Caloosahatchee River and Estuary Basin Management Action Plan (BMAP) and Everglades West Coast BMAP

Update Meeting

Via Webinar
Webinar Registration Link:
https://attendee.gotowebinar.com/register/6400109196450818655

April 8, 2025
10 AM EDT

Agenda

- Caloosahatchee River and Estuary Basin Management Action Plan (BMAP) Background.
- Overview of Draft Caloosahatchee River and Estuary BMAP Update.
- Questions/Comments.
- Everglades West Coast BMAP Background.
- Overview of Draft Everglades West Coast BMAP Update.
- Questions/Comments.

Please note the site for documents relating to the Caloosahatchee River and Estuary and Everglades West Coast BMAPs:
BMAP Public Meetings | Florida Department of Environmental Protection

For more information on the Caloosahatchee River and Estuary BMAP, contact: Tony Tomalewski, 850-245-8683.
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For more information on the Everglades West Coast BMAP, contact: Evelyn Becerra, 850-245-8547.
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CALOOSAHATCHEE RIVER AND ESTUARY AND EVERGLADES WEST COAST BASIN MANAGEMENT ACTION PLANS DOCUMENTS UPDATE

Tony Tomalewski and Evelyn Becerra
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoTo Webinar | April 8, 2025

Photo Credit: SFWMD

WEBINAR TIPS

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Attendee audio will automatically be muted.

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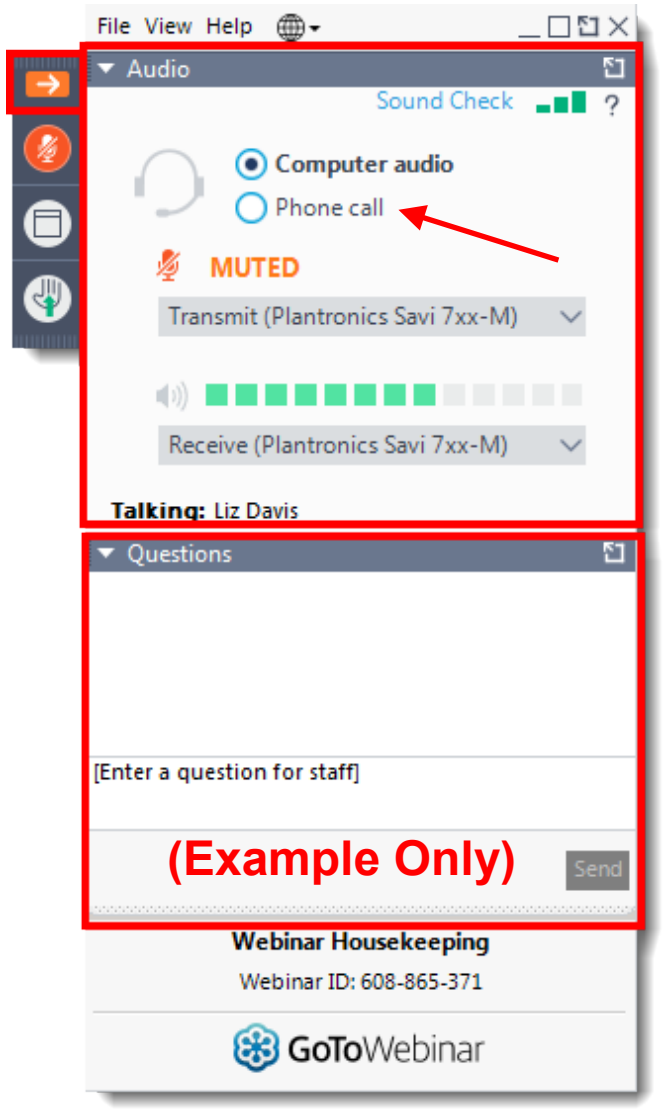
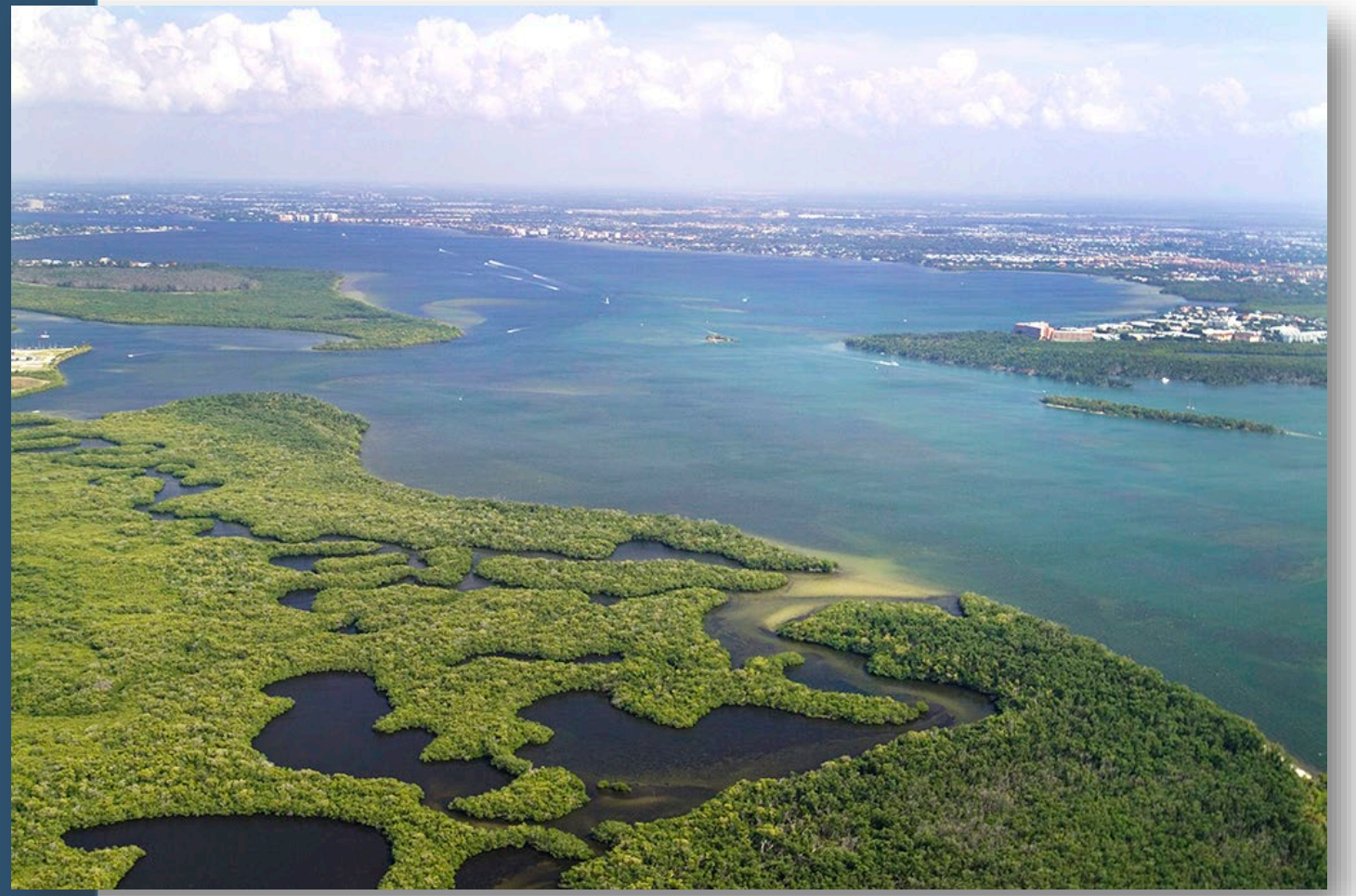
Note: Today's presentation is being recorded and will be provided on the website after the webinar.



AGENDA

- Caloosahatchee River Basin Management Action Plan (BMAP) Background and 2025 BMAP Update Draft Document.
- Everglades West Coast BMAP Background and 2025 BMAP Update Draft Document.
- Next Steps.



Source: SFWMD

KEY BMAP COMPONENTS

- Total maximum daily loads (TMDLs) being addressed.
- Area addressed by the restoration plan.
- Identify sources.
- Phased implementation approach.
- Milestones.
- Projects and management strategies.
- Future growth impacts.

Projects to meet the TMDL:

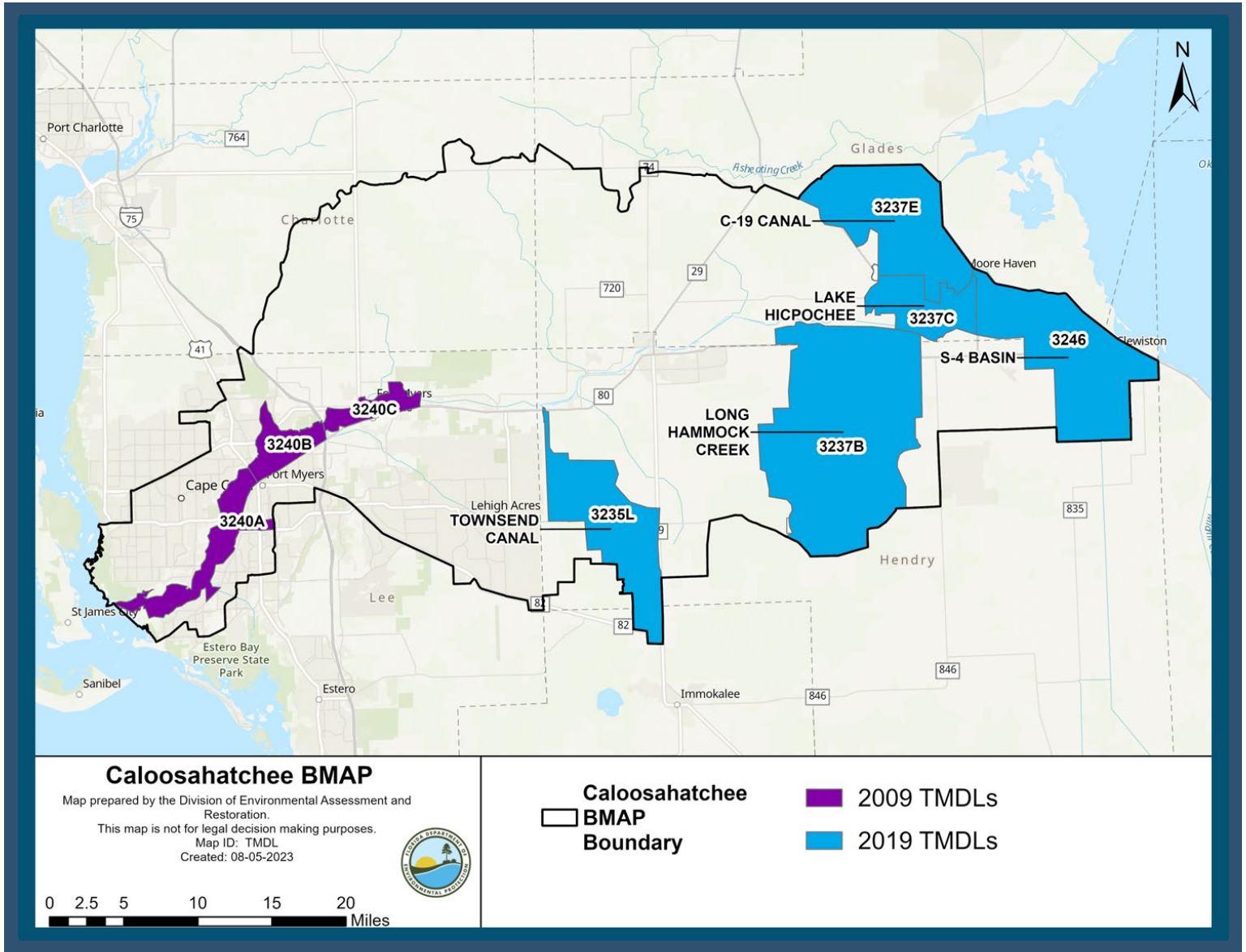
- Implementation timeline.
- Commitment to projects.
- Expected water quality improvement from projects and management strategies.

