NORTHERN EVERGLADES BASIN MANAGEMENT ACTION PLANS

Moira Homann
Program Administrator, Water Quality Restoration Program
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

SFWMD Headquarters | Nov. 18, 2024

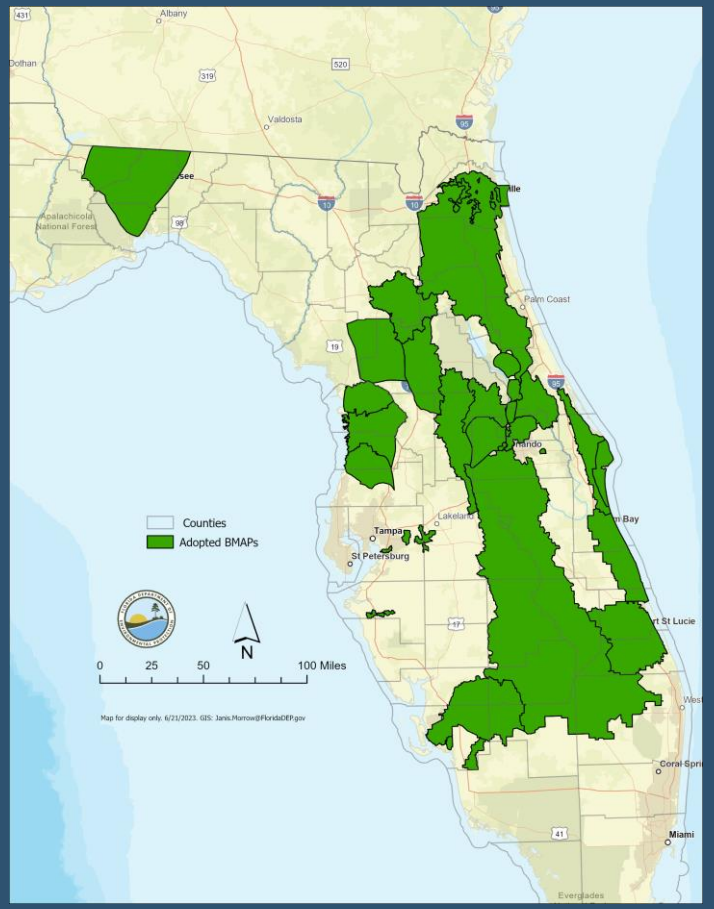
CLEAN WATERWAYS ACT (2020)

NUTRIENT BMAP UPDATES AND WASTEWATER REQUIREMENTS

Wastewater Treatment Plans

- Inventory of wastewater treatment facilities (WWTFs) within jurisdiction of local governments.
- Summary of each facility's current status, which may include:
  - Permitted capacity.
  - Average discharge.
  - Permitted nutrient limits.
  - Average nutrient concentration.
  - Estimated average nutrient load.
- Summary of capacity analysis for each facility, including future growth.
- Ranking or list of facility upgrades needed to meet requirements.
- Timelines/milestones for all projects.
- Funding estimates for all projects.

Nutrient Basin Management Action Plans (BMAPs)



Adopt by July 1, 2025

Onsite Sewage Treatment and Disposal System (OSTDS) Remediation Plans

- Inventory of OSTDS within jurisdiction of local governments.
- Plan to address OSTDS in the future.
  - Areas for sewering and/or enhancements and prioritization of those areas.
  - Summary of capacity analysis for wastewater facilities that would accept newly sewered areas.
  - Timelines/milestones for projects.
  - Funding estimates for all projects.
  - Future growth considerations.

HOUSE BILL (HB) 1379 (2023) – STRENGTHENING BMAPS

PROJECTS AND MILESTONES

List of Identified Projects:

- Requires BMAPs be assessed and updated every five years as needed to include implementation milestones and other requirements.
- Requires a list of projects and strategies that will achieve the five-year implementation milestones to meet total maximum daily loads (TMDLs).
- Requires each identified project to include an estimated amount of nutrient reduction, a planning-level cost estimate and an estimated date of completion.
- Requires DEP to increase coordination with local governments, water management districts and other stakeholders to identify projects.

Agricultural Nonpoint Sources:

- Where agricultural nonpoint sources contribute at least 20% of nonpoint source nutrient discharges, requires a list of cooperative agricultural regional water quality improvement element(s) submitted by the Department of Agriculture and Consumer Services which, in combination with the best management practices (BMPs), additional measures and other management strategies, will achieve the nutrient reductions established for agricultural nonpoint sources.

IMPROVING DOMESTIC WASTEWATER

HB 1379 (2023) AND HB 1557 (2024)

Wastewater Facility Upgrades:

- By 2033 – requires all wastewater facilities discharging to an impaired water to upgrade to advanced wastewater treatment (AWT).
- After July 1, 2023 – requires any facility discharging to a waterbody impaired for nutrients or subject to a BMAP or reasonable assurance plan (RAP) area to upgrade to AWT within 10 years.

More Stringent Wastewater Treatment Standards:

- Authorizes DEP to require a more stringent treatment standard (greater than AWT) if required to meet the TMDL within a BMAP.

OSTDS:

- Requires new OSTDS on lots 1 acre or less within a BMAP to connect to central sewer if available, or if unavailable, to upgrade to an enhanced nutrient-reducing system or other wastewater system that achieves 65% reduction.

Reclaimed Water:

- Ensures that reclaimed water is treated to meet 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.

BMAP UPDATES

ONGOING AND UPCOMING 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.
- Development/revision of allocations in BMAPs.
- Identification of projects for BMAP milestones.
- Incorporation of Clean Waterways Act requirements.
- Incorporation of HB 1379 and HB 1557 requirements.

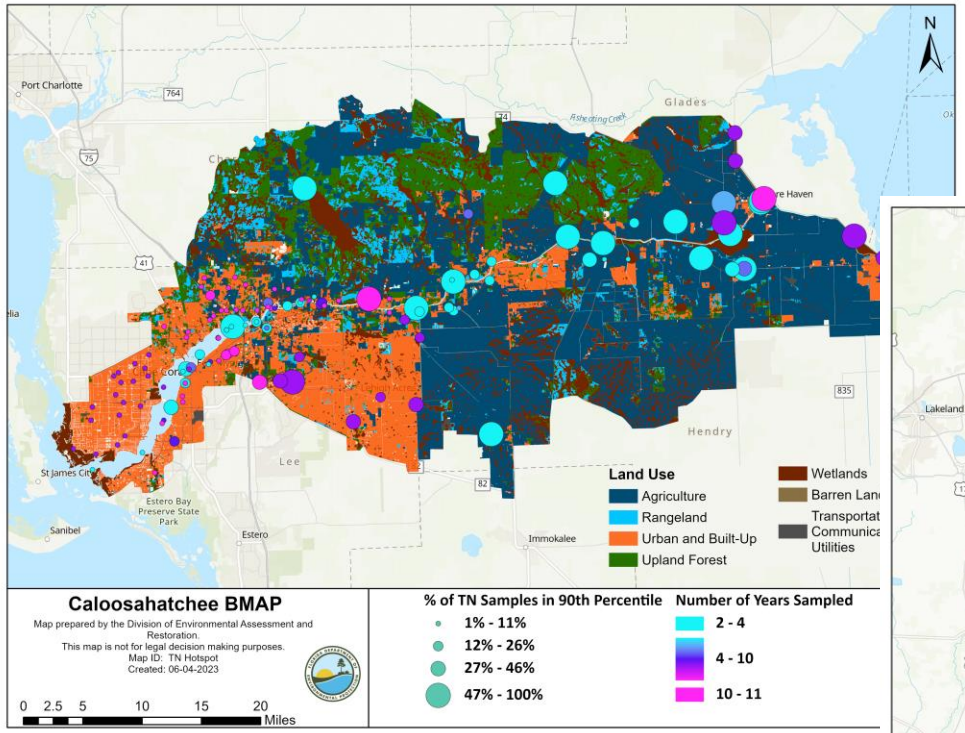
Source: SFWMD; Caloosahatche

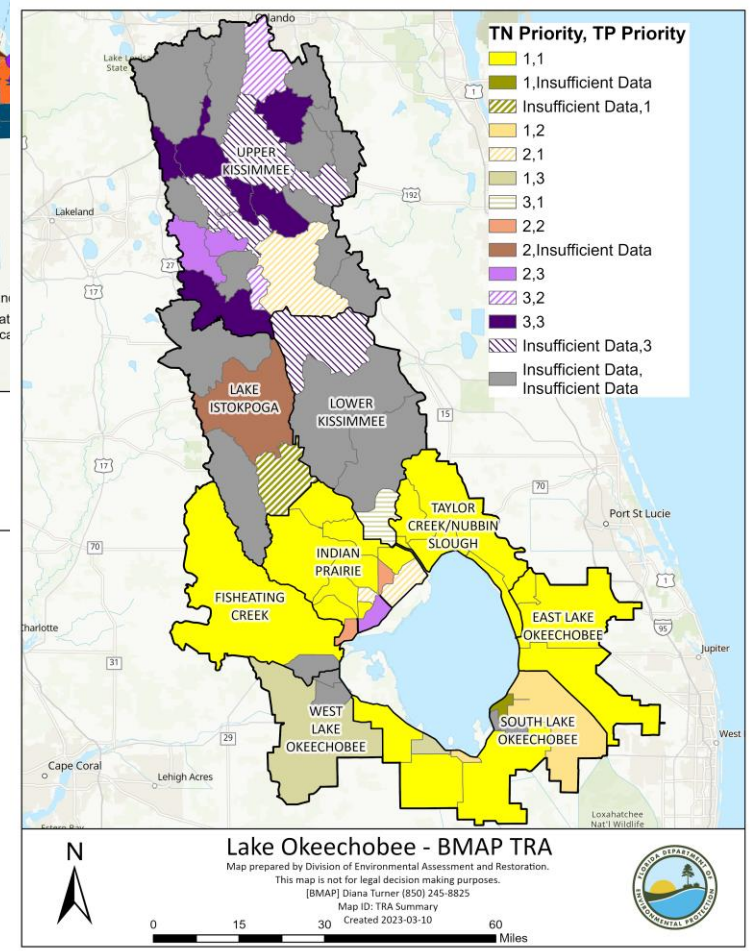
Source: SFWMD; St. Lucie Estuary

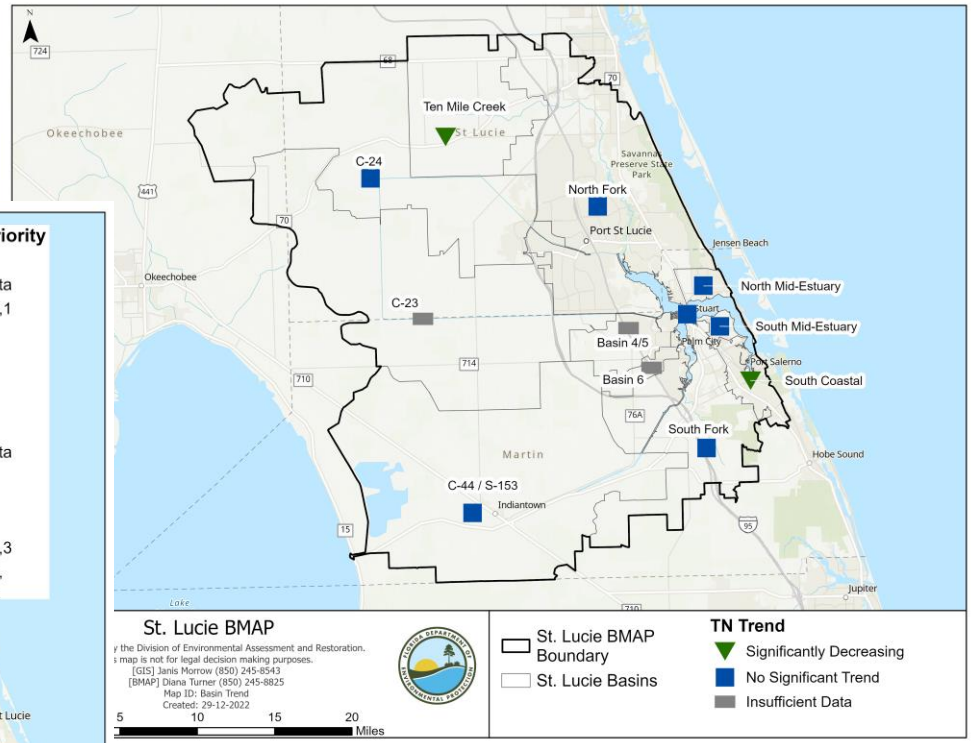
Source: SFWMD; Lake Okeechobee

EXISTING DATA AND TOOLS

WATER QUALITY ANALYSES







EXISTING DATA AND TOOLS

TOOLS AND INFORMATION FOR STAKEHOLDERS

Instructions for BMAP stakeholders for OSTDS Septic to Sewer Projects or Enhancement/65% Treatment or More Projects

1 Projects in springs BMAPs should use the green-colored tabs, not other methods. Use springs calculations for the following BMAPs: Crystal River/Kings Bay; DeLeon; Gemini; Homosassa/Chassahowitzka; Jackson Blue; Rainbow; Santa Fe; Silver; Suwannee; Volusia Blue; Wacissa; Wakulla; Weeki Wachee/Aripeka; and Wekiwa.

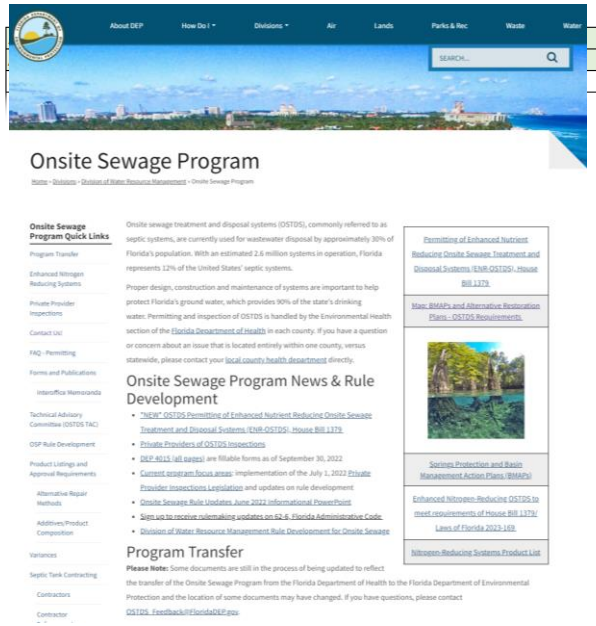
2 Sheets with orange tabs indicate methods for surface waters. Seek guidance from your basin coordinator before using a specific potential method.

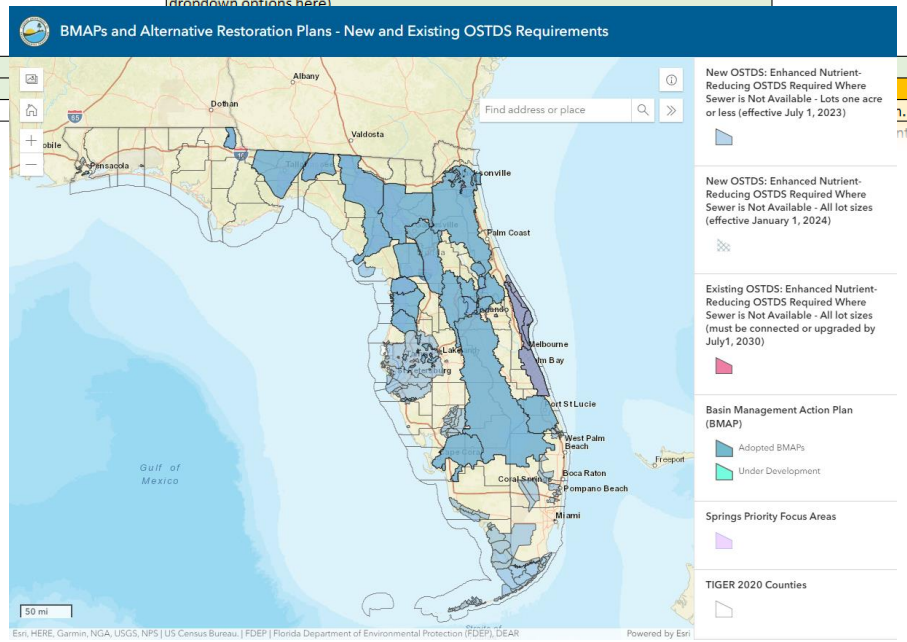
3 As more information is known, the methods may change over time.

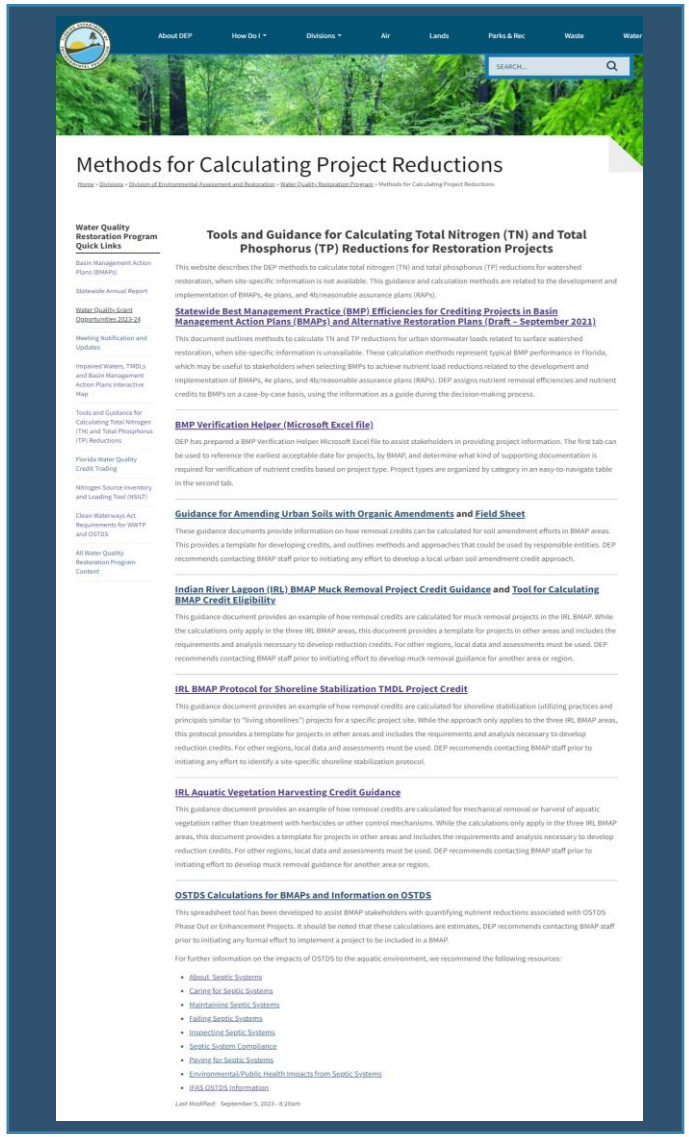
Brief Q&A to Guide Method Selection

	Question	Answer
1	Is your project in a BMAP springshed?	Use the springs residential property or springs commercial property method, as applicable
2	Are you looking for a nitrogen reduction estimate for a surface water that is not a lake?	Use the NLM or SJRWMD method, or you can use the ArcNLET Model
3	Are you looking a nitrogen reduction estimate for a lake?	Use the TMDL Method, NLM, or SJRWMD methods, or you can use the ArcNLET Model

Springs OSTDS Loading Calcs (Spring BMAPs ONLY)	
Approved for BMAP Springs Credit Calculations	**Advantages**
Point of Contact: Moira Homann, DEP	Consistent use across springs BMAPs.
	Uses census data for the persons per household, which is easy to find (online or in the dropdown options here)







EXISTING DATA AND TOOLS

TOOLS AND INFORMATION FOR STAKEHOLDERS

B18 | Required pieces of information (listed below)*

11/8/2021

BMP Verification Helper

First: Select a BMAP in the orange cell below, for the earliest acceptable start date (year).

BMAP List

Select a project type from pick list in the cell below.	
Select a Project Type by clicking this cell and choosing from this dropdown list.	
Category 1:	Select a project type in cell B10
Category 2:	Select a project type in cell B10
Message about the project type selected:	Definition of the project type selected:
Please select a project type in the yellow cell at the top of this table and have a great day!	Select a project type in cell B10 next to the yellow arrow.
Select a project type in cell B10	*Select a project type in cell B10*
Required pieces of information (listed below)*	Optional pieces of information (listed below)

Instructions:

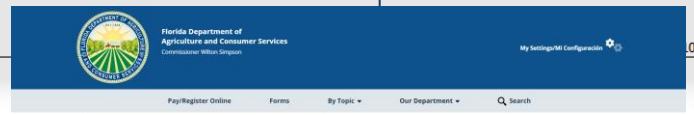
1. Will this project be eligible based on start date? Each BMAP tracks projects starting with a specific year and forward. Projects that began before this date are not typically eligible for credit. Select the BMAP basin in the orange cell, B4. As always, contact your BMAP coordinator if you are unsure.

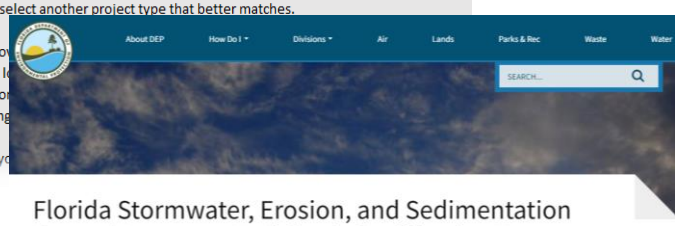
2. What is the project type? Review the project types table (tab called Project Types) and identify the project type that suits the project you are submitting. Project types are categorized for easier identification (ex. stormwater or wastewater). Click on a project type to read the definition in a pop-up. Pop-ups for project types currently ineligible for credit suggest the reader review definitions for creditable project types with similar names.

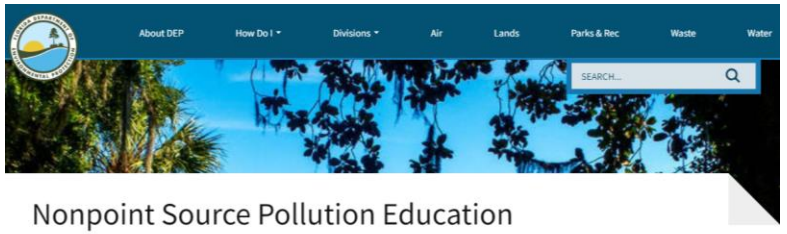
3. What information is needed for credit verification? Select the project type from the dropdown list in cell B10 (next to the yellow arrow). Confirm that categories 1 and 2 match your project. Read the message box and the definition to confirm you have selected the best option. If not, select another project type that better matches.

