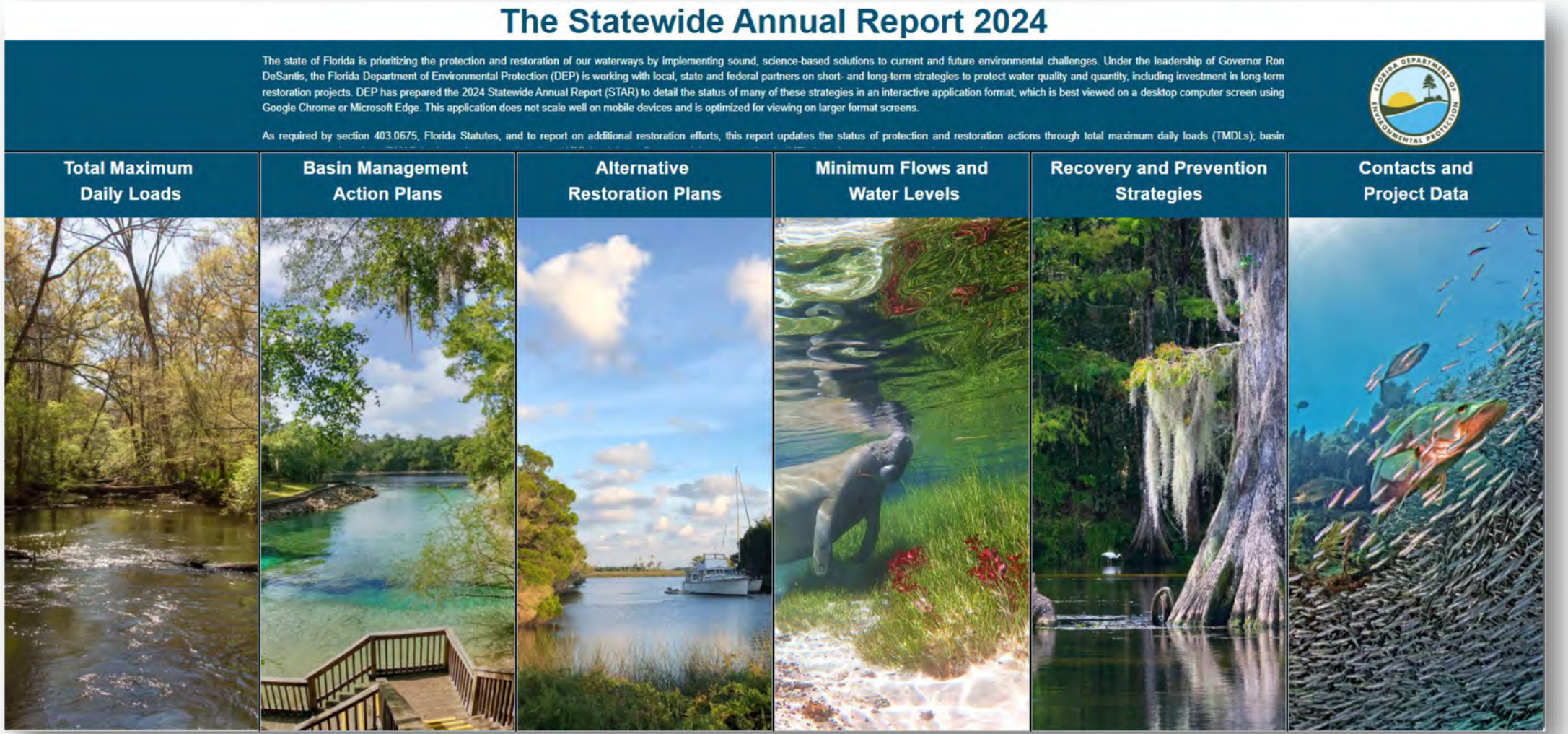
- Basin Management Action Plan (BMAP) adopted: June 27, 2025
- Total Maximum Daily Load (TMDL) Restoration Targets adopted: March 2009
- BMAP Restoration Area: 539,690 acres
- Water Quality Impairment: Total Nitrogen (TN), Total Phosphorus (TP), and Biochemical Oxygen Demand

01
/

Principal Sources of Nutrients:

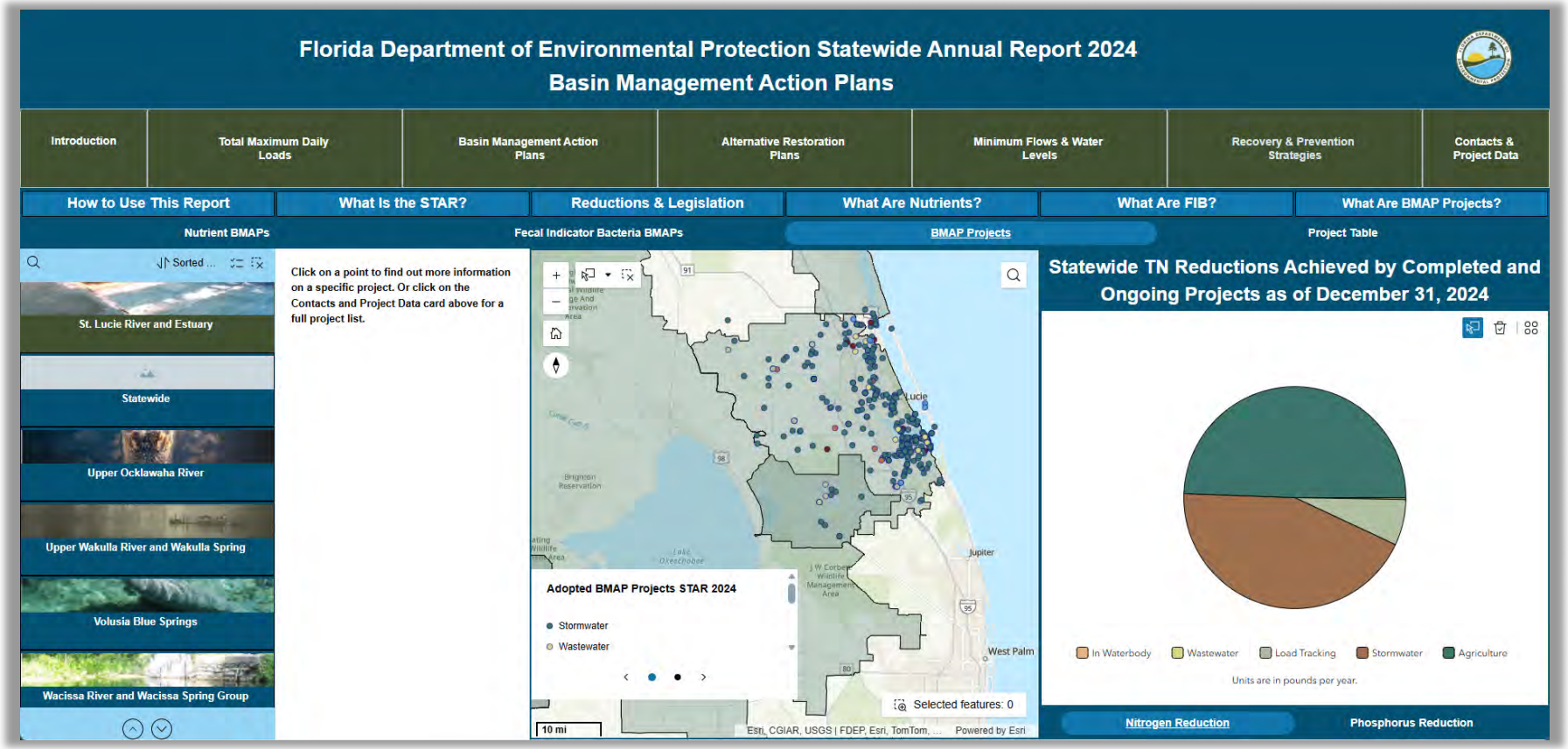
St. Lucie Basin Management Action Plan StoryMap

STAR
STATEWIDE ANNUAL REPORT



https://floridadep.gov/STAR

STAR
STATEWIDE ANNUAL REPORT

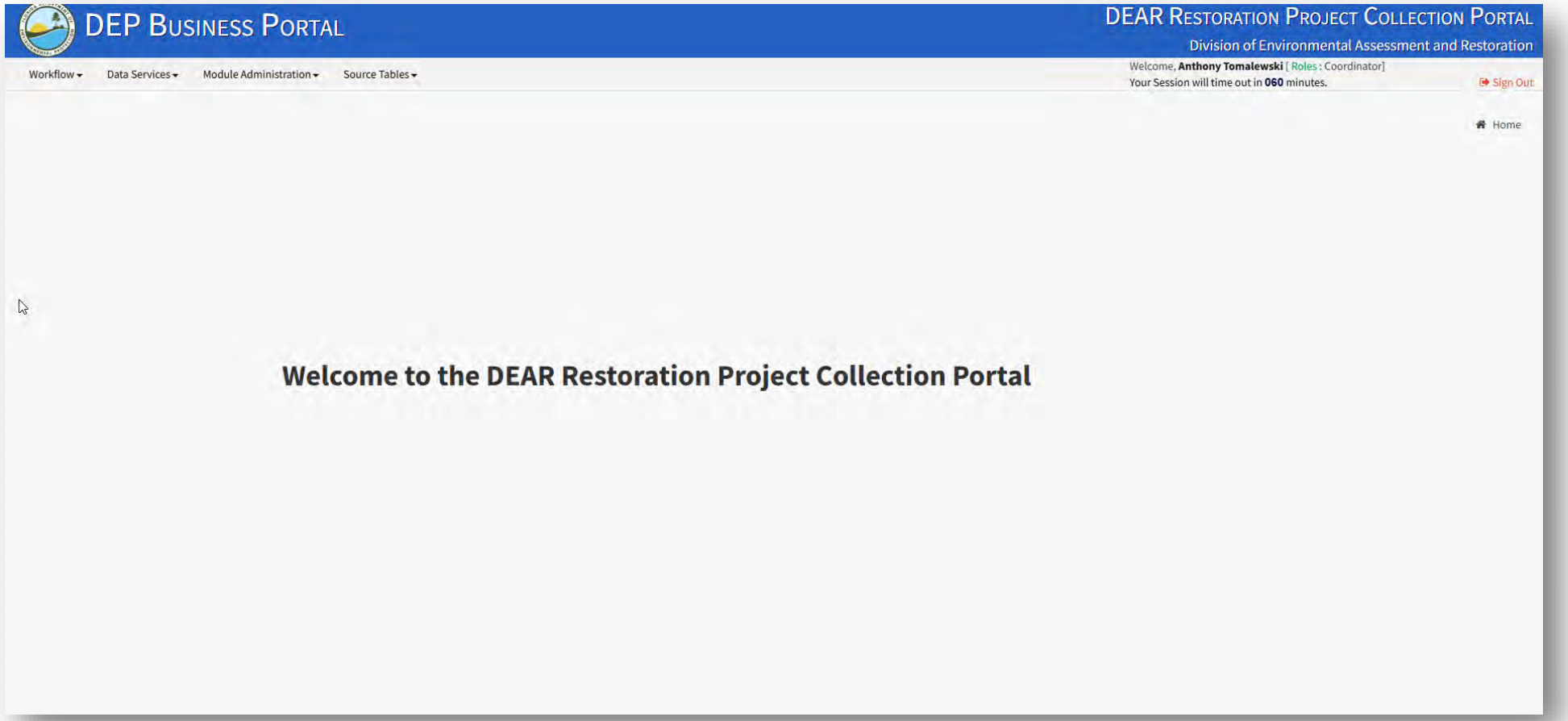


- Report will be published by July 1, 2026, to update reporting through Dec. 31, 2025.
- Summarizes accomplishments in the BMAPs statewide.
- Reports on restoration projects and management strategies.
- Data download available.

STAR

BMAP PORTAL FOR PROJECT COLLECTION

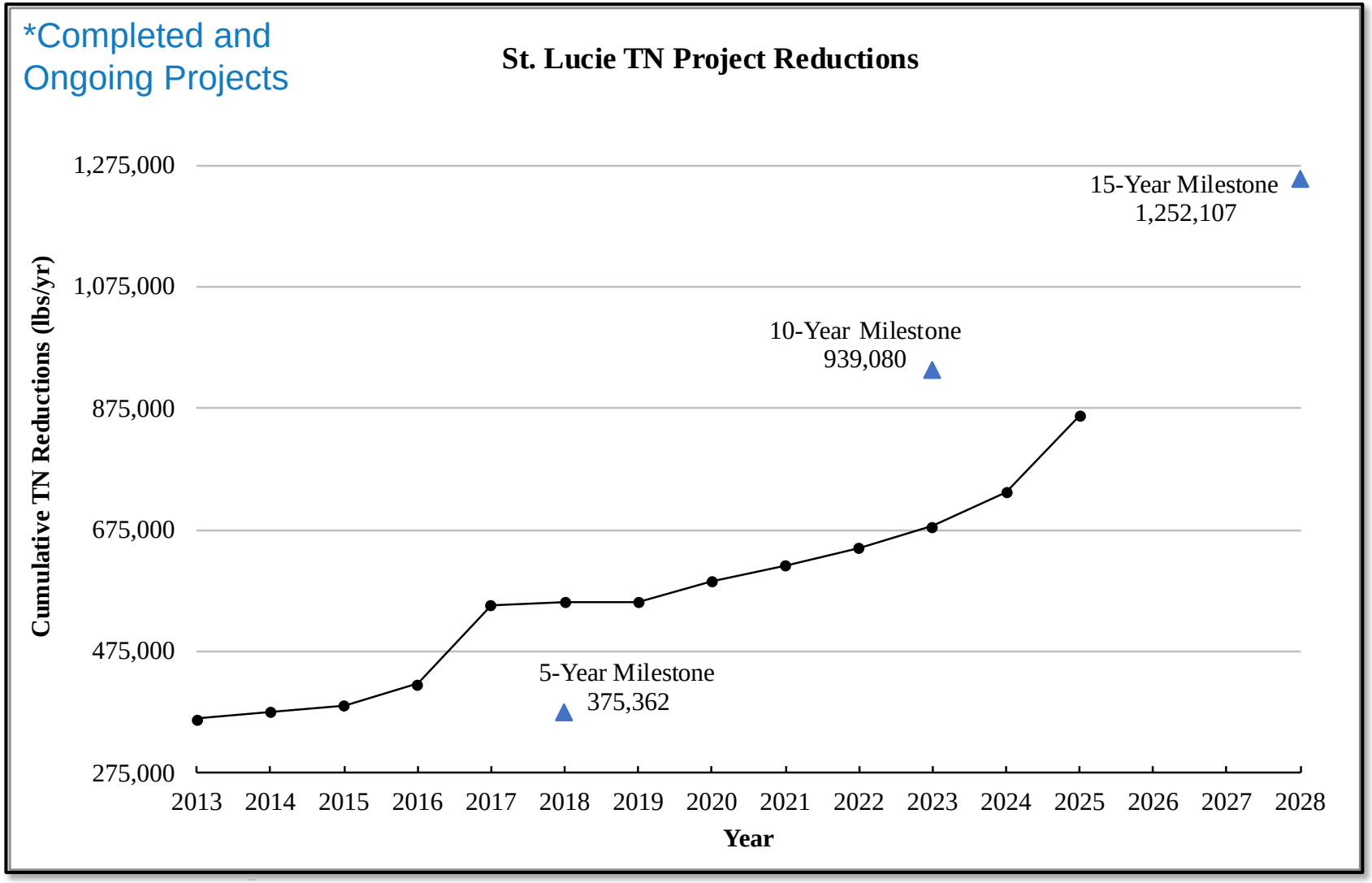
Notify your BMAP coordinator know if changes in access to the portal are needed.