Process to assess progress toward achieving the TMDL:

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

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

BACKGROUND



Estuary TMDL:

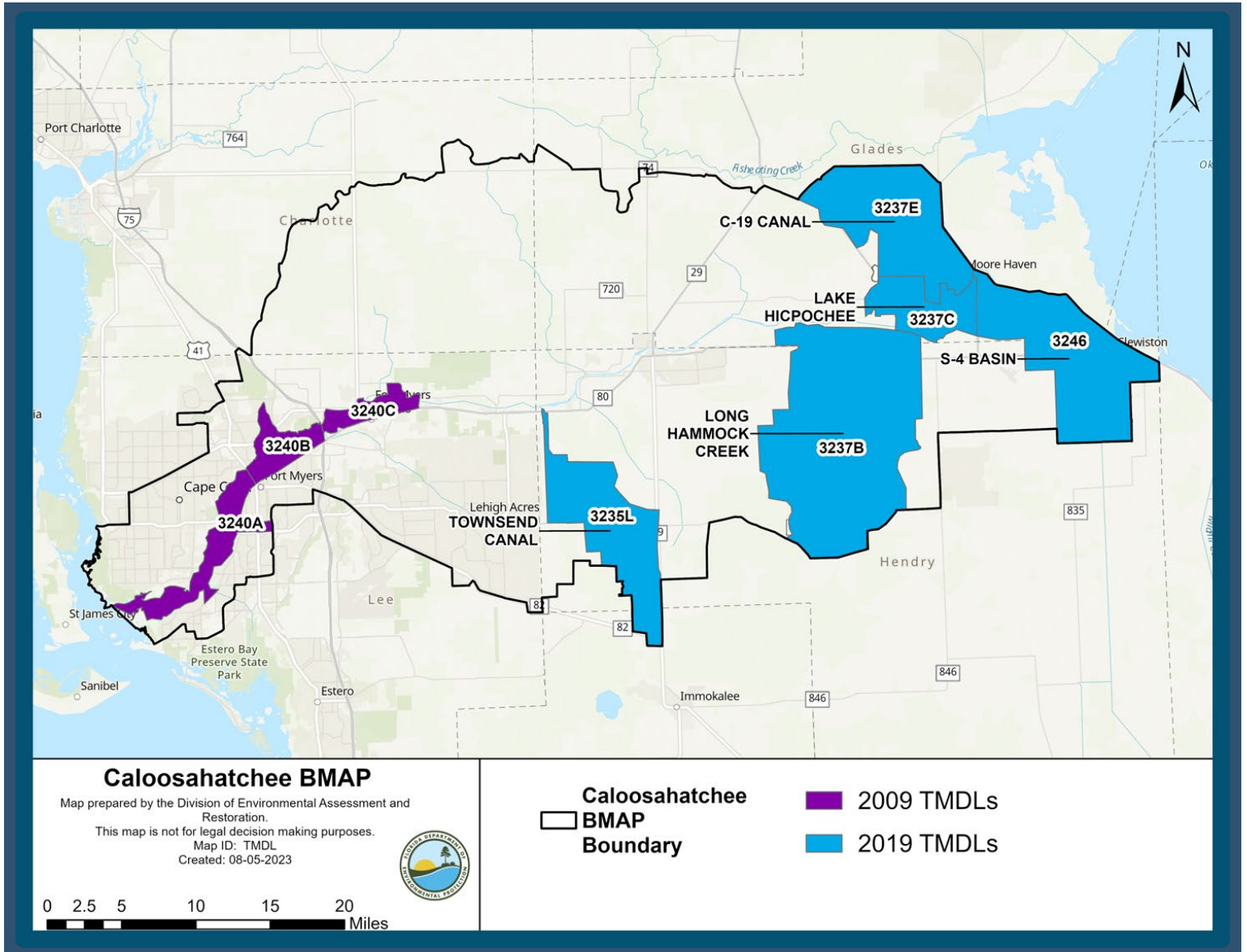
- Developed in 2009 to address total nitrogen (TN) in the estuary.

Estuary BMAP:

- Adopted in 2012

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

BACKGROUND



Tributary TMDLs:

- Adopted five new tributary TMDLs in 2019 as directed by Executive Order 19-12 for TN and total phosphorus (TP).

Current BMAP:

- Adopted in 2020 to encompass complete watershed and new tributary TMDLs.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP
STAKEHOLDERS

Type of Organization/Entity	Name	
Responsible Entities	Agriculture Charlotte County Collier County Glades County Hendry County Lee County City of Cape Coral City of Clewiston City of Fort Myers City of LaBelle City of Moore Haven Lucaya Community Development District (CDD) Moody River Estates CDD Port LaBelle CDD Portico CDD	River Hall CDD Sail Harbour CDD Verandah East CDD Verandah West CDD Barron Water Control District Clewiston Water Control District Collins Slough Water Control District County Line Drainage District Cow Slough Water Control District Devil's Garden Water Control District Disston Island Conservancy District Flaghole Drainage District Gerber Groves Water Control District Hendry-Hilliard Water Control District Lehigh Acres Municipal Services District Sugarland Drainage District
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection (DEP) Florida Department of Transportation (DOT) District 1 South Florida Water Management District (SFWMD)	

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

ADOPT BY JULY 1, 2025

- Management strategies.
- Future growth update.
- Incorporate the 2020 Clean Waterways Act, 2023 House Bill (HB) 1379 and 2024 HB 1557 requirements.
- Incorporate regional projects.
- Water quality data evaluation:
  - Evaluation of the monitoring networks.
  - Inclusion of adjustment factor based on measured load increases.
  - Hot Spot Analysis.
- Evaluate further onsite sewage treatment and disposal systems (OSTDS) provisions.
- Evaluate the need for advanced wastewater treatment (AWT) or other more stringent effluent limits for domestic wastewater treatment facilities (WWTF).


Source: SFWMD


Source: SFWMD


Source: SFWMD

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

DRAFT BMAP DOCUMENT

Chapter 1 – Context, Purpose and Scope of the Plan.

Chapter 2 – Modeling, Load Estimates and Restoration Approach.

Chapter 3 – Subwatershed Results.

Chapter 4 – Summary.

Appendices.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 1 – CONTEXT, PURPOSE, AND SCOPE OF PLAN

- Water Quality Standards and TMDLs.
- Caloosahatchee River and Estuary BMAP.
  - 5-Year review.
  - Pollutant sources.
  - Assumptions.
  - Considerations.

Subwatershed	Land Use Category	Total Nitrogen (TN) Load to Estuary (% Subwatershed Total)	Total Phosphorous (TP) Load to Estuary (% Subwatershed Total)
East Caloosahatchee	Urban	5	16
East Caloosahatchee	Agriculture	90	80
East Caloosahatchee	Natural	5	4
Tidal Caloosahatchee	Urban	43	83
Tidal Caloosahatchee	Agriculture	44	12
Tidal Caloosahatchee	Natural	13	5
West Caloosahatchee	Urban	21	20
West Caloosahatchee	Agriculture	71	73
West Caloosahatchee	Natural	8	7

CALOOSAHATCHEE RIVER AND ESTUARY BMAP
CHAPTER 1 – ASSUMPTIONS AND CONSIDERATIONS

Assumptions

- Certain Best Management Practices (BMPs) were assigned provisional nutrient reduction benefits for load reductions in this BMAP iteration while additional monitoring and research are conducted to quantify their effectiveness. These estimated reductions may change in future BMAP iterations as additional information becomes available.

- Nutrient reduction benefits of the stakeholders' projects were calculated using the best available methodologies. Project-specific monitoring, where available, will be used to verify calculations and reduction benefits may be adjusted as necessary.

- The allocations do not include required load reductions from areas identified as natural land use areas in the Hydrological Simulation Program – FORTRAN (HSPF) model land use coverage. These loads are considered uncontrollable, background sources and the stakeholders are not required to make reductions on natural lands. The focus of the BMAP allocations is on urban and agricultural stormwater, OSTDS and wastewater sources in the watershed.

- Achieving the Caloosahatchee Estuary TMDL is contingent on reductions from the Lake Okeechobee watershed and in the Caloosahatchee River and Estuary allocations, it was assumed that the Lake Okeechobee TMDL had been met. A separate BMAP is adopted for the Lake Okeechobee Watershed.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 1 – ASSUMPTIONS AND CONSIDERATIONS

Considerations

- Land Uses: The loading estimates in the BMAP are based on land uses at a point in time, allowing the model to be validated and calibrated. The loading estimates for this BMAP iteration were based on 2008–2009 SFWMD land use data as well as Southwest Florida Water Management District land use data that were used in the 2017 HSPF model.

- Increased TN Loads: Since the 2017 HSPF model was completed, measured TN loading in the East and West Caloosahatchee subwatersheds has increased substantially. This BMAP update uses factors to adjust the 2017 HSPF model loading to match the measured loading in the East and West Caloosahatchee subwatersheds. The HSPF model is currently being updated and the refined loading from that model will be used in future BMAP updates.

- Lake Okeechobee BMAP Overlap: Portions of the Lake Okeechobee Watershed overlap with the Caloosahatchee River and Estuary Watershed. The projects in these overlap areas are included in both this BMAP and the Lake Okeechobee BMAP. The benefits of these projects will vary by BMAP as the reductions are calculated for the waterbody that is the focus of the BMAP.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – MODELING, LOAD ESTIMATION, AND RESTORATION APPROACH

- Watershed Model.
- BMAP Loads and Milestones.
- Basinwide Sources Approach.
  - Agriculture.
  - Stormwater.
  - WWTFs.
  - OSTDS.
- Targeted Restoration Area (TRA) Evaluation.
- Hot Spot.
- Water Quality Monitoring Plan.

Source: DEP Staff Photo – Estero Bay Aquatic Preserve

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – WATERSHED MODEL AND BMAP LOADS

Source: DEP Staff Photo – Estero Bay Aquatic Preserve

Measured load has increased since the 2017 model.

- TN load in the East and West Caloosahatchee subwatersheds has substantially increased since 2017.
- Allocations and project reductions were modified based on the differences between modeled and measured loads.
  - 1,329,467 lbs/yr of TN came from the East Caloosahatchee Subwatershed (+31.78%).
  - 2,457,362 lbs/yr of TN came from the West Caloosahatchee Subwatershed (+40.38%).
  - This information was used as an adjustment factor for each subwatershed to modify entity allocations and project reductions.
- DEP is in the process of updating the HSPF model with more current land uses and data to reflect the changes in the watershed TN loading.
  - Future BMAP updates will use this revised model.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

- **Five Year Milestones**
  - Requirement under section 403.067, Florida Statutes (F.S.) (amended in 2023 HB 1379).
- Milestones for East and West subwatersheds have been added to the BMAP.