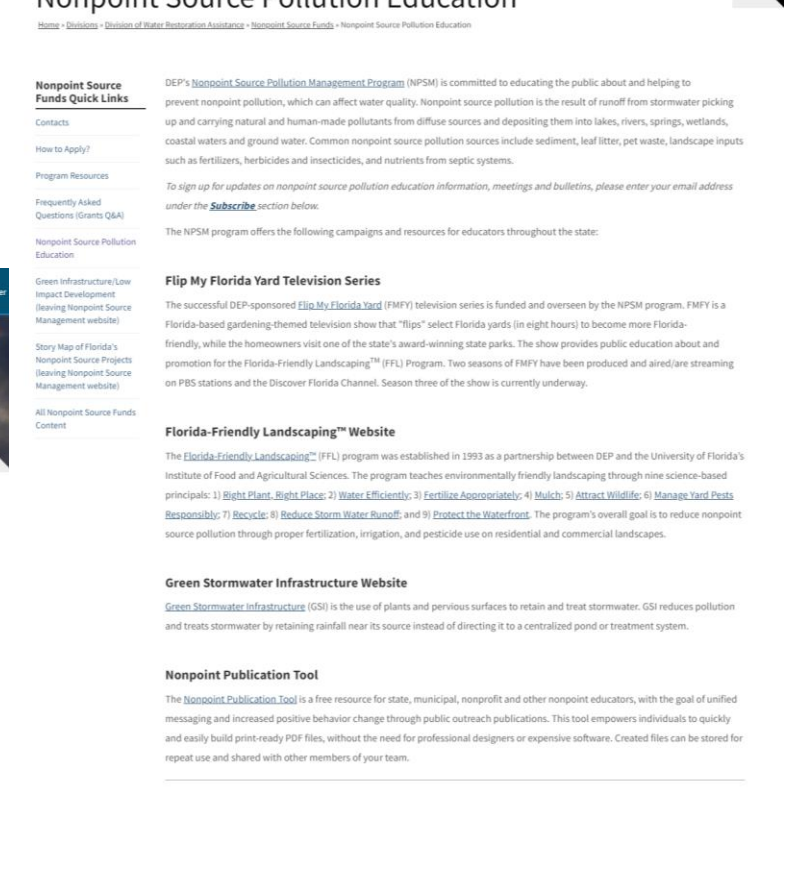
4. Pro… BMP I… Optio… during…

5. If yo…



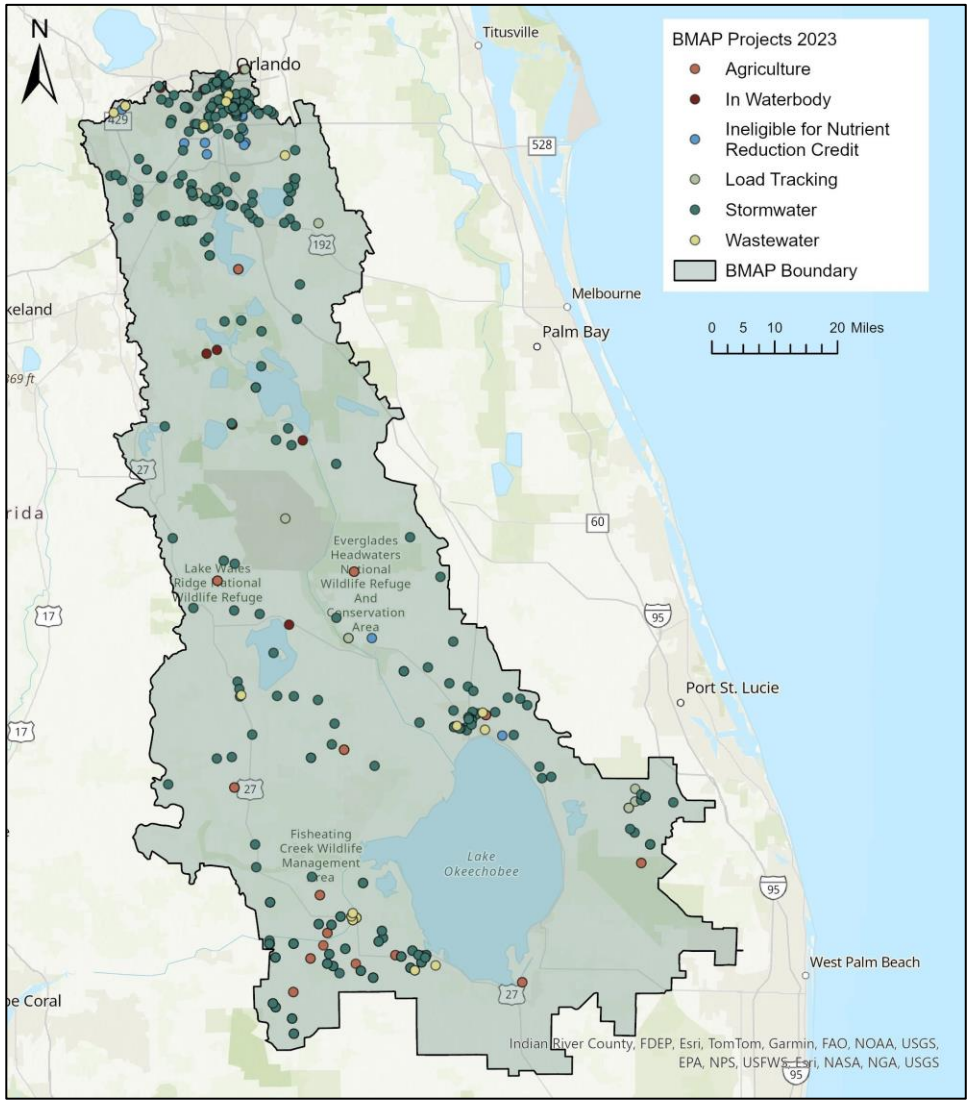






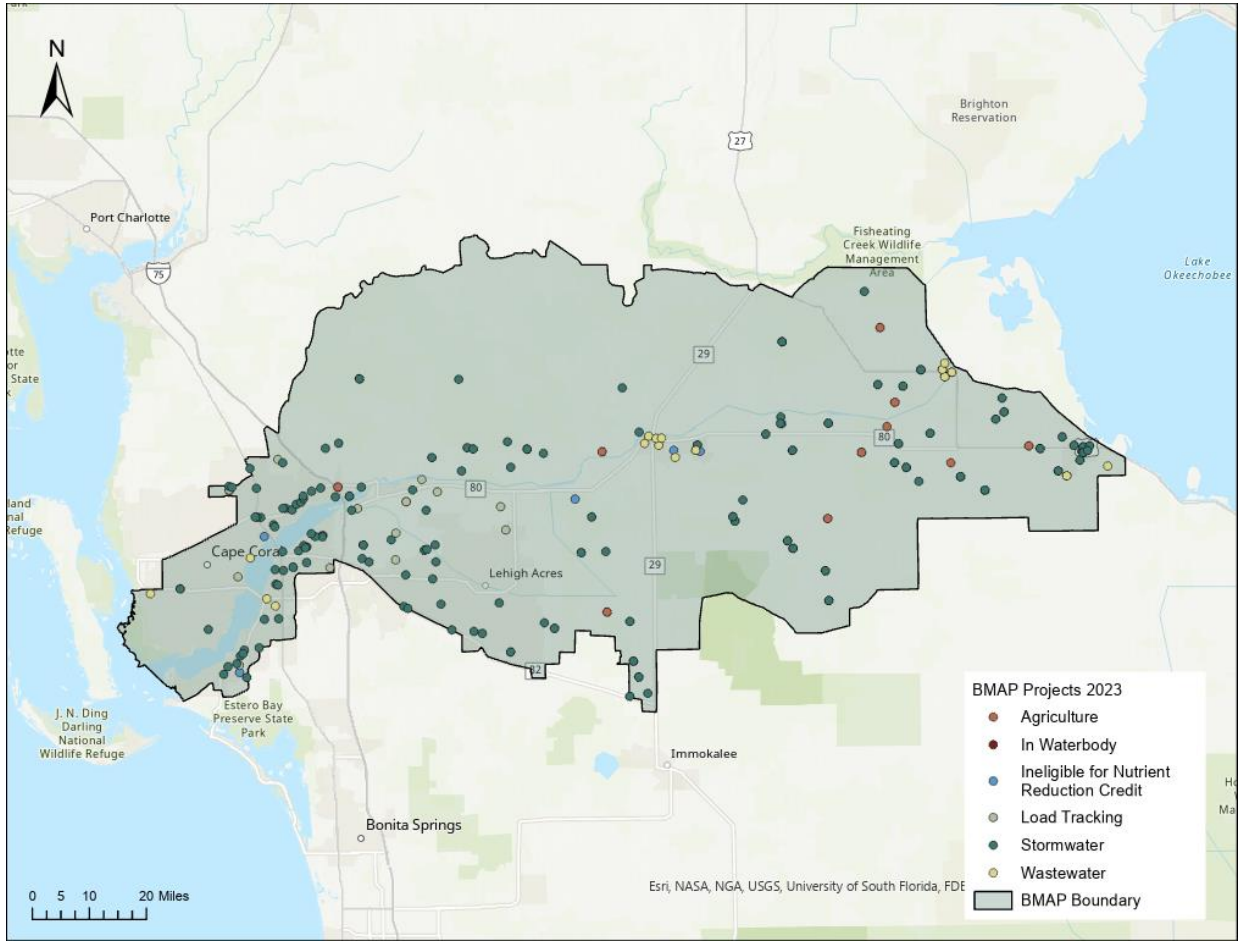
LAKE OKEECHOBEE BMAP

- Originally adopted 2014.
- Updated per Executive Order (EO) 19-12 in 2020.
- Water quality impairment:
  - Total phosphorus (TP) total maximum daily load of 140 metric tons.
- Restoration:
  - Through December 2023, 213 projects were completed, 79 ongoing activities listed and 60 projects are underway or planned.
  - Estimated reductions of 243,895 lbs/yr TP.

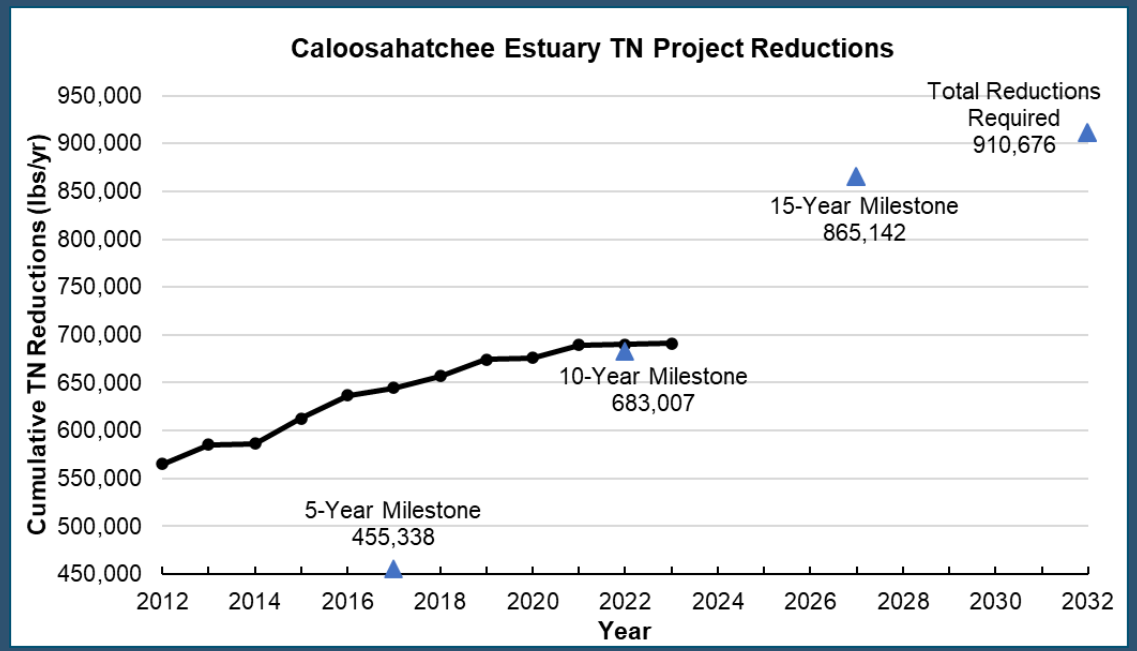


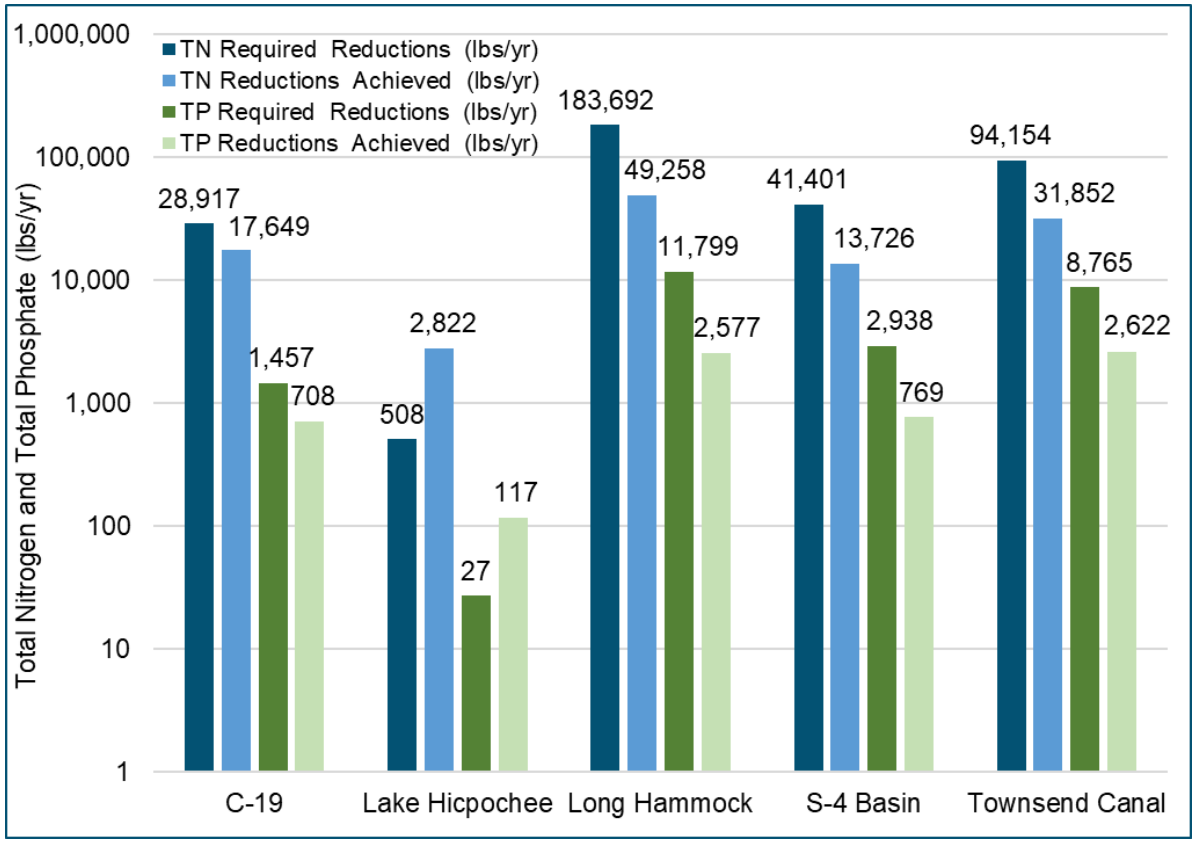
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

- Originally adopted 2012.
- Updated per EO 19-12 in 2020.
- Five-year review 2022.
- Estuary TMDL:
  - Total Nitrogen (TN) – 9,086,094 lbs/yr.
- Water quality restoration:
  - Through December 2023, 158 projects were completed, 61 ongoing activities listed and 102 projects are underway or planned.
  - Estimated reductions of 87,292 lbs/yr TP and 848,268 lbs/yr TN.



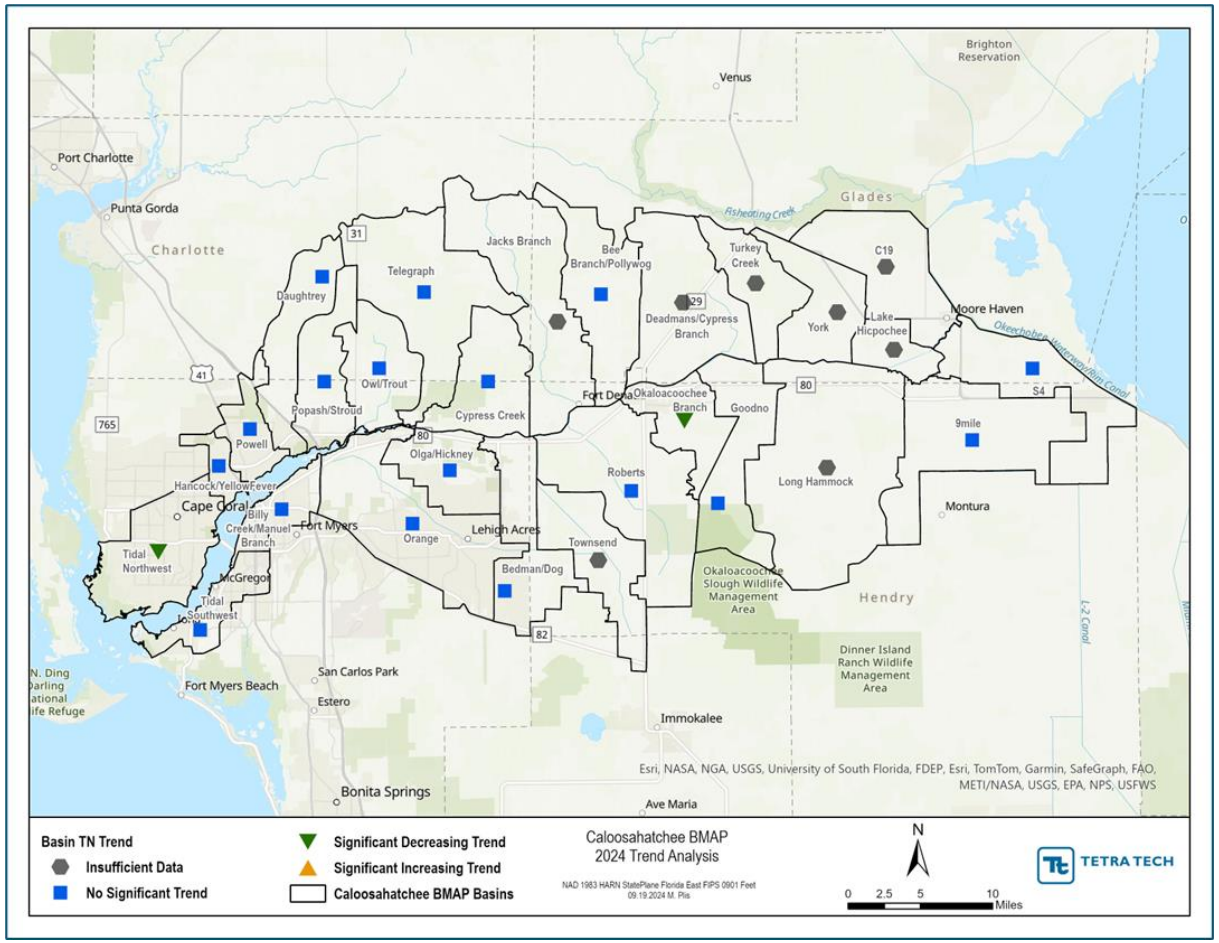
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