ST. LUCIE RIVER & ESTUARY BMAP

*PRELIMINARY 2025 STAR UPDATE – TN

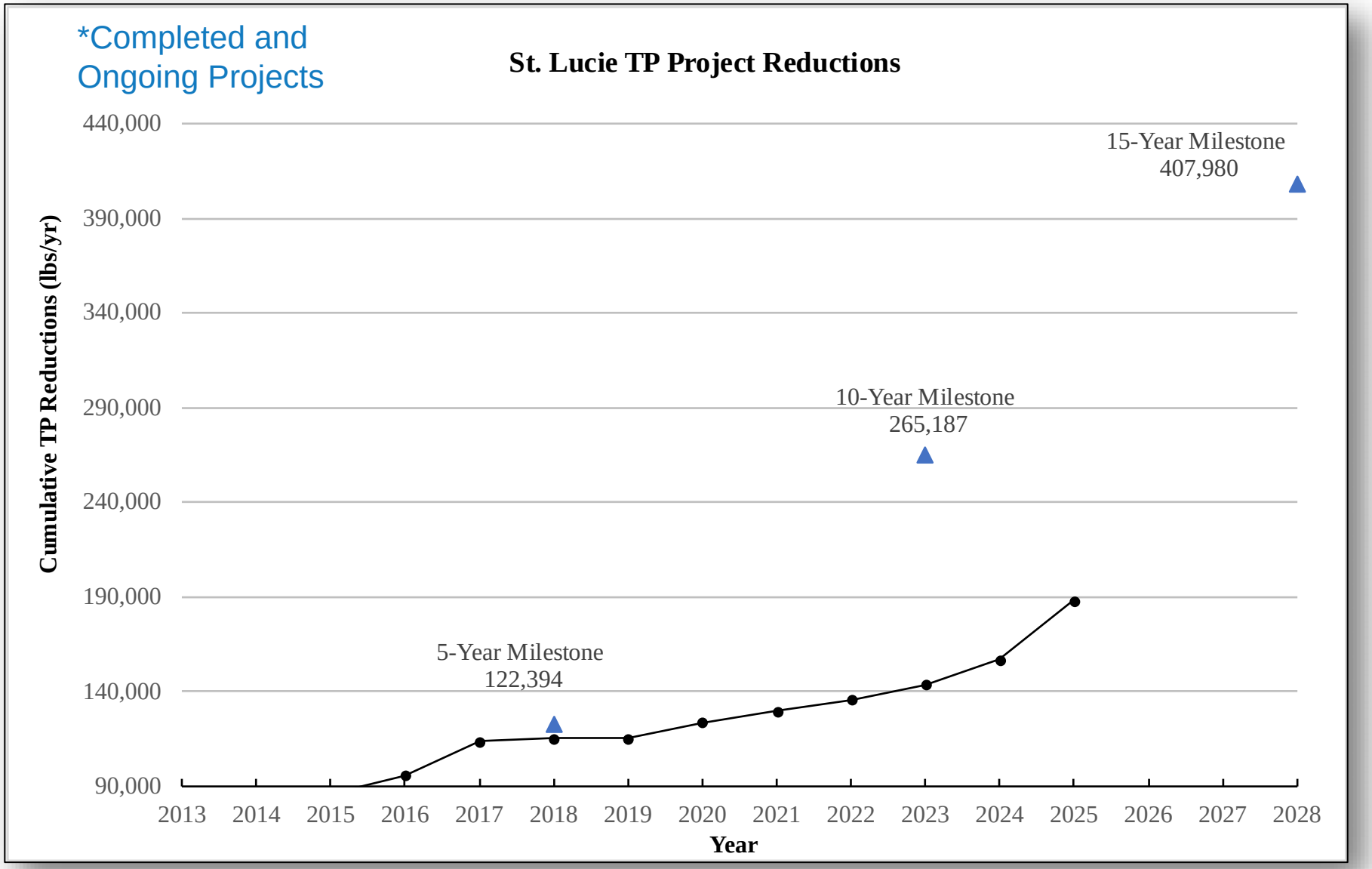
*Completed and Ongoing Projects



lbs/yr = pounds/year

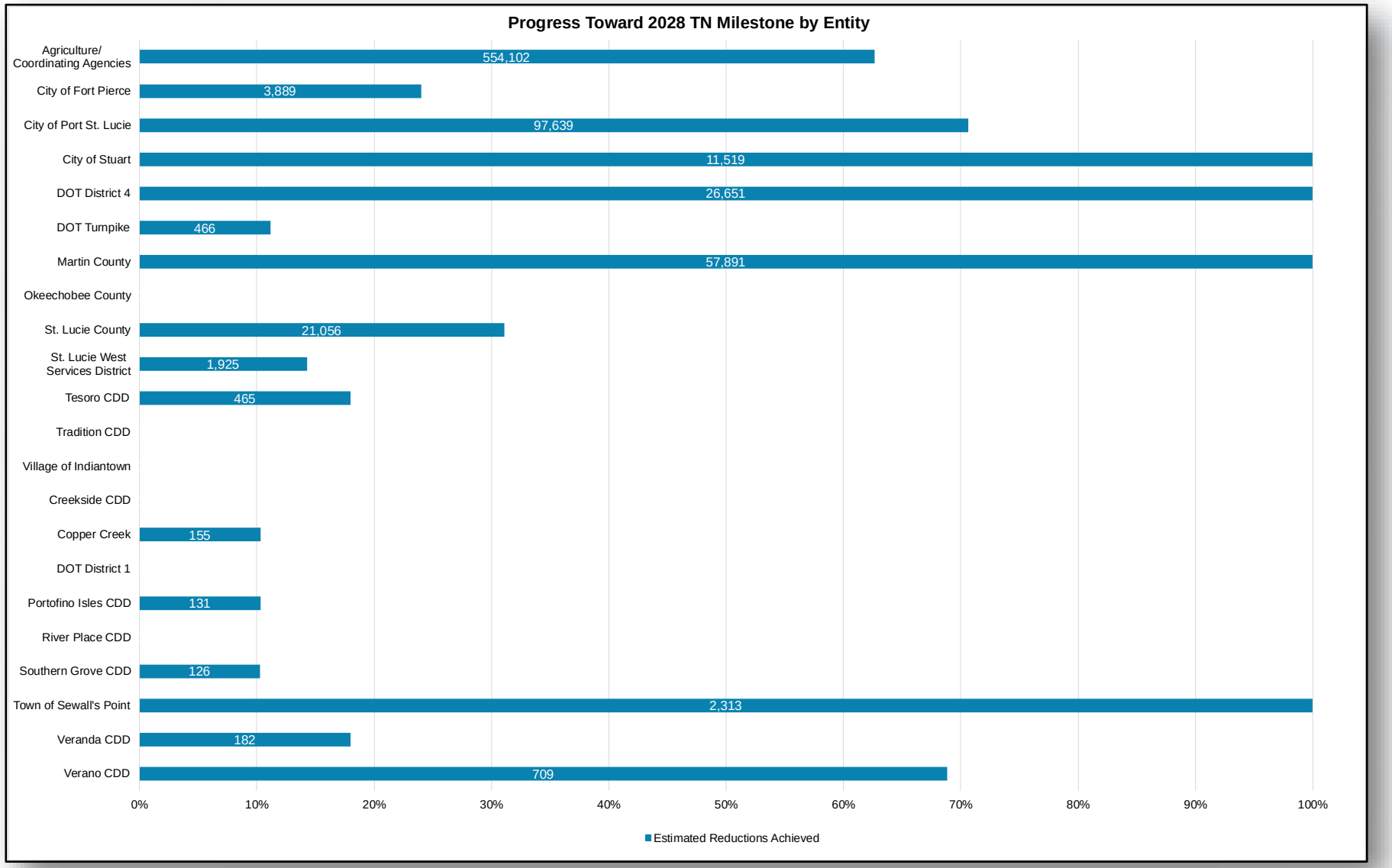
ST. LUCIE RIVER & ESTUARY BMAP

*PRELIMINARY 2025 STAR UPDATE – TP



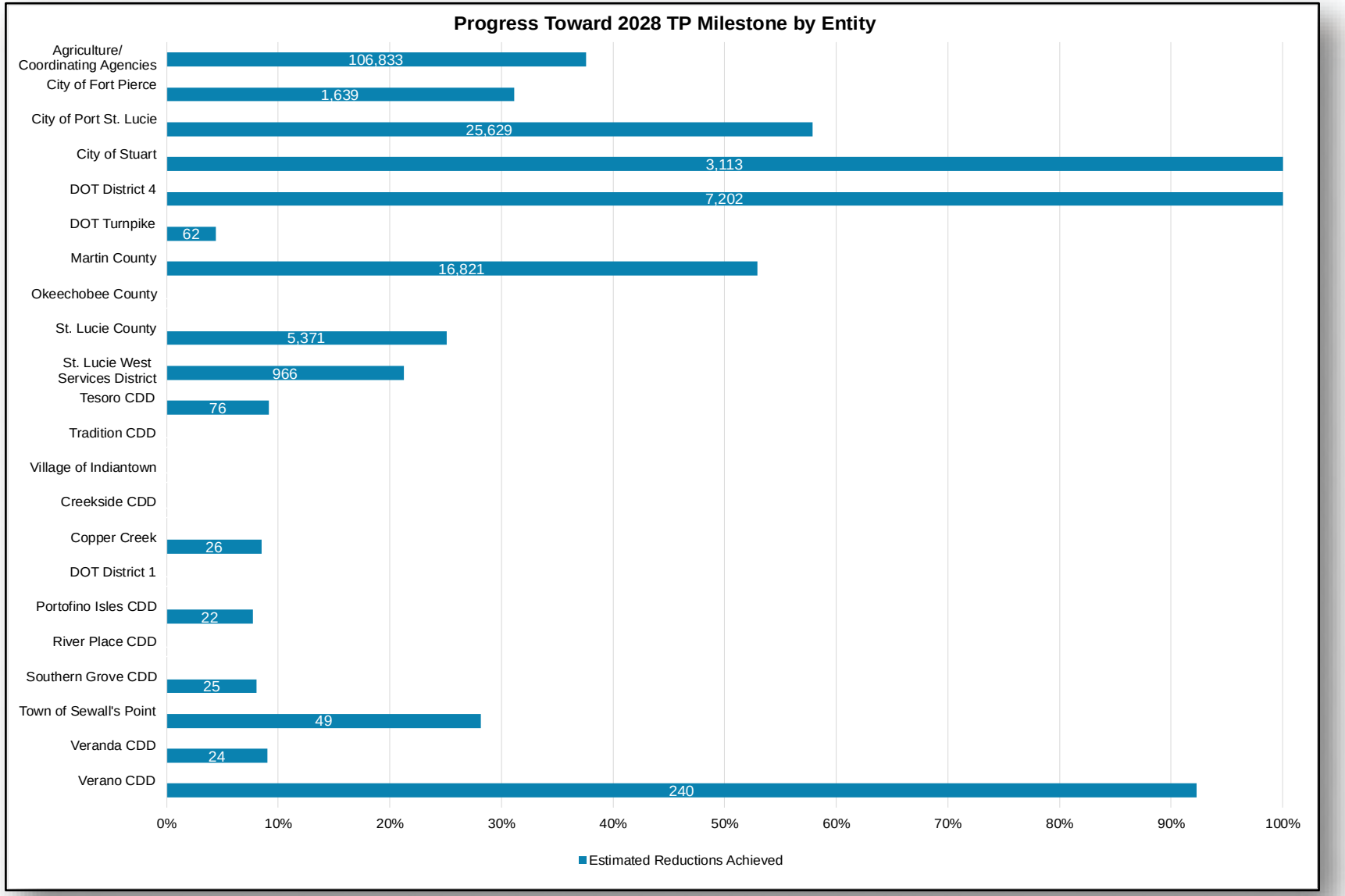
ST. LUCIE RIVER & ESTUARY BMAP

*PRELIMINARY 2025 STAR UPDATE – ENTITY TN REDUCTIONS PROGRESS



ST. LUCIE RIVER & ESTUARY BMAP

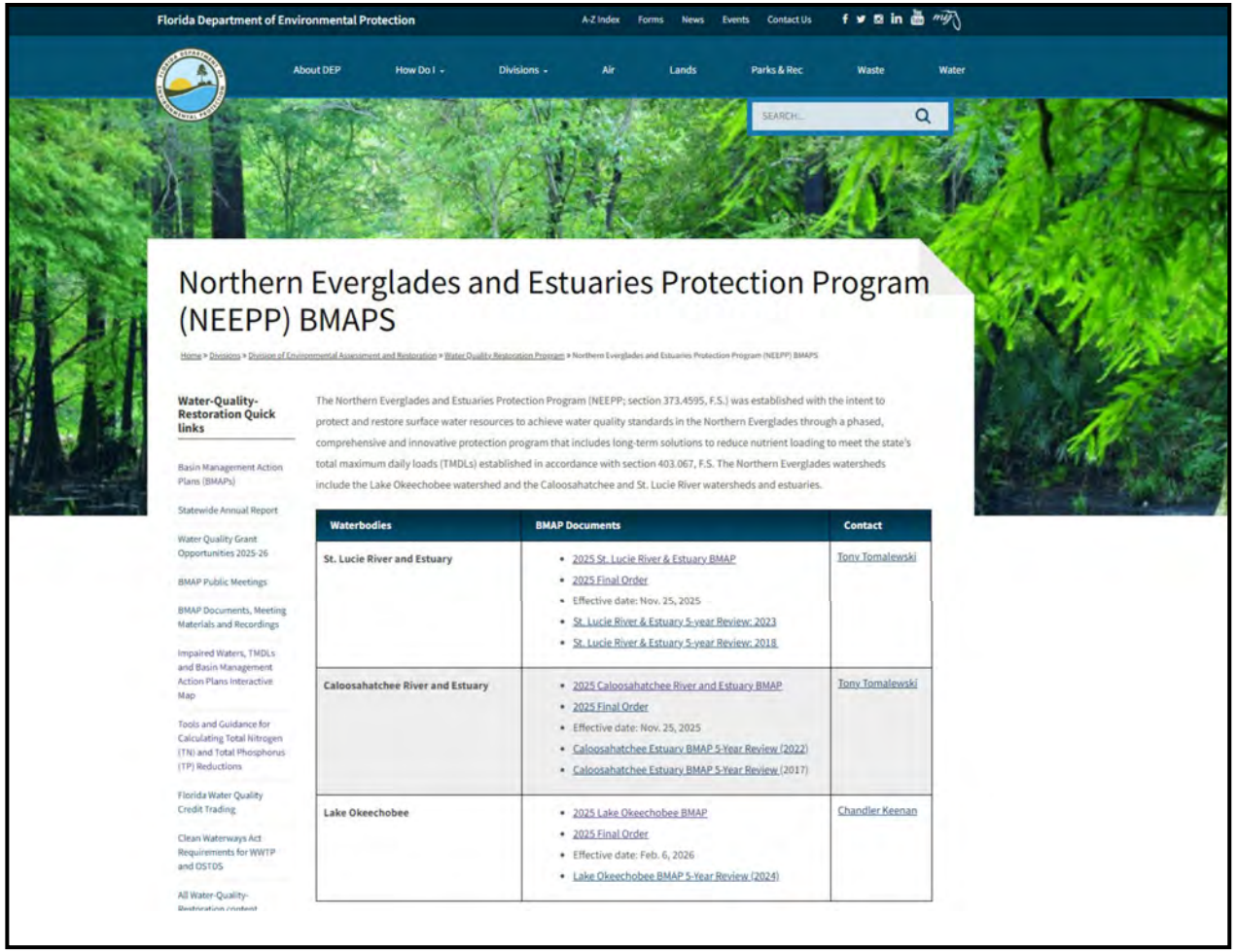
*PRELIMINARY 2025 STAR UPDATE – ENTITY TP REDUCTIONS PROGRESS



BMAP UPDATES

COMPLETED AND ONGOING EFFORTS

- Water quality data evaluation.
- Water quality trend analyses.
- Hotspot analysis.
- Evaluation of the monitoring network.
- Planning and development of regional projects with partner agencies.
- Identification of projects for BMAP milestones.
- Increased outreach to local governments, special districts and industry.
- Incorporation of Clean Waterways Act requirements.
- Incorporation of House Bill (HB) 1379 and HB 1557 requirements.



POLICY AND 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.
Wastewater	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.

GOLF COURSE REQUIREMENTS

Date	Requirement for Public Golf Courses	Requirement for Private Golf Courses
Nov. 27, 2026	Draft Nutrient Management Plan (NMP) Due	Draft NMP Due
Dec. 31, 2026	Superintendents must have completed their University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Golf Course Best Management Practices Program Certification	-
Nov. 27, 2027	Final NMP Due	Final NMP Due
Mid-November to Mid-January Annually	Annual reporting during STAR. Beginning November 2028.	Annual reporting during STAR. Beginning November 2028.

BMAP UPDATES

COMPLETED AND ONGOING EFFORTS

- Stakeholder meetings held.
  - 4 public meetings/workshops.
  - 8 individual entity meetings.
- New stakeholder group added to the BMAP: Golf Courses.
  - Required creation of a golf course database which did not exist prior to 2025.
  - One informational webinar held in 2025, one planned for May 2026.
  - Outreach ongoing.
- St. Lucie Hydrological Simulation Program – FORTRAN (HSPF) model updates and ArcNLET model development ongoing.

Limpkin seen on a South Florida golf course during site visit.

Wildlife viewing in an STA with WMD staff.

BMAP STAKEHOLDER SPOTLIGHT

THE CITY OF PORT ST. LUCIE'S MCCARTY RANCH EXTENSION AND PRESERVE PROJECT

Project Benefits:

- 6-billion-gallon reduction in discharges entering the North Fork
- Nutrient reductions to be determined.

St. Lucie River and Estuary BMAP Annual Meeting

April 29, 2026

Jennifer Thera

Florida Department of Agriculture and Consumer Services

Office of Agricultural Water Policy

Office of Agricultural Water Policy (OAWP) Team

West Gregory
Director
West.Gregory@FDACS.gov

Megan Seward
Assistant Director
Megan.Seward@FDACS.gov

Jessica Ferris
Staff Director
Jessica.Ferris@FDACS.gov

OAWP Team: Policy Planning and Coordination

Yesenia Escribano
Bureau Chief
Yesenia.Escribano@FDACS.gov

Maddy Hart
Environmental Administrator
Madeline.Hart@fdacs.gov

Jennifer Thera
NEEPP Coordinator
Jennifer.Thera@FDACS.gov

Mission

Implement strategies that protect Florida's water resources while promoting the sustainability of agriculture.

Strategic Goals

- Expand and enhance agricultural Best Management Practice (BMP) implementation.
- Ensure the availability of an adequate and sustainable agricultural water supply.
- Manage cost share programs that support agricultural non-point source BMP implementation and water resource protection projects.

BMP Manuals

OAWP recently updated 9 manuals and adopted a 10th, new manual for Small Farms and Specialty Livestock

Manual	Last Updated	Stage	Dates
Sod	2008	Rule Effective	November 12, 2024
Cattle	2009	Rule Effective	December 22, 2024
Procedures	2021	Rule Effective	October 30, 2024
Small Farms and Specialty Livestock	New!	Rule Effective	February 23, 2025
Specialty Fruit and Nut	2011	Rule Effective	February 24, 2025
Citrus	2013	Rule Effective	March 4, 2025
Nursery	2014	Rule Effective	March 12, 2025
Vegetable and Agronomic Crop	2015	Rule Effective	February 27, 2025
Poultry	2016	Rule Effective	February 13, 2025
Dairy	2016	Rule Effective	March 5, 2025
Equine	2012	Rule Effective	March 12, 2025

https://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy/Rule-Development-Activities

Producer Options in BMAP Areas

1. Enroll in our BMP Program and properly implement applicable BMPs for presumption of compliance, OR

2. Follow an FDEP or WMD-prescribed water quality monitoring plan at a producer's expense

Enrollments within the St. Lucie BMAP

Subbasin	Total Ag Acres	Enrolled Ag Acres	% Enrolled	Irrigated Acres	Enrolled Irrigated Acres	% Enrolled
Basin 4/5	2,812	1,500	**53%**	216	150	**69%**
Basin 6	288	55	**19%**	62	41	**66%**
C-23	83,772	70,176	**84%**	8,549	8,517	**100%**
C-24	59,750	44,524	**75%**	12,473	11,667	**94%**
C-44/S-153	70,352	55,286	**79%**	24,059	21,161	**88%**
North Fork	5,670	1,896	**33%**	358	54	**15%**
North Mid-Estuary	2	0	**0%**	2	0	**0%**
South Coastal	28	0	**0%**	0	0	**0%**
South Fork	15,774	11,368	**72%**	2,686	1,393	**52%**
Ten Mile Creek	32,100	18,413	**57%**	3,713	2,899	**78%**

FDACS BMP Program enrollment as of Dec 2025 and the Draft 13th FSAID Geodatabase

Agricultural Acres Enrolled within St. Lucie BMAP

BMP Manual	Acres
Cattle	124,242
Citrus	3,293
Dairy	3
Equine	456
Lake Okeechobee Protection Plan	3
Multiple Commodities	56,181
Nursery	1,262
Specialty Fruit & Nut	120
Small Farm & Specialty Livestock	57
Sod	213
Vegetable & Agronomic Crop	17,387
TOTAL	**203,219**

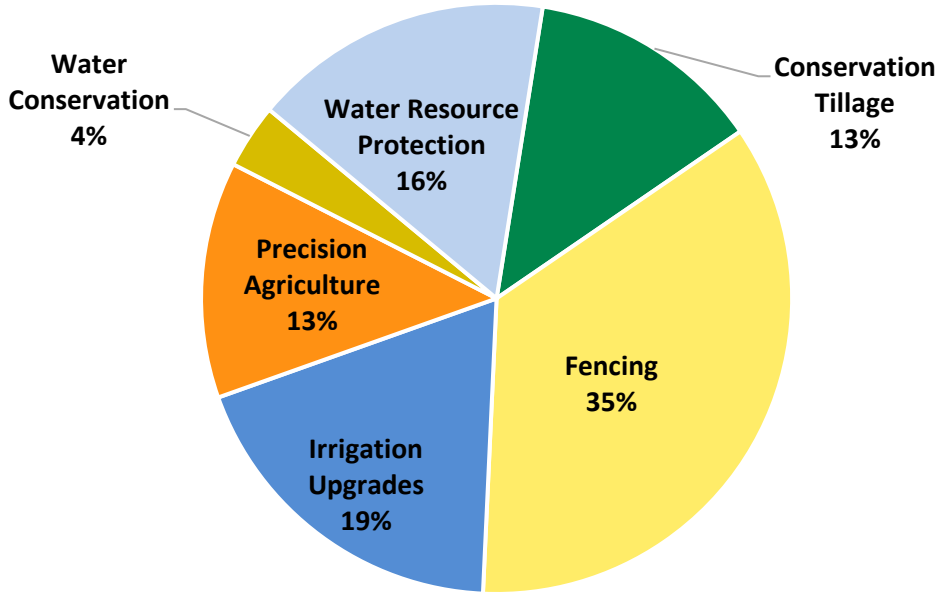
BMP Cost Share within NEEPP

Since 2024

Project Count: 89

Reimbursement: $4,046,090

Producers: 71



Category	Examples of Information Collected
Fencing	Grazing schedule; Map of fence cost-share; Map of resource concerns on site; Stocking rate (greater/less than threshold depending on species and property size); Sensitive features on the property; Purpose of fencing (e.g., rotational grazing)
Irrigation Upgrades (often automated)	Mobile Irrigation Lab (MIL) data; Irrigated acres; Irrigation frequency; Whether fertigating; Nitrogen and phosphorus rates from fertigation; Prior irrigation type; Whether irrigation systems are automated; Number of automated vs. non-automated systems
Alternative Water for Livestock	GPS location; Sensitive features on the property; Whether rotational grazing will be used year-round; Presence of cross-fencing; Top three benefits for the operation
Culverts	Volume; Whether a nutrient reduction has been calculated (and whether one could be calculated to support funding); Active time of year; Presence of open culverts (if applicable)