Source: DEP

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

Tidal TN Entity-Specific Milestones

Entity	5-year (2017) TN Reduction Milestone (lbs/yr)	10-year (2022) TN Reduction Milestone (lbs/yr)	15-year (2027) TN Reduction Milestone (lbs/yr)	20-year (2032) TN Reduction Milestone (lbs/yr)
Agriculture	104,335	156,502	198,236	208,669
Charlotte County	2,923	4,385	5,554	5,847
City of Cape Coral	19,482	29,224	37,016	38,965
City of Fort Myers	9,747	14,620	18,518	19,493
DOT District 1	2,549	3,824	4,843	5,098
LA-MSID	17,358	26,037	32,981	34,716
Lee County	29,780	44,670	56,581	59,559
Lucaya CDD	44	66	84	88
Moody River Estates CDD	212	318	403	424
Sail Harbour CDD	64	95	121	127
Verandah East CDD	266	400	506	533
Verandah West CDD	412	618	783	824
Total	**187,172**	**280,758**	**355,626**	**374,343**

lbs/yr = pounds per year.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

East and West Subwatershed TN Entity-Specific Milestones

Entity	5-year (2025) TN Reduction Milestone (lbs/yr)	10-year (2030) TN Reduction Milestone (lbs/yr)	15-year (2035) TN Reduction Milestone (lbs/yr)	20-year (2040) TN Reduction Milestone (lbs/yr)
Agriculture	135,840	475,441	1,018,801	1,358,401
Charlotte County	64	225	483	644
City of Clewiston	370	1,296	2,778	3,704
City of LaBelle	764	2,675	5,732	7,643
City of Moore Haven	103	359	770	1,026
Collier County	4	13	29	38
DOT District 1	533	1,867	4,000	5,333
Glades County	1,744	6,104	13,079	17,439
Hendry County/ Port LaBelle CDD	4,045	14,158	30,338	40,451
LA-MSID	3,169	11,092	23,767	31,690
Lee County	493	1,724	3,694	4,925
Portico CDD	79	275	588	785
River Hall CDD	434	1,520	3,257	4,343
Total	**147,642**	**516,748**	**1,107,316**	**1,476,422**

lbs/yr = pounds per year.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

East and West Subwatershed TP Entity-Specific Milestones

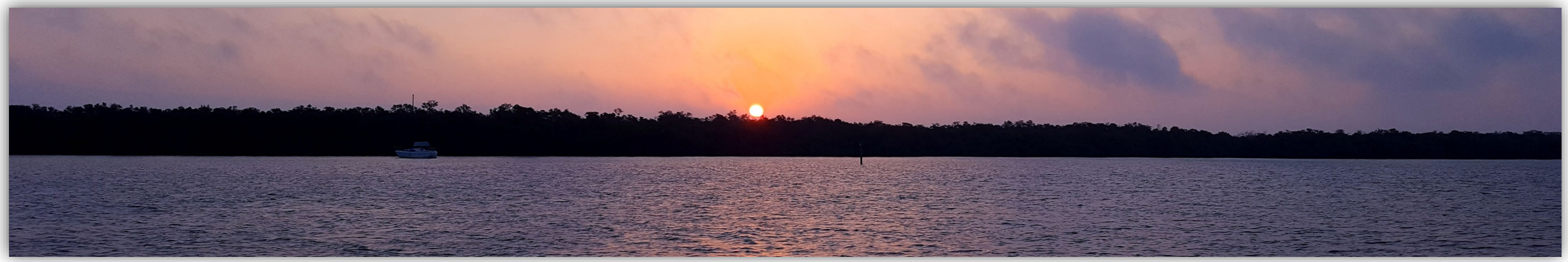
Entity	5-year (2025) TP Reduction Milestone (lbs/yr)	10-year (2030) TP Reduction Milestone (lbs/yr)	15-year (2035) TP Reduction Milestone (lbs/yr)	20-year (2040) TP Reduction Milestone (lbs/yr)
Agriculture	2,281	7,984	17,108	22,811
DOT District 1	23	81	174	232
City of Clewiston	32	111	237	316
Glades County	39	135	290	386
Hendry County/Port LaBelle CDD	124	432	926	1,235
Collier County	1	2.	5	6
Total	**2,499**	**8,745**	**18,740**	**24,986**

lbs/yr = pounds per year.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

- Consistent with statutes, entities must provide a list of projects and strategies to DEP that show how entities will meet their required reductions to achieve the next upcoming BMAP milestone, even if the identified project or strategy will not be completed by the milestone.
- All projects needed to achieve milestone targets should be included in the Statewide Annual Report (STAR), even if a funding mechanism is not currently identified, as this information gives the state an understanding of the support is necessary to achieve BMAP goals and assists with the prioritization of projects.
- It is critical for each BMAP that entities plan for and report projects and project updates to the state through the STAR process.



Source: DEP Staff Photo – Estero Bay Aquatic Preserve

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 - MILESTONES

- Responsible entities must submit a **sufficient list** of additional projects and management strategies to DEP by **Jan. 14, 2026**, to be compliant with the upcoming BMAP milestone or be subject to further department enforcement.
- If any lead entity is unable to submit a sufficient project list, then specific project identification efforts must be submitted **by Jan. 14, 2026**:
  - These responsible entities must submit project identification efforts whose purpose and timeline will provide projects to meet the 5-year milestone.
  - These efforts create a compliance schedule that must reflect the urgency of defining, funding and implementing projects to meet the upcoming and future milestones.
  - These planning efforts are ineligible for BMAP credit themselves but are necessary to demonstrate that additional eligible management actions will be forthcoming and BMAP compliance will be achieved.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – BASINWIDE SOURCES APPROACH

Bills and legislation updates.

- 2020 Clean Waterways Act, 2021 Senate Bill (SB) 64, 2023 HB 1379 and 2024 HB 1557.

Management actions by source.

- Agriculture (BMPs and agricultural cooperative regional elements).
- Stormwater.
- Sports turfgrass.
- Wastewater — OSTDS, WWTFs and biosolids.

Source: DEP Staff Photo – Estero Bay Aquatic Preserve

CALOOSAHATCHEE RIVER AND ESTUARY BMAP
CHAPTER 2 – AGRICULTURE

Dairy Operations with Confined Animal Feeding Operations (CAFO) Permits, Chapter 62-670 Florida Administrative Code (F.A.C.)

- Waste storage ponds must be lined and demonstrate no leaking.
- Sampling for TN and TP or land-applied effluent/wastewater must be included in the monitoring plan.

Livestock Operations Without CAFO Permits

- Section 403.067, F.S. requires livestock operations not large enough to require an NPDES CAFO permit must enroll in and implement the applicable DACS BMP program **OR**
- Conduct a monitoring program approved by DEP or the water management district.

Aquaculture

- Chapter 597, F.S., required DACS to create a program that requires those who sell aquatic species to annually acquire an Aquaculture Certificate of Registration and implement Chapter 5L-3, F.A.C., Aquaculture BMPs. Permit holders must be certified every year.

Silviculture

- The Florida Forest Service implements Chapter 5I-6, F.A.C. and encourages both private and public forest landowners across the state to comply with BMPs and the rule.

Agricultural Cooperative Regional Elements (ACE)

- Section 403.067, F.S., requires DACS, DEP and agricultural producers to work together to establish an ACE.
- DACS is responsible for providing DEP a list of projects which, in combination with BMPs, state-sponsored regional projects and other management strategies will achieve the needed pollutant load reductions established for agricultural nonpoint sources.
- DACS is assigned the lead role on project solicitation, development, selection and implementation. However, they will work closely with all the key stakeholders, including DEP as a partner agency, to define and identify regional projects that will be included in the BMAP.
- DACS and DEP will work together to track progress on agricultural water quality projects under the ACE framework through the development of performance metrics and evaluation of water quality monitoring data in the basin.
- DACS will report on projects annually through the DEP STAR process and during BMAP update and/or development.
- Projects and other management strategies implemented through the ACE will be evaluated cooperatively by partner agencies using the predetermined performance metrics.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP
CHAPTER 2 – STORMWATER FACILITIES

Stormwater

- The National Pollutant Discharge Elimination System (NPDES) Stormwater Program will, within five years of BMAP adoption, evaluate any entity located in the BMAP area that serves a minimum resident population of at least 1,000 individuals that is not currently covered by a Municipal Separate Storm Sewer System (MS4) permit and designate eligible entities as regulated MS4s, in accordance with Chapter 62-624, F.A.C.
- Chapter 62-330 F.A.C. (2024).
  - Updated Florida's stormwater rule for design criteria and to strengthen the operation and maintenance requirements.
  - Applicants must demonstrate a level of treatment sufficient to accomplish the greater of the following nutrient load reduction criteria through calculations or modeling that the future stormwater management systems would provide additional treatment to meet new Environmental Resource Permits stormwater treatment performance standards of 80% reduction for TP and 55% reduction for TN or post-development condition average annual loading of nutrients does not exceed the predevelopment condition nutrient loading, along with additional requirements that would apply where a project discharges to Outstanding Florida Waters or impaired waters.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – SPORTING FACILITIES

Sports Turfgrass and Golf Courses

- Sporting facilities are required to follow the 2025 Sports Turf BMP Manual.
- Superintendents of all publicly owned golf courses within the BMAP must obtain a certification for golf course BMPs under section 403.9339 F.S. and all golf courses must implement the BMPs described in the 2021 DEP golf course BMP manual.
- All publicly owned golf courses located within a BMAP are required to submit a Nutrient Management Plan (NMP).

Source: South Florida Water Management District

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – WWTFS AND OSTDS

Source: Florida Geological Survey (FGS)

Clean Waterways Act (2020)

- Required local governments within a nutrient BMAP to develop wastewater treatment plans and/or OSTDS remediation plans to be incorporated into BMAP updates.

Reclaimed Water Senate Bill (SB) 64 (2021)

- Subsection 403.064(16), F.S., requires domestic wastewater utilities that dispose of effluent, reclaimed water or reuse water by surface water discharge to submit for DEP review and approval, a plan for eliminating non-beneficial surface water discharge by Jan. 1, 2032.
  - A utility must fully implement the approved plan by Jan. 1, 2032.
- If a plan was not timely submitted or approved by DEP, the utility's domestic WWTFs may not dispose of effluent, reclaimed water or reuse water by surface water discharge after Jan.1, 2028.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – WWTFS AND OSTDS

Environmental Protection HB 1379 (2023)

- Requires facilities discharging to a waterbody impaired for nutrients or subject to a BMAP to upgrade to AWT within 10 years.
- Requires applicants for new septic systems serving lots of one acre or less within BMAPs to connect to central sewer if available or if unavailable, to install an enhanced nutrient-reducing system or other wastewater system that achieves a nitrogen reduction of 65%.

Environmental Protection HB 1557 (2024)

- Requires advanced treatment of reclaimed water within BMAPs (403.086, F.S.).
- DEP has determined that the use of reclaimed water is causing or contributing to the nutrient impairments being addressed in this BMAP area.
- The facilities listed in the BMAP — Appendix E have 10 years from BMAP adoption to meet the applicable AWT standards.

Source: DEP

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – WWTFS

The nitrogen effluent limits will be applied as an annual average, taken at end of pipe before any land disposal (or other authorized compliance point), to all new and existing WWTFs with a DEP-permitted discharge or disposal area within this BMAP.

Nitrogen effluent limits for wastewater facilities.

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix E (mg/L)	WWTFs Not Listed in Appendix E – Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix E – All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	3	3	3	10
Less than 0.5 and greater than 0.1	3	3	6	10
Less than or equal to 0.1	3	N/A	10	10

mgd = million gallons per day. mg/L = milligrams per liter.
N/A = Not applicable.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 2 – WWTFS

The phosphorus effluent limits will be applied as an annual average, taken at end of pipe before any land disposal (or other authorized compliance point), to all new and existing WWTFs with a DEP-permitted discharge or disposal area within this BMAP.