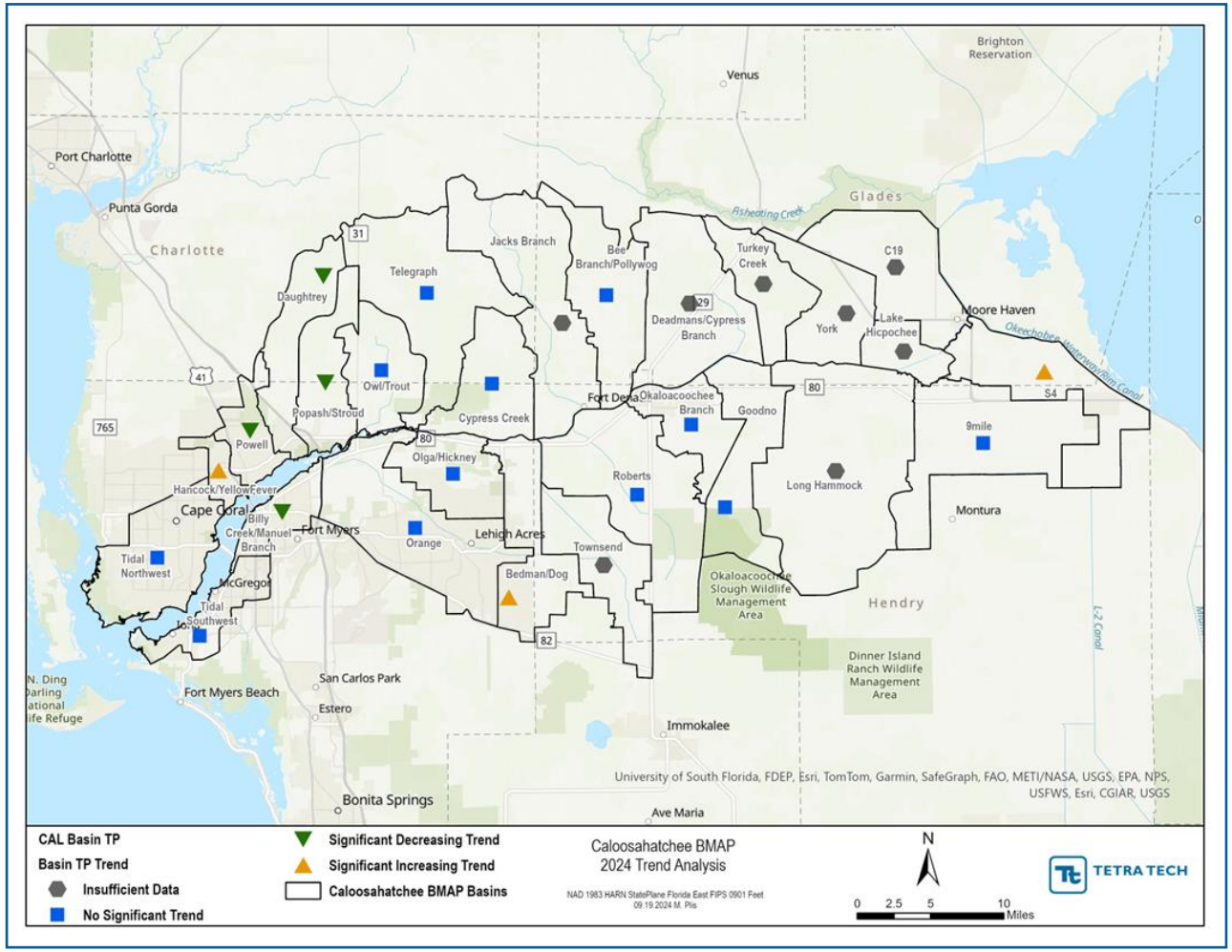




EXISTING DATA AND TOOLS

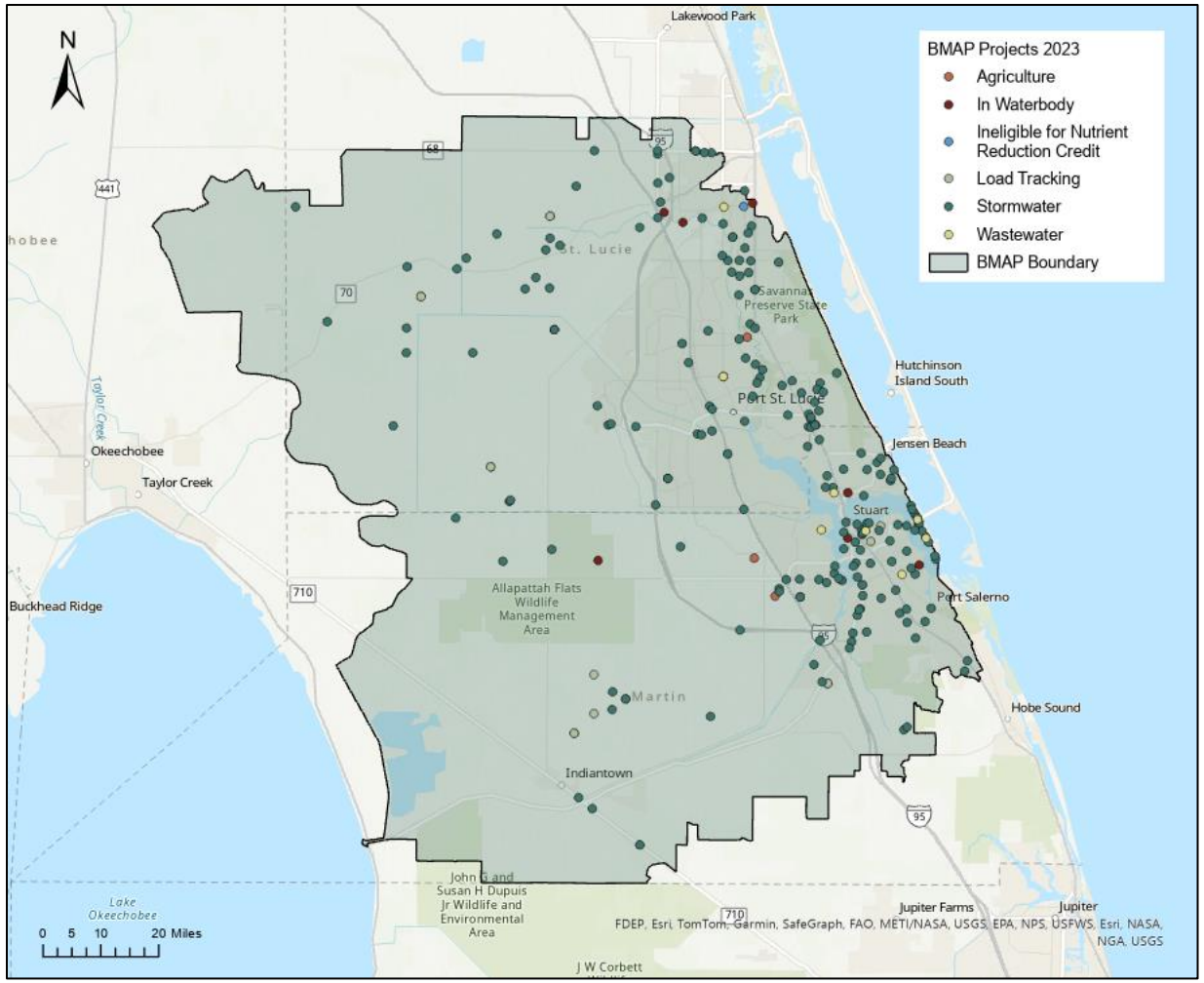
WATER QUALITY – BASIN TRENDS





ST. LUCIE RIVER AND ESTUARY BMAP

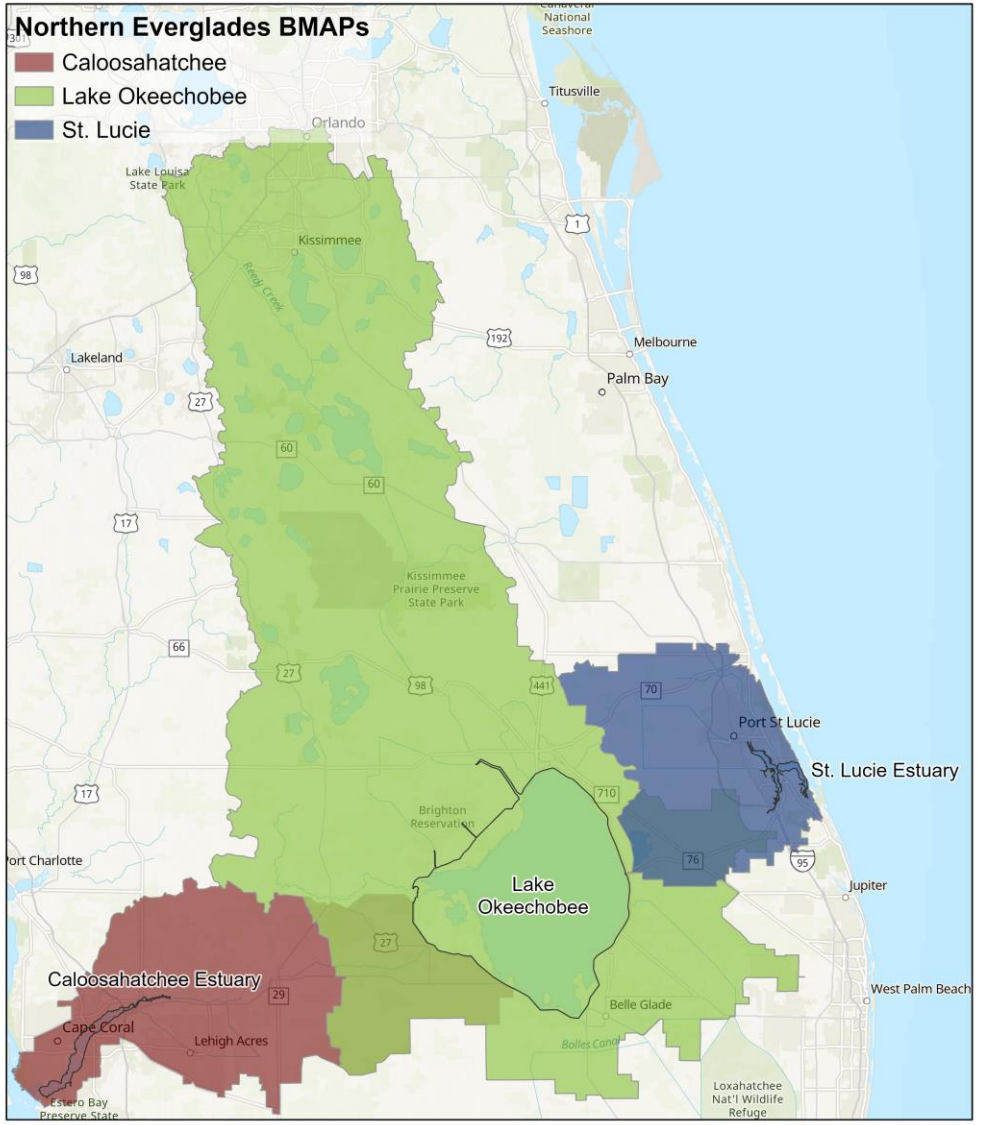
- Originally adopted 2013.
- Updated per EO 19-12 in 2020.
- Completed Five-Year Review in 2023.
- TMDLs:
  - Total nitrogen (TN): 0.72 mg/L.
  - TP: 0.081 mg/L.
- Restoration:
  - Through December 2023, 234 projects were completed, 40 ongoing activities listed and 36 projects are underway or planned.
  - Estimated reductions of 203,902 lbs/yr TP and 840,544 lbs/yr TN.



BMAP UPDATES POST-2025

MODEL UPDATES TIMELINES

- Caloosahatchee –
  - Updating 2017 Hydrologic Simulation Program-FORTRAN (HSPF) model.
  - Anticipate model update will be completed by fall 2025.
- St. Lucie –
  - Building new HSPF model.
  - Anticipate model will be completed by fall 2026.
- Okeechobee –
  - Building new series of HSPF models.
  - Anticipate model will be completed by winter 2027.

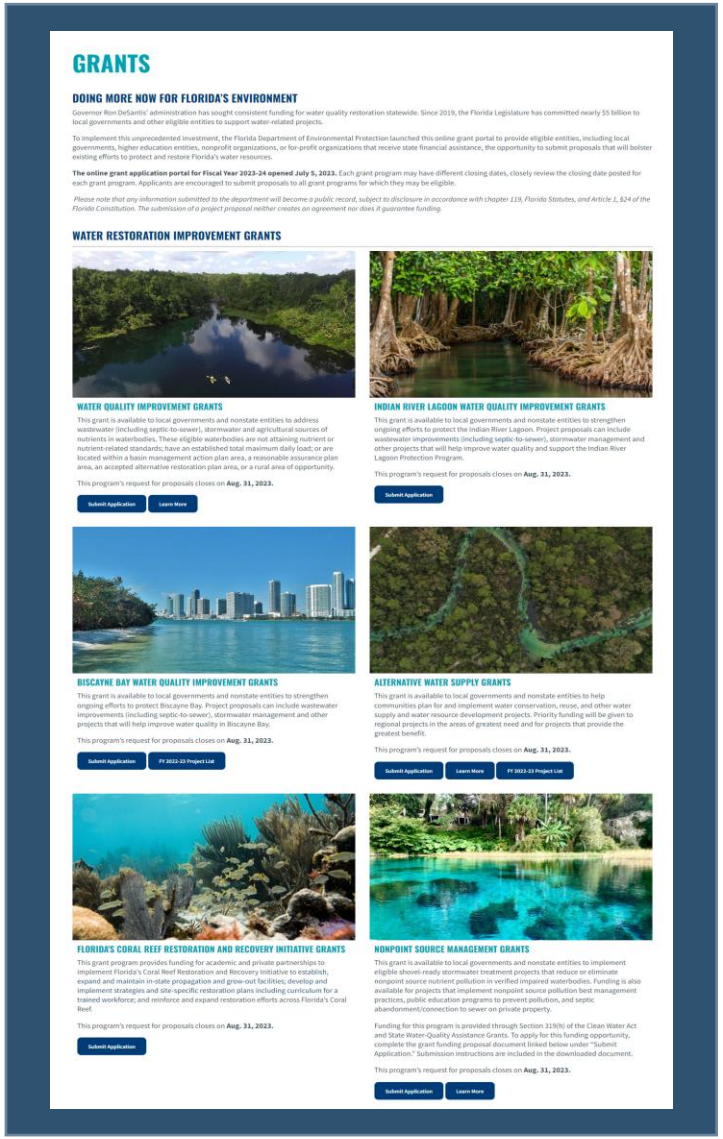


UPCOMING SCHEDULE

- Aug. 1, Final wastewater and OSTDS plans due.
- Nov.18, Second Annual Northern Everglades and Estuaries Protection Program (NEEPP) Public Workshop.
- Nov. 19-21, First round of BMAP update meetings.
- November /December, Draft BMAP update meetings; “Okeechobee 5-Year Review.”
- January 2025, Draft BMAP document comment period.
- July 1, 2025, Statutory deadline to update nutrient BMAPs.

EXPANDING GRANT OPPORTUNITIES

ACCELERATING PROJECT IMPLEMENTATION



Expanded Eligibility:

- Previously included projects within BMAPs, RAPs (4b) and a Rural Areas of Opportunity (RAO).
- Now **also** allows for projects that provide water quality improvements to a waterbody not attaining a nutrient or nutrient related standard, including those with a TMDL or a pollutant reduction plan (4e).

Expanded Project Types:

- Previously included septic-to-sewer, AWT expansion or upgrades, and OSTDS upgrades.
- Now **also** includes stormwater, regional agricultural projects, and a broader suite of wastewater projects such as collection systems and domestic wastewater reuse.

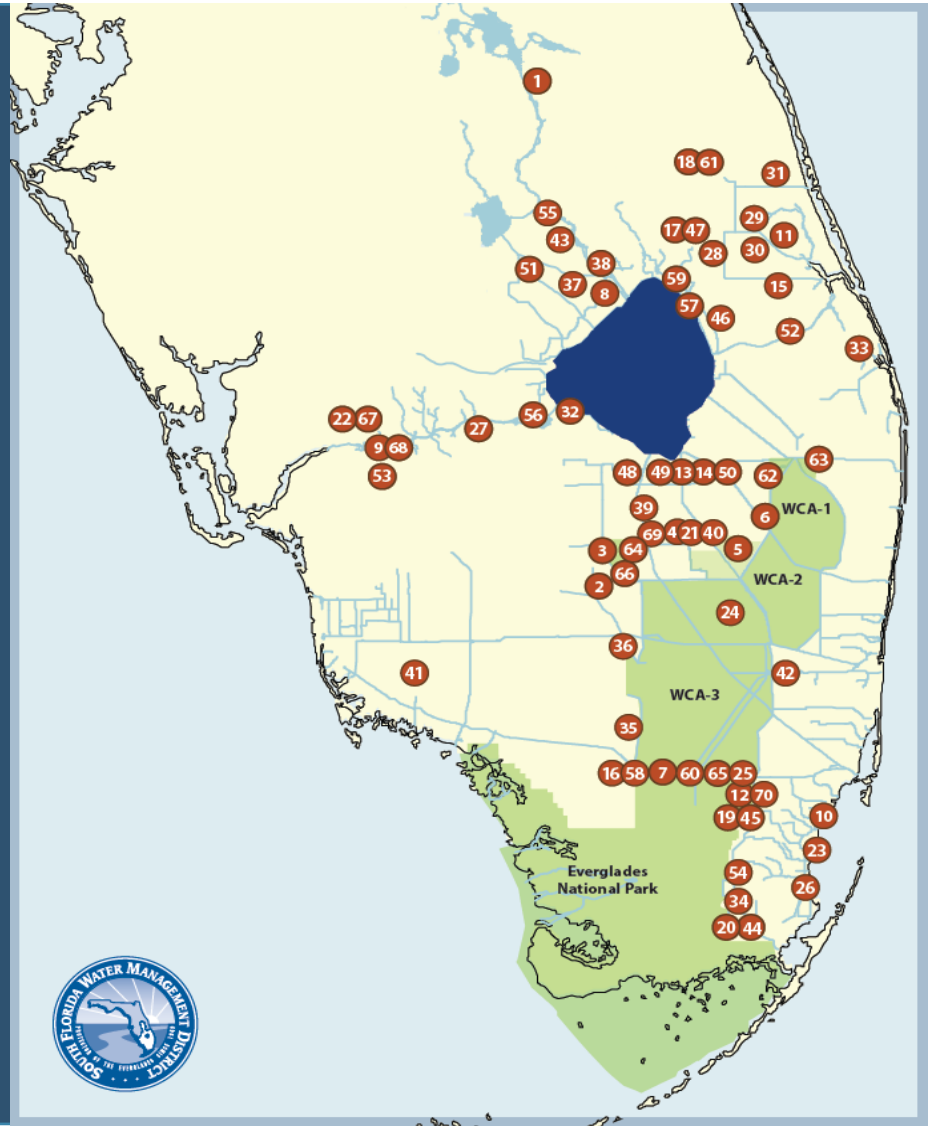
Project Prioritization:

- Prioritizes projects that have the maximum nutrient load per project, demonstrate project readiness, are cost-effective, have a cost-share by the applicant (except for RAOs), have previous state commitment and are in areas where reductions are most needed.

UNPRECEDENTED INVESTMENTS

FLORIDA'S COMMITMENT TO RESTORING AMERICA'S EVERGLADES

- Governor Ron DeSantis signed EOs 19-12 and 23-06, directing historic investments in Everglades restoration.
- Since 2019, the state has appropriated $3.2 billion for Everglades restoration with $412.2 million in the NEEPP.
- This record-funding has resulted in 70 opportunities for projects breaking ground, hitting a major milestone or being completed since EO 19-12 was signed. This includes 18 major milestones for NEEPP projects.



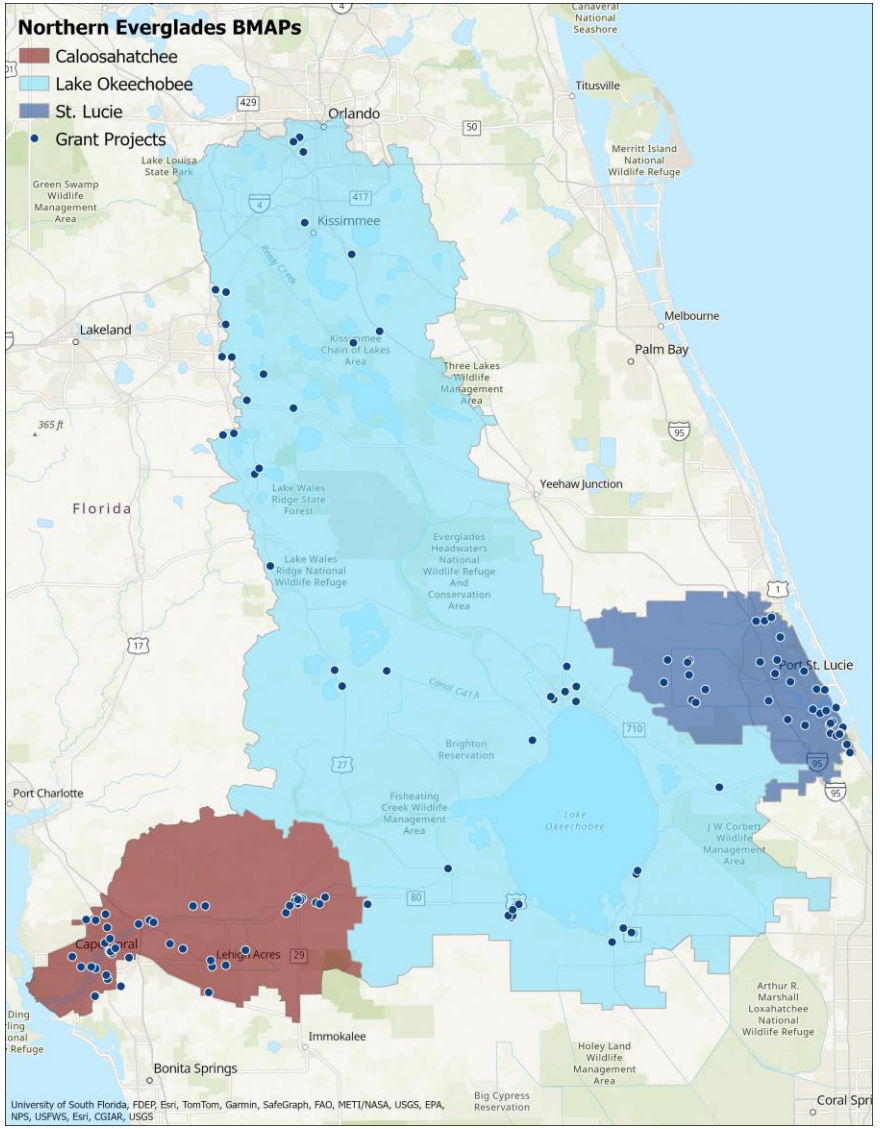
UNPRECEDENTED INVESTMENTS

TARGETED WATER QUALITY IMPROVEMENTS – NEEPP

216
awards totaling
$429 million

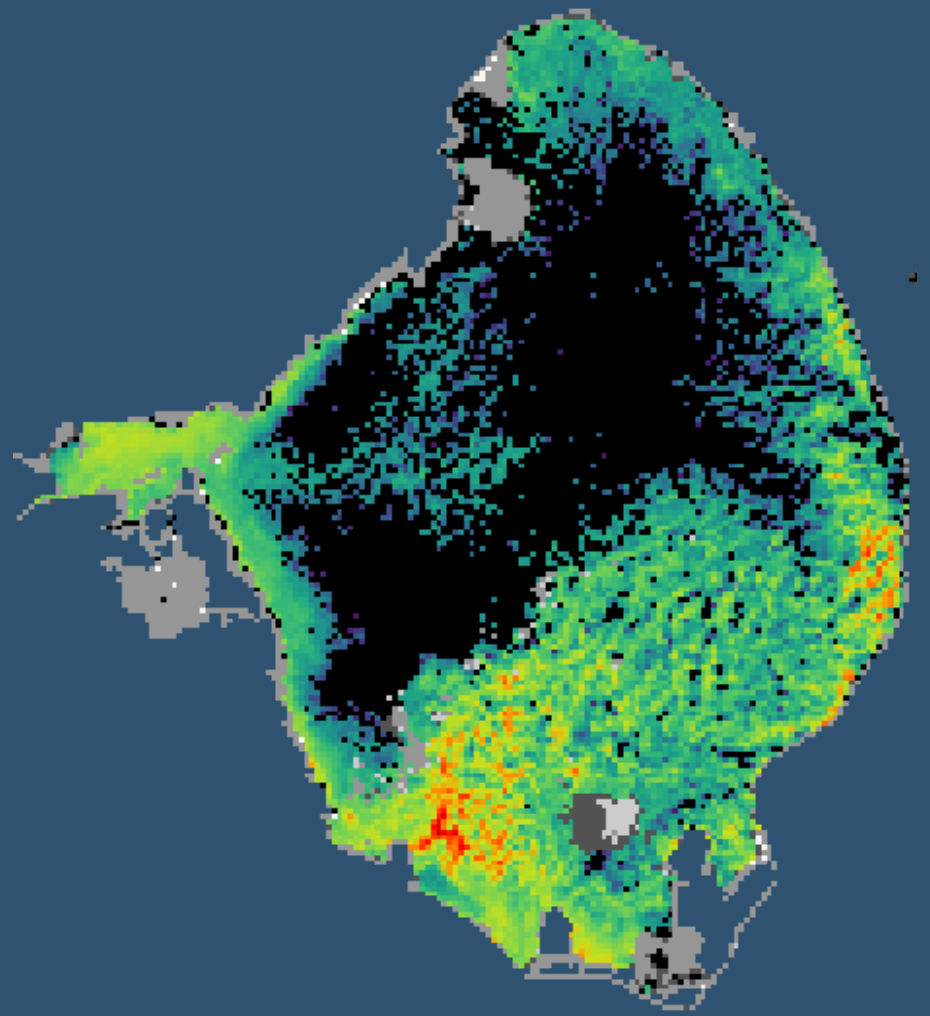
1.16
million lbs/yr TN

159.6
thousand lbs/yr TP

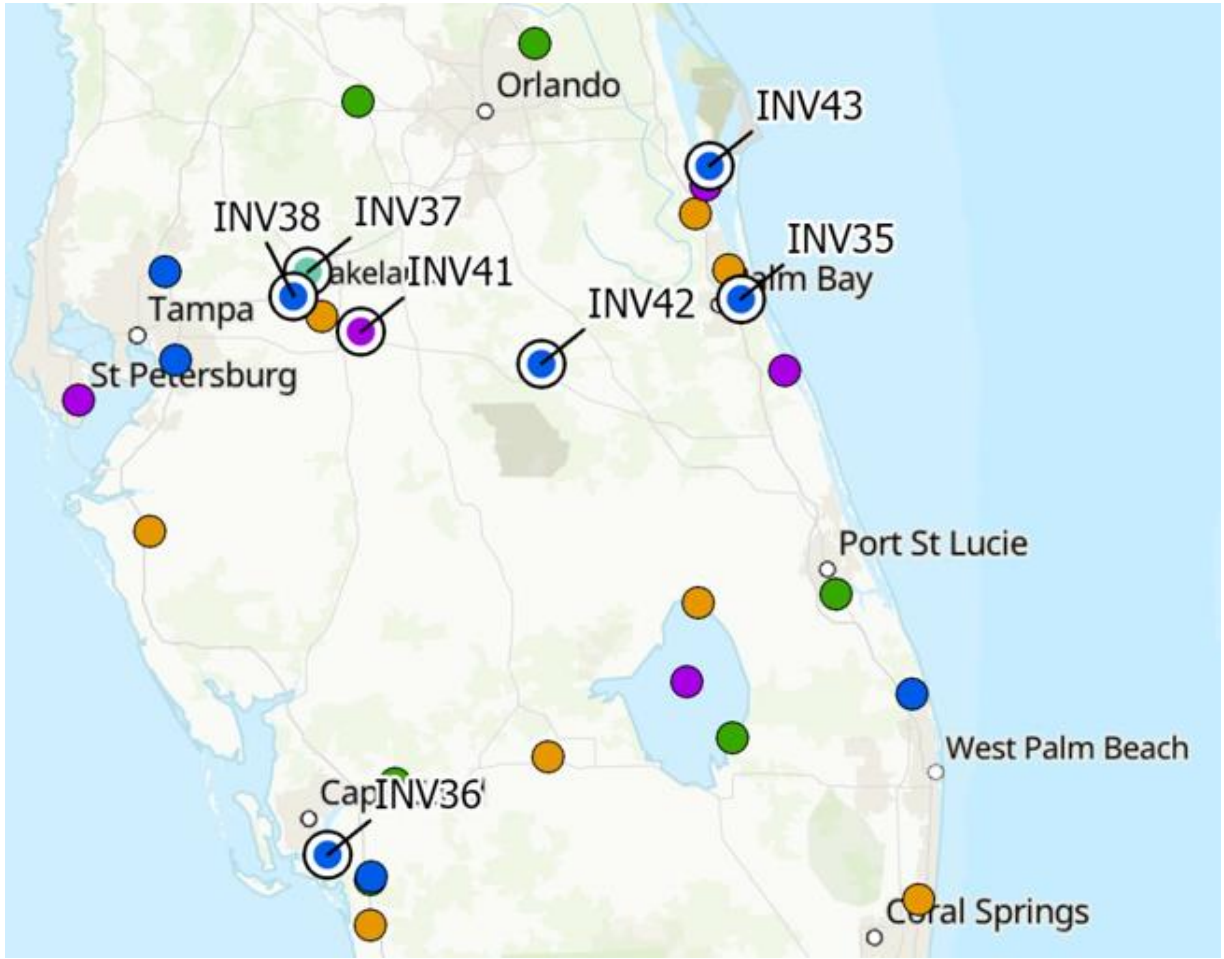


LAKE OKEECHOBEE
BLOOM MITIGATION

The Fiscal Year 2024-25 budget includes $10 million to competitively procure water quality treatment technologies to combat Harmful Algal Blooms (HABs) in Lake Okeechobee.