Agricultural Regional Projects

Floating Aquatic Vegetative Tilling (FAVT)

- East Caloosahatchee (1)
- Arbuckle Creek (5)*
- Fisheating Creek (6)

Hybrid Wetland Treatment Technology (HWTT)

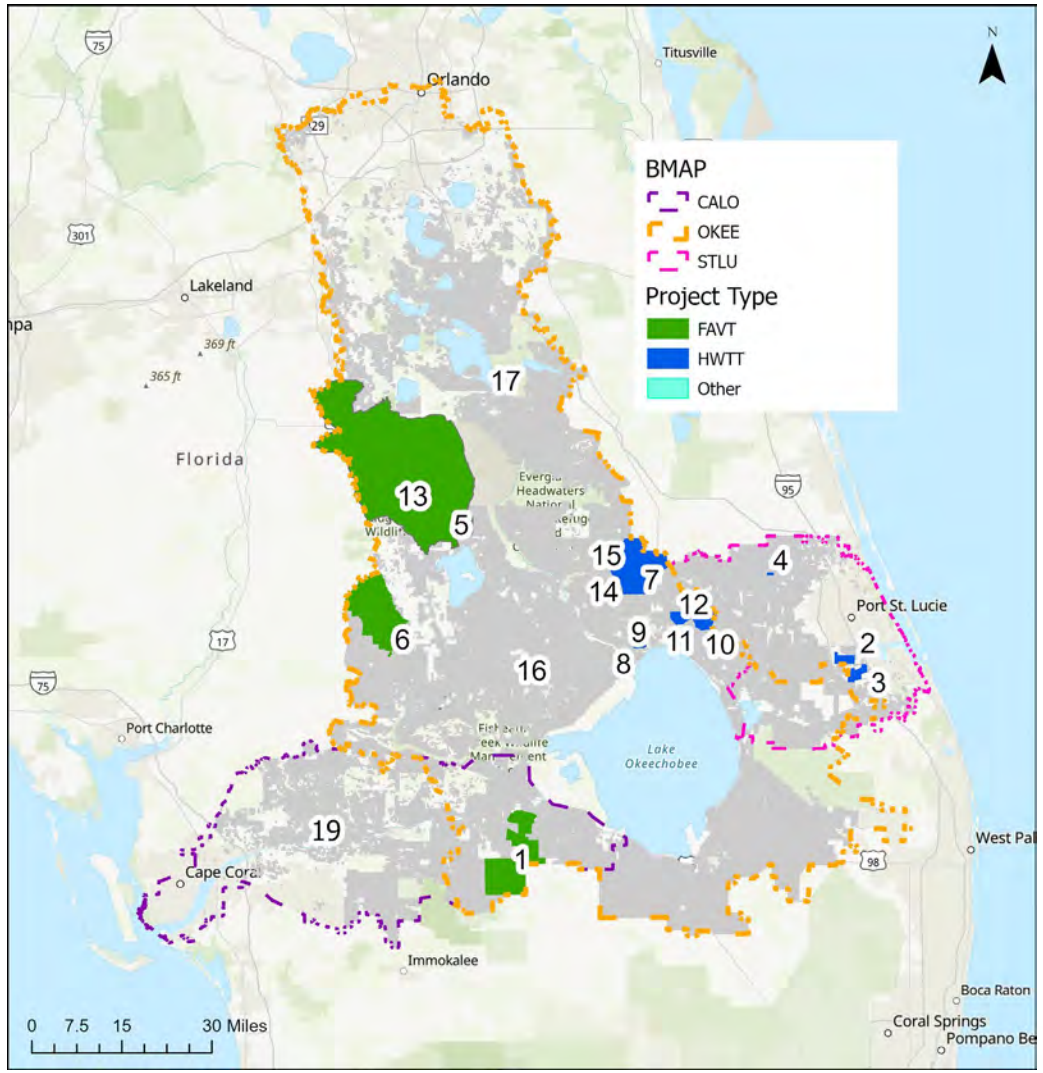
- Bessey Creek (2)
- Danforth Creek (3)
- Grassy Island (7)
- Ideal Holding (4)
- Lemkin Creek (8)/Wolff Ditch (9)
- Nubbin Slough (10)
- Mosquito Creek (11)
- Taylor Creek/Nubbin Slough (18)*

Other Projects

- Larson Dairy (12)*
- Triple G Dairy (13)*
- Milking R Dairy (14)*
- Bassett Grove Water Storage & Treatment (15)*
- Lykes Brothers - Harney Pond (16)
- Cypress Chapter (17)*
- Four Corners (19)

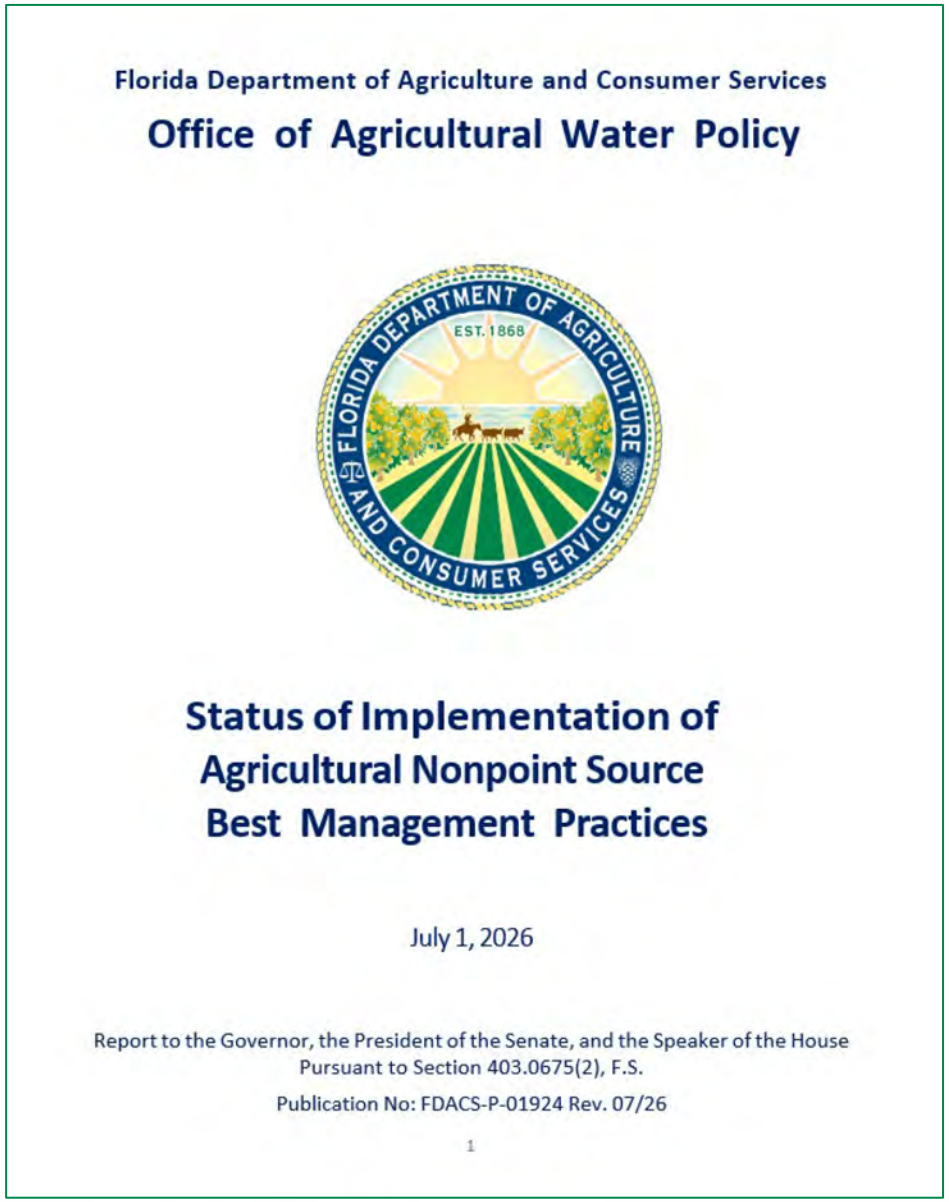
*New projects that have not been completed

St. Lucie:
Total TN Reductions: 121 lbs/yr
Total TP Reductions: 137 lbs/yr



2025 FDACS Legislative Annual Report – Available July 1

http://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy



Florida Department of Agriculture and Consumer Services

Office of Agricultural Water Policy

Status of Implementation of Agricultural Nonpoint Source Best Management Practices

July 1, 2026

Report to the Governor, the President of the Senate, and the Speaker of the House
Pursuant to Section 403.0675(2), F.S.

Publication No: FDACS-P-01924 Rev. 07/26

1

Thank You!

http://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy

Jennifer Thera, Environmental Consultant
Jennifer.Thera@FDACS.gov – (850) 617-1722

SFWMD Update

St. Lucie River Watershed Construction Project

Stacey Ollis, PMP
Principal State Policy Analyst
Everglades and Estuaries Protection Bureau

St. Lucie River and Estuary BMAP Annual Meeting

April 29, 2026

Agenda


St. Lucie River at US-1 Bridge

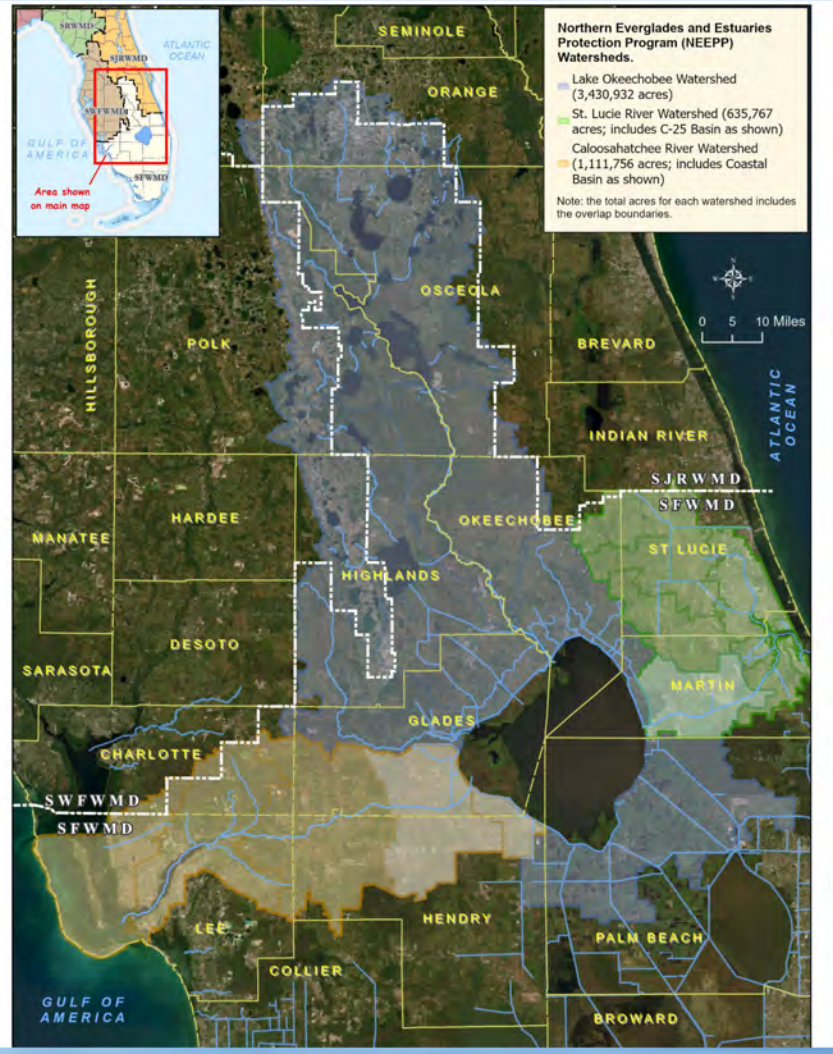
- Northern Everglades Program Overview
- 2026 St. Lucie River Watershed Construction Project Review
  - Project Spotlights
  - Water Storage Benefits
- Watershed Protection Plan Reporting

Northern Everglades and Estuaries Protection Program (NEEPP)

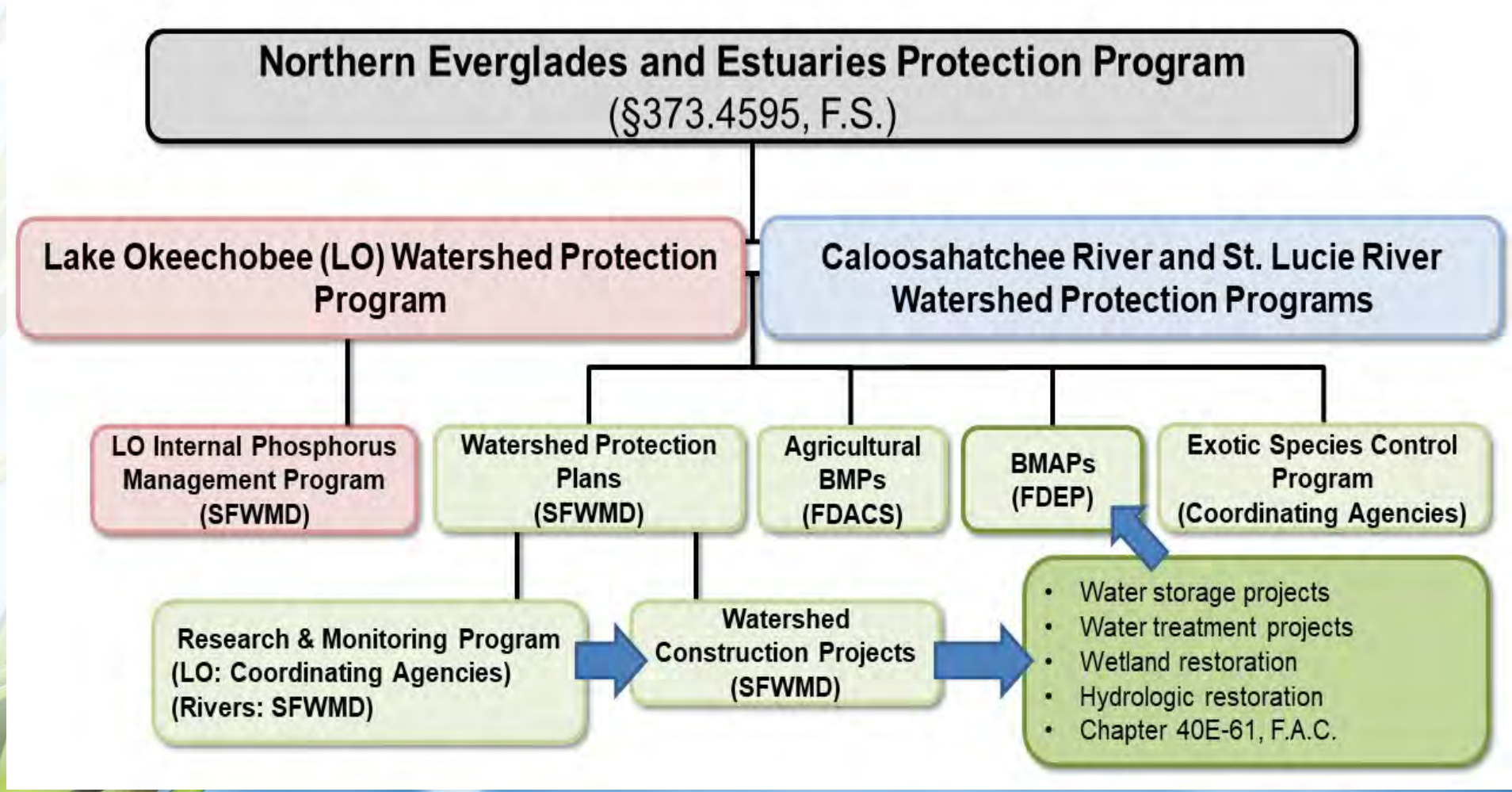
- Purpose: Protect and restore surface water resources by improving hydrology and water quality for the Northern Everglades ecosystem (§373.4595, Florida Statutes)

- Goal: Improve Water Quality
  - Lake Okeechobee: Total Phosphorus (TP)
  - Caloosahatchee Estuary: Total Nitrogen (TN)
  - St. Lucie Estuary: TP and TN

- Goal: Manage Water Quantity
  - Increase water storage north of Lake Okeechobee and in Caloosahatchee and St. Lucie River Watersheds