Phosphorus effluent limits for wastewater facilities.

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix E (mg/L)	WWTFs Not Listed in Appendix E – Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix E – All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	1	1	1	6
Less than 0.5 and greater than 0.1	1	1	3	6
Less than or equal to 0.1	1	N/A	6	6

mgd = million gallons per day. mg/L = milligrams per liter.
N/A = Not applicable.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

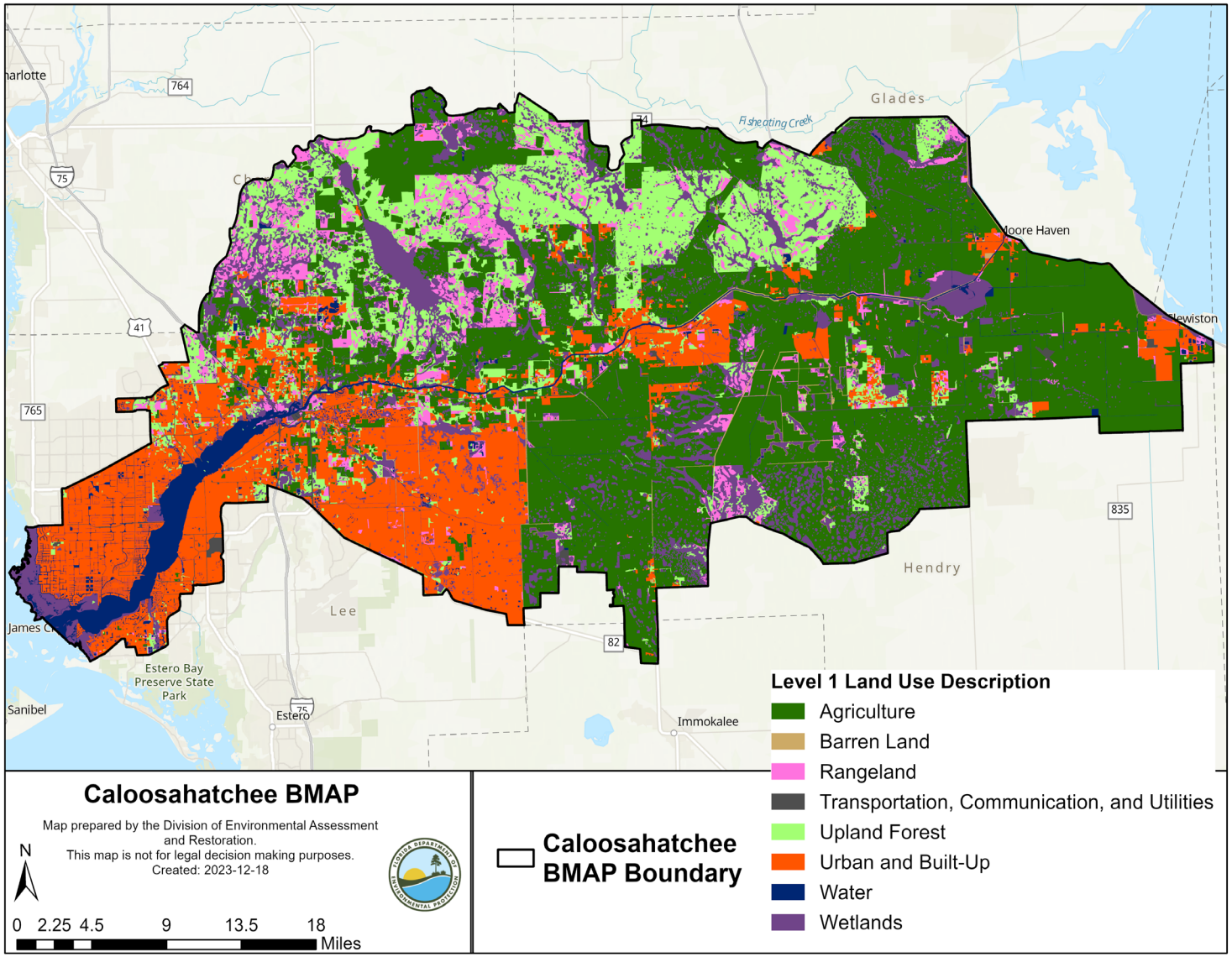
CHAPTER 3 – SUBWATERSHEDS

- Tidal Caloosahatchee, West Caloosahatchee and East Caloosahatchee.
- Each subwatershed section in the document includes water quality monitoring, basin evaluation results and project lists.
- Basin evaluation results will be presented for the whole BMAP area in Chapter 4.

Source: DEP

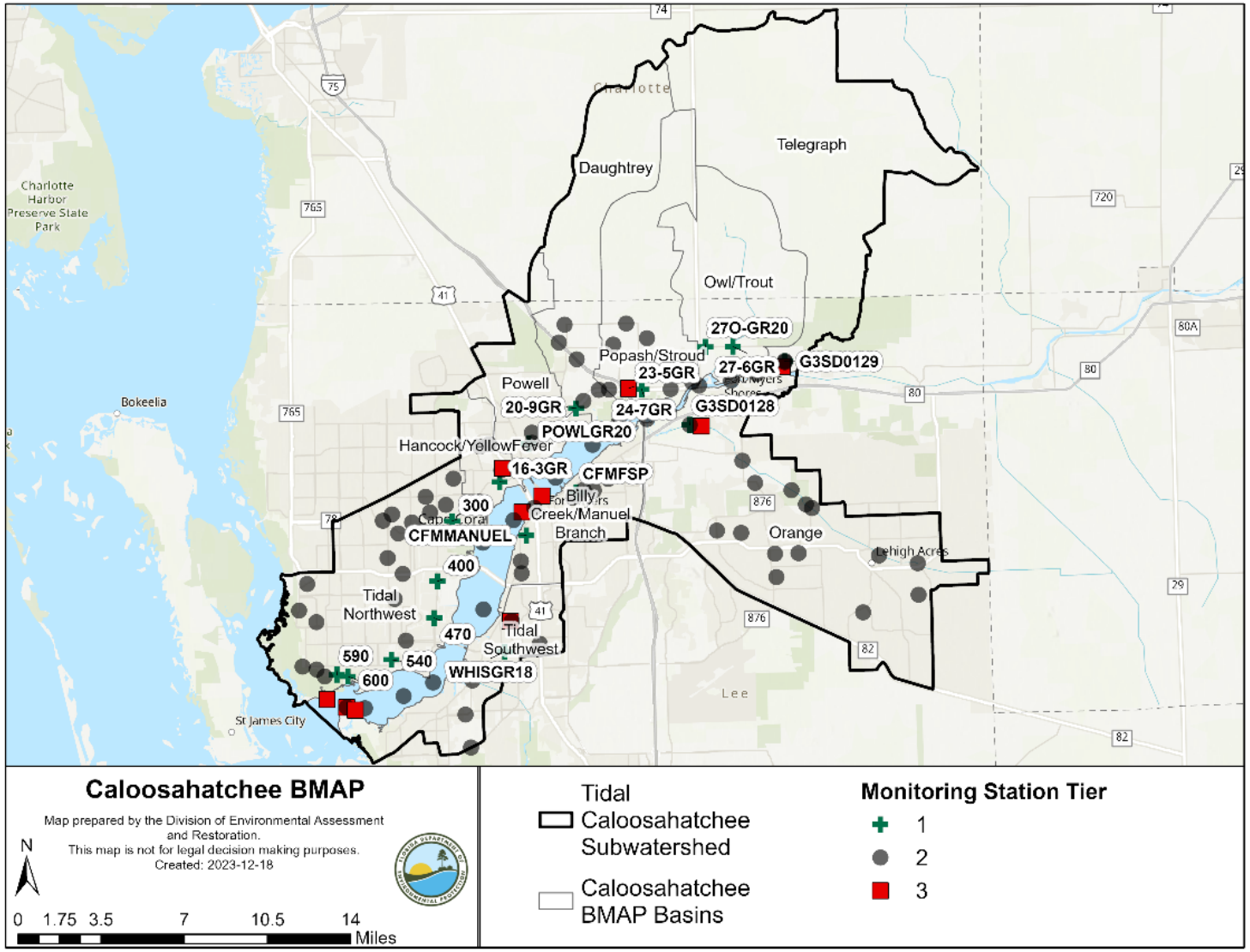
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 3 – LAND USE



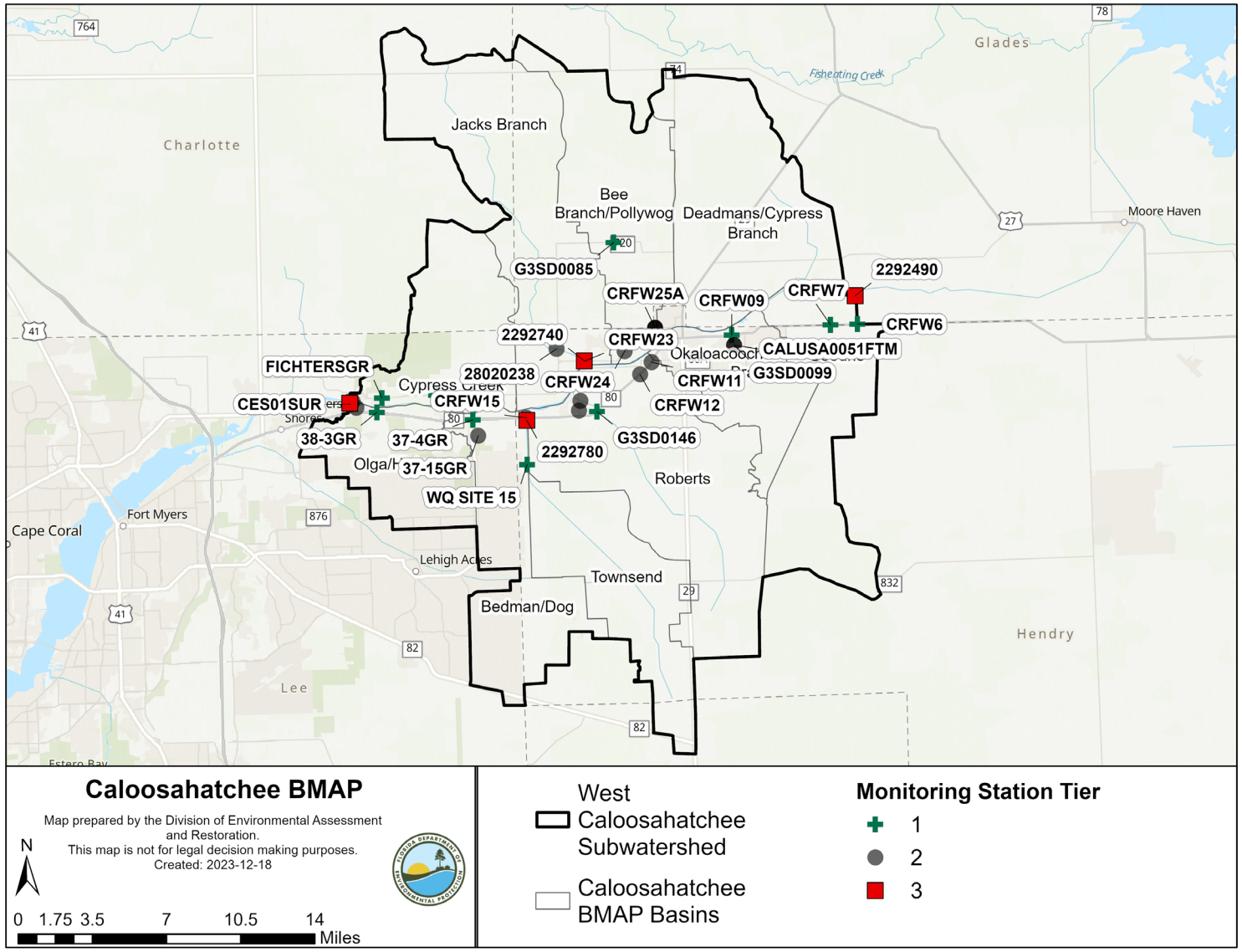
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 3 – TIDAL SUBWATERSHED MONITORING