INNOVATIVE TECHNOLOGIES
PROJECTS



- Three projects in Lake Okeechobee.
- Five projects in/around Caloosahatchee.
- Six projects in/around St. Lucie.

MORE BMAP INFORMATION

- BMAP webpage:
  - Includes all BMAPs and other relevant documents/resources.
  - StoryMaps.
    - Each BMAP.
    - Each BMAP type (NEEPP, Indian River Lagoon (IRL), bacteria and springs).
  - Interactive maps.
  - Tools for responsible entities – BMPs and project guidance.

- Statewide Annual Report (STAR):
  - Updated annually.
  - Information on projects.
  - Other BMAP information.

THANK YOU

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Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Progress Update on the Northern Everglades and Estuaries Protection Program (NEEPP) Public Workshop

November 18, 2024

Yesenia Escribano

Florida Department of Agriculture and Consumer Services

Office of Agricultural Water Policy

Overview

- Office of Agricultural Water Policy (OAWP) Staff
- FDACS Role in BMP Implementation
- BMPs and BMPs Manual Update
- BMP Enrollments and Implementation Verification in NEEPP
- Cost Share and Regional Projects
- Research and FDACS Report to Legislature

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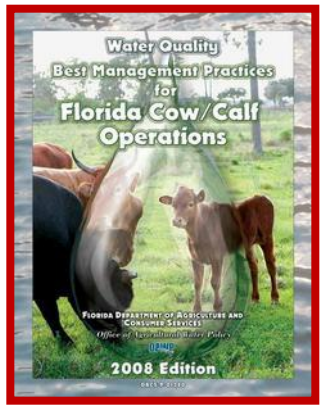
FDACS Role in BMP Implementation

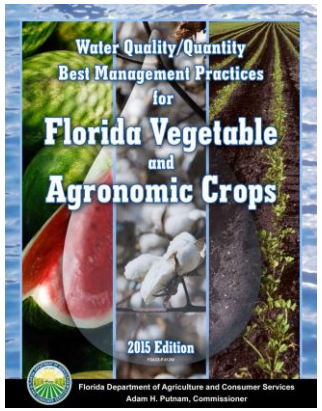
- Development agricultural BMPs
- Adopt Manuals by Rule
- Assist Producers with BMP Enrollment
- Identify and support cost-share of select BMPs
- Verify proper implementation through site visits
- Fund scientific and technical research

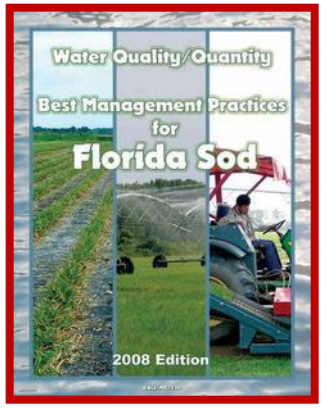
Agricultural Best Management Practices (BMPs)

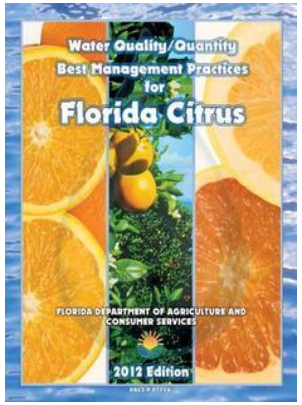
- Management strategies, tools and practices that improve water quality, conserve water, and protect water resources (Efficiency)
- Best available science and technology
- Technical and economic feasibility (Manual)
- Balance productivity with water quality improvement
- Benefits: water resource protection, soil health, groundwater recharge, wildlife habitat

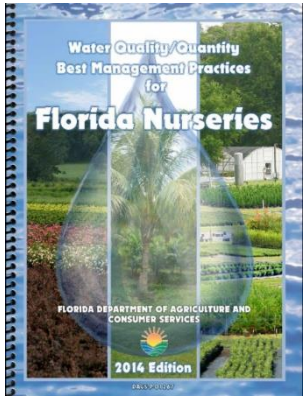
BMP Manuals

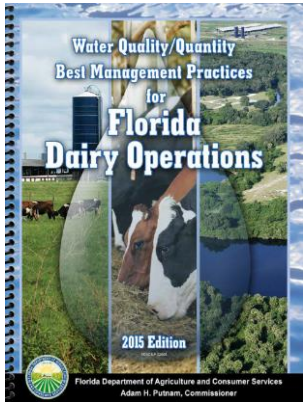


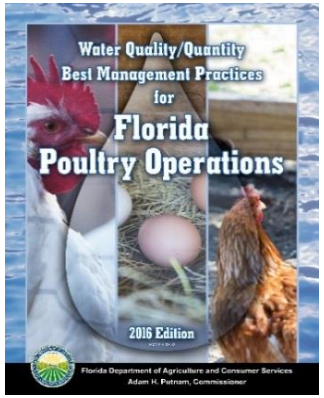


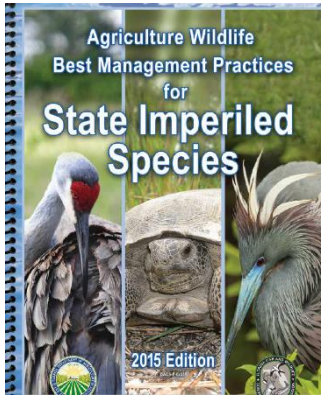












Small Farms and Specialty Livestock Manual Coming Soon!

BMP Manual Updates

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

Manual	Stage	Date
Administrative Code (5M-1)	Rule in effect	October 30, 2024
Sod	Rule in effect	November 12, 2024
Cattle	Notice of Proposed Rule Published	October 14, 2024
Specialty Fruit and Nut	Rule Certification Package in Development	Certification Target December 2024
Nursery	Rule Certification Package in Development	Certification Target December 2024
Poultry	Rule Certification Package in Development	Certification Target December 2024
Dairy	Rule Certification Package in Development	Certification Target December 2024
Equine	Rule Certification Package in Development	Certification Target December 2024
Vegetable and Agronomic Crop	Rule Certification Package in Development	Certification Target December 2024
Citrus	Notice of Rule Development Published	October 29, 2024
Small Farms and Specialty Livestock	Notice of Rule Development Published	October 1, 2024

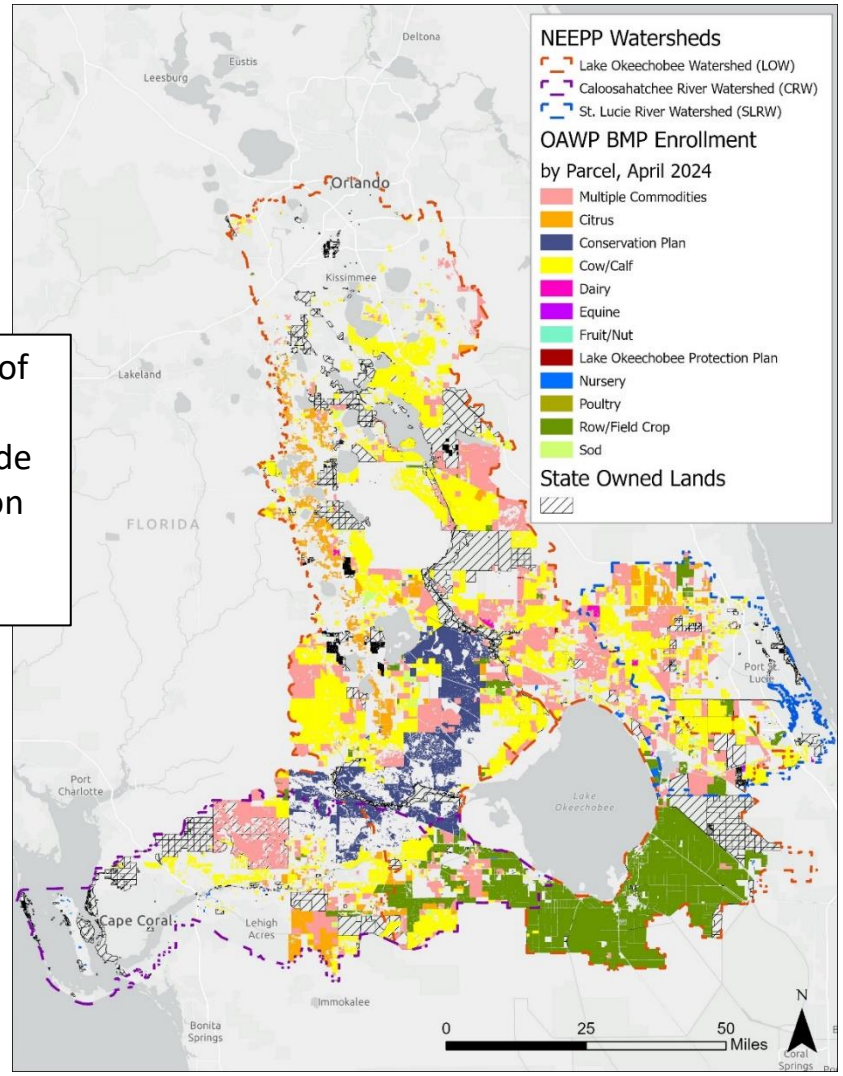
Producer Options in BMAP Areas

1. Enroll in the BMP program and implement applicable best management practices , OR

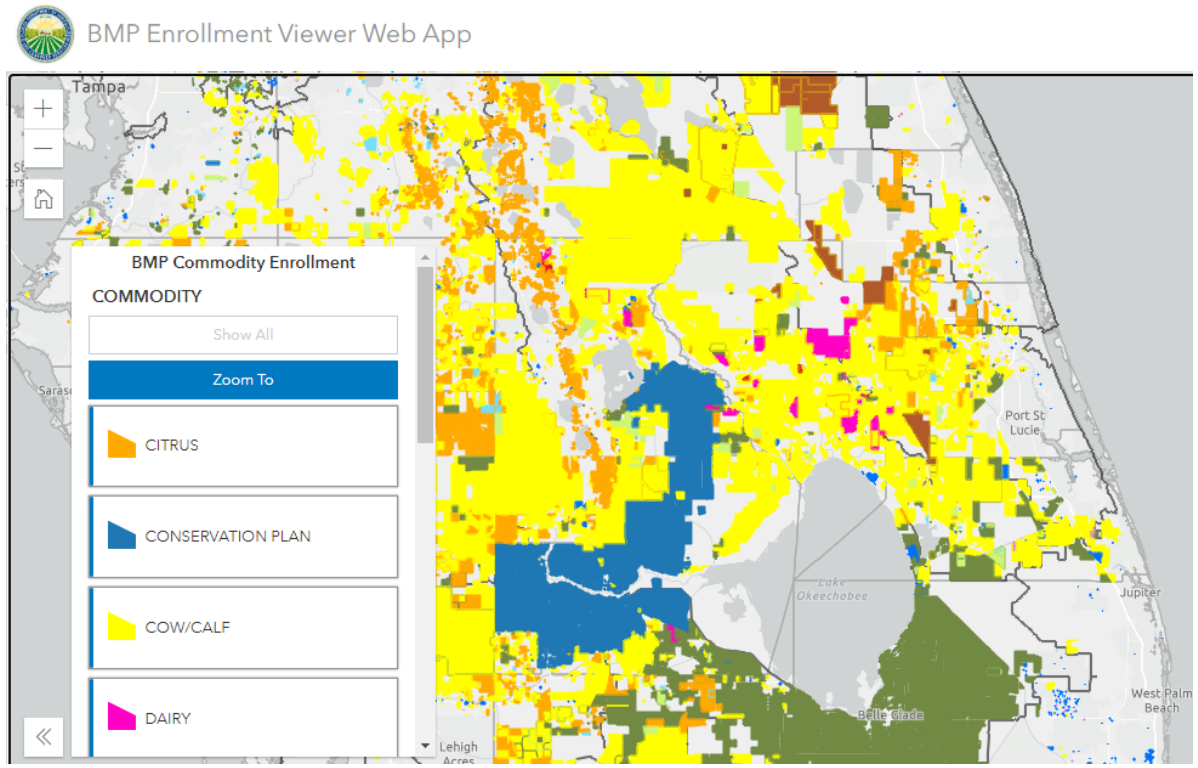
2. Demonstrate their compliance with state water quality standards by conducting water quality monitoring prescribed by DEP or a water management district

FDACS BMP Enrollments within NEEPP

- BMP enrollment as of April 2024
- 11th Florida Statewide Agricultural Irrigation Demand (FSAID) Geodatabase



- Online Feature
  - BMP Enrollment Viewer Web App
  - Office of Agricultural Water Policy: BMP Enrollment Map (fdacs.gov)



BMP Enrollments within NEEPP*

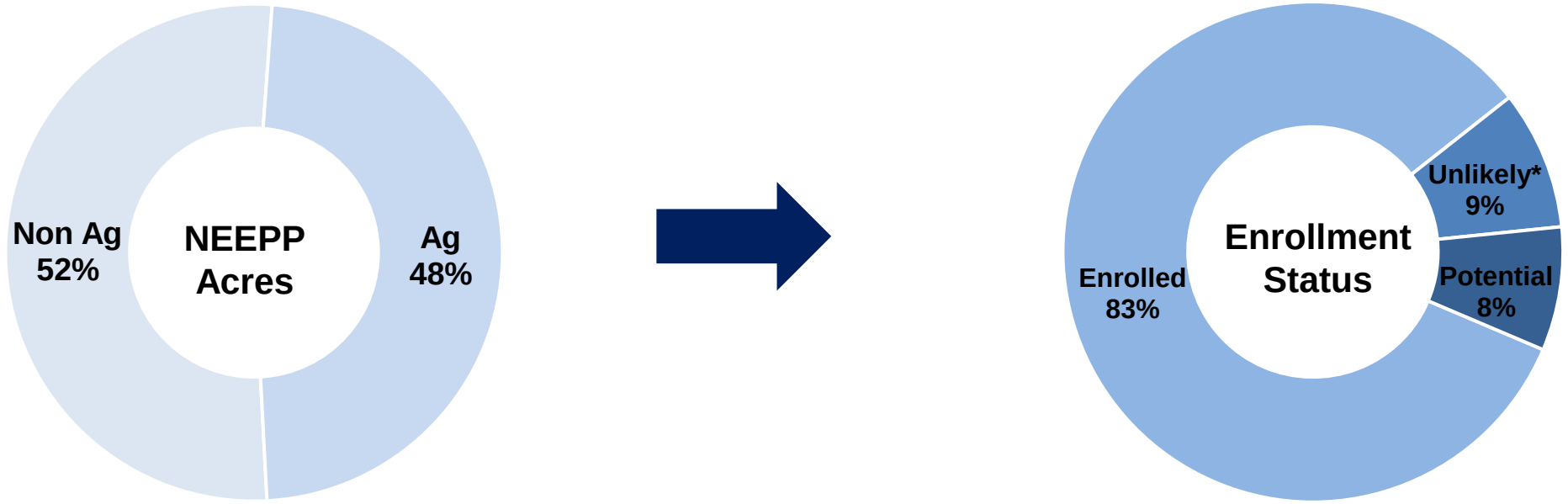
	Caloosahatchee River Watershed	Lake Okeechobee Watershed	St. Lucie River Watershed
Total Ag Acres	432,004	1,822,328	367,055
Enrolled Ag Acres	370,322	1,519,428	286,008
Percent Enrolled	**86%**	**83%**	**78%**
Total Irrigated Ag Acres	174,090	631,067	84,098
Enrolled Irrigated Ag Acres	163,002	589,941	76,671
Percent Enrolled	**94%**	**93%**	**91%**

FDACS BMP Program enrollment as of April 30, 2024 and the 11th Florida Statewide Agricultural Irrigation Demand (FSAID) Geodatabase

*The boundaries of the LOW overlap with those of the CRW and SLRW; therefore, the enrollment acreages provided for the different watersheds may include the same NOIs

Status of Agricultural Lands within the NEEPP BMAPs*

Non-Agricultural Acres	Agricultural Acres	Enrolled Agricultural Acres	Unenrolled - Unlikely Enrollable Acres **	Unenrolled - Potentially Enrollable Acres



* These estimated percentages were calculated by combining the three Northern Everglades BMAP areas together and may include enrollment acreages associated with more than one watershed. For more information and a summary for the individual BMAPs, see *Status of Implementation of Agricultural Nonpoint Source Best Management Practices* (FDACS 2024), which can be found at https://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy

** This percentage includes acreages within state-owned properties and/or surface water project areas

BMP Implementation Verification (IV)

- Process to verify the status of implementation of BMPs
- **Clean Waterways Act - SB 712 (July 2020)**
  - Requires IV site visits every 2 years
    - IVs completed during reporting period
      - 85% in the Lake Okeechobee BMAP
      - 93% in the Caloosahatchee Estuary BMAP
      - 90% in the St. Lucie River and Estuary BMAP
  - Requires collection, review, and retention of N and P fertilizer records
    - Nutrient Application Record Form (NARF)
  - FDACS reports total N and P applications to FDEP for utilization in BMAP assessments

*These numbers are affected by the Emergency Orders providing deferral of IVs in 18 counties impacted by Hurricanes Idalia in August 2023.

Cost Share

https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices/BMP-Cost-Share-Program

On Website

- Producer Eligibility Requirements
- List of Project Types Eligible for Cost Share Funding
- Opportunity to apply for new types
- New Application Portal is active

BMP Cost Share Program

The Florida Department of Agriculture and Consumer Services' (FDACS) Office of Agricultural Water Policy (OAWP) administers the Best Management Practices (BMP) Cost Share Program to assist eligible producers or landowners with BMPs. Project funding is on a continuous basis until program funds are fully encumbered.

OAWP will prioritize awarding first-time participants in the BMP Cost Share Program and projects that will result in the highest level of nutrient reductions to help achieve basin management action plan (BMAP) goals and conservation of water use. Funding will be based on the submittal of the necessary information on the funding request. Completed requests will be reviewed in the order in which they are received. Review of each cost share funding request will be conducted by FDACS. Additional information from the producer, including a site visit, may be requested by FDACS before a funding decision is made.

FDACS will review completed requests based on the following minimum criteria:

1. Confirmation of producer eligibility.
2. Prioritization of projects taking place in a BMAP.
3. Confirmation that the project type is on the approved list, to be used for implementing a checklist item, has an adequate relative water quality benefit, and is appropriate for the size of the operation.
4. Justification and consideration of the water quality benefit or water quantity benefit and the relative size and scope of the benefit.
5. Confirmation that the project type is directly linked to the implementation of the producer's manual checklist item.
6. Confirmation that the project type has the necessary precision/technology features.
7. The level of data-reporting commitment from the producer and corresponding cost share percentage.

Producer Eligibility Requirements

When applying, producers must meet the following requirements for their funding request to be considered:

1. The property where the prospective project is located must be in production for at least one year prior to applying (regardless of ownership/lease).
2. The producer must have an active Notice of Intent to Implement Agricultural BMPs (NOI) for the property where the

Project Types Eligible for Cost Share Funding

Project types eligible for cost share funding are provided in the expandable lists below. FDACS will determine the suitability of the project type based on the cost/benefit of the project and the estimated water quality or water quantity benefit compared to the current practice.

- Nutrient Management Project Types
- Irrigation Management Project Types
- Water Resource Protection Project Types

New Project Types

Producers may request an item or project that is not currently on the list by submitting a request that:

1. Identifies the applicable BMP checklist item that will be implemented through the installation of the item or completion of the project.
2. Describes why the new project type is necessary to implement the BMP compared to the producer's current practices.
3. Quantifies the estimated water quality benefit compared to the current practice.
4. Provides justification or proof of the item having a water quality or water quantity benefit (e.g., case studies, research, demonstrations or field tests).

Project types that show potential but do not satisfy the four criteria above may be eligible for funding as "research or demonstration projects" for the purpose of becoming eligible in the future.

How to Request Project Funding or a New Project Type

To request project funding or a new project type, select the following button to create an account and sign into our BMP Cost Share Program portal:

Request Project Funding

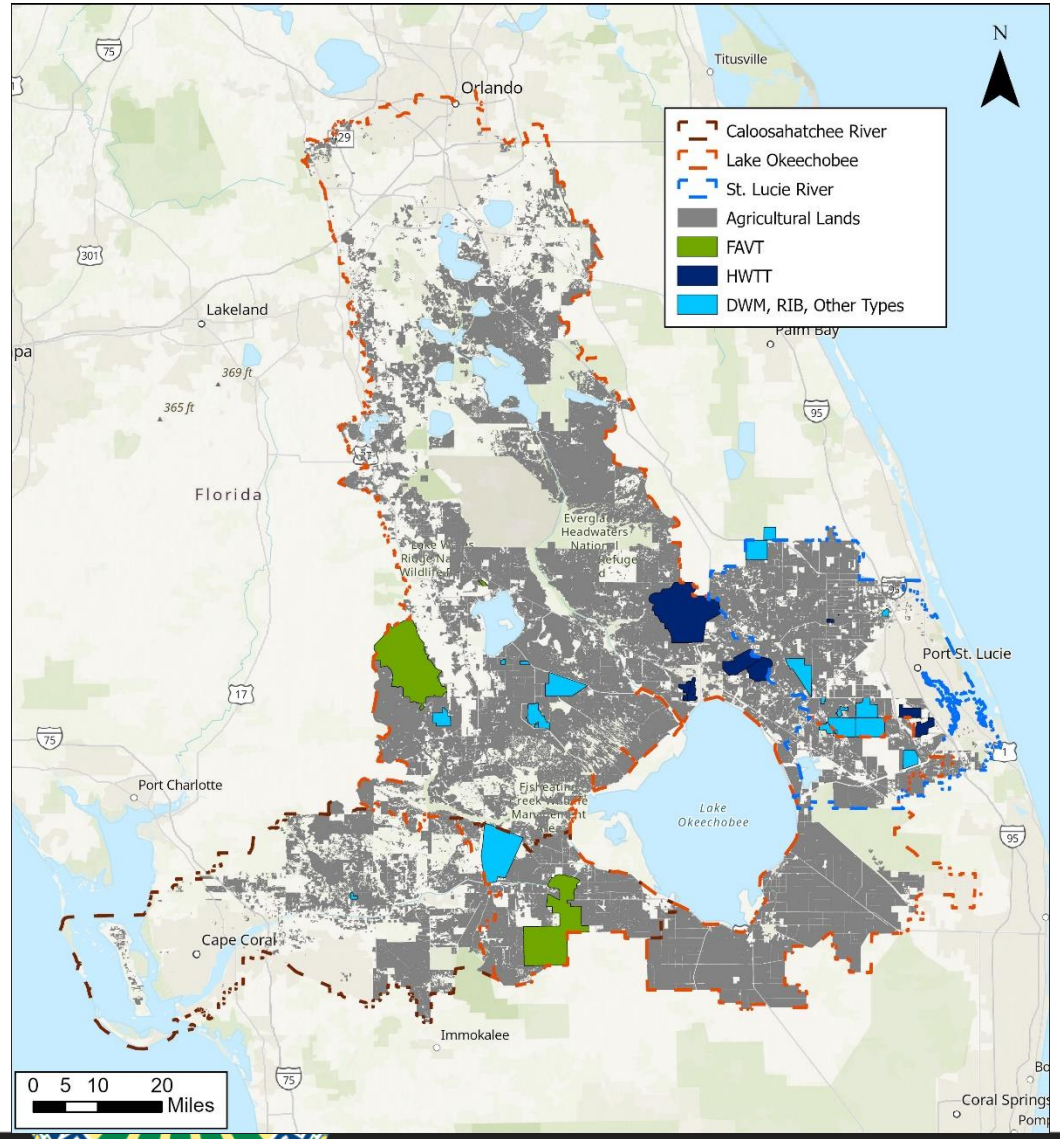
Alternatively, you may download and complete the Funding Request Form [1.3 MB] and submit it to OAWPCostShare@FDACS.gov. **Please note:** Submitting a form may take more time to process and review.