NEEPP: Coordinating Agencies Roles



Presenter: Stacey Ollis

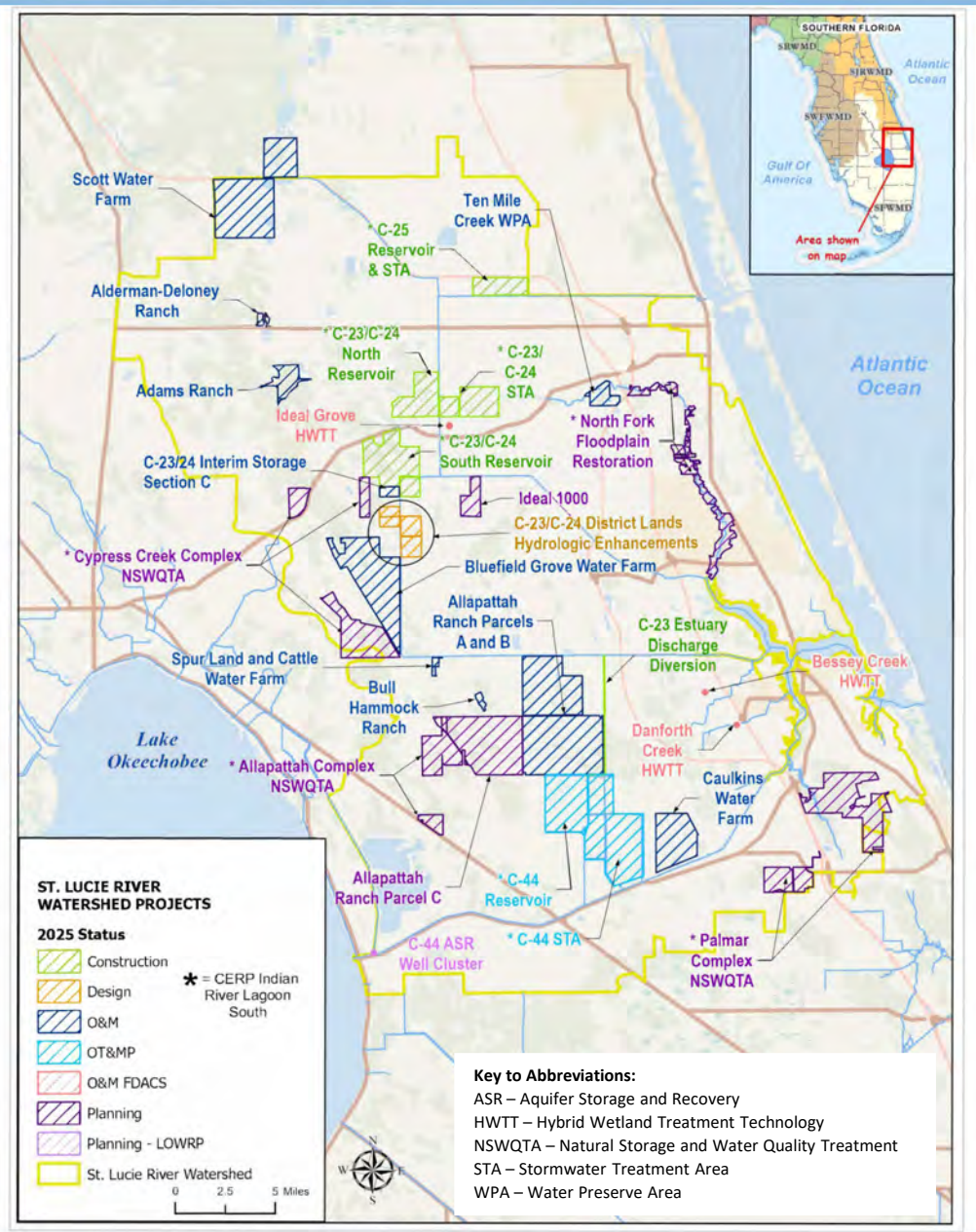
St. Lucie River Watershed Construction Project Review

- Since 2020, SFWMD completed St. Lucie River Watershed Construction Project (SLRWCP) reviews, as part of the Watershed Protection Plan (WPP) reviews
- Annual reviews are important to:
  - Maintain transparency and accountability in BMAP process
  - Assist to progressively move toward achieving state's TMDLs
  - Consolidate into NEEPP annual progress reporting (South Florida Environmental Report, or SFER) per §373.4595(6), F.S.
  - ***Develop and update WPPs required every five years***
- 2026 SLRWCP Review
  - Project performance – Water Year (WY) 2025 (Apr. 1, 2024–May 30, 2025)
  - Key accomplishments – Fiscal Year (FY) 2025 (Oct. 1, 2024–Sept. 30, 2025)
  - Final 2026 SFER – Volume I, Chapter 8C (March 1, 2026) at SFWMD.gov/SFER

Project Progress

- 2025 SLRWCP Status:
  - 7 projects – planning/design
  - 5 projects – construction
  - 12 projects – operational

C-23/C-24 Public Lands, Sections A and B



Project Spotlights

- CERP Indian River Lagoon – South
- C-23/24 Interim Storage – Section C and Other Parcels
- Caulkins, Bluefield Grove and Scott Water Farms

C-25 Reservoir and STA

US Army Corps of Engineers

Indian River Lagoon - South


C-44 Reservoir

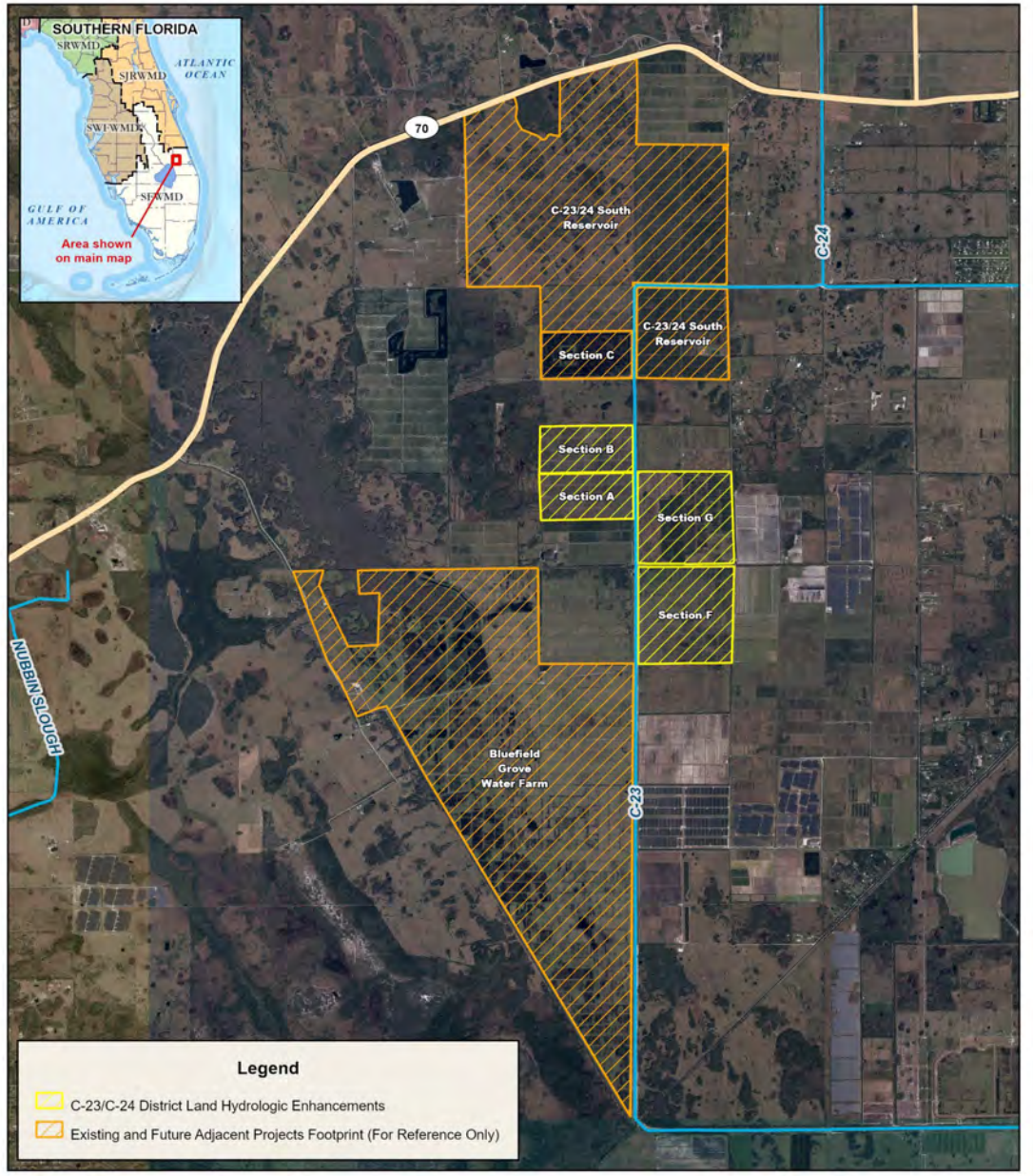

C-23/C-24 STA


C-23 Estuary Discharge Diversion, S-457 Pump Station


S-401 Pump Station, C-44 Area

C-23/C-24 District Lands: Section C Interim Storage and Other Parcels

Section C Interim Storage



Caulkins, Bluefield Grove & Scott Water Farms

Caulkins Water Farm, C-44 Basin

Bluefield Grove Water Farm, C-23 Basin

Scott Water Farm, C-25 Basin

Project Benefits

Progress Toward Water Quality and Storage Goals

- During 2025, operational projects provided over:
  - 127 metric tons of total nitrogen retention
  - 21 metric tons of total phosphorus retention
  - 71,000 acre-feet of dynamic storage
- Projects in the works to add even more storage capacity—which will *exceed* the total storage goal for the watershed

Increasing Storage Capacity in the St. Lucie River Watershed

Plus, more than 30,000 ac-ft of storage is planned beyond 2035.

Dynamic Storage

The total volume of water held over a specific period of time.
In the 2026 SFER, project performance was assessed during the WY2025 period.

Static Storage

The volume of water retained at maximum capacity, usually up to the point of discharge.
The static storage target for the St. Lucie River Watershed is 200,000 acre-feet.

Watershed Protection Plan Reporting

For more information, visit:

SFWMD.gov/WPPs

and

SFWMD.gov/SFER

(Final 2026 SFER –
Volume I, Chapter 8C)

Contact Information

Stacey Ollis, PMP

Principal State Policy Analyst

Everglades & Estuaries Protection Bureau

South Florida Water Management District

sollis@sfwmd.gov; 561-682-2039

sfwmd.gov

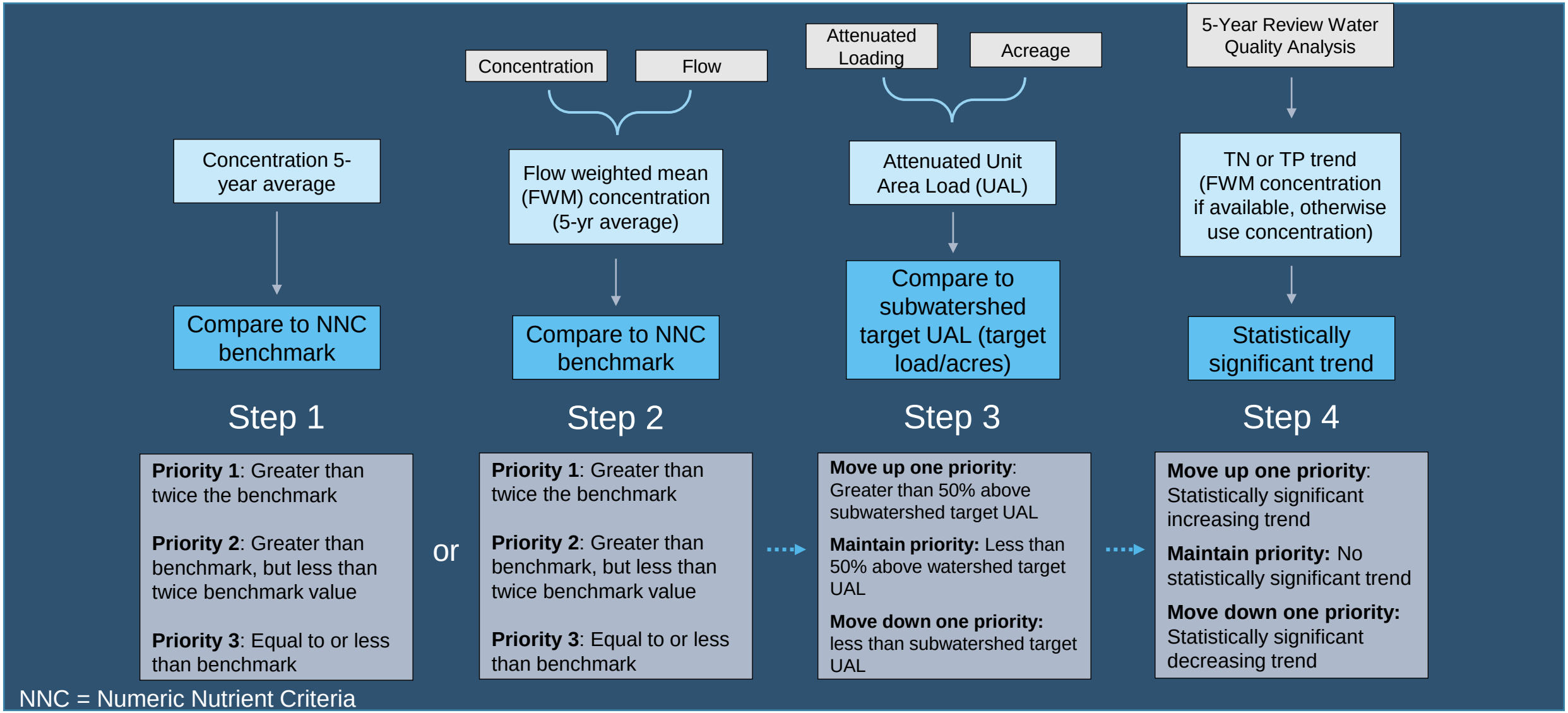
QUESTION BREAK

Questions

Please use the Questions panel to submit questions for Coordinating Agencies.