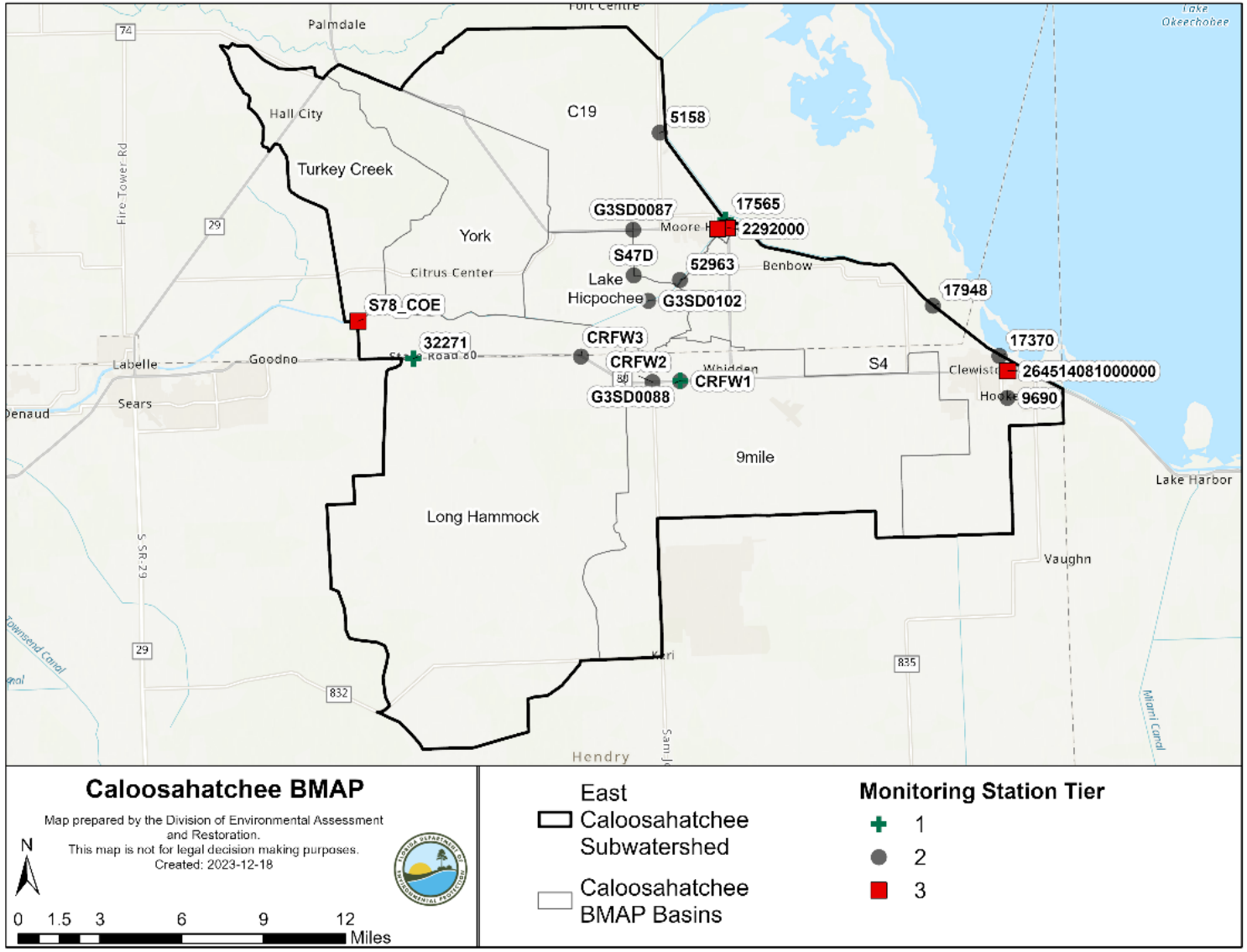
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 3 – WEST SUBWATERSHED MONITORING



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 3 – EAST SUBWATERSHED MONITORING



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 - SUMMARY

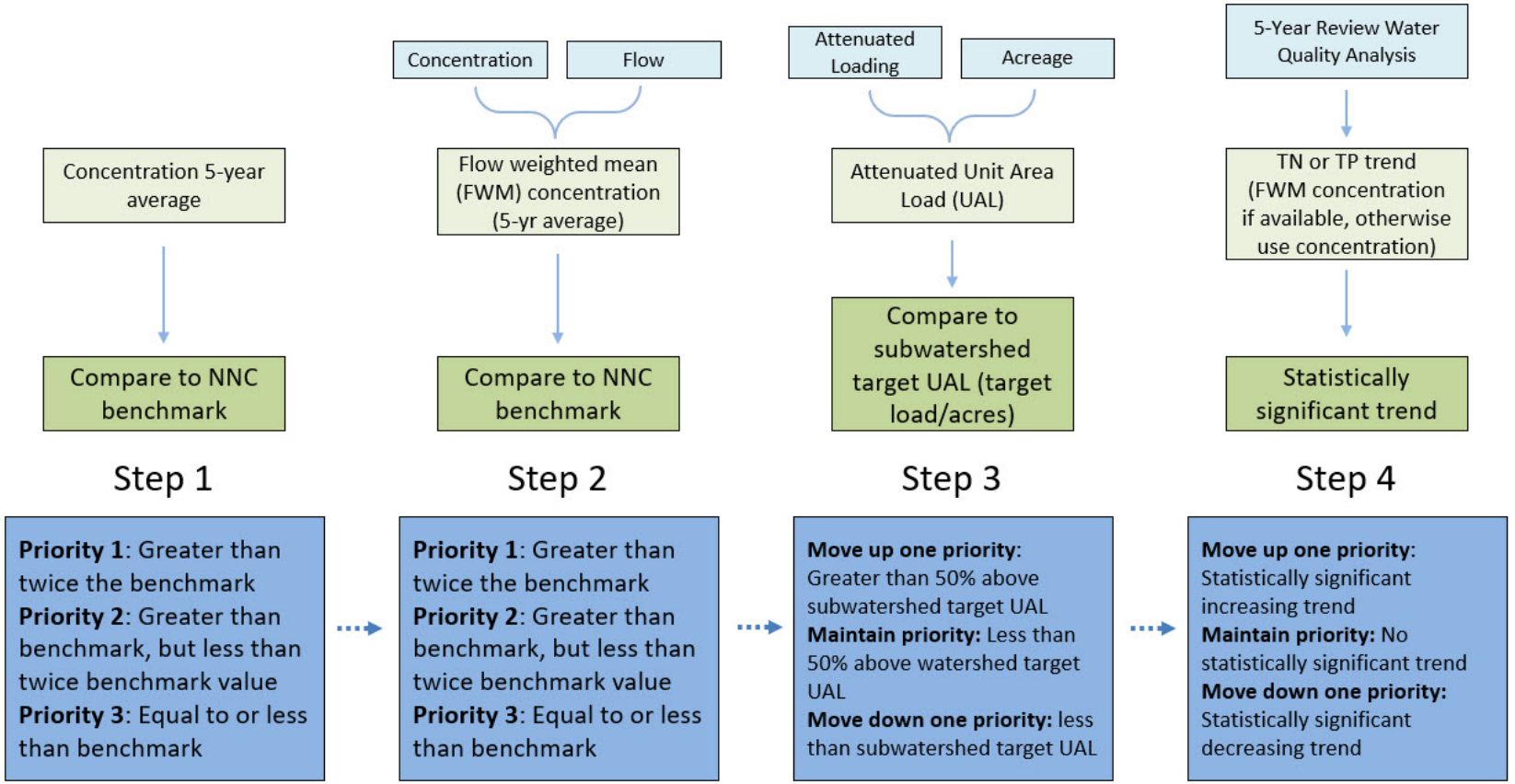
- Basin Evaluation Results.
  - TRA Evaluation.
  - Trend Analysis.
  - Hot Spot Analysis.
- Future Growth.
- Compliance.

Source: DEP Staff Photo – Estero Bay Aquatic Preserve

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – TRA APPROACH

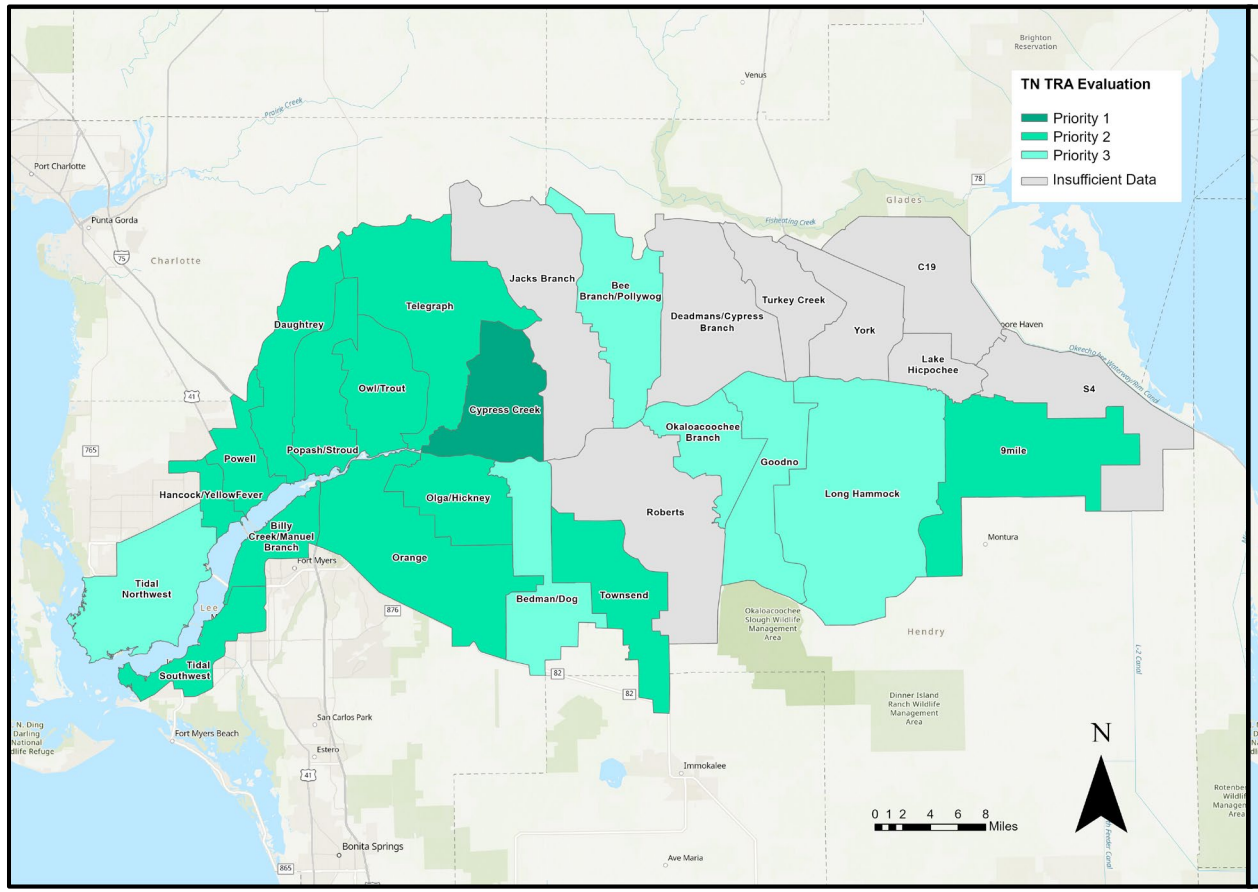
Developed to help prioritize certain basins and focus resources on most efficient restoration using measured data throughout the watershed.