Important: Do not begin work on a project prior to executing a cost share agreement.

Additional Funding Resources

FDACS works with multiple partners, including the U.S. Department of Agriculture's Natural Resources Conservation Service, the Florida Department of Environmental Protection, water management districts, and soil and water conservation districts, to provide funding to assist producers in implementing Best Management Practices.

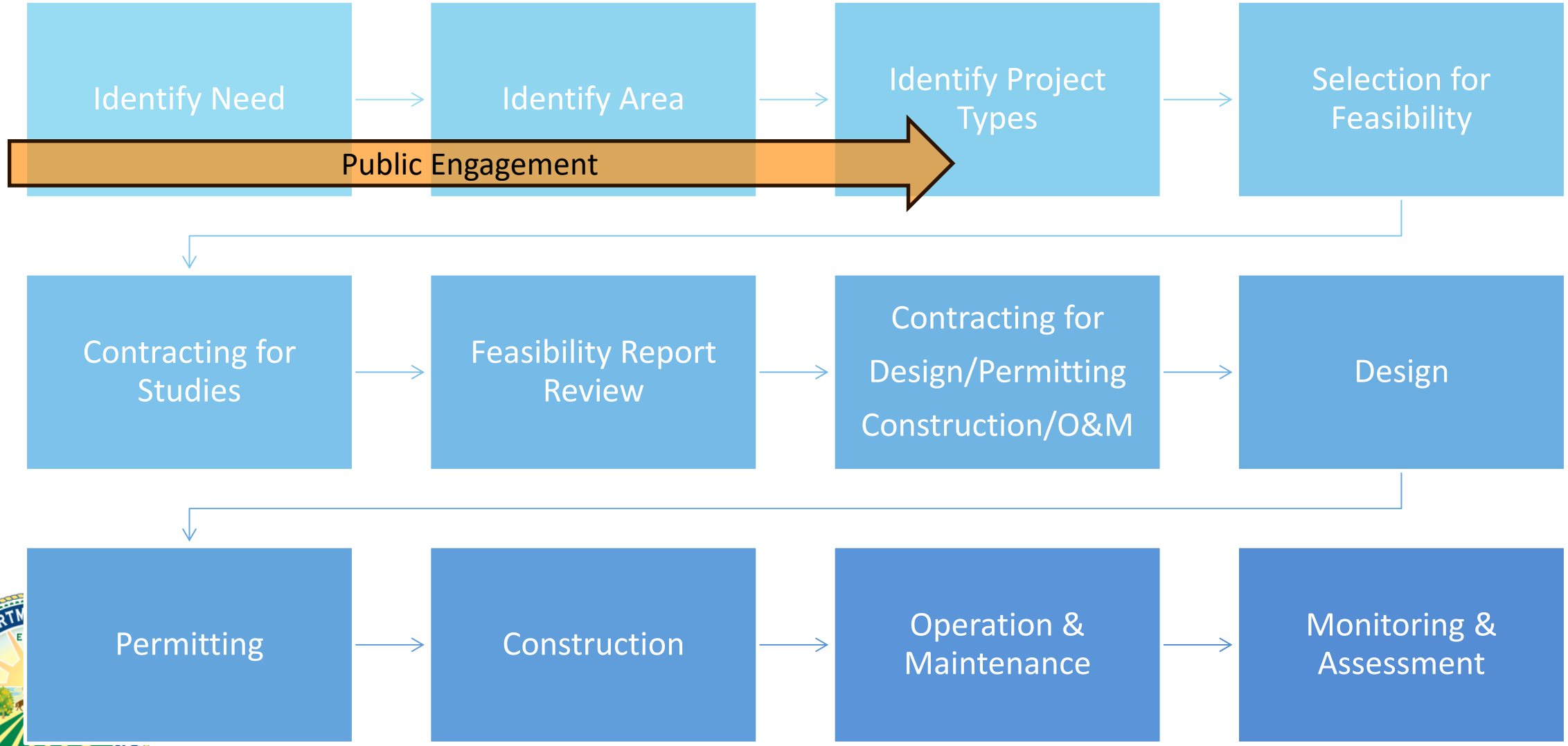
Projects within NEEPP



Floating Aquatic Vegetation Tillage (FAVT) Projects & Hybrid Wetland Treatment Technology (HWTT) :

- Lake Okeechobee/Caloosahatchee River Watershed
  - East Caloosahatchee FAVT
    - 31,738 ac-ft (45.6 million m^3) treated
    - 3.3 t TP and 20.7 t TN removed
- Lake Okeechobee Watershed
  - 5 HWTT facilities (Lemkin Creek, Wolff Ditch, Grassy Island, Nubbin Slough, and Mosquito Creek
    - 12,066 ac-ft (17.3 million m^3) treated
    - 4.5 metric tons (t) TP and 12.8 t TN removed
  - Fisheating Creek FAVT
    - 5,716 ac-ft (8.2 million m^3) treated
    - 1.1 t TP and 3.0 t TN removed.
- St. Lucie River Watershed
  - 3 HWTT facilities (Ideal 2 Grove, Bessey Creek, and Danforth Creek)
    - 3,756 ac-ft (5.4 million m^3) treated
    - 0.8 t TP and 2.5 t TN remove

Projects Path Forward



Research

Home / Agriculture Industry / Water / Agricultural Best Management Practices / BMP Research

BMP Research

The Florida Department of Agriculture and Consumer Services (FDACS) develops, adopts and assists with the implementation of agricultural Best Management Practices (BMPs) to protect and conserve Florida's water resources. Each year, FDACS considers applications for BMP research funding that supports current BMPs or evaluates potential BMPs for water quality and water conservation.

Research Spotlight

Researchers at the University of Florida's Everglades Research & Education Center are evaluating the use of cover crops to improve soil health and nitrogen use efficiency, and the effects on crop production following cover crops. Implementing cover crops during the fallow period between growing seasons helps improve soil structure and fertility, and to reduce soil erosion and nutrient loss. Photo: Dr. Jehangir Bhadha

Research and Demonstration Projects Story Map

Visit OAWP-funded BMP Research and Demonstration sites across Florida and learn about projects through this interactive Story Map.

Request for BMP Research Applications Is Closed

The FDACS Office of Agricultural Water Policy accepted BMP research and demonstration project applications through **March 11, 2024**. We are not accepting additional applications. The next request for applications is anticipated in January 2025.

Agricultural Best Management Practices

- **BMP Research**
- BMP Success Stories
- BMP Cost Share Program

Program Resources

- FDACS Office of Agricultural Water Policy Current Research [4.1 MB]

Contact Us

(850) 617-1736
Kathryn.Holland@FDACS.gov

Laws and Regulations

Florida Statutes
Sections: 373.4595, 373.813, 403.067, 576.045

4 Rs: Time, Place, Rate, Source

Funding Priorities

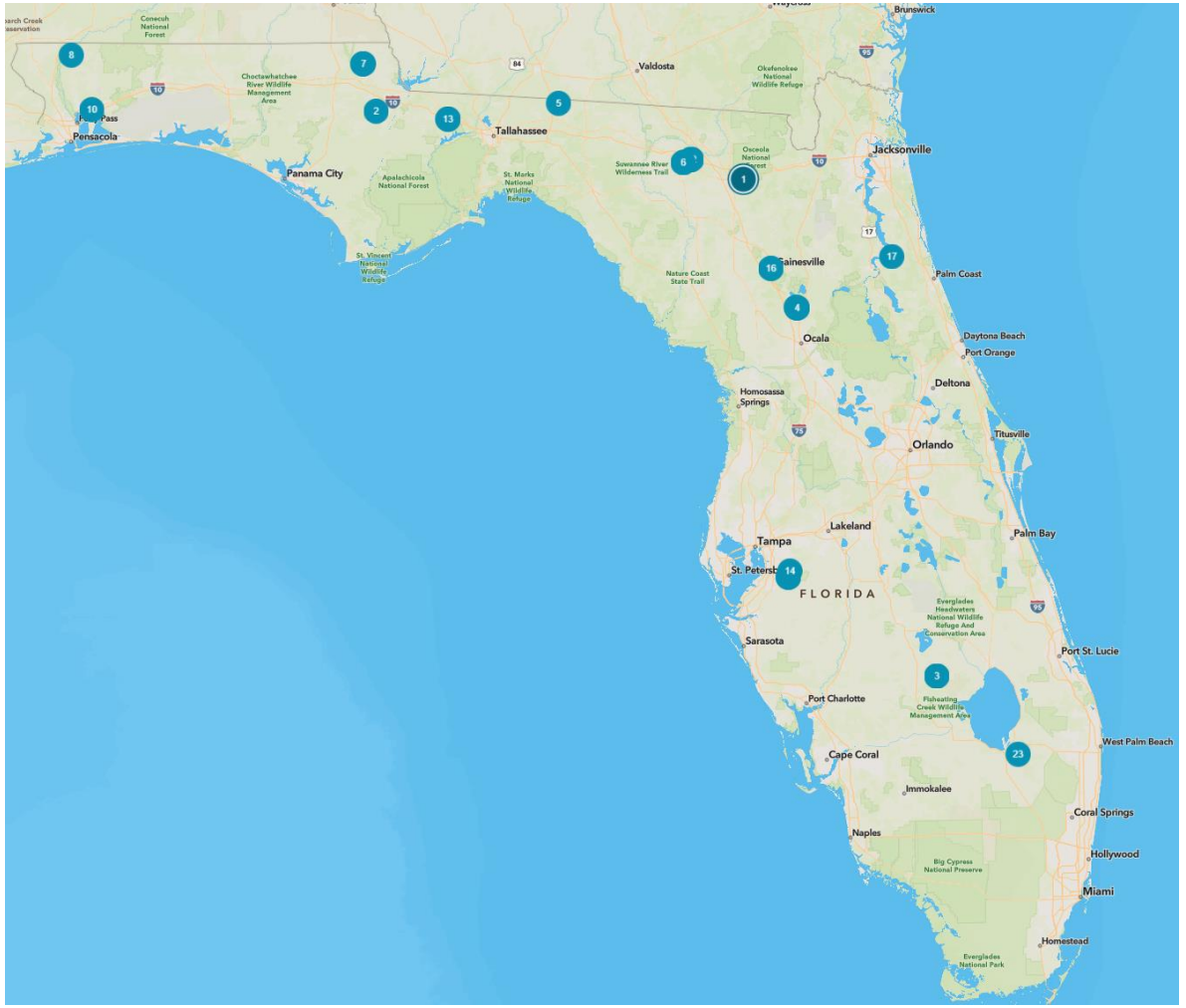
Research Projects by Topic

https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices/BMP-Research

Research & Demonstration Projects

BMP Research

- Controlled release fertilizer
- Rates updates, corn, cotton, blueberry, hemp
- Sod based rotation
- Emerging tech, e.g., mobile drip irrigation
- Cover crop



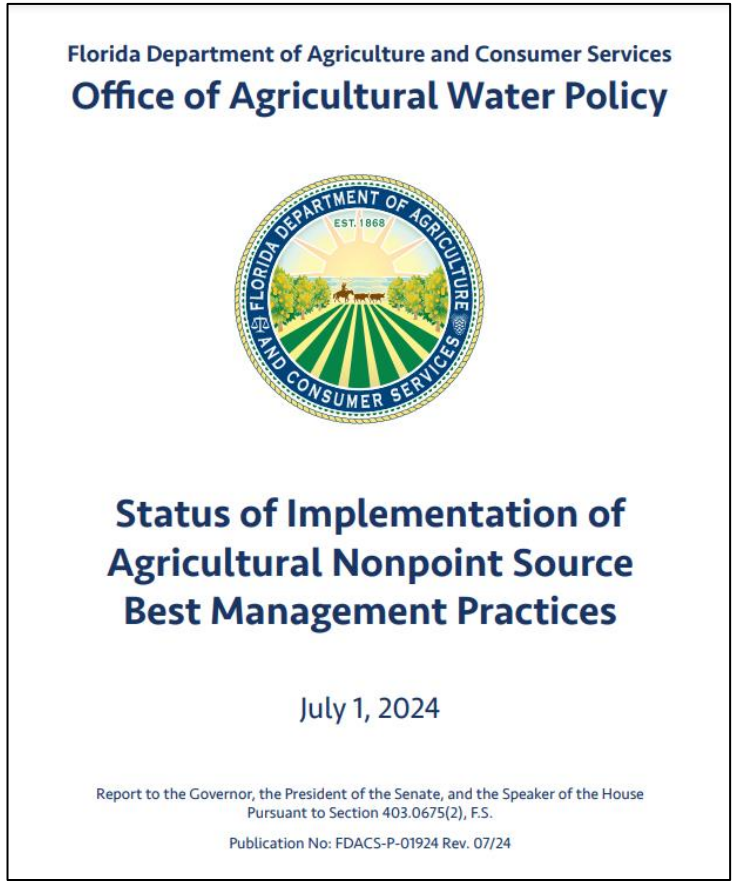
Identifying Hotspots of Soil Legacy Phosphorus and Implementing Targeted Vegetation Harvest for Soil P Remediation on a Cattle Ranch in the Headwaters of the Everglades

On-farm Soil Health Assessment of Cover Crops in Florida

https://gis.fdacs.gov/portal/apps/storymaps/stories/f93c2b3bfe3e4803a7fee64cb79c9890

FDACS Report to Legislature

FDACS/OAWP Status of Implementation of Agricultural Nonpoint Source Best Management Practices


Florida Department of Agriculture and Consumer Services

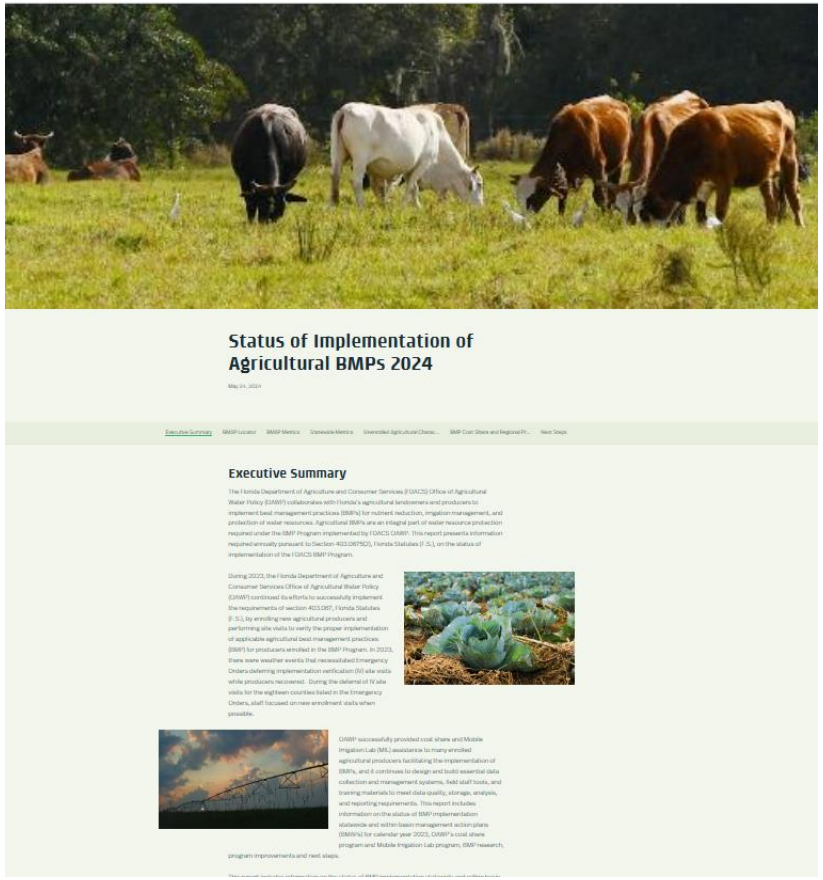
Office of Agricultural Water Policy

Status of Implementation of Agricultural Nonpoint Source Best Management Practices

July 1, 2024

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. 07/24



https://gis.fdacs.gov/portal/apps/storymaps/stories/f93c2b3bfe3e4803a7fee64cb79c9890

Thank You!

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

Yesenia Escribano, Chief, Bureau of Policy Planning and Coordination

Yesenia.Escribano@fdacs.gov – (850) 617-1732

Jennifer Thera, NEEPP Coordinator

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

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

NEEPP Watershed Construction Projects Update

Jonathan Madden, P.E.

Section Administrator, Planning and Project Management

Everglades and Estuaries Protection Bureau, SFWMD

November 18, 2024

sfwmd.gov

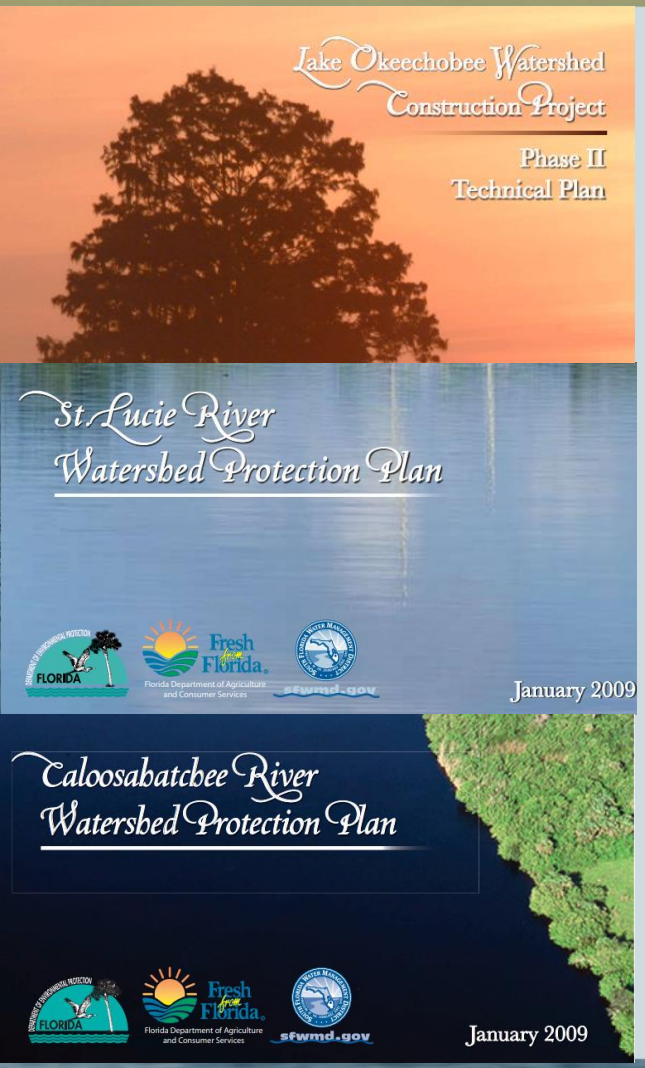
St. Lucie Estuary in Martin County

SFWMD Projects Update

Topics:

- Operational projects currently providing water storage and water quality benefits:
  - Public projects on SFWMD lands
  - Private Dispersed Water Management (DWM) projects owned and operated by landowners
- Upcoming projects in planning or design
- Strategies moving forward
- Watershed Protection Plans (WPPs) Model

Construction Projects Basis



- Northern Everglades and Estuaries Protection Program - Phase II technical plan and construction
  - Identify Lake Okeechobee Watershed Construction Project (LOWCP) facilities
  - Provide for additional measures, including voluntary water storage and quality improvements on private land
  - Develop the appropriate water quantity storage goal
- Original modeling: LOWCP Phase II Technical Plan published in February 2008 and River WPPs in January 2009
  - LOW storage goal: 900,000 – 1,300,000 acre-feet
  - CRW storage goal: 400,000 acre-feet
  - SLRW storage goal: 200,000 acre-feet

Project Updates: Public Projects

- Construction:
  - C-43 Water Quality Treatment and Testing - Phase II, Test Cells
  - C-43 Reservoir Water Quality Component: Alum Injection
- Planning, Design and Permitting:
  - Lake Hicpochee Phase II
  - Boma Flow Equalization Basin (FEB)
  - Brady Ranch and Grassy Island
  - TCNS 214
  - Lower Kissimmee Basin Stormwater Treatment Area (STA)
  - C23/24 and Berry Groves Enhancements
  - Allapattah Parcel C

Project Updates: Private Projects

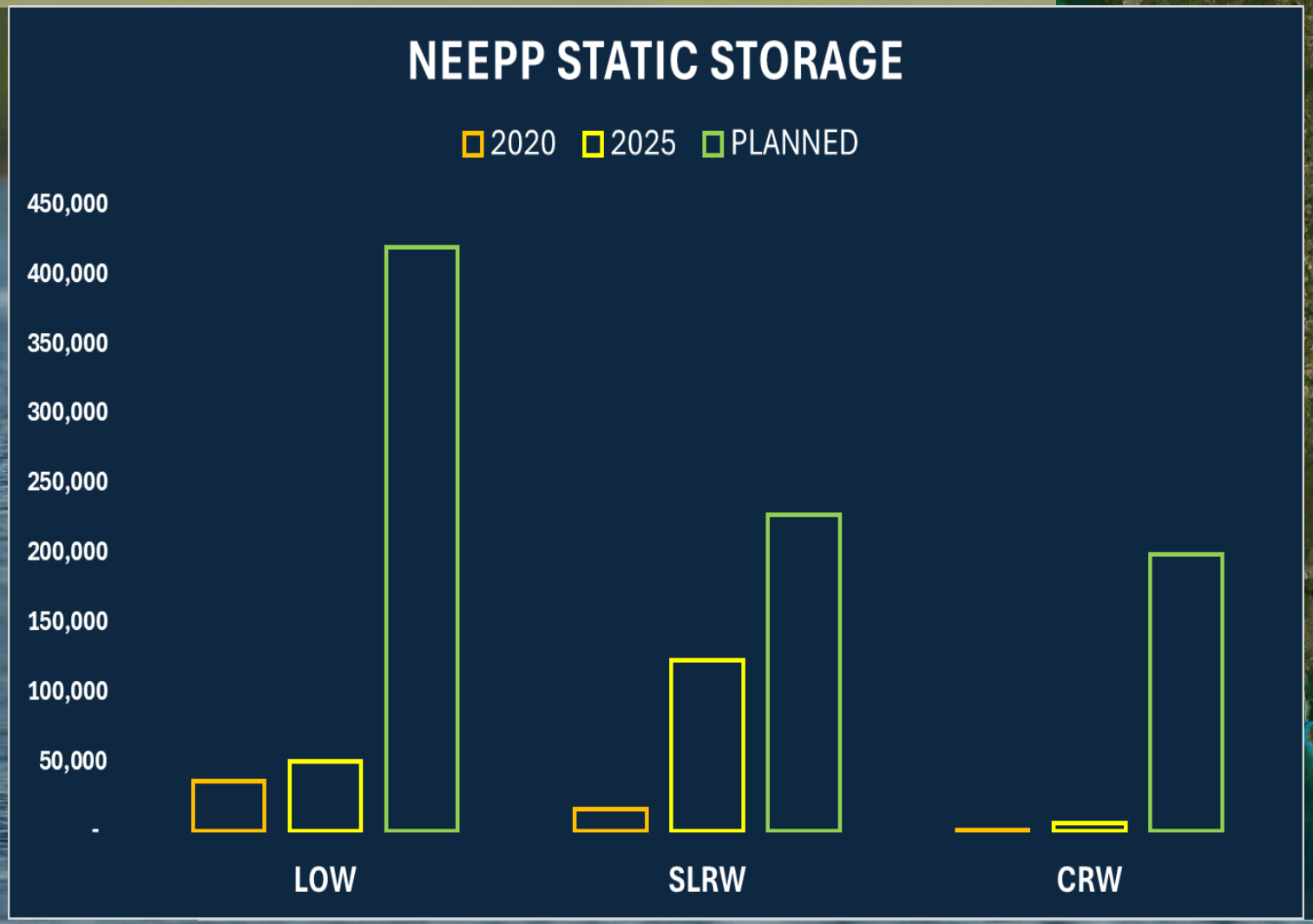
- Operational Water Year 2024
  - Four Corners Rapid Infiltration
  - S-191 Lake Okeechobee Phosphorus Removal
  - Partin Family Ranch
- New Water Year 2025
  - El Maximo Ranch
  - Aguaculture – Lake Istokpoga
- Planning, Design, and Permitting
  - Three DWM renewals/expansions