Targeted Restoration Area (TRA) Evaluation

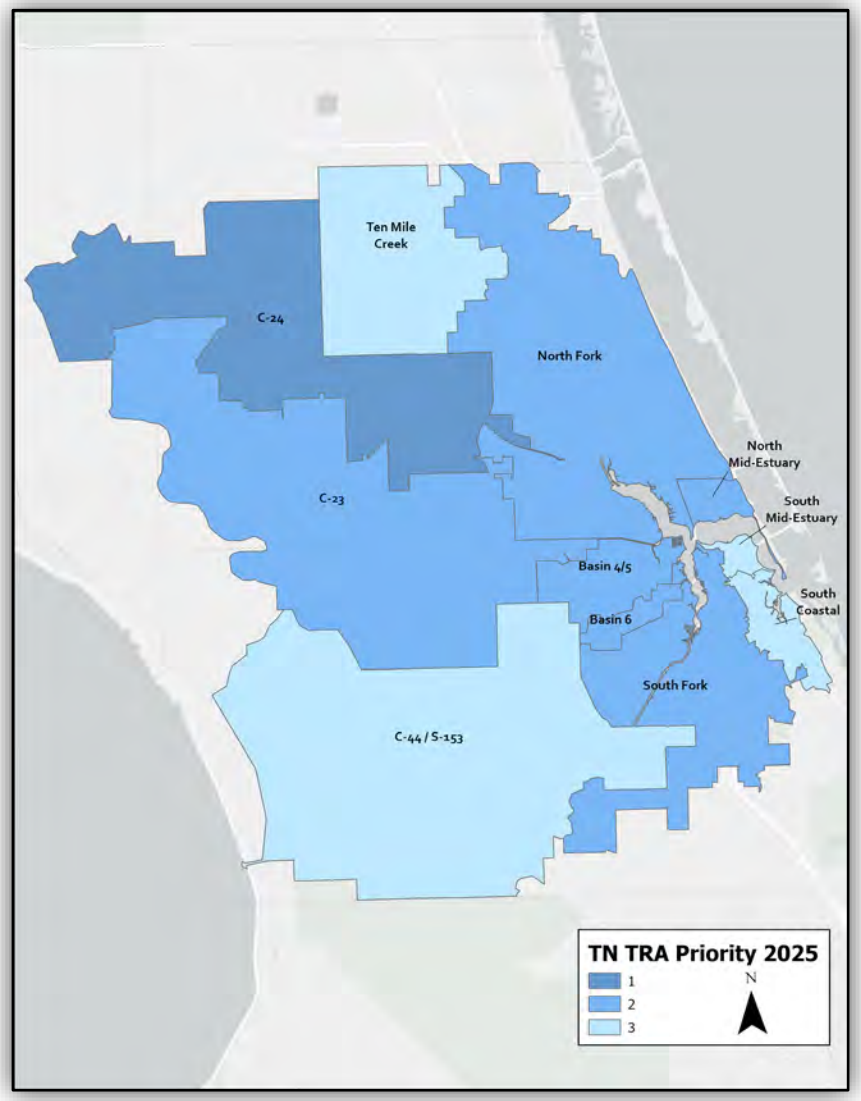
Approach

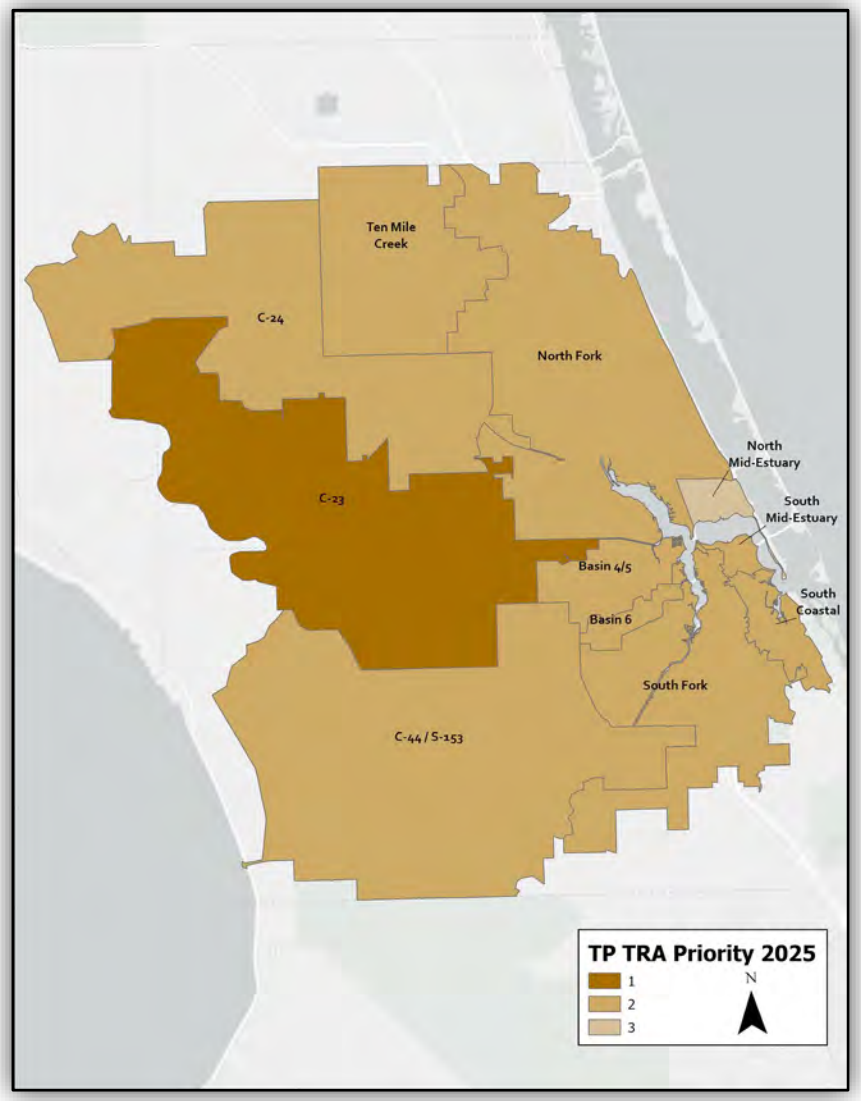


NNC = Numeric Nutrient Criteria

TRA EVALUATION

2025 EVALUATION RESULTS



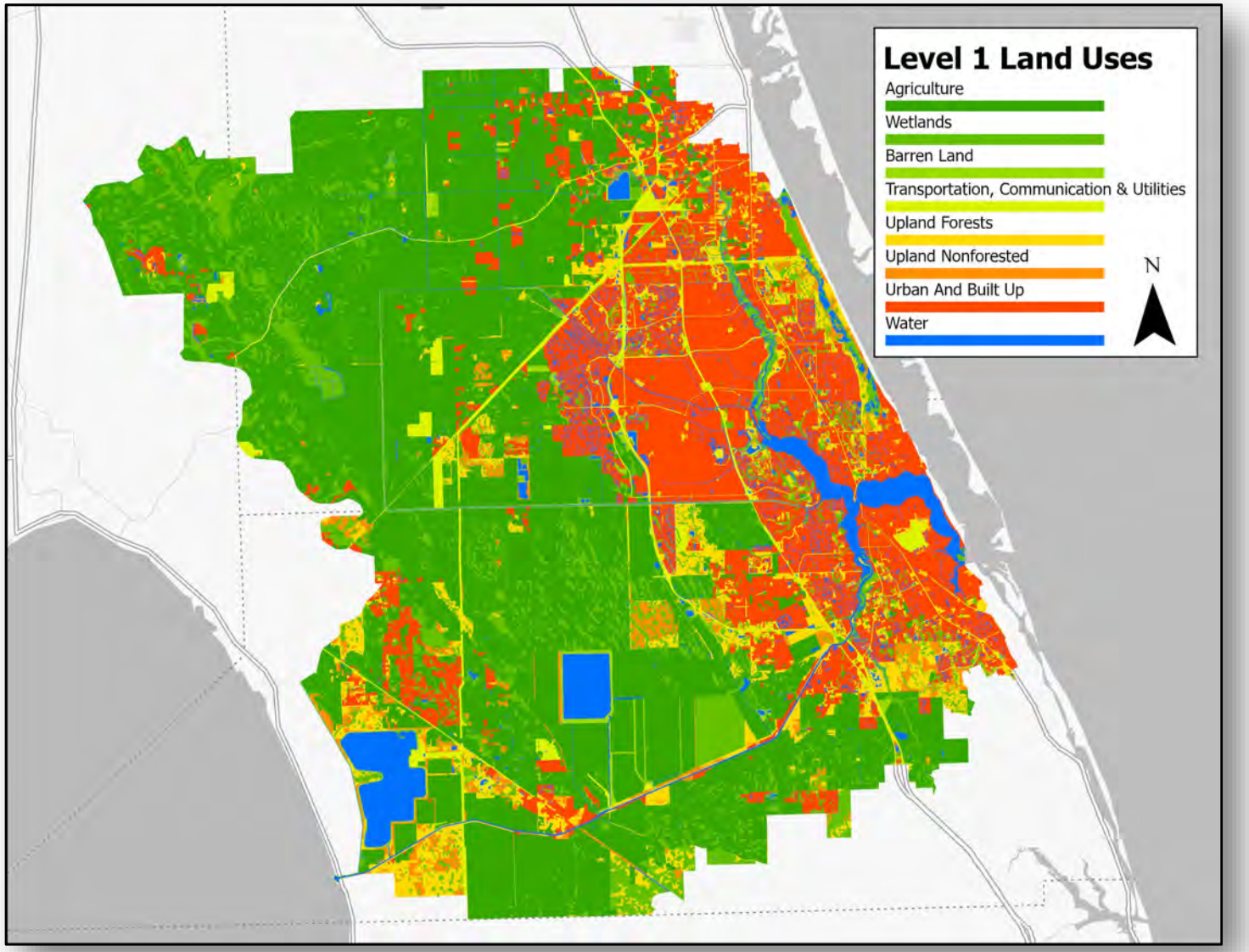


ST. LUCIE MODEL UPDATE

GENERAL OVERVIEW

In Progress

- Updating data used in model, including:
  - Flow.
  - Water Quality.
  - Wastewater Facility & Onsite sewage treatment and disposal systems (OSTDS).
  - Land Use.
  - Project Data.
- Updating allocations in 2027.
- Sending out components for review as they are completed.



TETRA TECH

St. Lucie River and Estuary Model Update

April 29, 2026

Model History and Scope Overview

- Current model is the Watershed Water Quality Simulation (WaSh).
- Florida Department of Environmental Protection's (DEP) goal is to have one consistent modeling approach across the Northern Everglades basin management action plans (BMAPs):
  - Hydrological Simulation Program – FORTRAN (HSPF) watershed model.
  - ArcGIS-Based Nutrient Load Estimation Toolbox in Python (ArcNLET-Py) for septic systems.
- Project is to prepare a model that represents total nitrogen (TN) and total phosphorus (TP) loading throughout the watershed.
  - Use to assist DEP with a future BMAP update.

Tasks

- Inventory available data.
  - Completed – memo provided for stakeholder input in August 2025.
- Delineate and setup model.
  - Completed – DEP and agency review occurred in November 2025.
- Calibrate watershed hydrology.
  - Drafted – memo with results provided for stakeholder input on April 15, 2026.
- Calibrate watershed water quality.
- Develop an ArcNLET-Py model to represent septic systems.
  - Drafted – memo and shapefile provided for stakeholder input on April 15, 2026.
- Prepare a final model report.
- Prepare a load estimation tool (LET) for future BMAP update.

TETRA TECH

Data Inventory and Setup

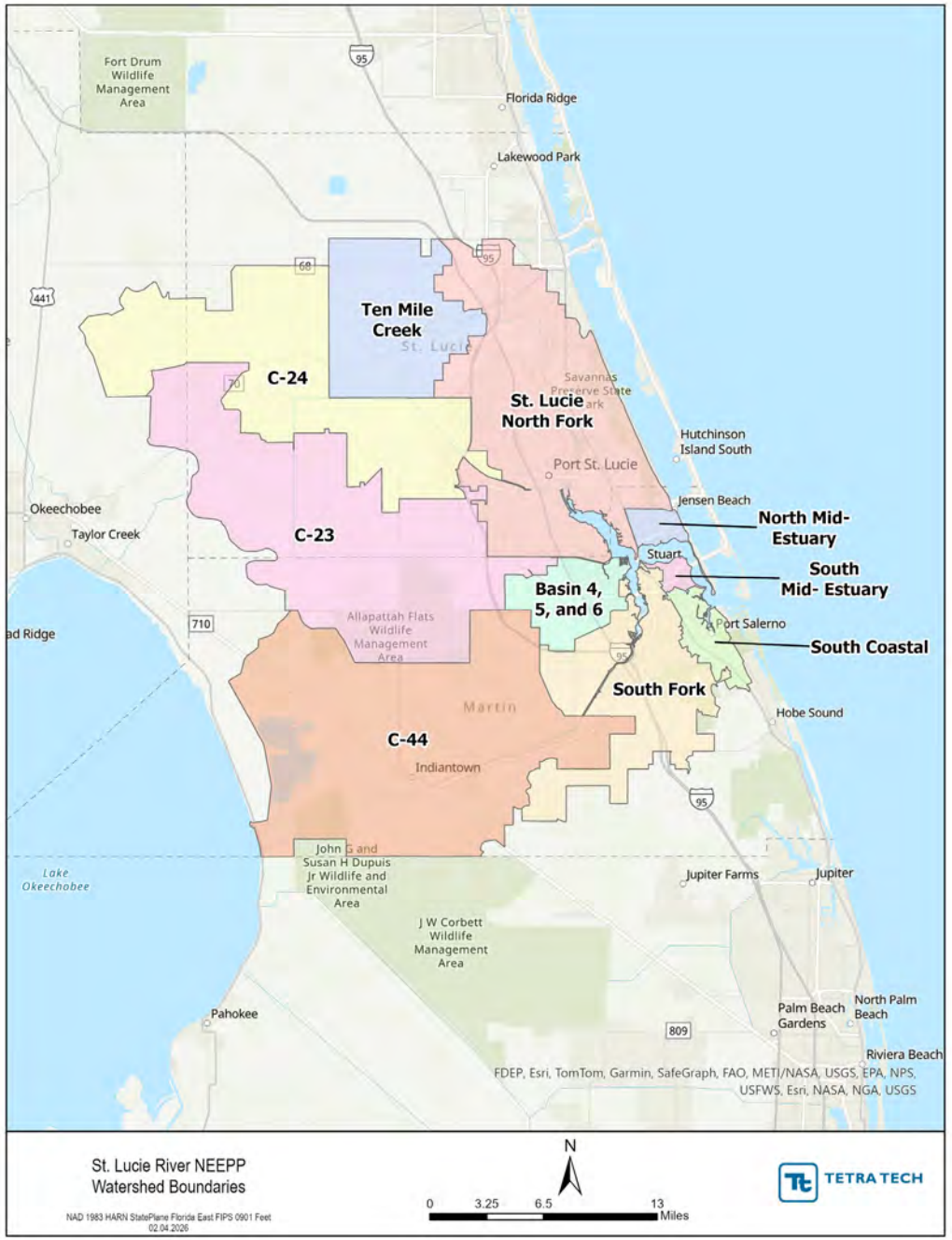
Data Inventory

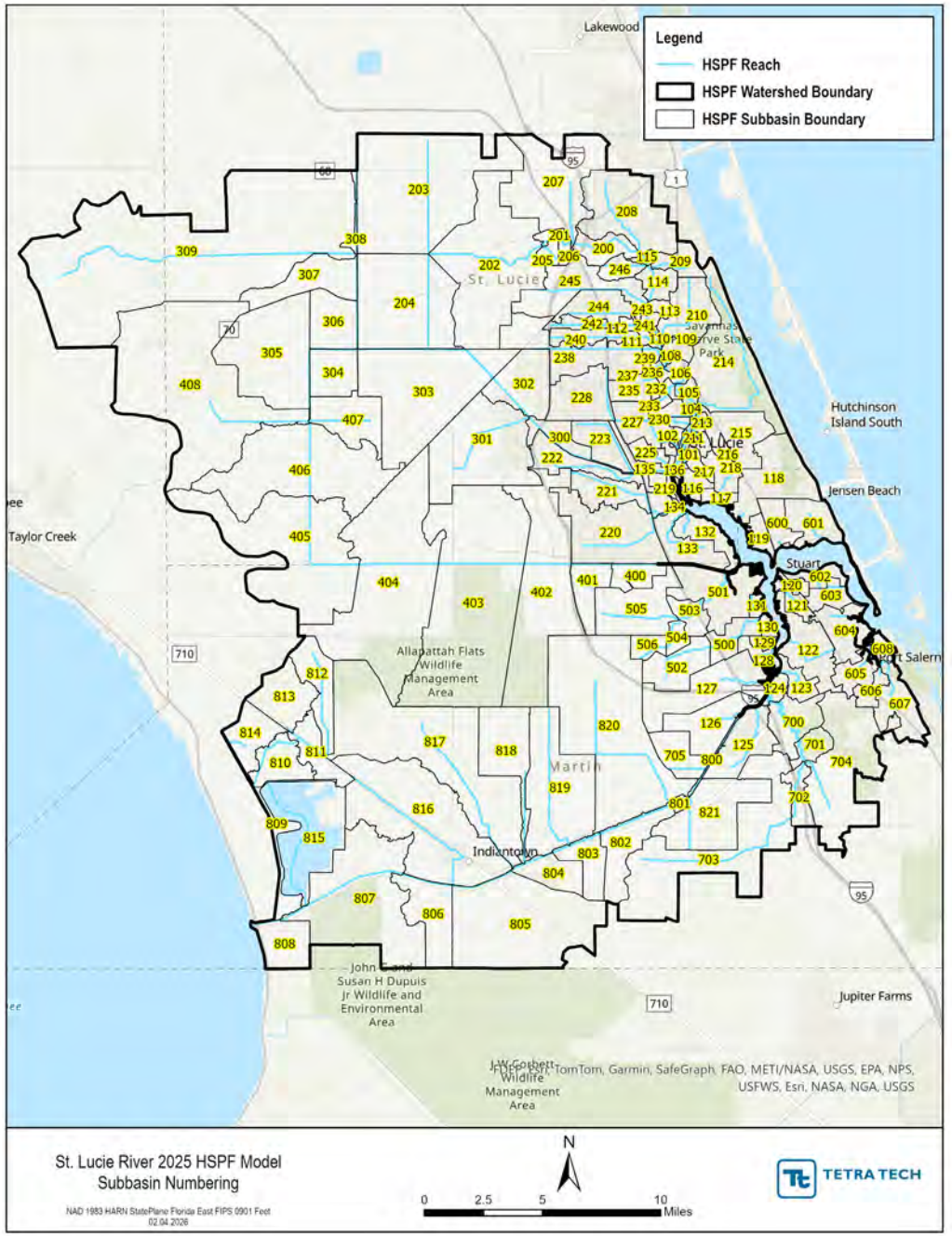
- Gathered available data from 2008 through 2023 (2008 for model spin up).
  - Same period of record used in the Caloosahatchee River and Estuary and Lake Okeechobee HSPF models.
- Data included:
  - Land use cover.
  - Agricultural irrigation.
  - National Pollutant Discharge Elimination System (NPDES) and reuse facilities.
  - Septic systems.
  - Weather.
  - Wet and dry atmospheric deposition loading.
  - Water quality and flow.
- Incorporated stakeholder input from review of data memo.

HSPF Model Setup

- Divided the watershed into the 11 basins using the latest information from the South Florida Water Management District (SFWMD).
- Each basin was further subdivided into subbasins to provide appropriate hydrologic connectivity and delineate around monitoring stations for calibration and validation.
- The subbasins were based on:
  - City of Port St. Lucie watersheds.
  - Martin County watersheds.
  - Impaired Waters Rule (IWR) Run 66 waterbody identification number (WIBD) boundaries.
  - National Hydrography Dataset (NHD) boundaries.
  - Hydrology and water quality monitoring station coverages.
- A representative reach was defined for each subbasin:
  - Selected from SFWMD Arc Hydro Enhanced Database (AHED) Canals and Streams based on subbasin hydrologic connectivity, (i.e., primary canal before secondary canal).
  - Location of the hydrology or water quality monitoring station.

Basins and Subbasins

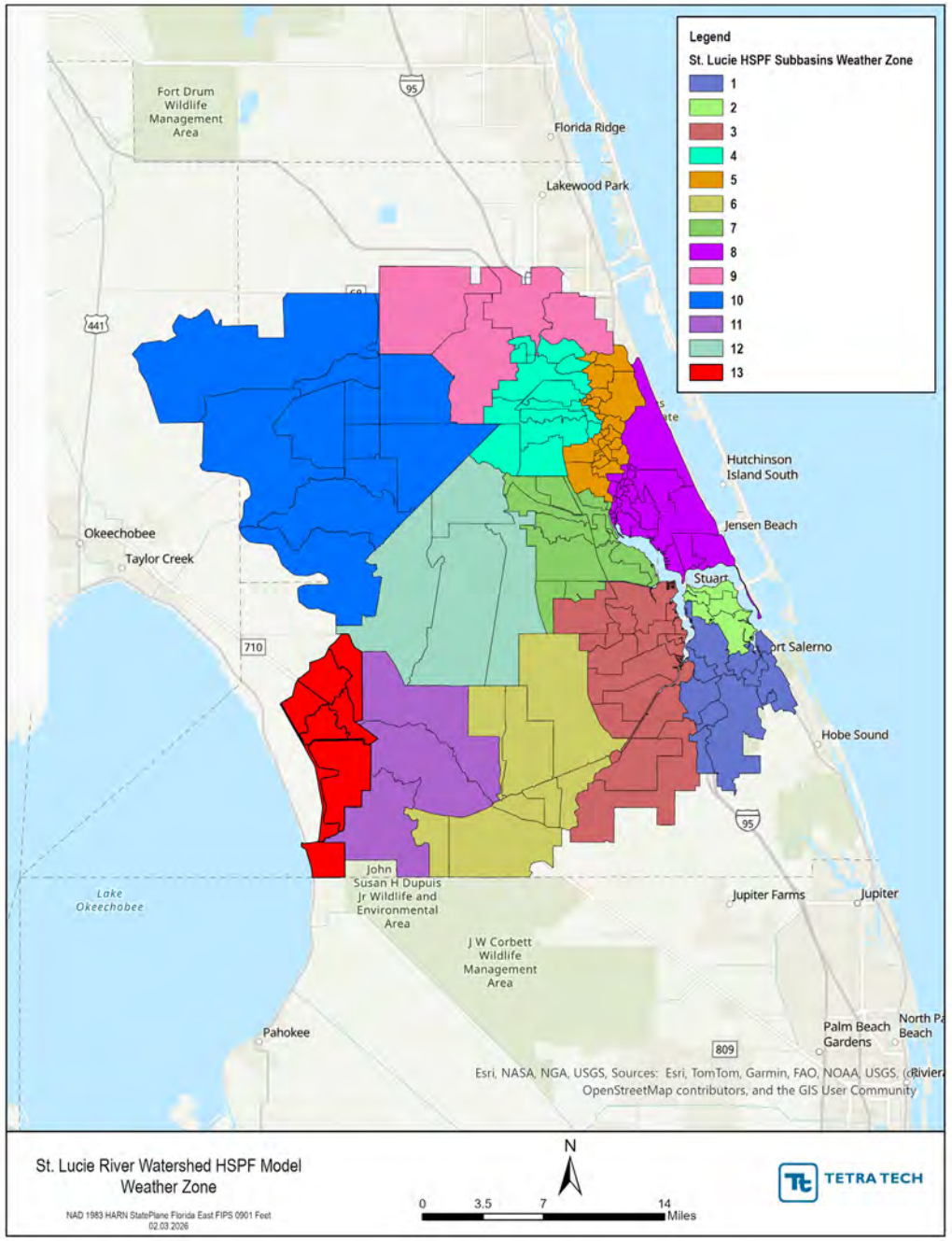




Hydrology Calibration

Weather Data

- Precipitation data came from Next Generation Weather Radar (NEXRAD).
  - Averaged into 13 NEXRAD zones.
- Reference evapotranspiration (ETo) data came from SFWMD.
- Surface Airways (SA) station WBAN 12895 (Fort Pierce Airport) was used for air temperature, dew point temperature, wind speed, cloud cover, and solar radiation.