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – TRA RESULTS

TN



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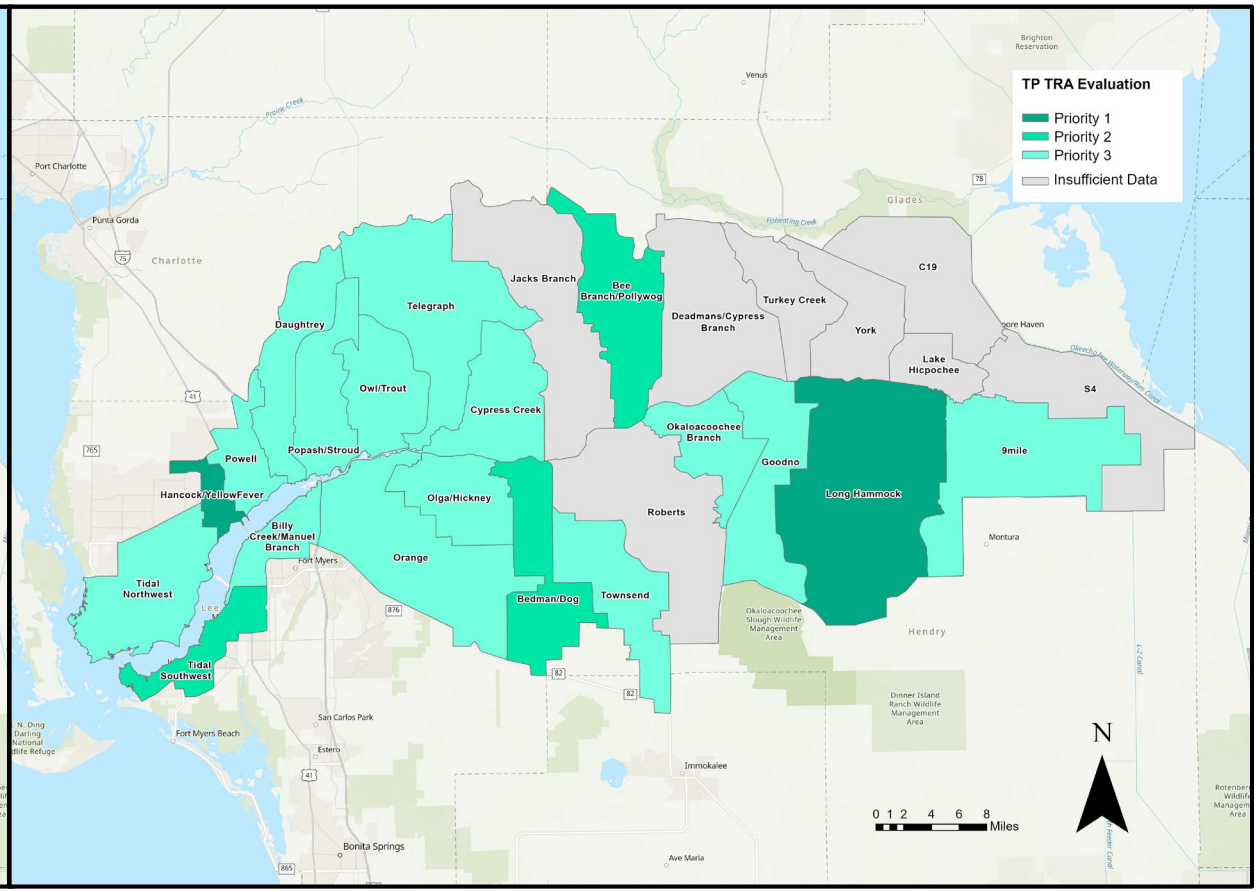
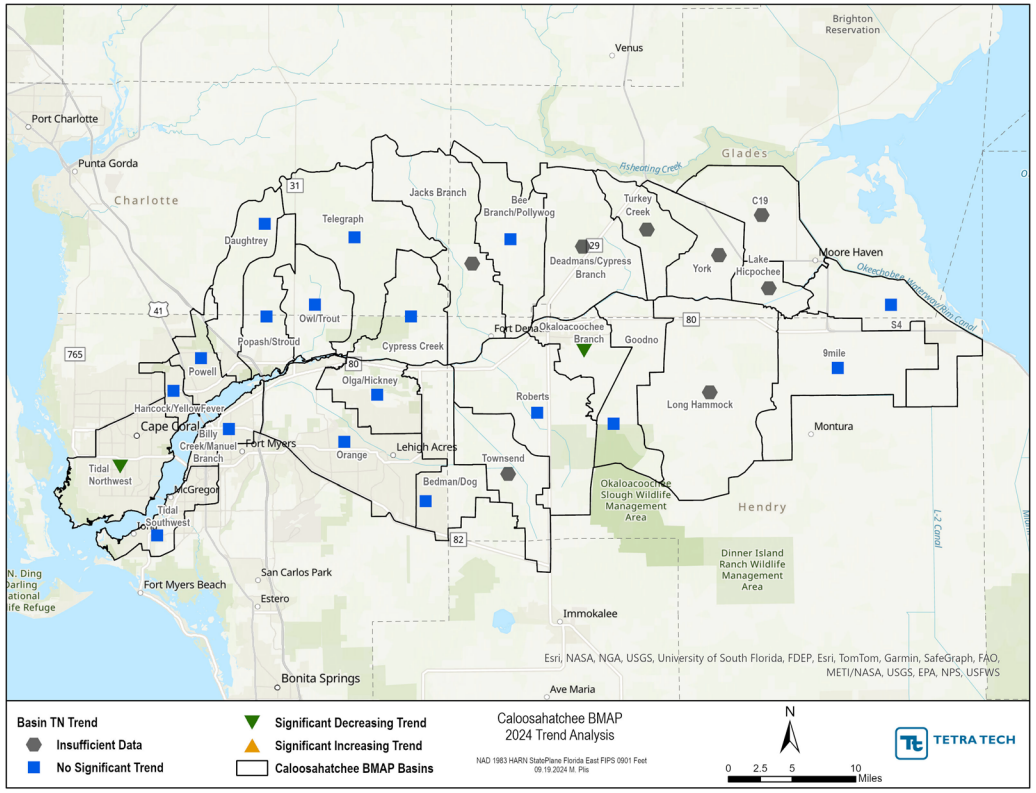


CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – TREND ANALYSIS APPROACH / TREND RESULTS

- The trend analysis from the second 5-Year Review was updated to add data through Water Year 2024 (WY2024).
- The latest analysis uses data from five water years before BMAP adoption and 12 years after adoption for a period of record extending from May 1, 2008, through April 30, 2024.

TN



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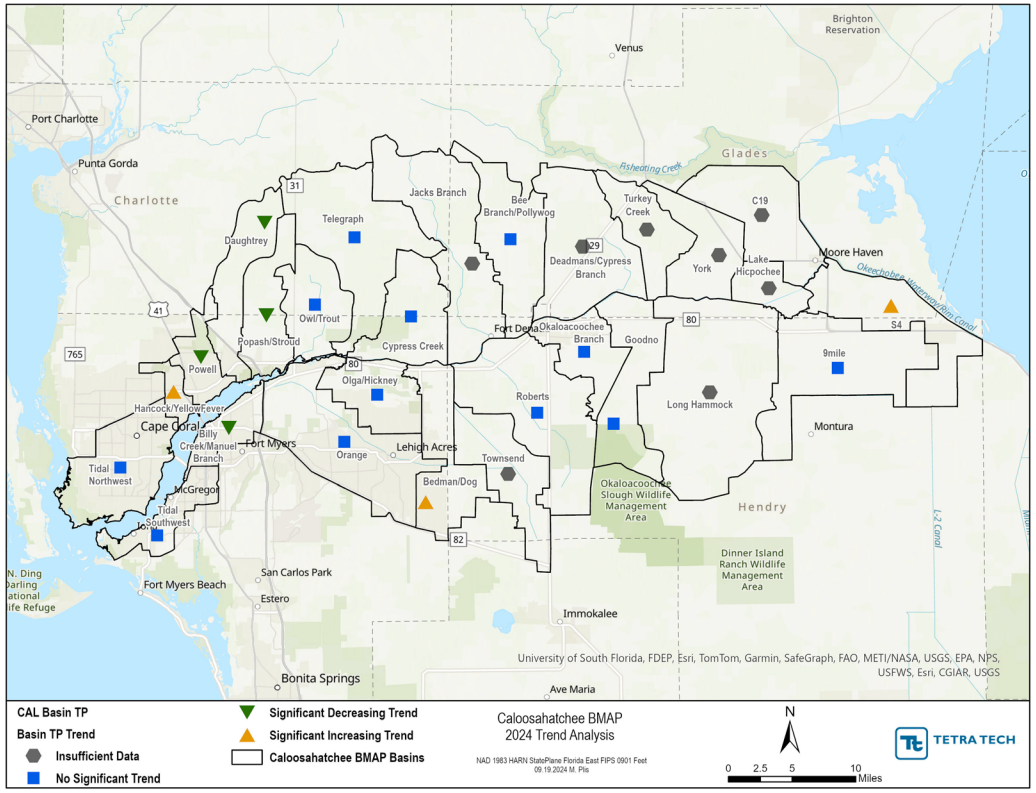
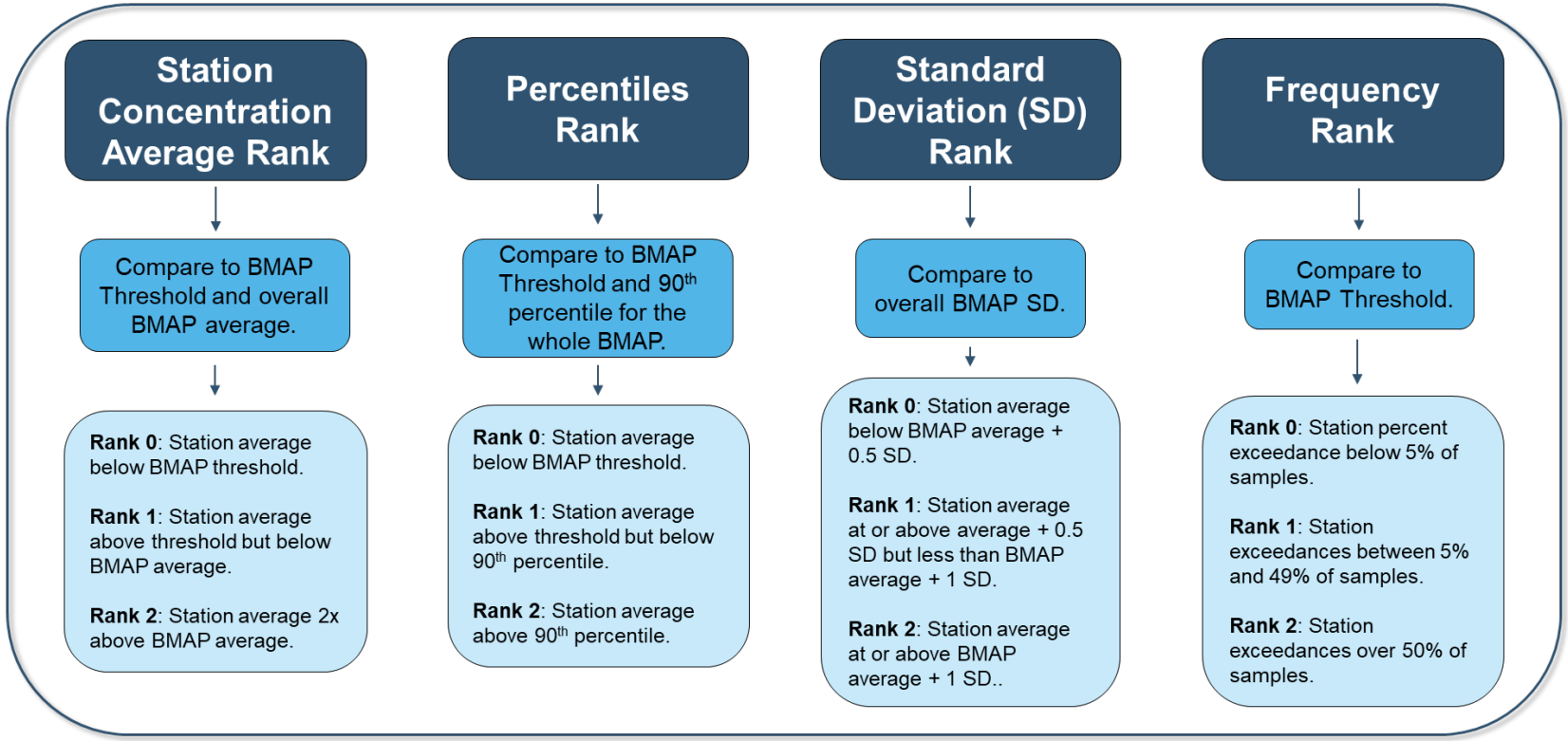


CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – HOT SPOT APPROACH

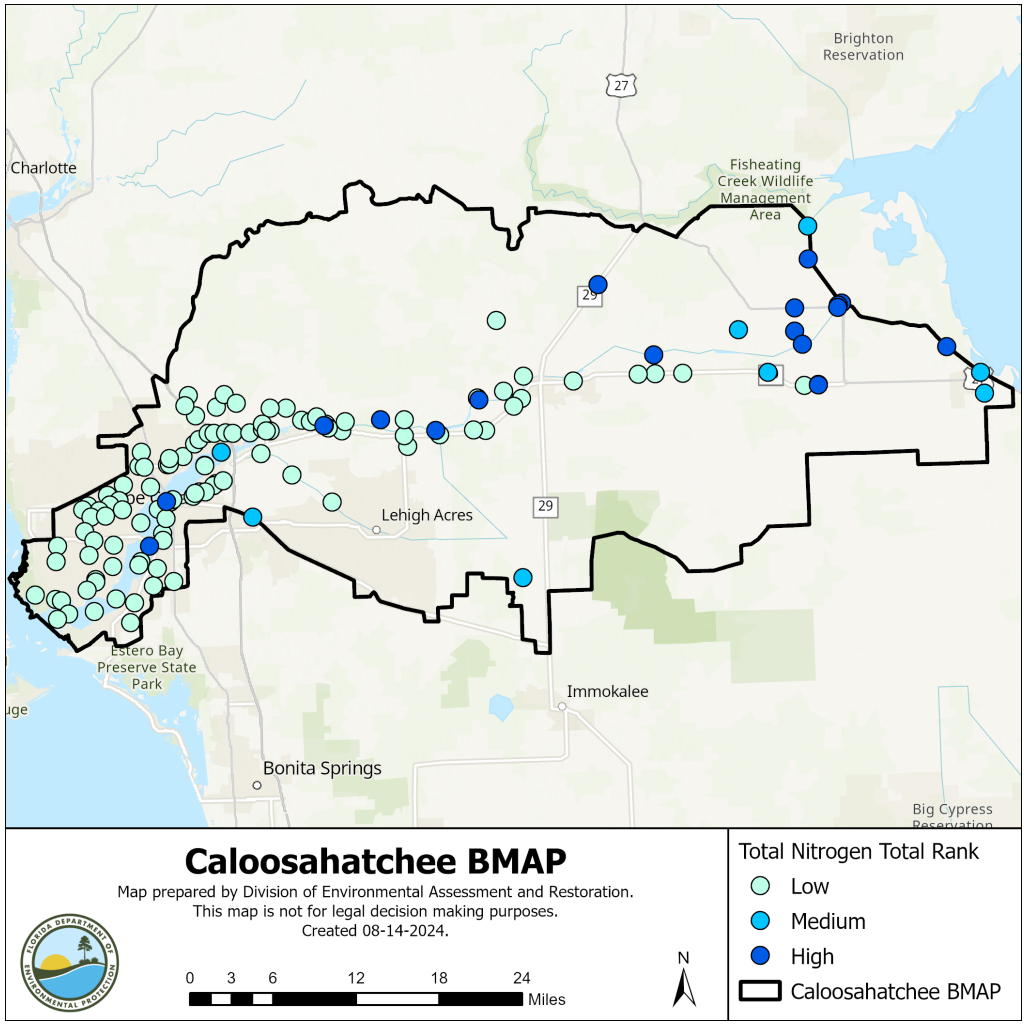
- Uses measured data collected throughout the watershed to evaluate TN and TP concentrations at monitoring stations.
- This process is not intended to be a management strategy under Chapter 403.067, F.S.
- The benchmarks are not intended to measure progress towards restoration; they will only be used to prioritize resources.



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – HOT SPOT ANALYSIS RESULTS

TN



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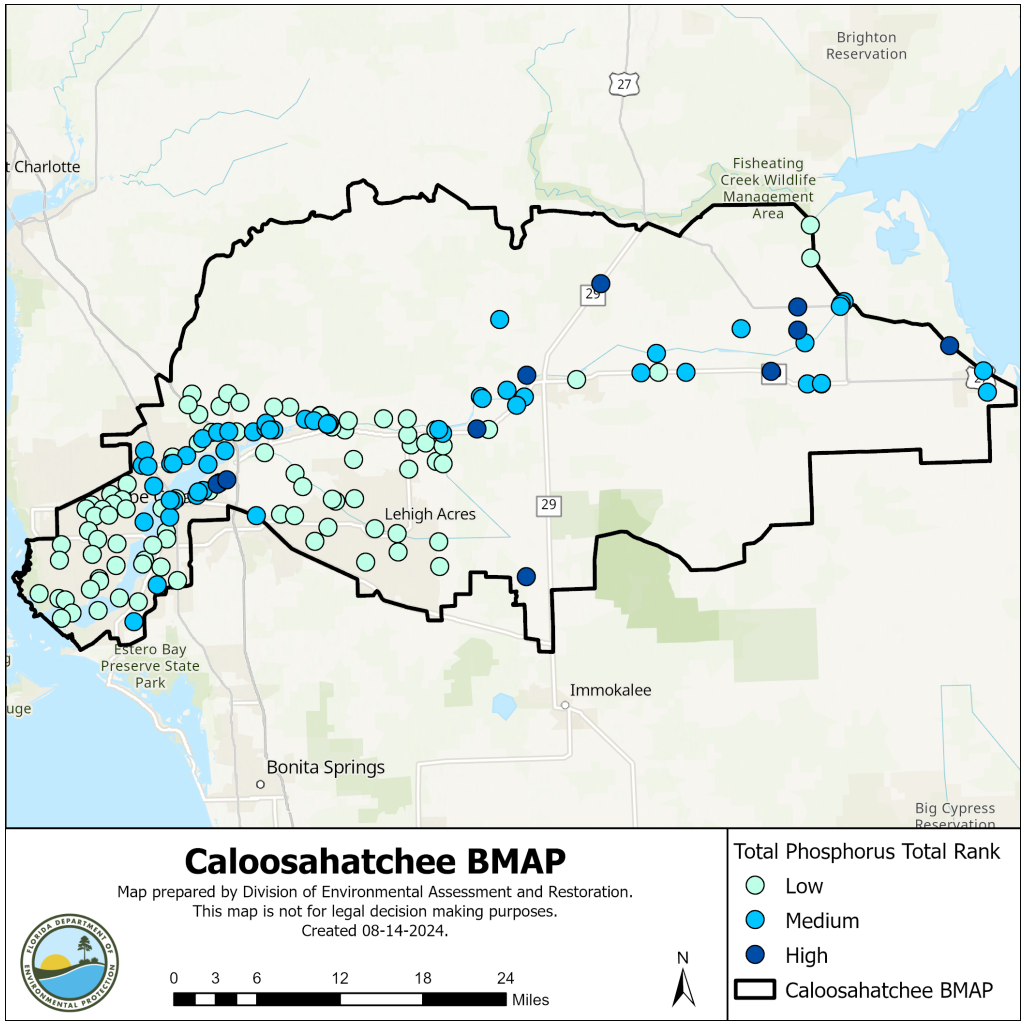
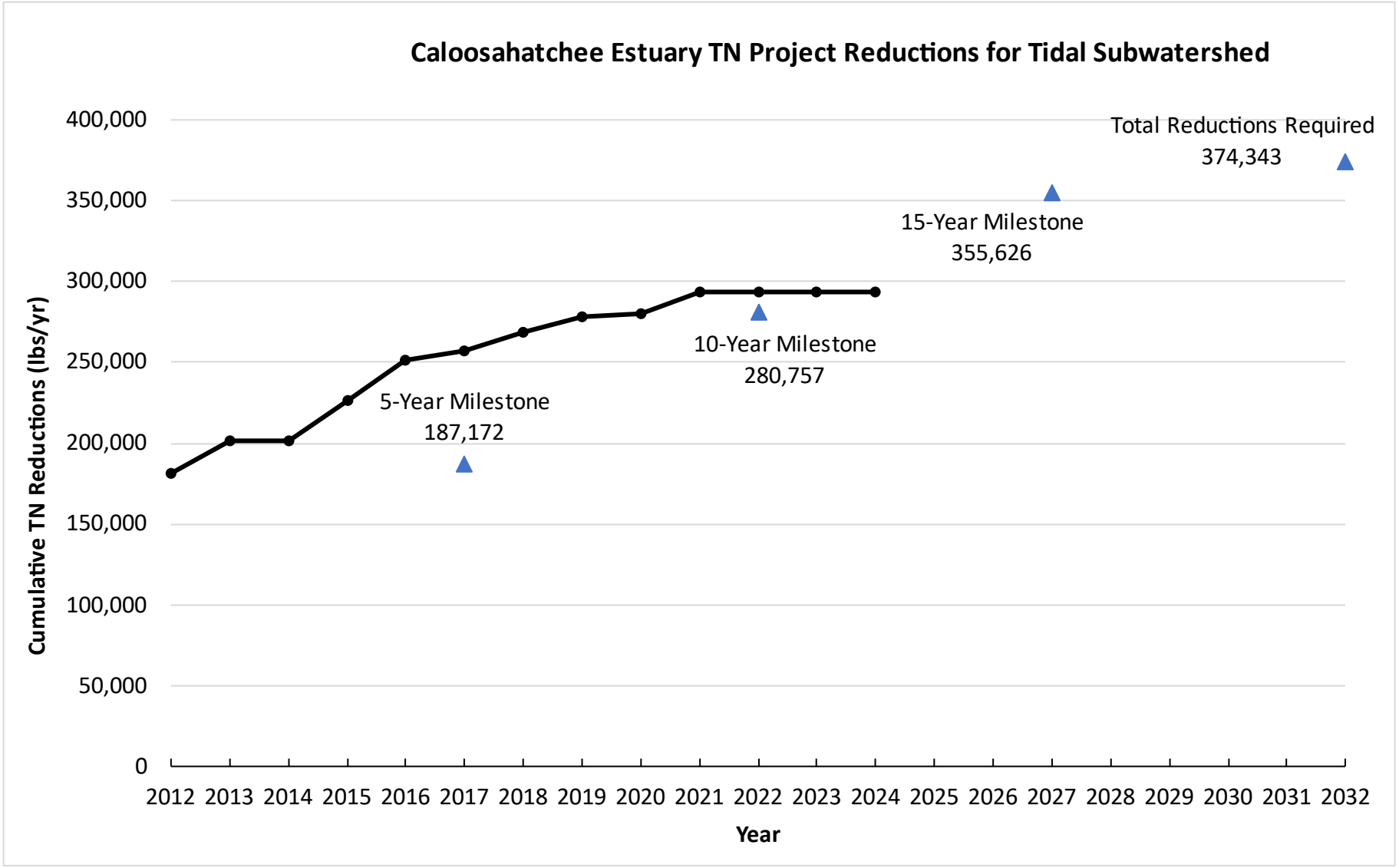