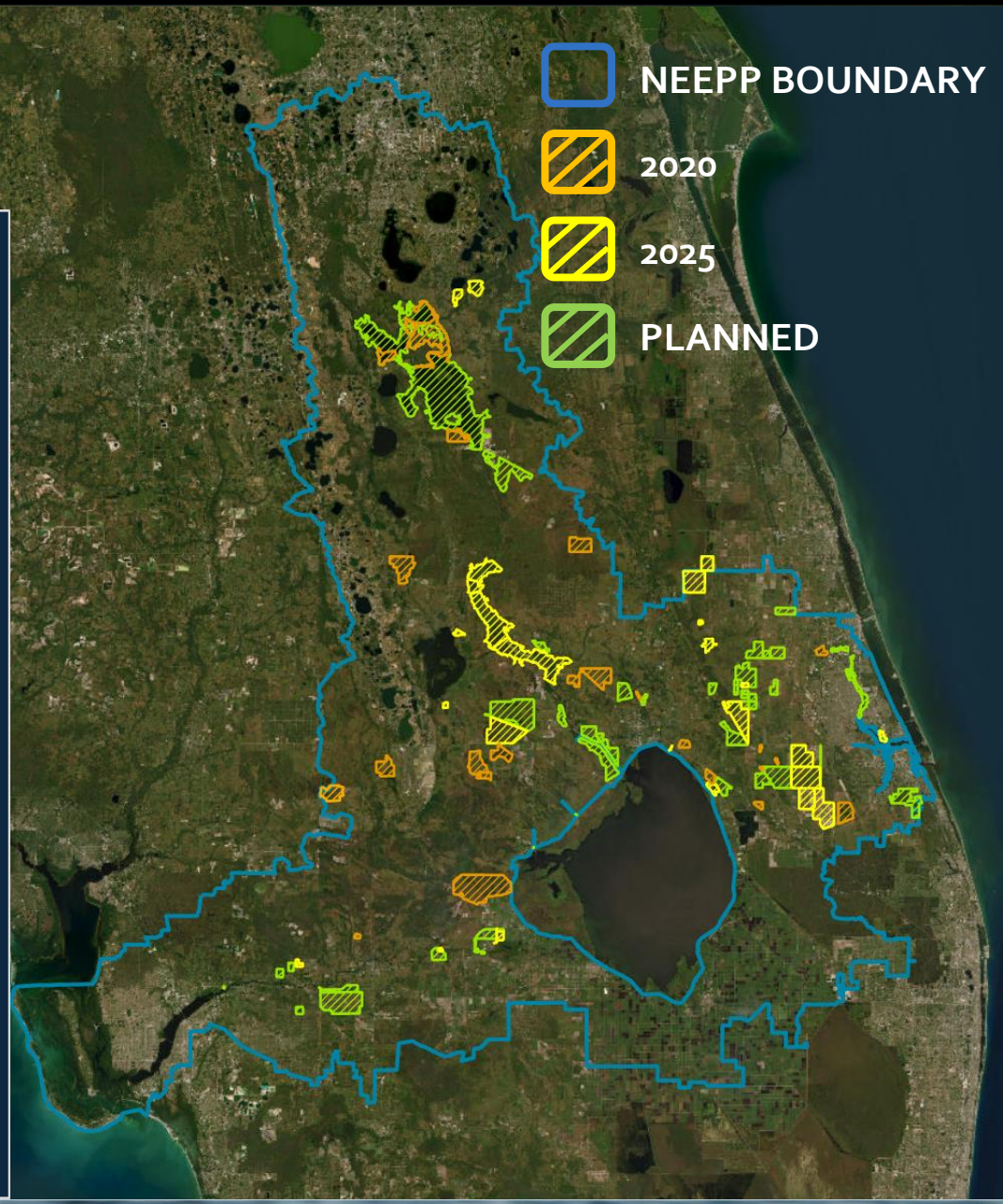
Project Benefits Water Year 2024

	Lake Okeechobee	St. Lucie	Caloosahatchee
# of Projects	23	14	5
Water Storage (acre-feet)	85,000+	58,000+	25,000+
Total Phosphorus Retained (metric tons)	29+	36+	7+
Total Nitrogen Retained (metric tons)	182+	237+	65+
SFER Chapter	8B	8C	8D

- 1 metric ton = 1,000 kilograms
- For additional detail, see draft 2025 SFER: www.sfwmd.gov/sfer

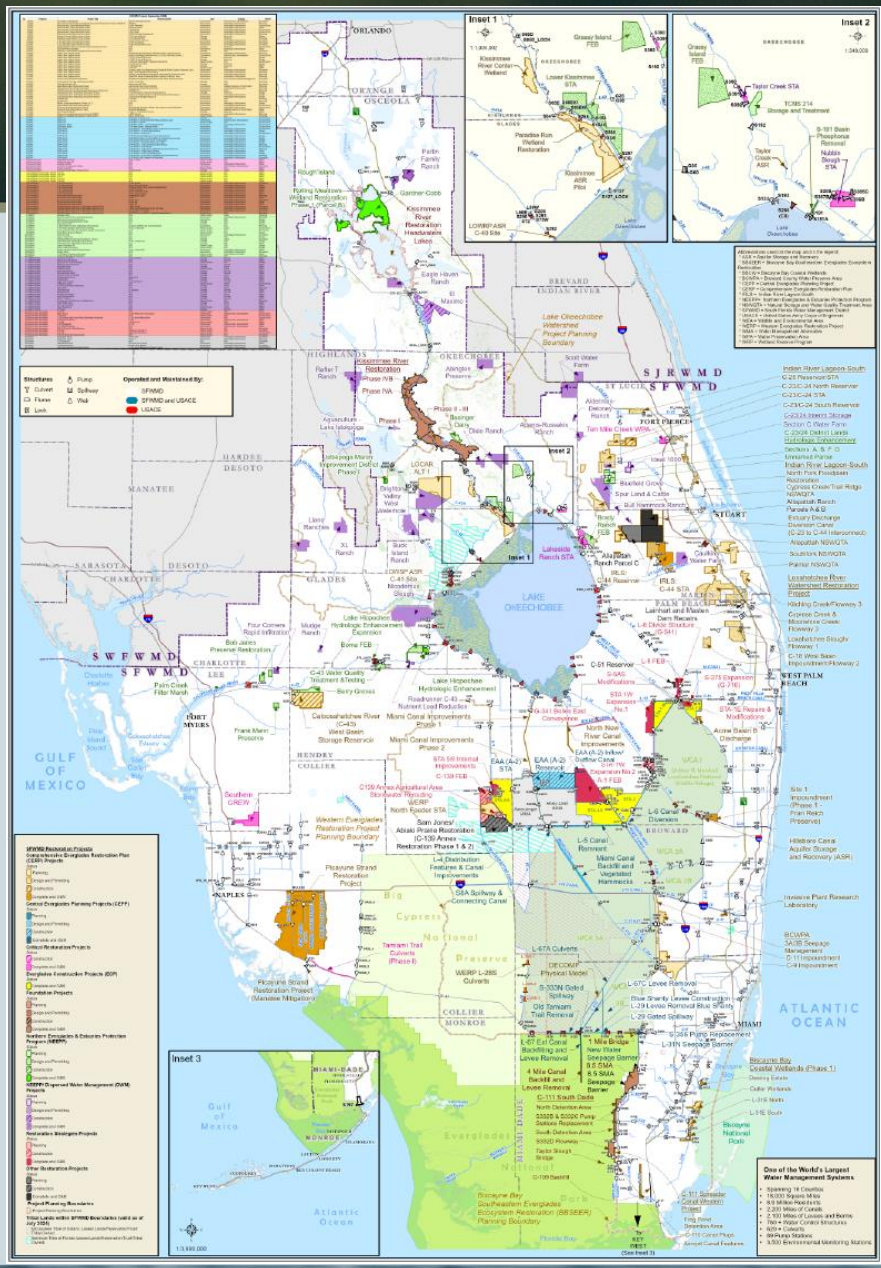
Projects Progress





Strategies Moving Forward

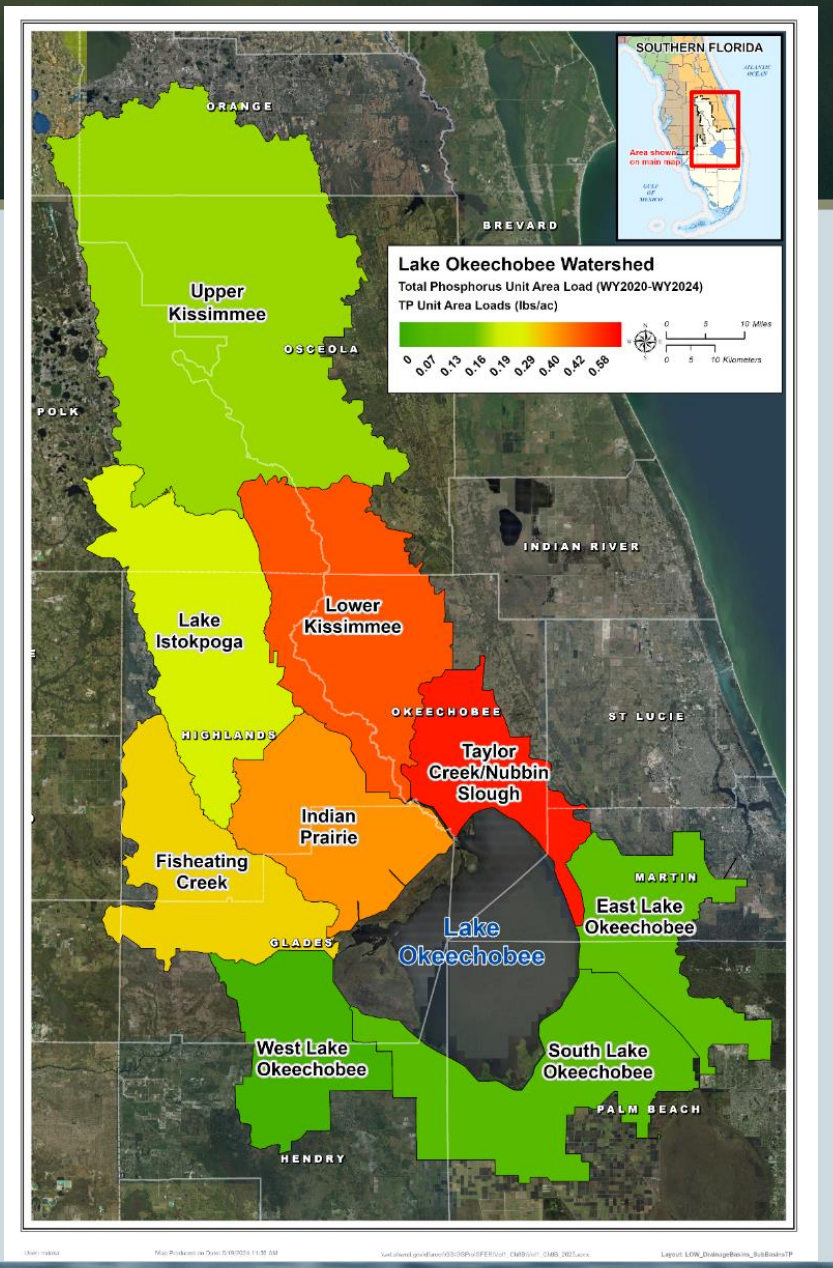
- Bring planned Public projects to operation
- Prioritize new Private projects
- Improve existing projects
- Integrate dispersed and regional projects
- Refine sub-watershed storage and treatment needs
  - Public engagement
  - Evaluation of observed data
  - Hydrologic and water quality model analysis



Lake Okeechobee Priorities - 1

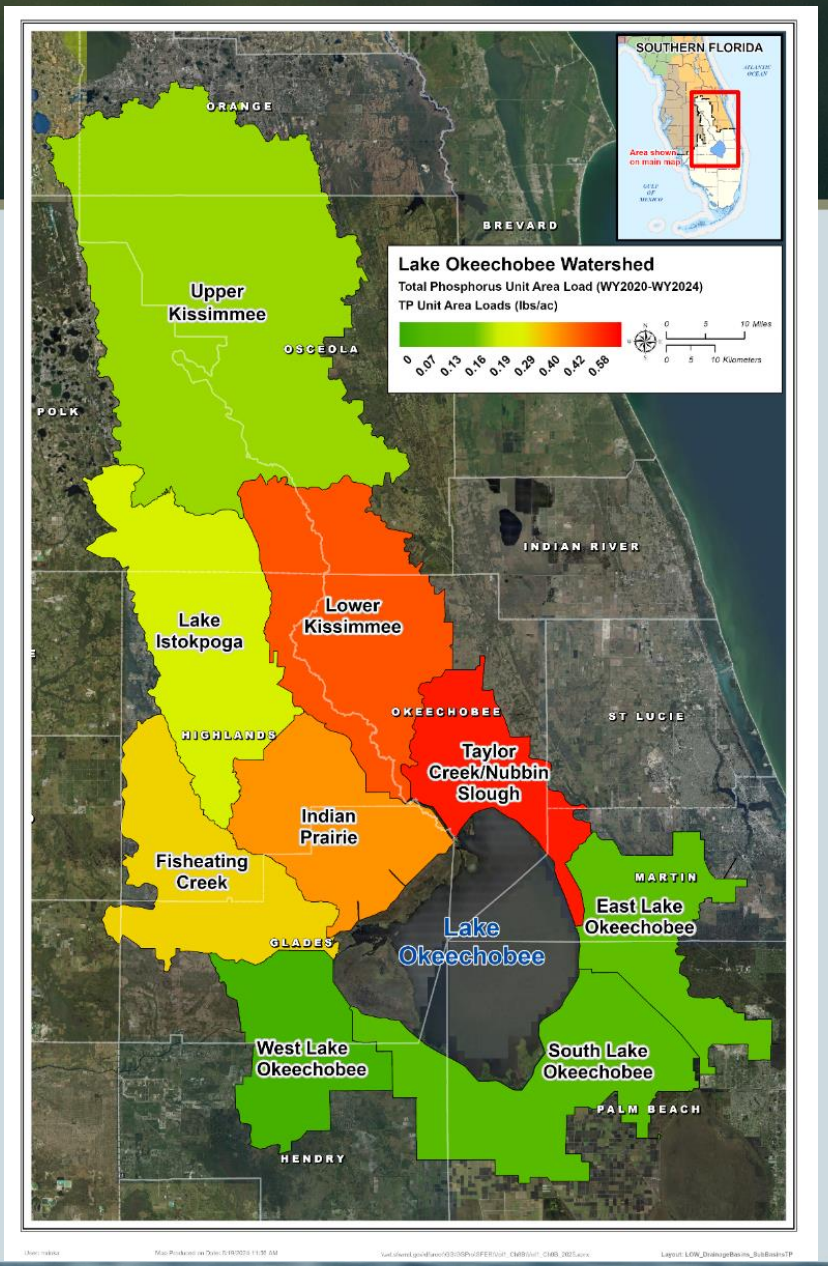
Average phosphorus load per acre to lake → 5-year unit area load (WY2020-2024)

- Taylor Creek/Nubbin Slough
  - 3 Stormwater Treatment Areas
  - 5 Hybrid Wetland Treatment Technologies sites
  - DWM Dixie Ranch East
  - Innovative Tech S-191 phosphorus removal
  - Planned: Brady Ranch, Grassy Island, TCNS 214 and Aquifer Storage and Recovery (ASR) wells



Lake Okeechobee Priorities - 2

- Lower Kissimmee
  - Kissimmee River Restoration
  - DWM Abington Preserve and Dixie Ranch West
  - DWM El Maximo Ranch
  - Planned: Lower Kissimmee Basin STA and Basinger Dairy Legacy Phosphorus
- Indian Prairie
  - DWM Buck Island Ranch, West Waterhole, and Brighton Valley
  - North of Lake Okeechobee Component A Reservoir (LOCAR)
  - Planned: Paradise Run Wetland and 2 ASR well clusters



St. Lucie River Priorities

- Substantial progress made in past 5 years from both public and private projects
- Remaining storage needs planned to be met primarily by Indian River Lagoon (IRL) - South CERP project features
- Maintain progress with project design and construction
- St. Lucie success also relies upon Lake Okeechobee projects

Caloosahatchee River Priorities

- Future planned projects to provide 222,000 acre-feet storage
  - C-43 West Storage Reservoir (CERP)
  - Lake Hicpochee Phase II
  - Boma FEB
  - Frank Mann Preserve
- Additional 174,000 acre-feet needed to reach storage goal
- Alum injection to improve reservoir nutrient removal
- Test cells to evaluate wetland treatment to remove nitrogen

Additional Information

- Watershed Protection Plans:
  - www.sfwmd.gov/wpps
- South Florida Environmental Report (Chapters 8A-D and Appendices)
  - www.sfwmd.gov/sfer

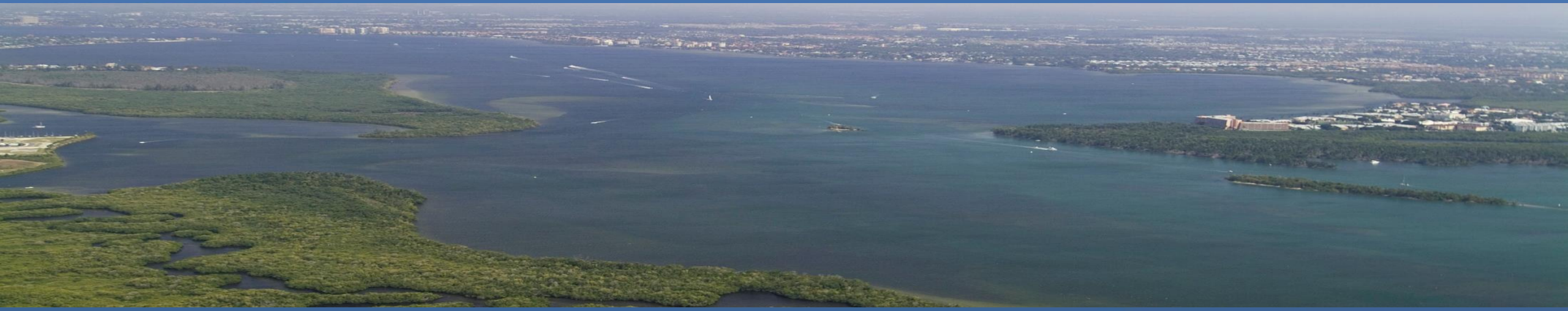
WHO TO CONTACT FOR MORE INFORMATION

NEEPP General Inquiries: NEEPP@sfwmd.gov

Presenter: Jonathan Madden, jmadden@sfwmd.gov

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Caloosahatchee Estuary
in Fort Myers



2025 Northern Everglades and Estuaries Protection Program Modeling Update

Walter Wilcox, P.E.
Chief, Water Resources & Systems Modeling Bureau, SFWMD
November 18, 2024

Northern Everglades and Estuaries Protection Program (NEEPP) Modeling Update Goals

- Updated technical analysis & modeling:
  - Represent plan features in the latest/greatest modeling tools, i.e. the Regional Simulation Model Basins (RSMBN); this is the same model used in Comprehensive Everglades Restoration Plan (CERP) & Lake Okeechobee System Operation Manual (LOSOM) planning efforts:
    - Model Distributed & Dispersed Water Management features – FIRST TIME!
    - Extend period of record climate analysis to 1965-2016 (previously 1970-2005)
  - Incorporate latest performance evaluation measures:
    - Revised Lake Okeechobee stage envelope
    - Revised Caloosahatchee River and St. Lucie River Estuary salinity envelopes
  - Incorporate latest planned projects into analysis including the Everglades Agricultural Area (EAA) Reservoir, LOCAR, Indian River Lagoon, C43 Reservoir, Lake Okeechobee Watershed Restoration Project (LOWRP) Aquifer Storage & Recovery (ASR).

Northern Everglades and Estuaries Protection Program (NEEPP) Modeling Update Goals (cont)

- Review progress toward storage goals & reaffirm or revisit as needed.

  "Storage" in this context refers to the "static" storage capacity of project features.

  - Many of these features process much more volume in a "dynamic" manner and cycle multiple times in a water year
  - e.g. the Everglades Agricultural Area Reservoir is a "240 kaf" storage feature although it is expected to process more than 800 thousand acre-feet of flow on average and over 1.4 million acre-feet of flow in a wet year
  - Nutrient removal flow-through projects, such as Stormwater Treatment Areas are not included in the storage accounting

- Socialize outcomes in public meetings and summarize in Draft 2025 SFER as part of 5-Year Watershed Protection Plan update.