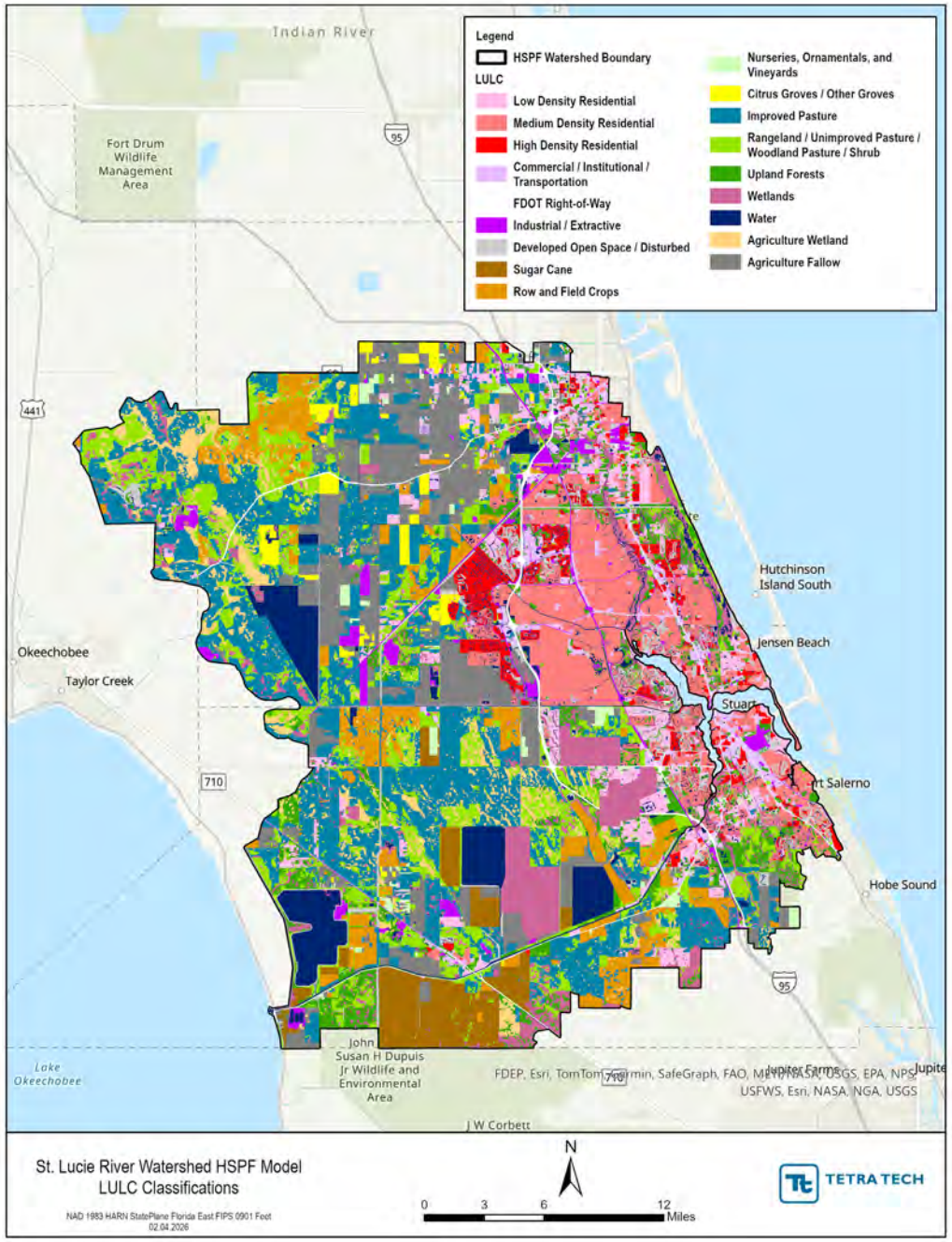


Land Use

- Combination of:
  - 2020–2023 DEP Statewide Land Use Land Cover.
  - 2023 National Land Cover Dataset (NLCD) impervious cover.
  - DACS Florida Statewide Agricultural Irrigation Demand (FSAID) 12.
  - Florida Department of Transportation (DOT) roads and rights-of-way.
- Rolled up to 18 land use categories in the HSPF model.
- For regional projects updated land use to:
  - Water for storage projects.
  - Wetland for water quality treatment projects.

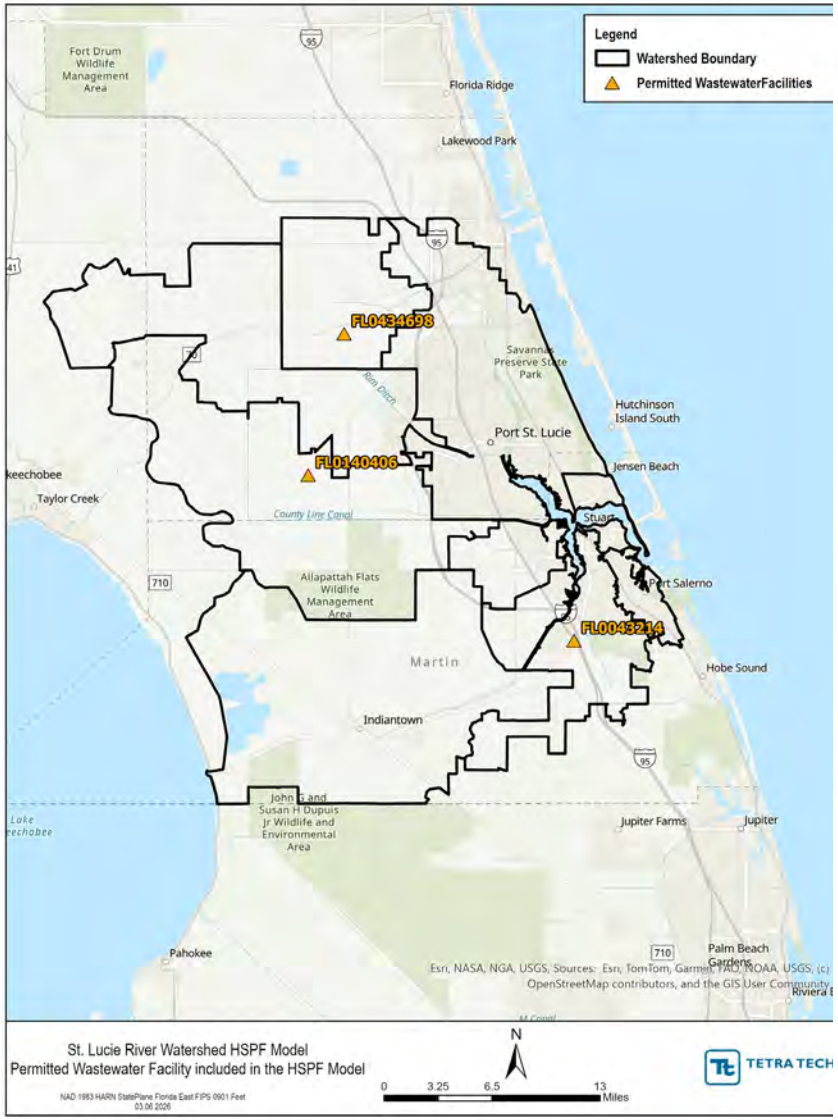
Land Use Results

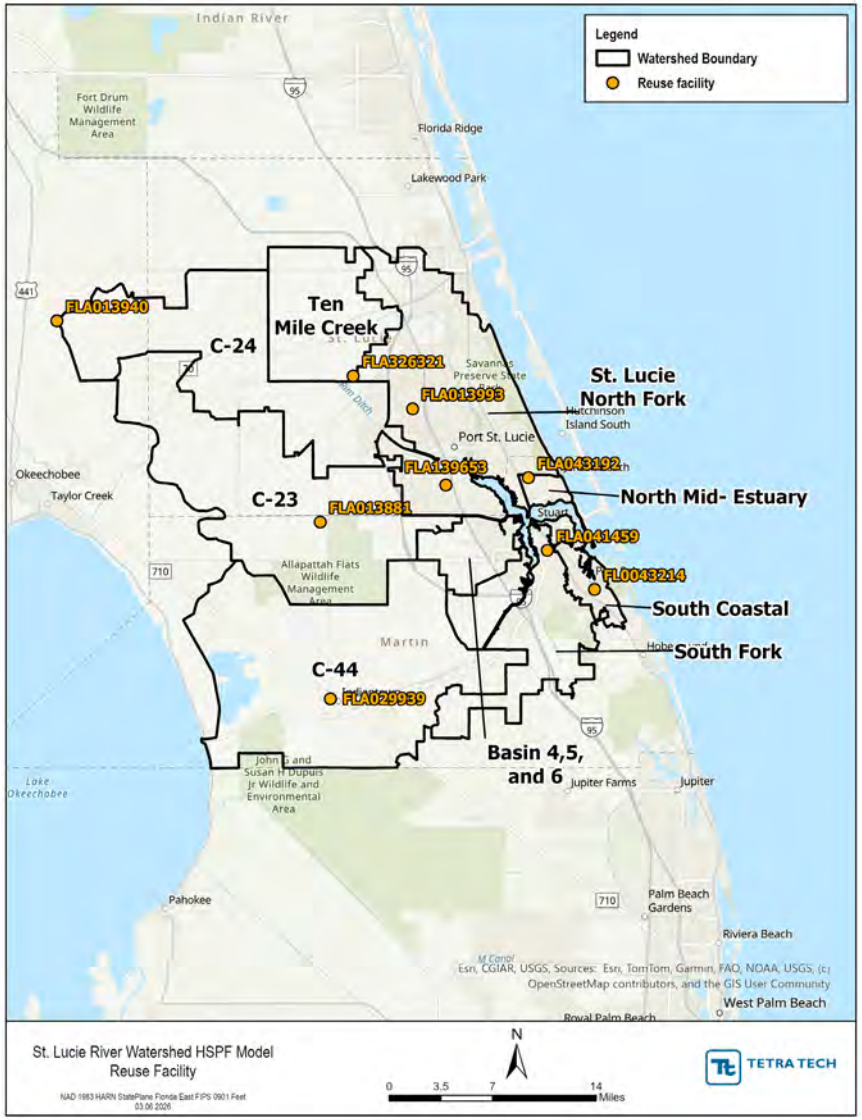
Numeric Land Use Code	Numeric Land Use Code Description
1	Low Density Residential
2	Medium Density Residential
3	High Density Residential
4	Commercial / Institutional / Transportation
6	Industrial / Extractive
7	Developed Open Space / Disturbed
8	Sugar Cane
9	Row and Field Crops
10	Nurseries, Ornamentals, and Vineyards
11	Citrus Groves / Other Groves
12	Improved Pasture
13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
14	Upland Forests
15	Wetlands
16	Water
17	Agricultural Wetland
18	Agriculture Fallow



Point Sources and Reuse Facilities

- Included in the model:
  - Three (3) NPDES domestic and industrial wastewater treatment facilities.
  - Nine (9) reuse facilities.
- Missing values filled using assumptions outlined in memo.



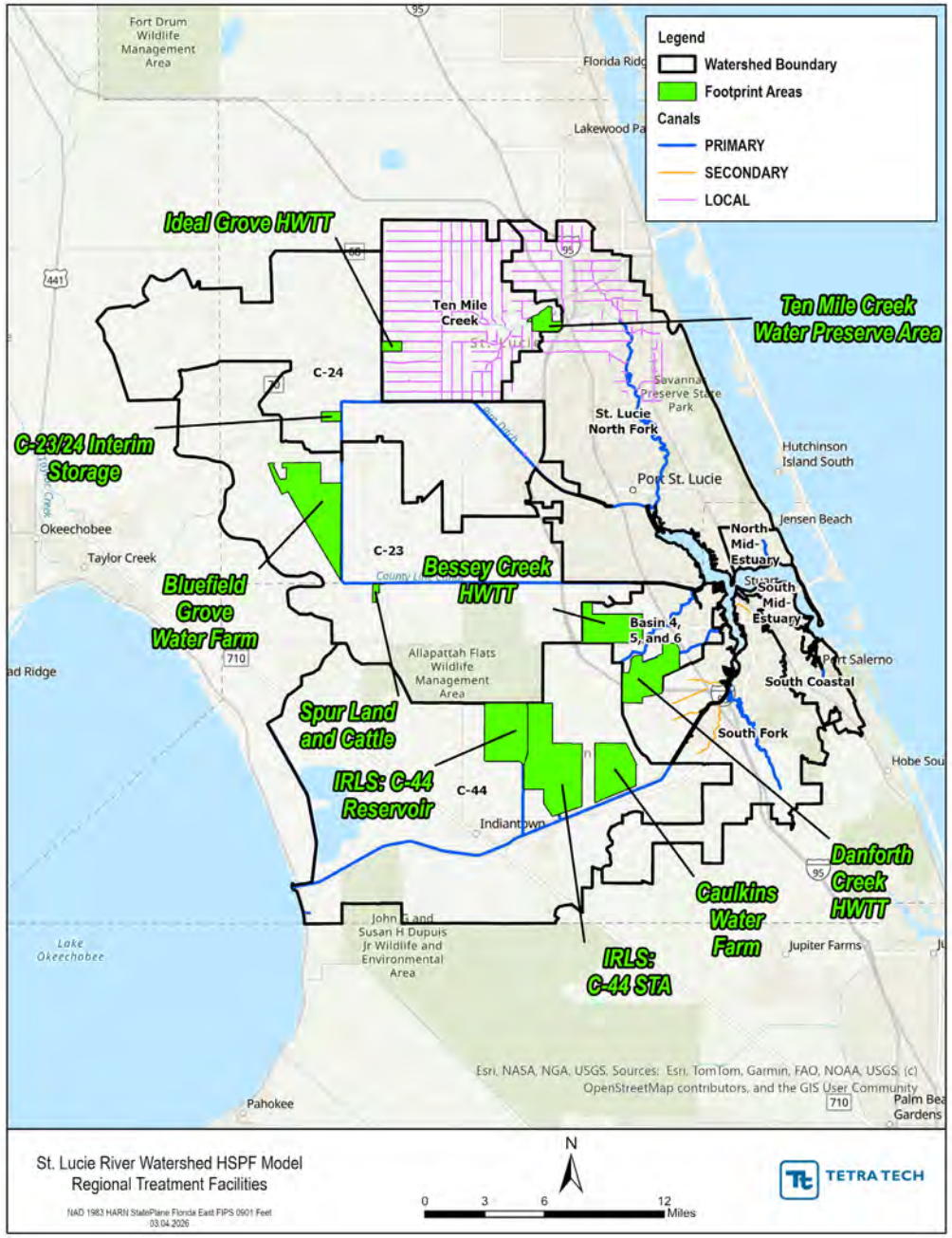


Specialized Hydrologic and Hydraulic Representations

- Lake Okeechobee boundary condition at the S-308 lock:
  - Water flowed from the lake to the river 65% of the time and from the river to the lake 35% of the time during the model period of record.
- C-25 Boundary with the C-24 Basin at the G-81 structure.
- Ten Mile Creek at the GORDY_S station corrective flows to account for:
  - Presence of unaccounted groundwater contributions.
  - More irrigation water use.
  - Seepage flows from the Ten Mile Creek Water Preserve Area.
  - Other external water inputs that are not represented in the model.
- C105 Canal corrective flows to account for:
  - Additional baseflow from deep well injection of wastewater discharges.
  - Potential errors in observed flow measurements.
  - Unique hydrologic conditions.
- L-65 Canal corrective flows at station S153 to account for:
  - S153L_S short-duration, discrete release pulses from the latching gate mechanism, which the continuous-simulation HSPF model cannot dynamically replicate.

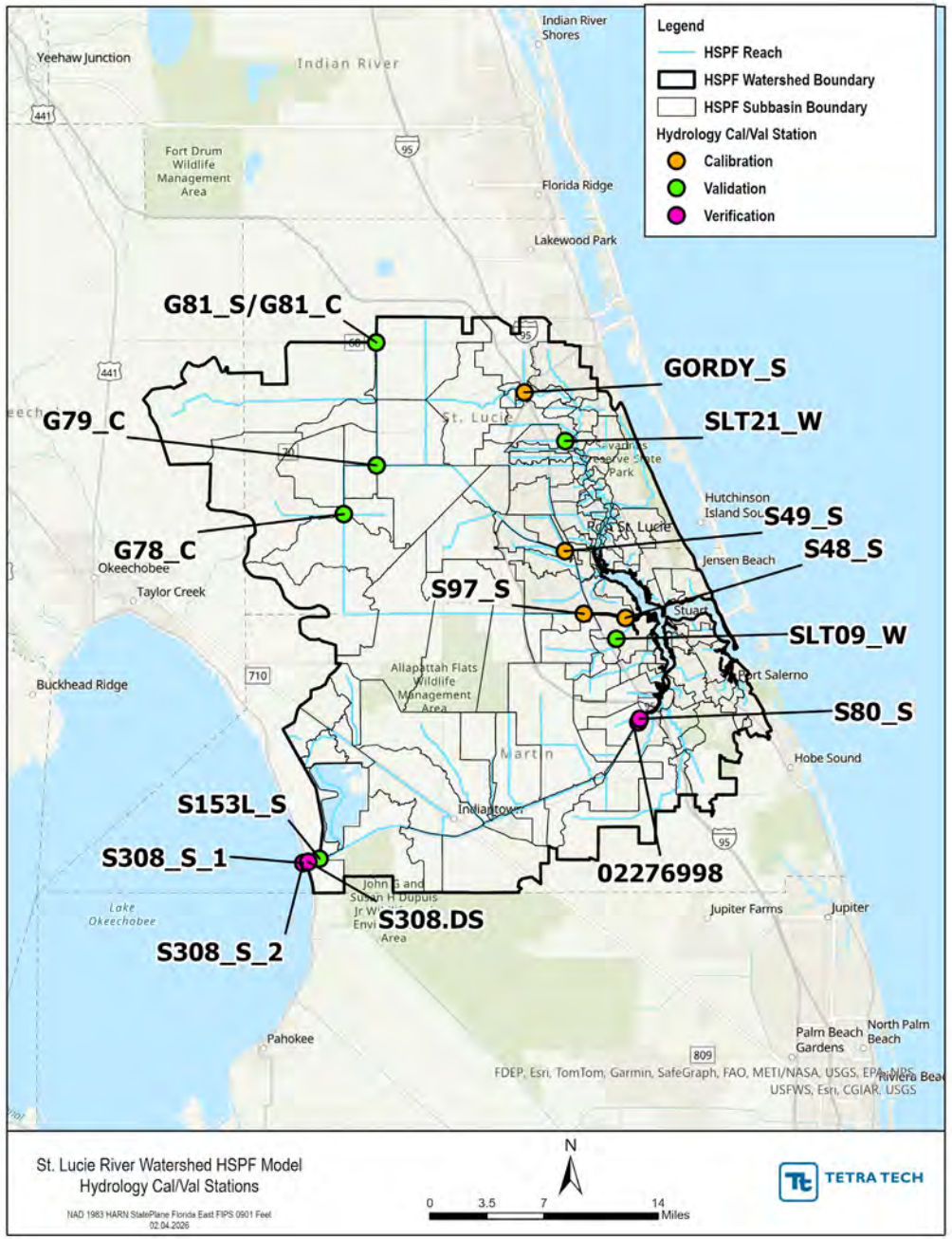
Regional Projects

- Regional projects represented in the model:
  - Bluefield Water Farm.
  - C-44 Reservoir and Stormwater Treatment Areas (STA).
  - Caulkins Water Farm.
  - C-23/C-24 Interim Storage Section C.
  - Spur Land and Cattle Water Farm.
  - Ten Mile Creek Water Preserve Area.
  - Bessey Creek Hybrid Wetland Treatment Technology (HWTT).
  - Danforth Creek HWTT.
  - Ideal Grove HWTT.
- Use data on flows into and out of (where applicable) each project.



Hydrology Calibration

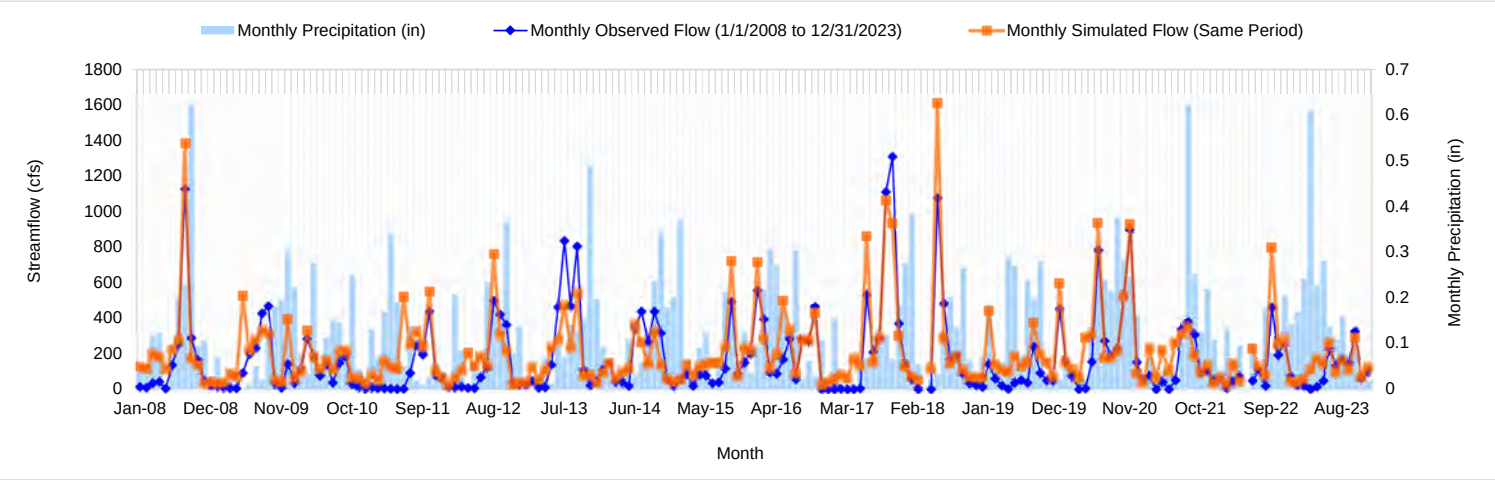
- Calibration, validation, and verification to observed flow data at 15 stations:
  - 4 calibration.
  - 6 validation.
  - 5 verification.



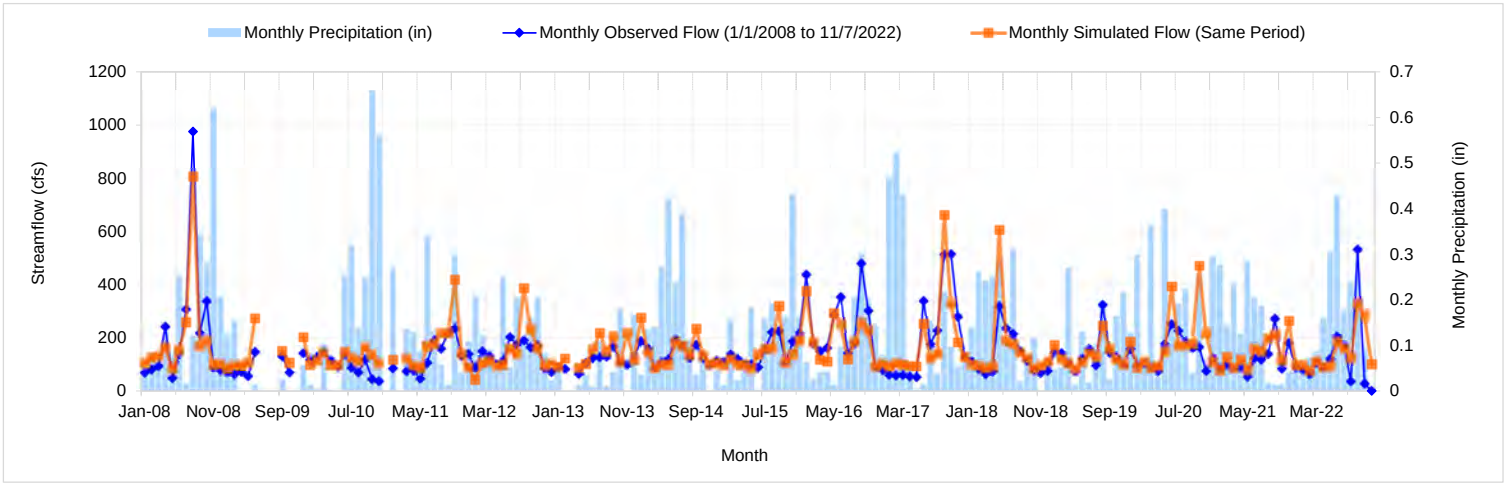
Hydrological Calibration Statistical Summary

Station ID	Station Name	R^2 (monthly)	R^2 Rating	NSE	NSE Rating	NSE (monthly)	NSE (monthly) Rating	Total Volume % Error	Total Volume % Error Rating
S48_S	S-48 Spillway on Canal C-23 at Tidewater	0.75	Good	0.625	Fair	0.799	Good	14.85	Good
S49_S	S-49 Spillway on Canal C-24 near Florida Turnpike	0.74	Good	0.684	Fair	0.846	Very Good	-20.20	Fair
S97_S	S-97 Spillway on Canal C-23 near Florida Turnpike	0.76	Good	0.586	Poor	0.837	Very Good	6.77	Very Good
GORDY_S	Gordy Rd. Bridge N St. Lucie Water Control District Structure 71-1	0.63	Fair	0.088	Poor	0.792	Good	1.03	Very Good
G78_C	At C-23 canal, about 15 miles southwest of Fort Pierce	0.01	Poor	-2.071	Poor	-0.240	Poor	30.35	Poor
G79_C	G79 dividing structure between C23 and C24 (Carlton Road Structure)	0.52	Poor	0.467	Poor	0.560	Poor	-40.35	Poor
G81_S/G81_C	G81 3-gate Spillway structure	1.0	Very Good	0.997	Very Good	0.999	Very Good	1.96	Very Good
SLT09_W	Bessey Creek Weir	0.64	Fair	-13.85	Poor	-4.914	Poor	150.23	Poor
SLT21_W	C105 Weir Flow	0.09	Poor	0.061	Poor	0.566	Poor	-13.56	Good
S153L_S	S-153L (Latching Gate) on Levee L-65 at Canal C-44A	0.58	Poor	0.387	Poor	0.643	Fair	-24.45	Fair
02276998	St. Lucie River Above S-80 NR Stuart FL	0.89	Very Good	0.830	Very Good	0.941	Very Good	0.66	Very Good
S80_S	S-80 Spillway and Sector on St. Lucie River at Tidewater	0.74	Good	0.719	Good	0.910	Very Good	9.81	Very Good
S308_S_1	S-308 Spillway and Sector Flow on St. Lucie River at Lake Okeechobee	0.97	Very Good	0.279	Poor	0.771	Good	25.49	Poor
S308_S_2	S-308 Spillway and Sector Flow on St. Lucie River at Lake Okeechobee	1	Very Good	1	Very Good	1	Very Good	0.07	Very Good
S308.DS	St. Lucie River Below S-308 at Port Mayaca FL	0.84	Very Good	0.765	Good	0.876	Very Good	7.27	Very Good

Example Results – Calibration Stations



S-48 Spillway on Canal C-23 At Tidewater



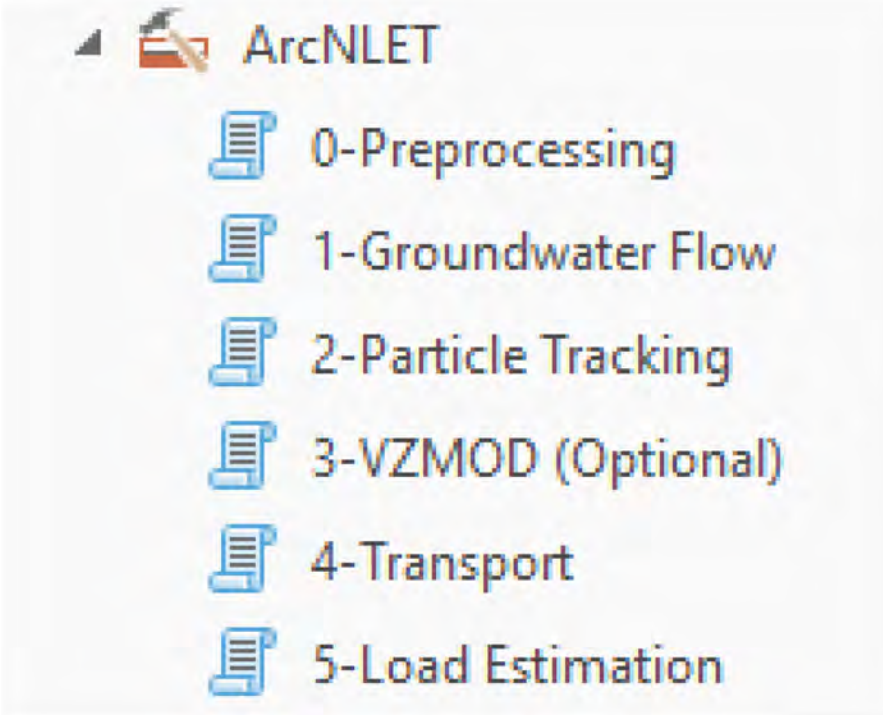
GORDY Rd. Bridge N St. Lucie Water Ctl Dist. Structure 71-1

TETRA TECH

ArcNLET

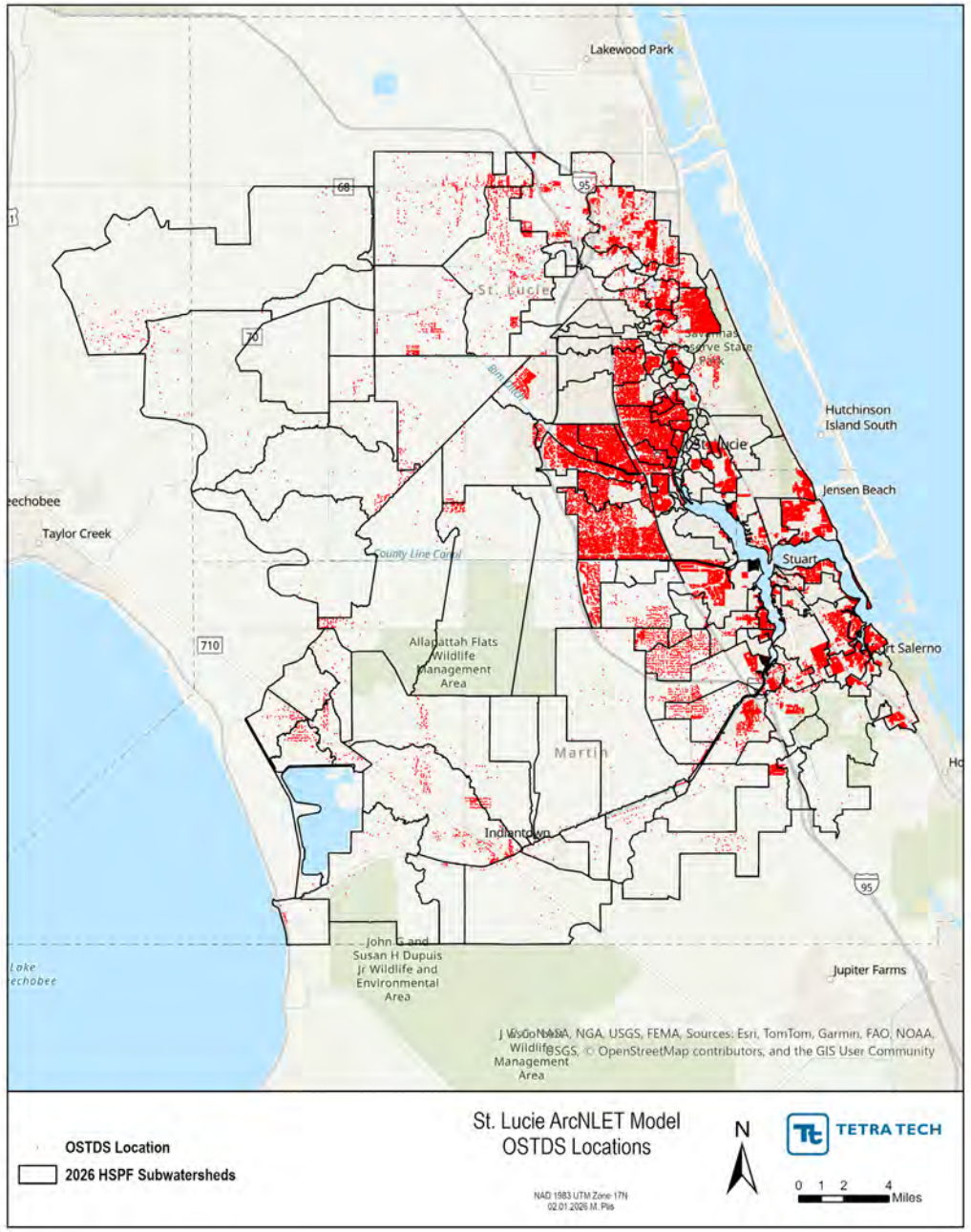
Septic Systems Representation

- HSPF Model uses ArcNLET model to add septic system loads.
  - Added as point source input to each reach.
  - Consistent with BMAP crediting approach and provides tool for stakeholders.
- Used latest ArcNLET-Py model.
  - Simplified model of nitrogen and phosphorus transformation and transport.



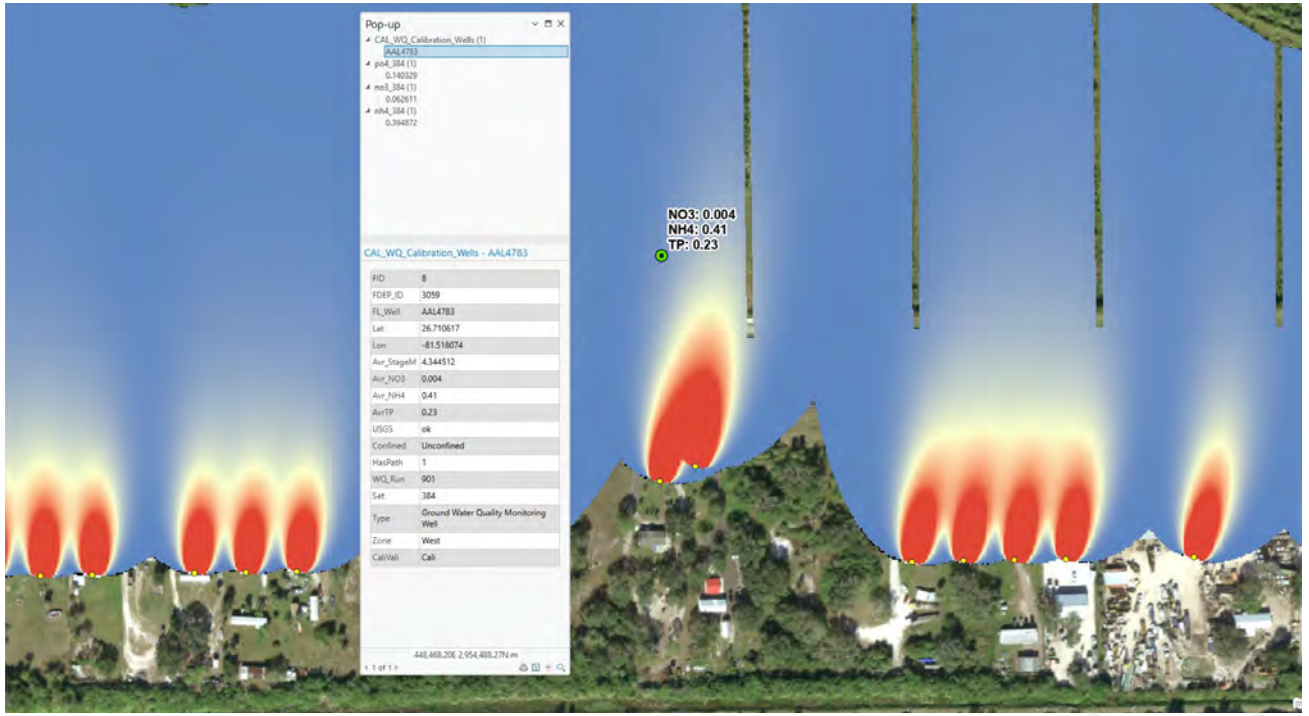
ArcNLET Data

- Used latest FDOH Florida Water Management Inventory septic system coverage.
  - Posted in late 2024.
  - 43,754 septic systems in the watershed.
- Elevation.
- Soil properties for hydraulic conductivity, porosity, texture, and spatial distribution.
- Waterbodies.
- Groundwater well data for water level, nitrogen and phosphorus concentrations.