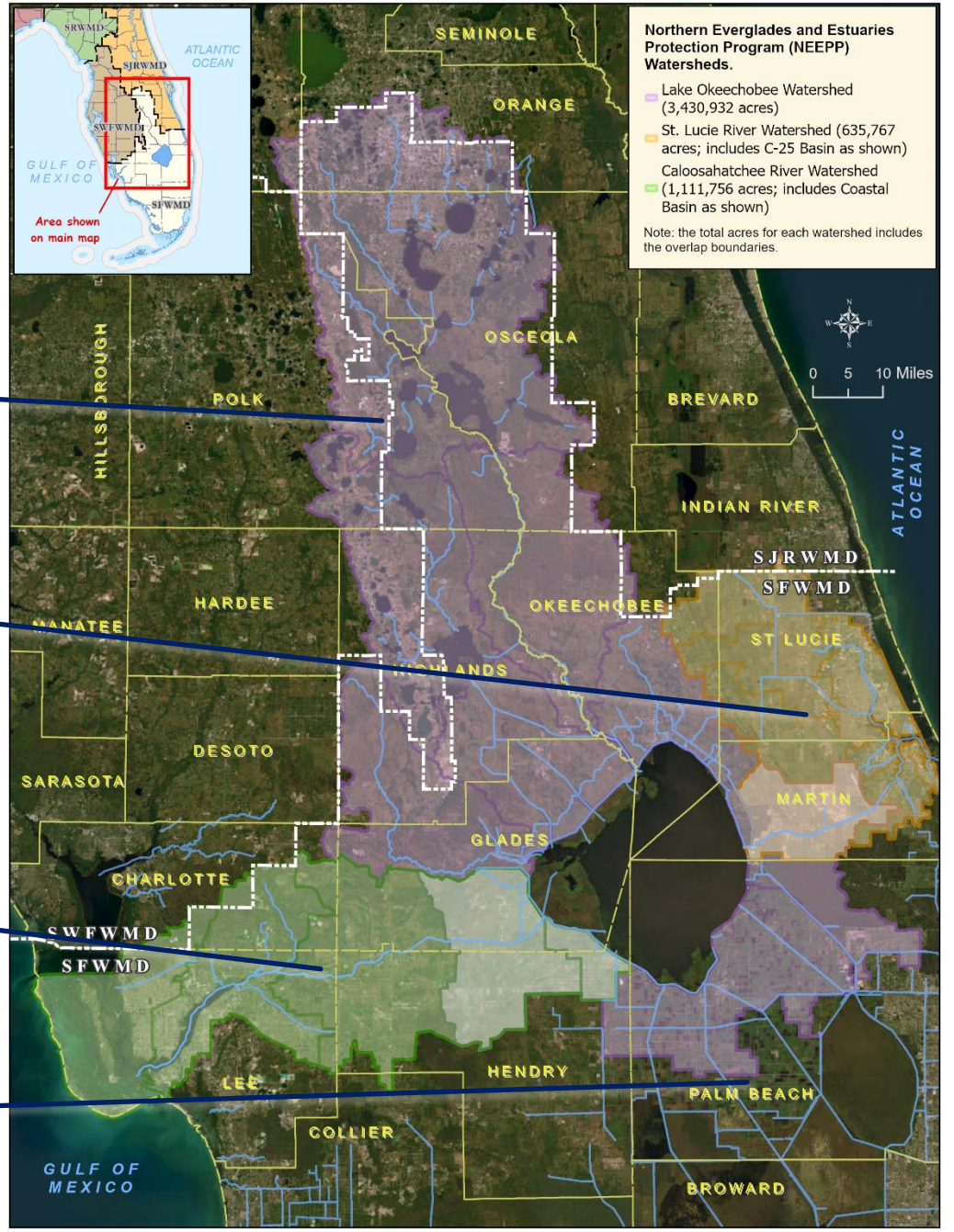
Northern Everglades and Estuaries Protection Program (NEEPP) Storage Recommendations

Lake Okeechobee Watershed:
NEEPP Goal =
900 thousand acre-feet to
1.3 million acre-feet

St. Lucie River Watershed:
NEEPP Goal =
200 thousand acre-feet

Caloosahatchee River Watershed:
NEEPP Goal =
400 thousand acre-feet

Storage South (Central Flowway):
NEEPP Assumed = 190 thousand acre-feet
Actual + Planned = 300 thousand acre-feet



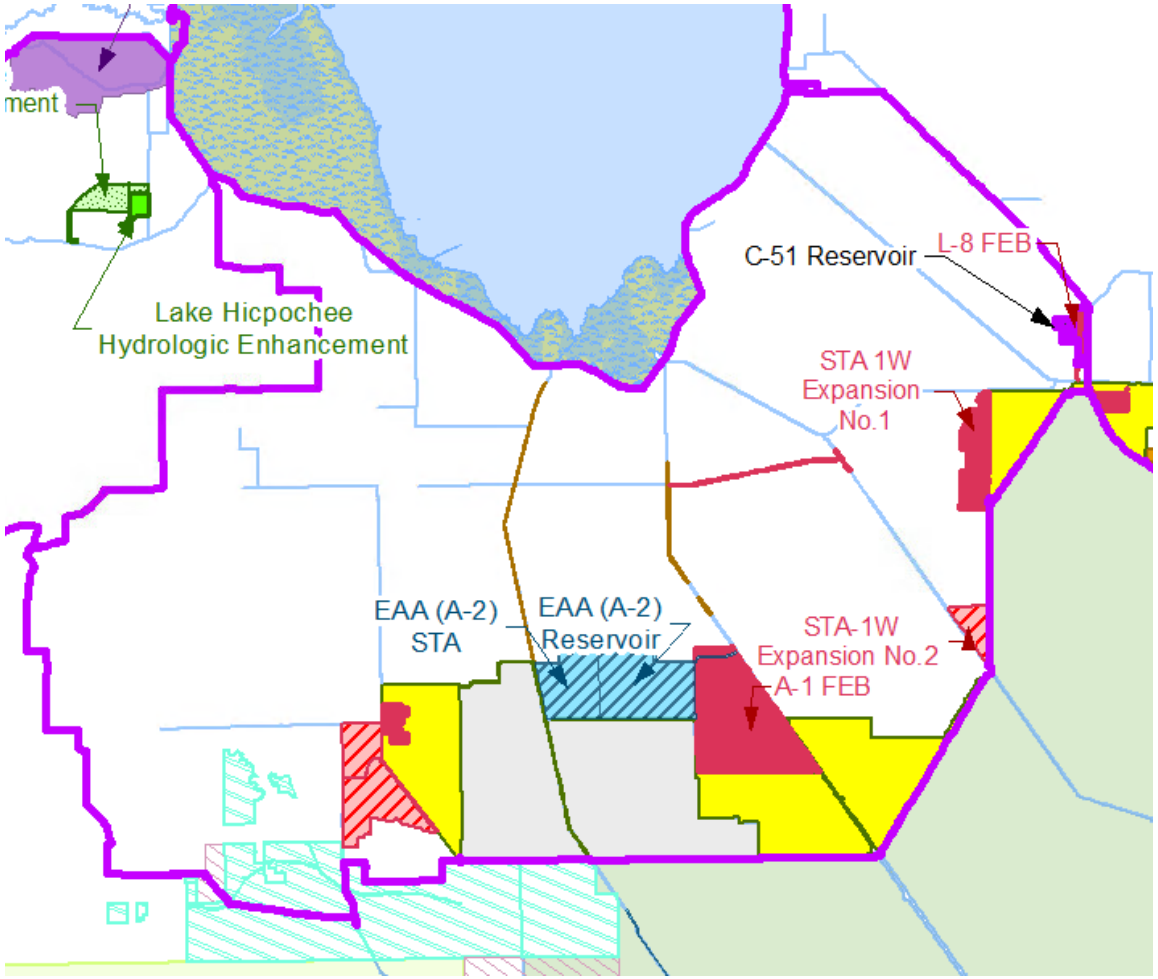
NECB Existing	=	LOSOM	+	LOW Storage 50k ac-ft	+	SLRW Storage 108k ac-ft	+	CRW Storage 2k ac-ft
NFPP Future Projects	=	NECB	+	LOW Storage 412k ac-ft	+	SLRW Storage 204k ac-ft	+	CRW Storage 188k ac-ft
NALT 1 Maximize Storage	=	NFPP	+	LOW Storage 1,300k ac-ft	+	SLRW Storage 204k ac-ft	+	CRW Storage 400k ac-ft
NALT 2 Optimize	=	NFPP	+	LOW Storage 900k ac-ft	+	SLRW Storage 204k ac-ft	+	CRW Storage 400k ac-ft
NALT 2R Reduce Storage	=	NFPP	+	LOW Storage 682k ac-ft	+	SLRW Storage 204k ac-ft	+	CRW Storage 294k ac-ft

NECB = NEEPP Existing Conditions Baseline NFPP = NEEPP Future Planned Projects NALT = NEEPP Alternative
LOW = Lake Okeechobee Watershed CRW = Caloosahatchee River Watershed SLRW = St. Lucie River Watershed
LOSOM = Lake Okeechobee System Operating Manual

South of Lake Okeechobee Including Everglades Agricultural Area and Everglades

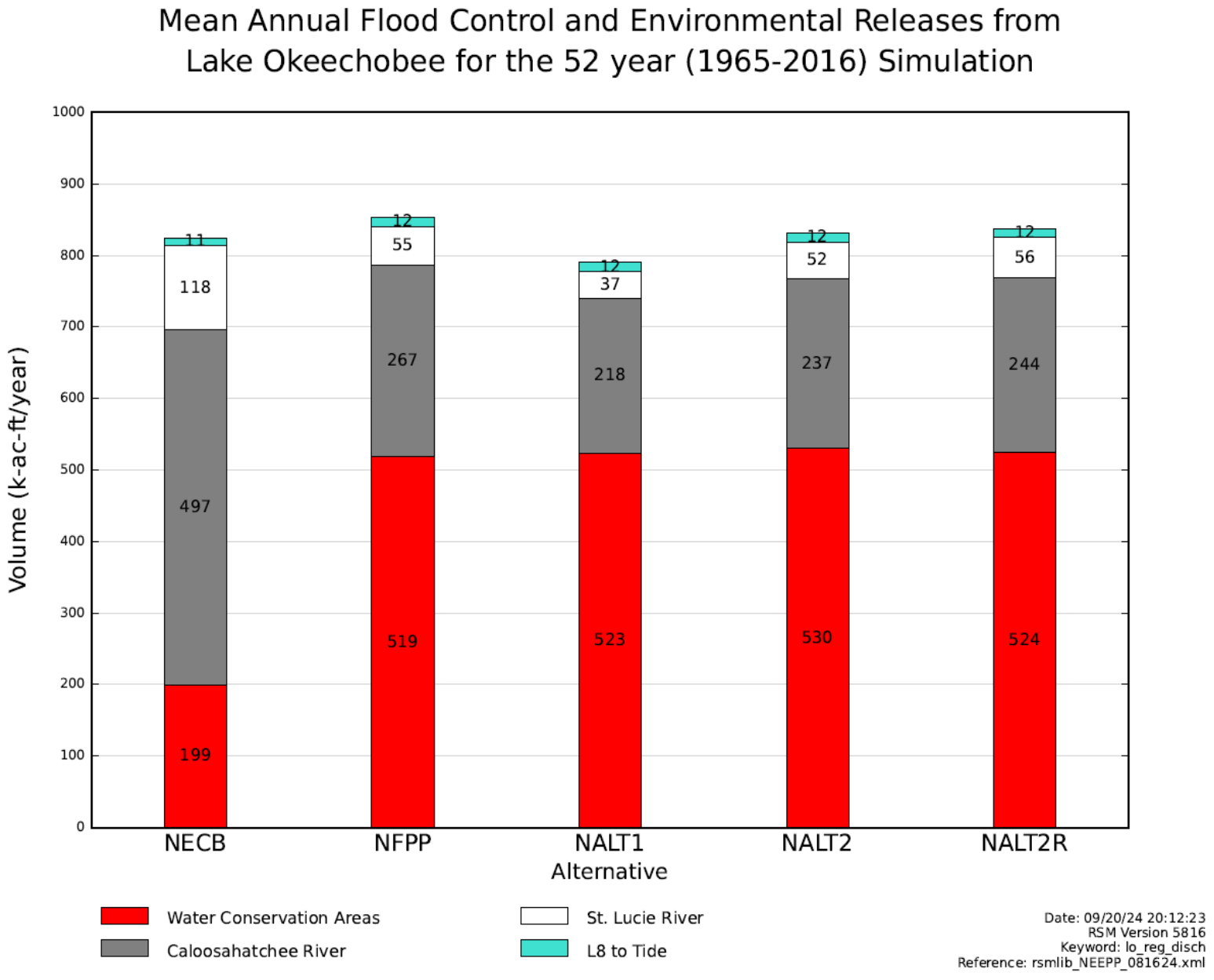
- Everglades Agricultural Area Projects that can receive Lake Okeechobee water:
  - A1 FEB (NECB)
  - A2 Reservoir (NFPP)

- Findings: the NEEPP plans are consistent with anticipated Everglades Restoration activities and provide significant additional flows south.

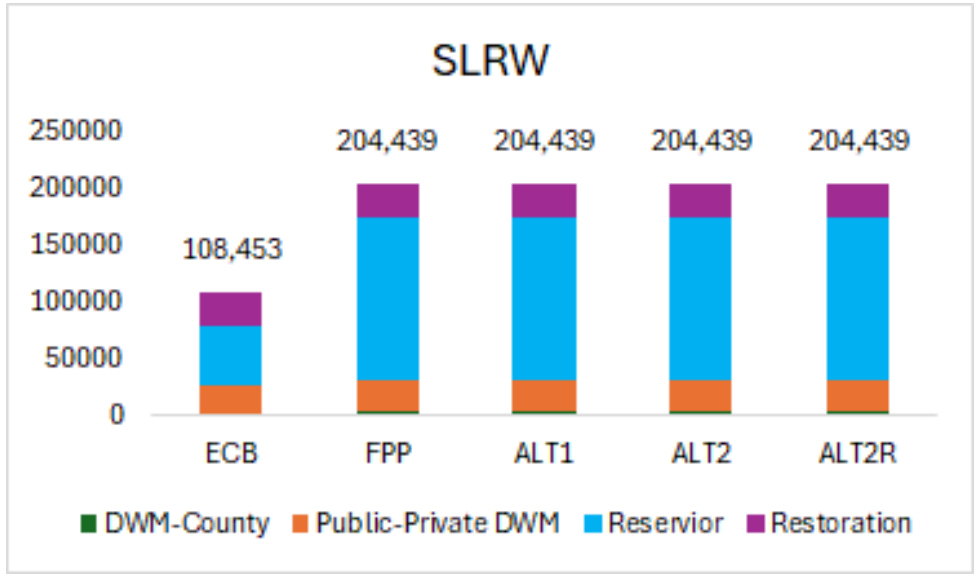


NFPP and all NALTs significantly increase flow south (red bar) and realize the restoration flow objectives for CEPP / EAA / CERP

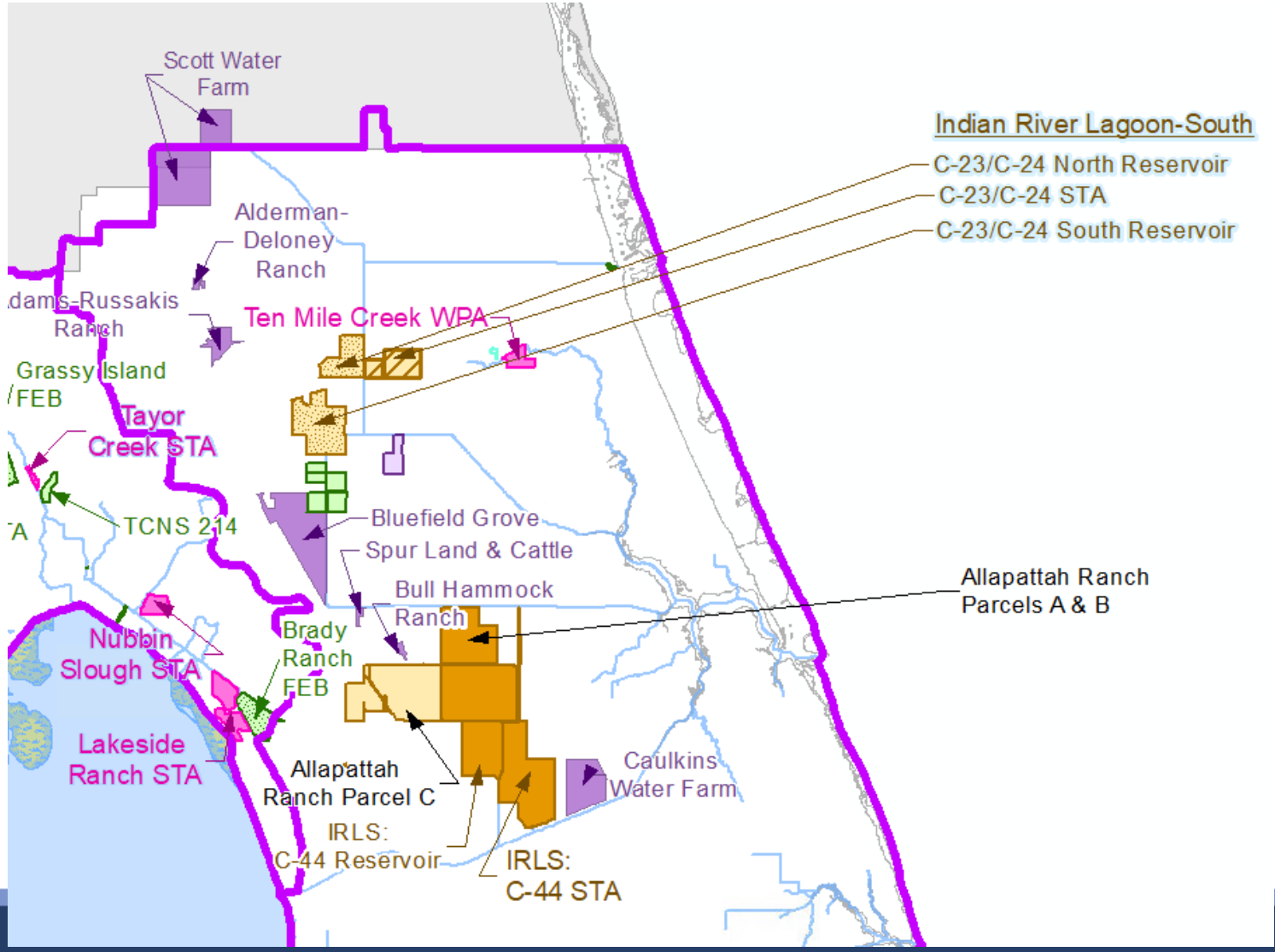
Note: NECB includes early benefits due to LOSOM which are also made more reliable by the upcoming operation of the A2 Stormwater Treatment Area



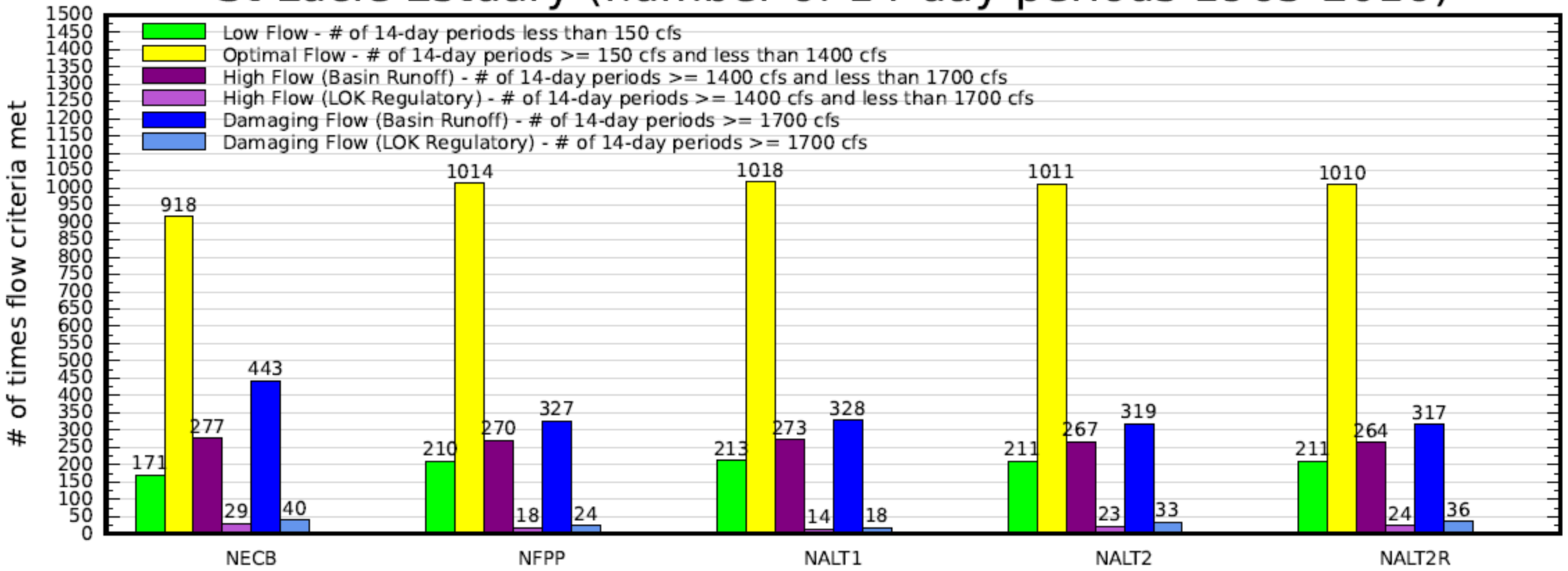
St. Lucie River Watershed (SLRW) Project Features



- Findings: the NEEPP plans implement the planned Indian River Lagoon (IRL) project and achieve significant improvements in St. Lucie Estuary performance indicators



Number of times Salinity Envelope Criteria Met for the St Lucie Estuary (number of 14-day periods 1965-2016)

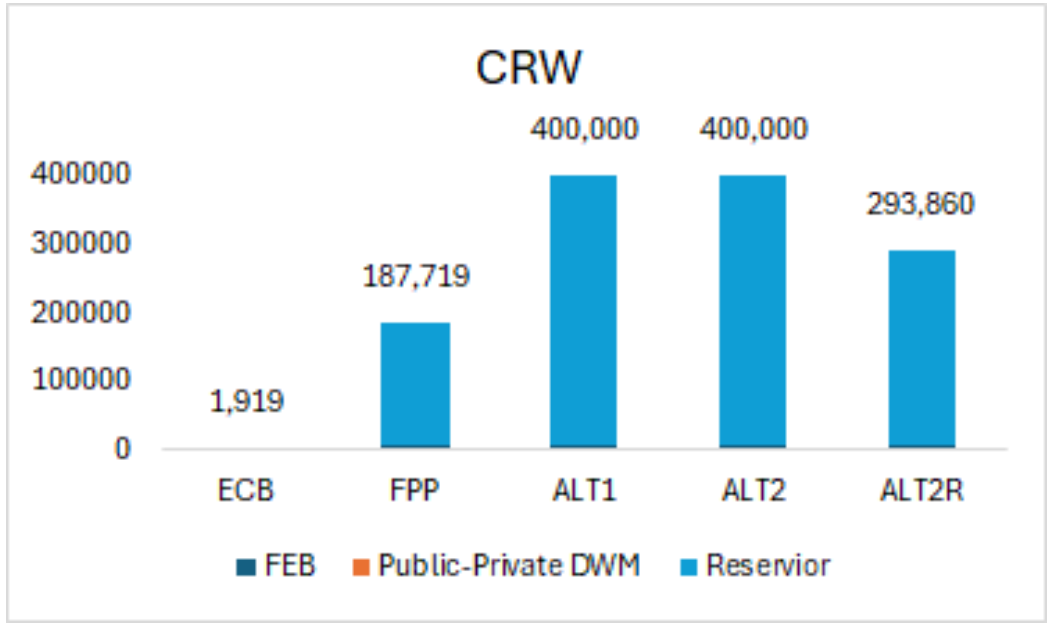


NFPP and all NALTs significantly decrease basin damaging flow events and increase optimal flow counts

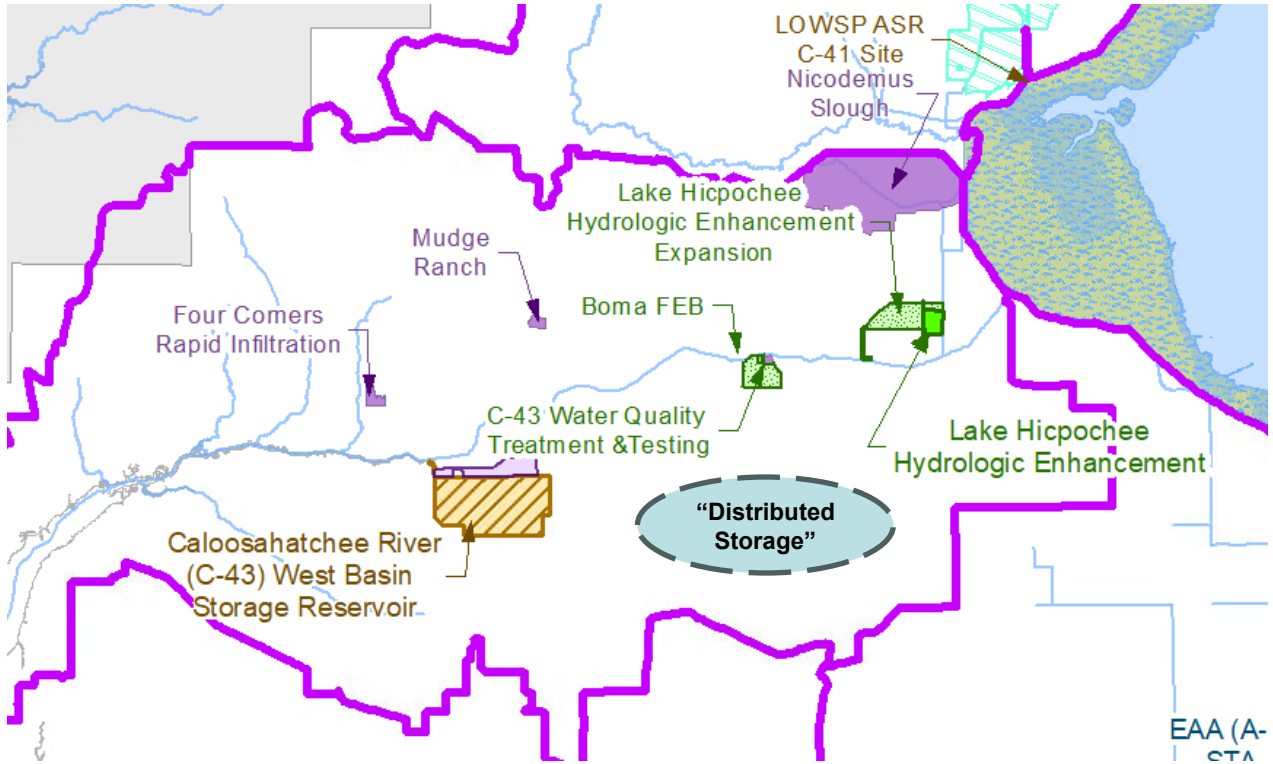
Notes: Small changes in Basin & LOK counts can occur due to changes in LOK backflow opportunities