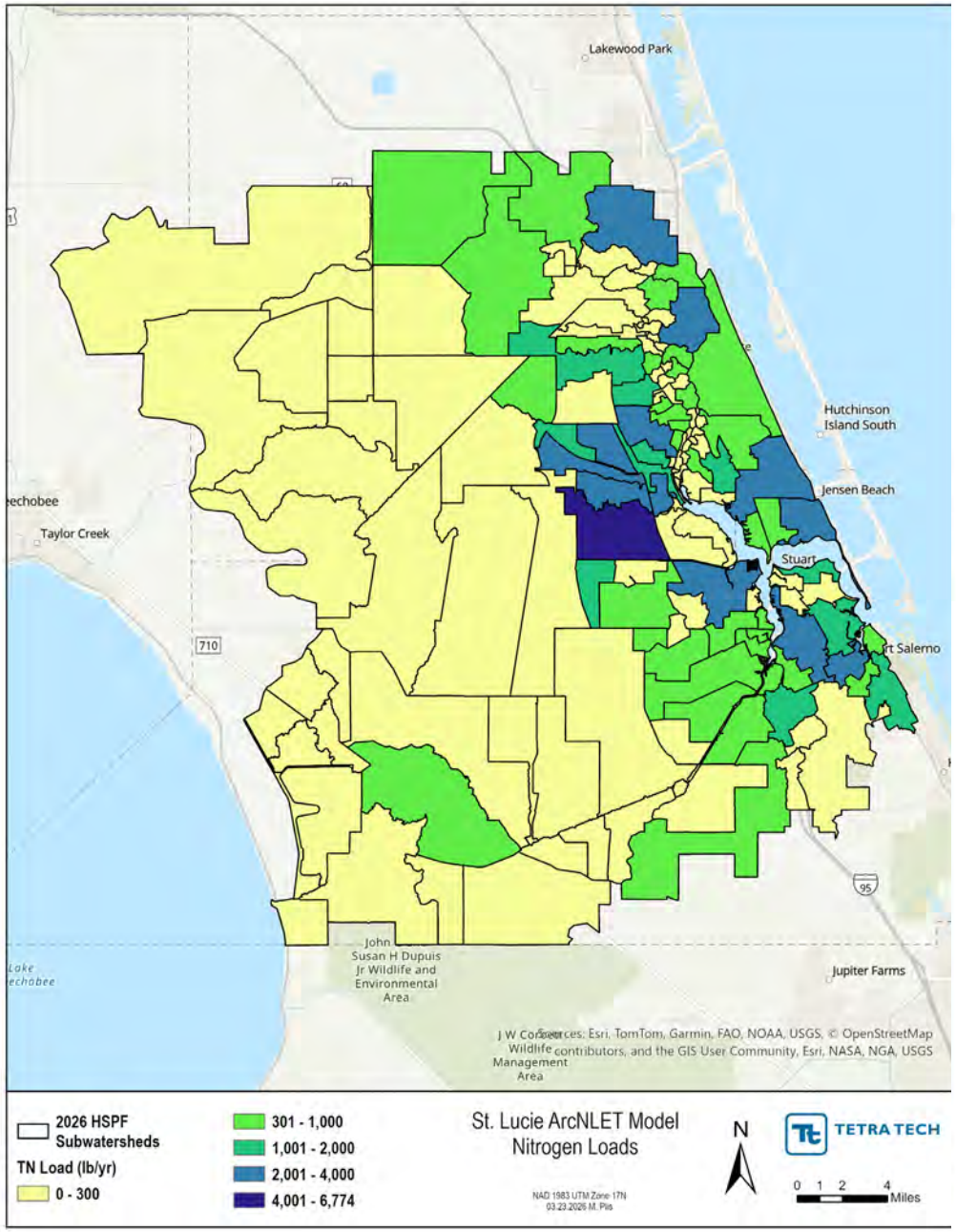


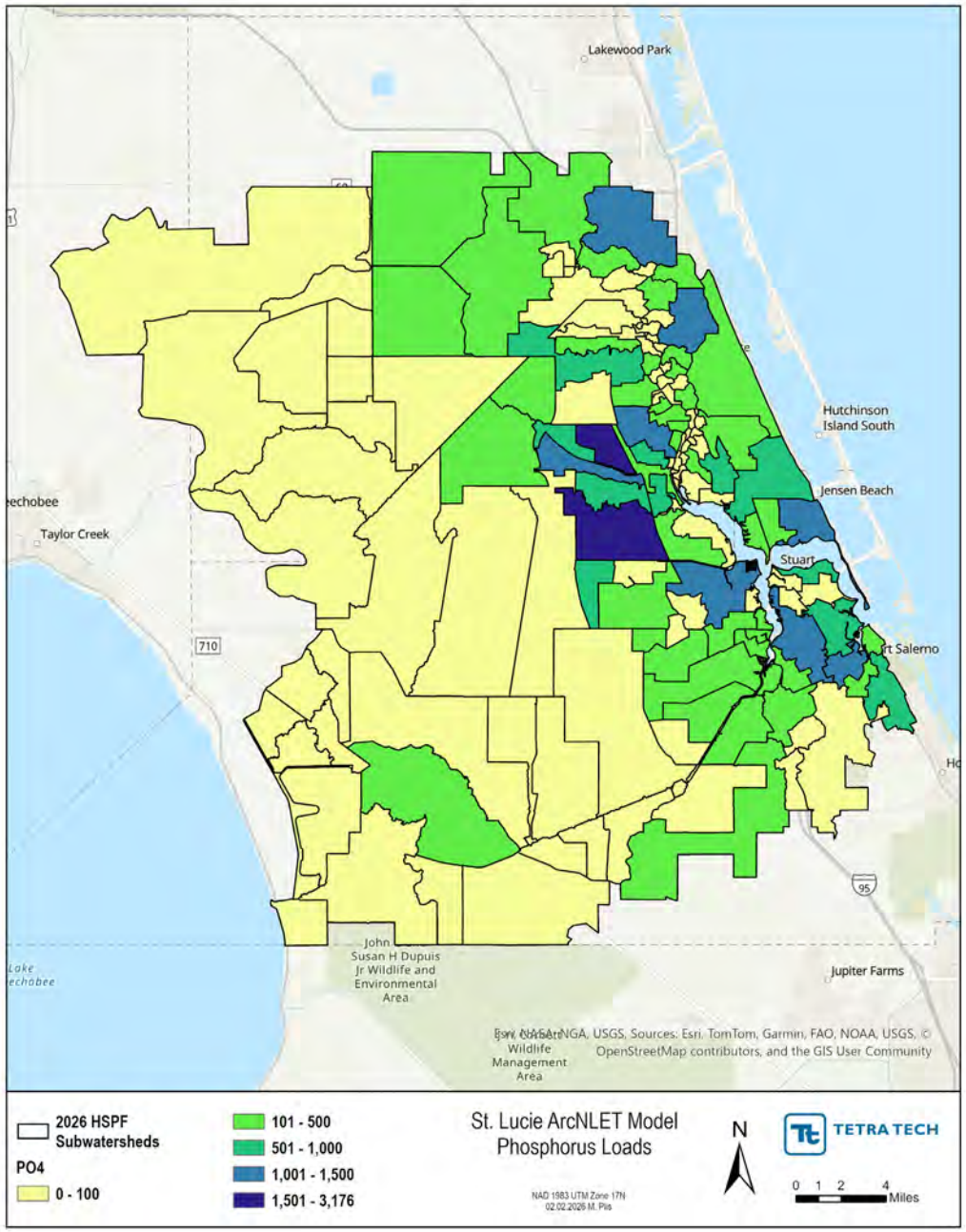
ArcNLET Components

- Groundwater flow: simplified flow model using smoothed topography to approximate water table.
- Particle tracking: calculate flow paths based on velocity direction and magnitude.
- Transport: simulate the movement of ammonia, nitrate, and phosphate plumes.
- Load estimation and HSPF integration:
  - Calculate mass load input, output, and removal.
  - Assign each septic system to a HSPF model reach and summarize the loads.
- Create a summary spreadsheet with individual parcel information.



ArcNLET Results





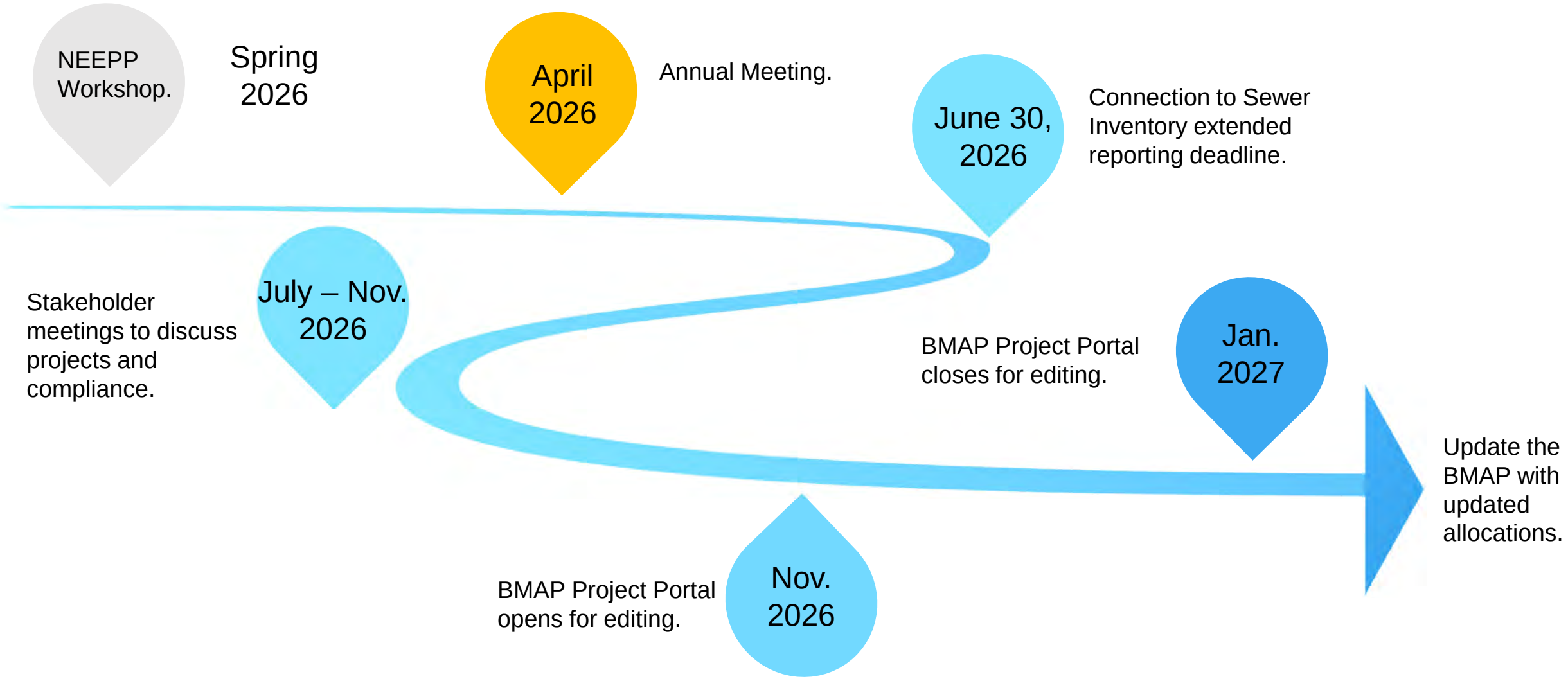
Next Steps

Remaining Tasks

- Stakeholder comments on the hydrology calibration memo due May 6.
- Stakeholder comments on the ArcNLET memo due May 6.
- Calibrate the model for water quality and prepare memo.
  - Stakeholder review and meeting.
- Prepare the HSPF Model report and share for stakeholder review.
- Update LET using latest model results.
- Model completed by end of 2026.

Questions?

LOOKING AHEAD



NEEPP = Northern Everglades and Estuaries Protection Program

FUNDING OPPORTUNITIES

Florida Department of Environmental Protection
Funding Opportunities

FloridaDEP.gov/Funding

RESOURCES

Basin Management Action Plans (BMAPs)

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

Water Quality Restoration Program Quick Links

- Basin Management Action Plans (BMAPs)
- Statewide Annual Report
- Water Quality Grant Opportunities 2024-25
- BMAP Public Meetings
- Impaired Waters, TMDLs and Basin Management Action Plans Interactive Map
- Tools and Guidance for Calculating Total Nitrogen (TN) and Total Phosphorus (TP) Reductions
- Florida Water Quality Credit Trading

What is a Basin Management Action Plan?

A BMAP is a framework for water quality restoration that contains a comprehensive set of solutions to achieve the pollutant reductions established by a TMDL. Examples include permit limits on regulated facilities, urban and agricultural best management practices, wastewater and stormwater infrastructure, regional projects and conservation programs designed to achieve pollutant reductions established by a TMDL. A BMAP is developed with local stakeholders and relies on local input and commitment for successful implementation. BMAPs are adopted by Secretarial Order and are legally enforceable. BMAPs use an adaptive management approach that allows for incremental load reductions through the implementation of projects and management strategies, while simultaneously monitoring and conducting studies to better understand the water quality and hydrologic dynamics. Progress is tracked by assessing project implementation and water quality analyses. DEP continues to work with local and regional partners to identify additional projects necessary to meet reduction milestones to achieve the TMDLs and inform funding priorities.

What's New: Upcoming Meetings and BMAP Progress

July 1, 2025 BMAP Update Progress

As required by the Clean Waterways Act, DEP must prepare updates to its nutrient BMAPs by July 1, 2025. The **July 1, 2025 BMAP Update Progress** dashboard provides a visual representation of progress towards the completion of each of the required tasks and related sub-tasks leading up to the July 1, 2025 updates. Please visit the **BMAP Public Meeting Calendar** to find out about upcoming meetings and subscribe to meeting notices.

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

NEEPP BMAPs

The Northern Everglades watersheds include the Lake Okeechobee watershed and the Caloosahatchee and St. Lucie River watersheds and estuaries.

SUBSCRIBER PAGE

HOW TO CONTACT US

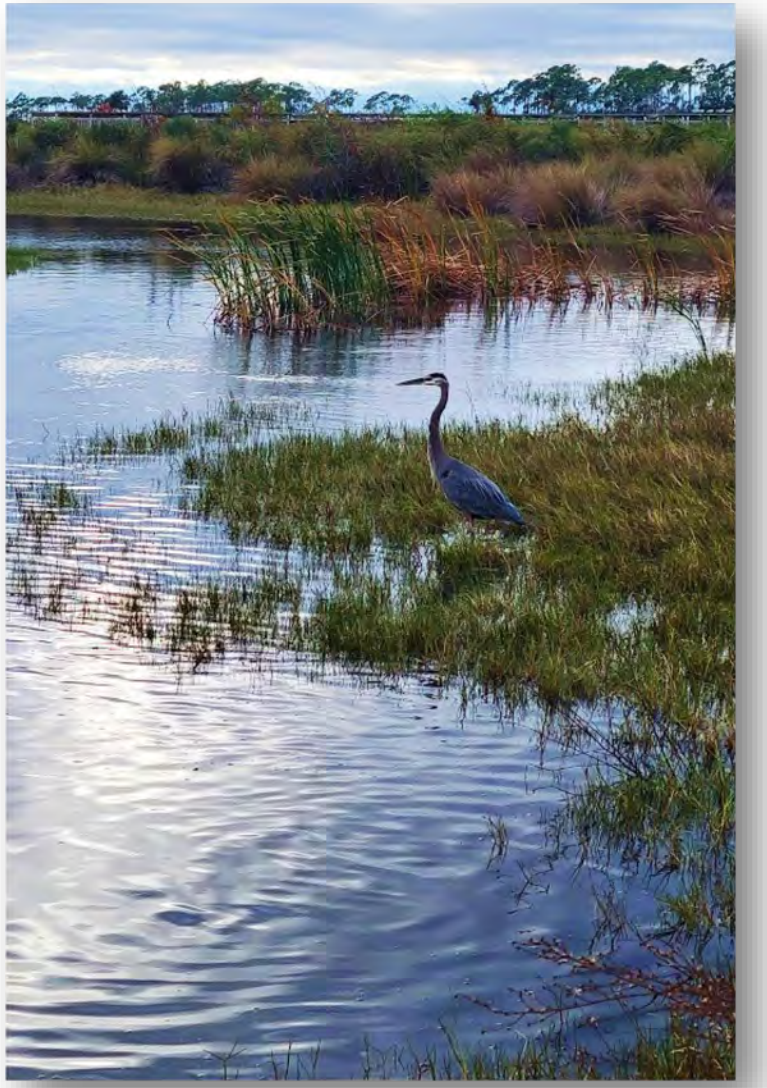
BMAPProgram@FloridaDEP.gov

QUESTION BREAK

Questions

Please use the Question panel to submit questions.

Submit written comments concerning today's meeting to: **Anthony.Tomalewski@floridaDEP.gov.**



THANK YOU

Tony Tomalewski

Contact Information:
Phone: 850-245-8683
Email: Anthony.Tomalewski@FloridaDEP.gov

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Photo Credit: SFWMD

St. Lucie River and Estuary Basin Management Action Plan (BMAP) Annual Meeting
Webinar Summary
Wednesday, April 29, 2026
10:00 am – 11:00 am

Participants

Santiago Acevedo, SFWMD
Miranda Anderson, DEP
Cora Aossey, DEP
Marc Aveni, Martin County
Christian Avila, SFWMD
Bill Baker, MacVicar Consulting
Lisa Bally, ATM
Maurice Barker, DEP
Venetia Barnes, Fort Pierce
Janelle Barriero, Florida Senate
Terrie Bates, Citizen
Evelyn Becerra, DEP
Nicole Belian, FDOT
Lara Bracci, DEP
Rich Budell, Budell Water Group
Patricia Burke, SFWMD
Roberto Cabrera, Culpepper & Terpening
Stacey Cecil, SJRWMD
Alycia Ciresi, Kimley Horn
Gina Colonna, Captec
Rachael Cooper, Applied Ecology
Derek Cox, SFWMD
Juan Cuesta, Delray Beach
Chris Cunniffe, Champion Turf Club
Sukanya Dayal, DEP
Briston De Armas, FDOT
Letuzia De Oliveira, FDACS
Fernando Diaz, Gunster
Amy Eason, Martin County
Kristina Embrey, FGUA
Amanda Exposito, FDOT
Jake Fojtik, Florida Farm Bureau
Eric Folks, Infiltrator Water
Marcy Frick, Tetra Tech
Aubrey Frye, SFWMD
Nick Gagliano, Clear Stream Systems
Jim Gorton, Martin County
McKee Gray, Audubon
John Greene, SWIG
Sharon Guaderrama, SJRWMD
Jason Harris, Citizen
Maddy Hart, FDACS
Ruth Holmes, City of Stuart
Moira Homann, DEP
Laila Hudda, EPA
Danielle Ivey, Audubon
Manohardeep Josan, SFWMD
Bret Kaiser, Port St. Lucie
Tenney Kapellusch, LLW
Chandler Keenan, DEP
Elizabeth Kelly, Martin County
Travis Kirk, Seminole Tribe
Scott Knight, Wetland Solutions
Natalie Kraft, FPL
Lisa Kreiger, Lee County
Julianne LaRock, SFWMD
Mitchell Latzman, Friends of the Everglades
Celeste Lyon, RES
Steve Marquart, Captec
Peter May, City of Port St. Lucie
Amanda McDonald, SFWMD
Kim McLaughlin, Martin County
Sarah Menz, DEP
Adrian Mocanu, Deerfield Beach
James Moir, Citizen
Jon Moore, DEP
Anne Murray, Martin County
Caitlin Newcamp, Audubon
Alejandra Nirenberg, CRI
Kevin O'Donnell, DEP
Stacey Ollis, SFWMD
Steffany Olson, SFWMD
Sara Ouly, SFWMD
Mark Perry, Florida Oceanographic Society
Luna Phillips, Gunster
Nicolas Pisarello, ATM
David Prado, Integrity Sales
Irene Quincey, Pavese Law
HM Ridgely, Evans
Mikayla Rogers, FFVA

Shimelis Setegn, SFWMD
Edward Smith, DEP
Mailin Sotolongo-Lopez, DEP
Vanessa Stephen, US Sugar
Jordan Tedio, DEP
The Florida Channel
Jennifer Thera, FDACS
Todd Thurlow, Thurlow & Thurlow
Tony Tomalewski, DEP
Diana Turner, DEP
Rachel Vitek, RES
John Vogt, WWBC
Youchao Wang, SFWMD
Joseph Whyte, RES

The full webinar recording and supporting materials are posted to the Florida Department of Environmental Protection (DEP) website at https://floridadep.gov/dear/water-quality-restoration/content/bmap-documents-meeting-materials-and-recordings.

Questions and Answers

Question: The St. Lucie total maximum daily loads (TMDLs) are expressed as a concentration unlike other TMDLs that are expressed as a load. From the 2013 to the 2025 BMAP it appears that the starting loads increased by approximately 14%. Neither BMAP appears to state the total modeled flow to arrive at these loads based on concentration x flow. If the modeled flow has increased by 14% from 2013 to 2015 does this mean that the target loads so to speak (starting-reductions) has increased by 14%? In other words, have we increased the target loads by 14% based on a longer period of record in the modeling?
Answer (DEP): Tony showed the targeted restoration area (TRA) results. We are tracking how progress is being made in the watershed and we are seeing some improving concentrations. At this point, the model flows are only part of the puzzle so we will see when we calibrate to water quality what the overall loading looks like. In terms of the difference in concentrations and loads, we are using the concentration targets compared to the concentrations in each of the basins to determine the percent reductions needed by basin. Until we have all the pieces it will be hard to say what is really happening but we are doing trend analyses and hot spot analyses every few years to continue to track progress.

Question: Who was the sender of the memo mentioned? Was it a DEP email? I've checked and I do not have that email.
Answer (DEP): The memo was sent out by Tony. We can resend following today's meeting.