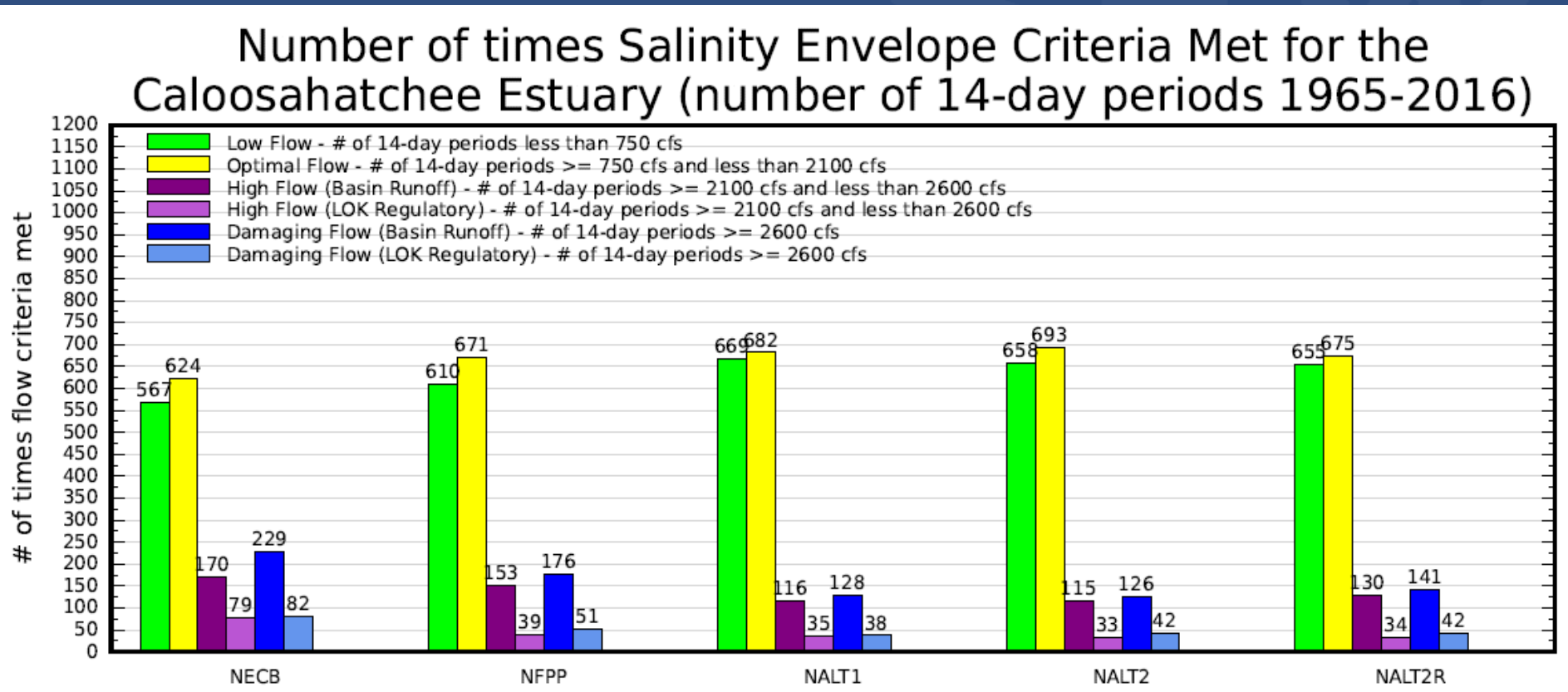
Low flows are typically met by the basin, not Lake O; spatial considerations are important

Caloosahatchee River Watershed (CRW) Project Features



- Findings: the NEEPP plans illustrate a first performance improvement with the addition of the C43 Reservoir and then subsequent benefits from the addition of conceptual “Distributed Storage”



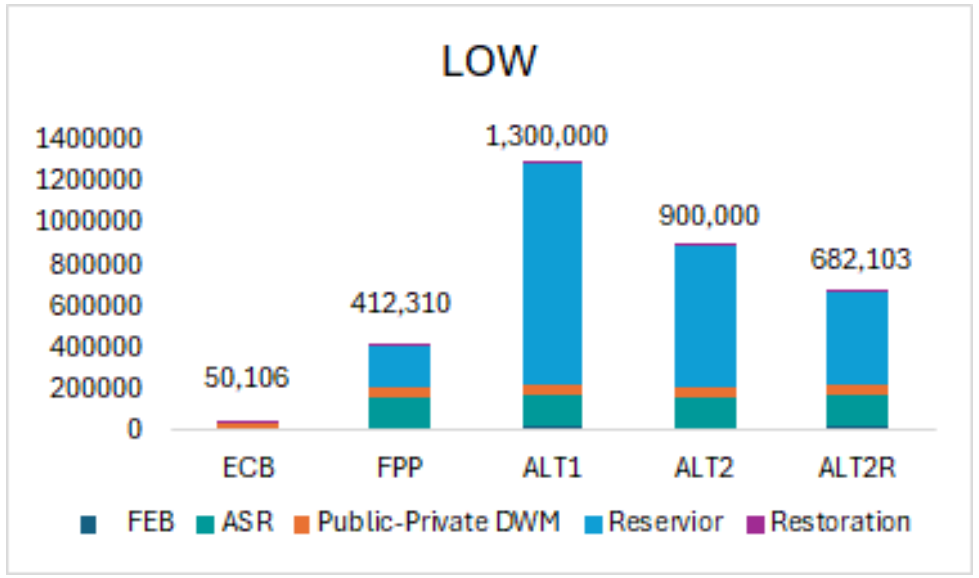


Caloosahatchee River MFL Evaluation.

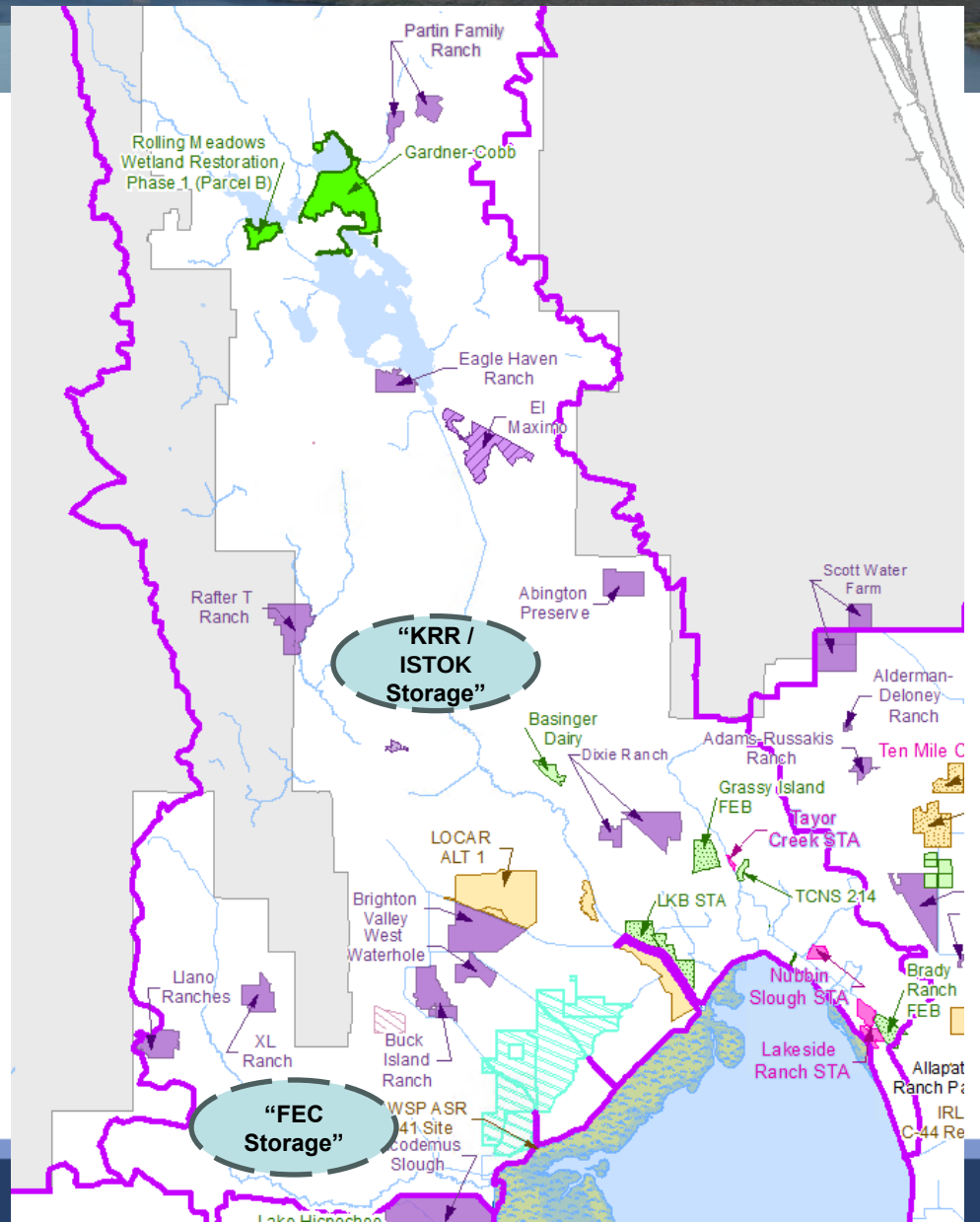
Simulation	Exceedance (52 yrs)
NECB	29
NFPP	14
NALT1	8
NALT2	9
NALT2R	13

NFPP and all NALTs significantly decrease basin & LOK high and damaging flow events and increase optimal flow counts; although “low” flow counts increase, C43 mfl is improved, with higher storage alternatives realizing lower exceedance counts.

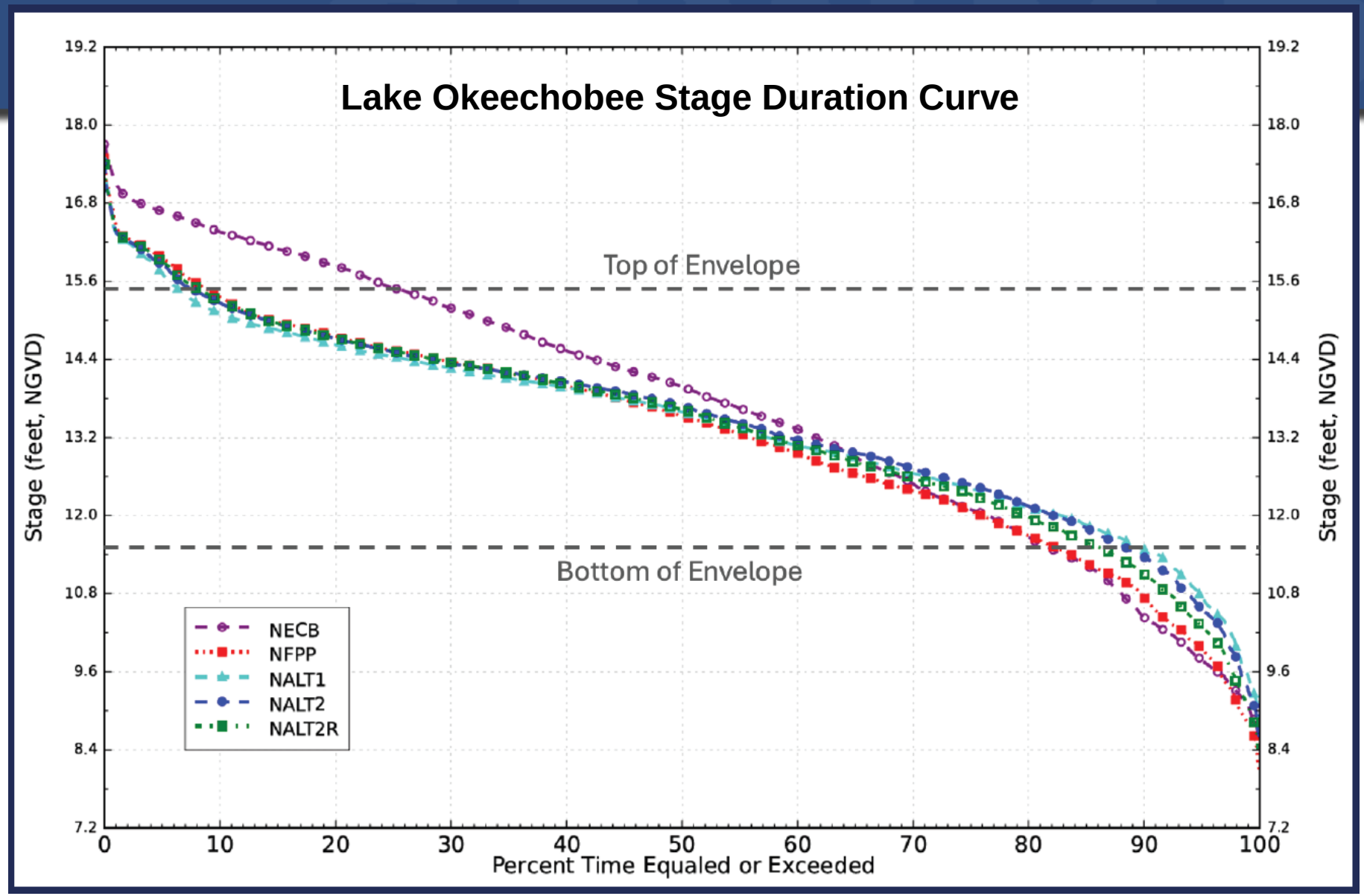
Lake Okeechobee Watershed (LOW) Project Features



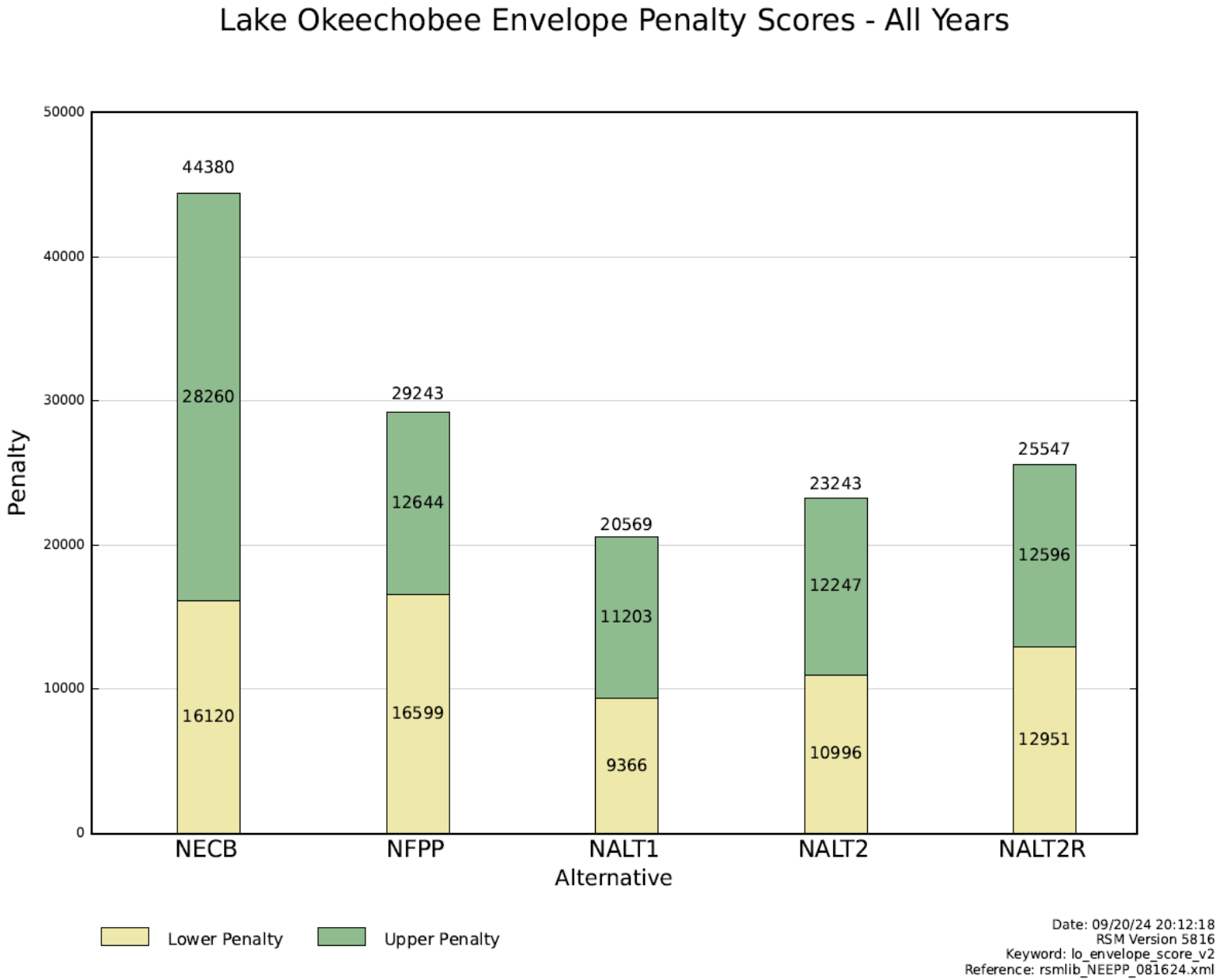
- Findings: the NEEPP plans illustrate a first performance improvement on high Lake stages with the addition of LOCAR & ASR and then subsequent benefits from the addition of conceptual “KRR/ISTOK/FEC Storage” on low Lake stage



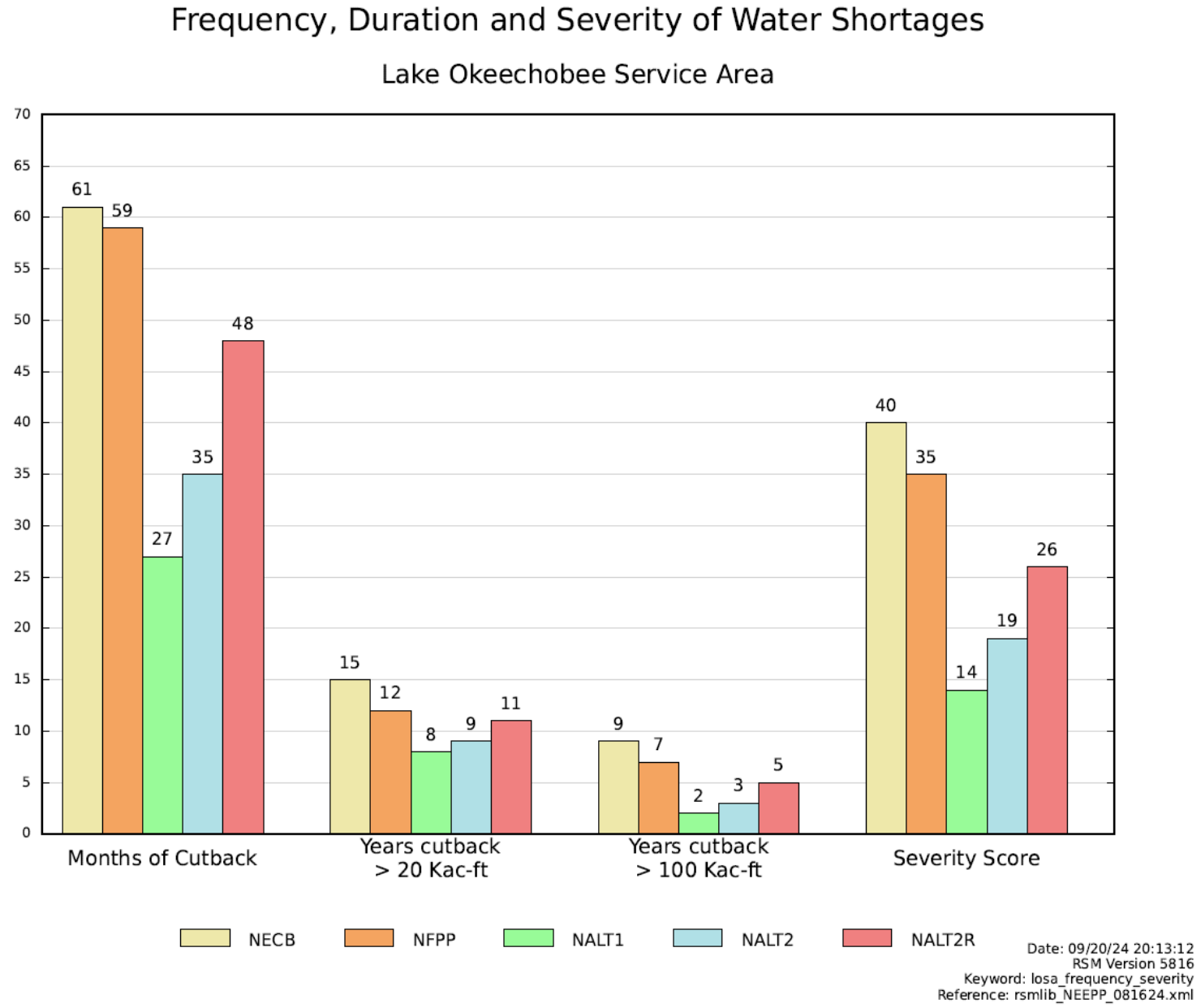
Addition of storage provides the opportunity to reduce high Lake stages (these benefits are largely realized in NFPP) and increase / improve low Lake stages (more storage creates improved opportunities)



Stage envelope score sensitivity illustrated reduced penalties with increased storage. This trend is observed for “lower” penalties and wet season contribution to “upper” penalties



All water supply performance indicators show an improving trend with the addition of storage.



Conclusions & Next Steps

- Modeling tools and hydrologic analysis are updated.
  - Improved performance south relative to previous analysis
  - Equal or improved performance in Northern Estuaries relative to previous analysis
  - Improved high Lake Okeechobee stages relative to previous analysis
  - Updated low Lake Okeechobee stage performance incorporates latest science and improves LOSA water supply relative to the current condition
- SFWMD is making progress toward the NEEPP storage goals.
  - Significant progress toward goals, both realized and planned
  - Dispersed water management, restoration of natural lands and distributed storage are a part in achieving these goals
- Given the latest modeling information, team is appreciative of any feedback on the performance changes observed with the addition of system storage.
- Note: This hydrologic modeling did not holistically update water quality goals/progress.