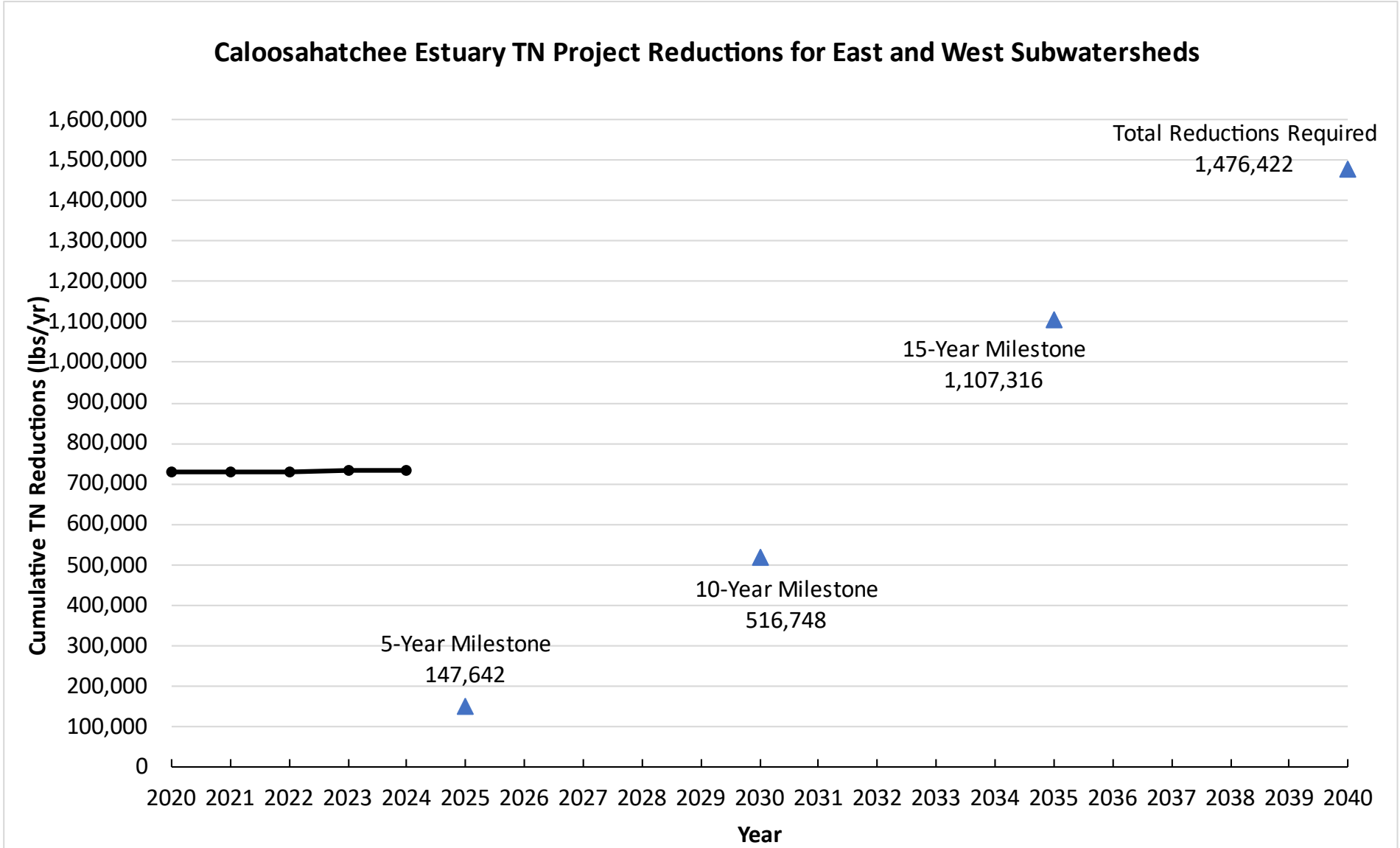
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – TIDAL PROGRESS CHART



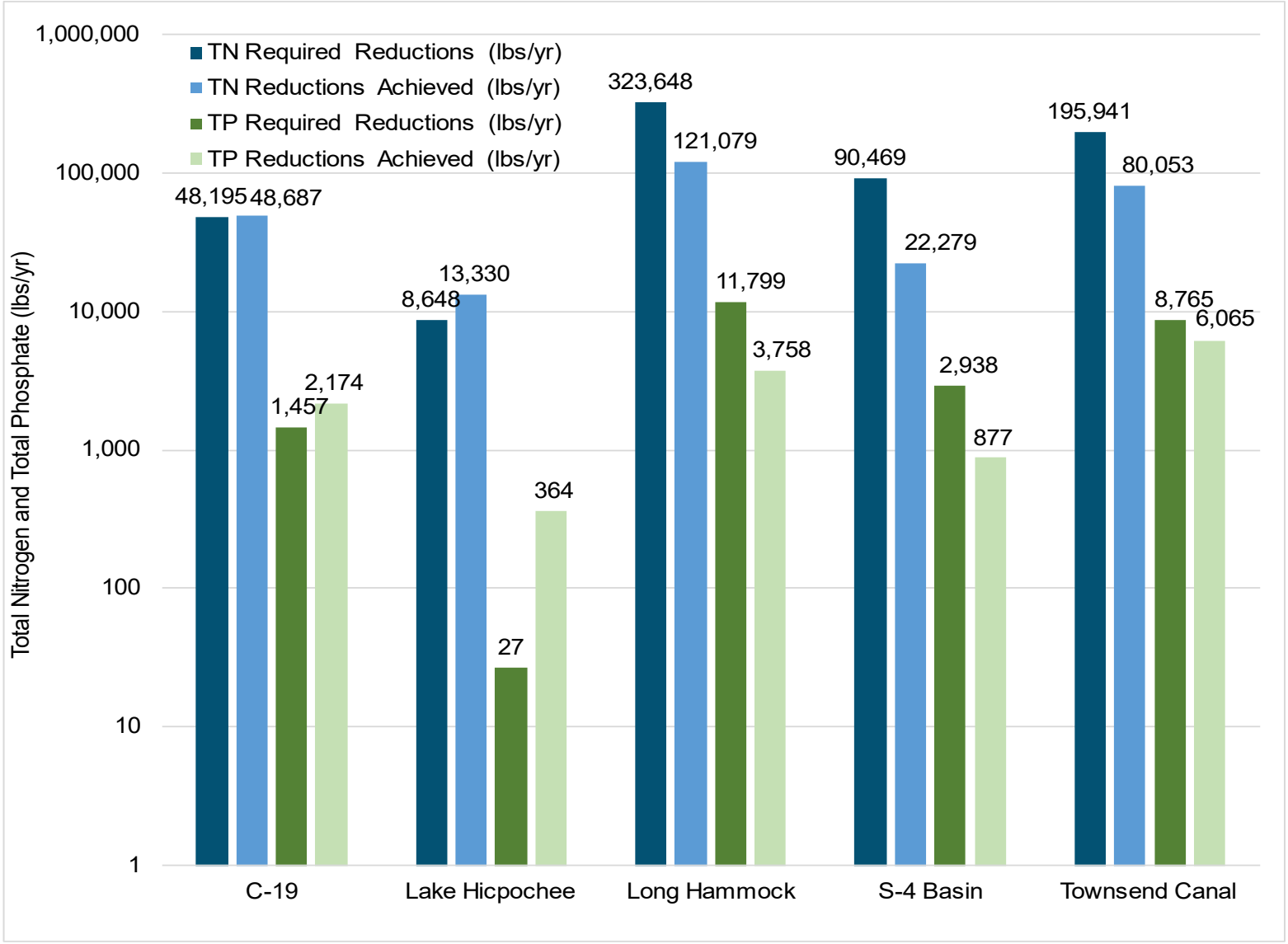
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – EAST AND WEST PROGRESS CHART



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – TRIBUTARIES PROGRESS CHARTS



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – FUTURE GROWTH

Assessed additional loading to the basin by 2040 under different growth management scenarios.

- 2040 population “additional people” based on Bureau of Business and Economic Research (BEBR) medium growth projections by county.
- Growth distributed to jurisdictional boundaries based on available land area.
- Determined percentage of population sewered based on Florida Water Management Inventory (FLWMI) parcel-to-point data.
- Applied per person loading values for portions of future population on centralized sewer or OSTDS.
- Assumed increase in urban stormwater loading based on percentage of undeveloped acres converted to low density residential land use, using statewide event mean concentrations (EMCs) and runoff coefficients (ROCs).
- Ran three management scenarios to look at loading by entity, source and overall basin.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – FUTURE GROWTH

Scenario 1	Scenario 2	Scenario 3
By 2040:	By 2040:	By 2040:
• **90%** or more of **new population** is connected to central sewer.	• **New population** is connected to central sewer at **same rate as today.**	• **New population** is connected to central sewer at **same rate as today**.
• All wastewater treating to **3 mg/L TN.**	• All wastewater treating to **3 mg/L TN.**	• All wastewater treating to **6 mg/L TN.**
• Remainder of new population has **enhanced OSTDS.**	• Remainder of new population has **enhanced OSTDS.**	• Remainder of new population has **conventional OSTDS.**
• **2% of undeveloped land** converted to low density development	• **10% of undeveloped land** converted to low density development	• **17% of undeveloped land** converted to low density development

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

CHAPTER 4 – FUTURE GROWTH

Entity	Developable Land (acres)	2040 Additional TN loading under Scenario 1 (2%)	2040 Additional TN loading under Scenario 2 (10%)	2040 Additional TN loading under Scenario 3 (17%)
Charlotte County	41,460	44	218	371
Glades County	193,830	204	1020	1735
Moore Haven	682	1	4	6
Hendry County	207,056	218	1090	1853
Clewiston	2,887	3	15	26
LaBelle	8,719	9	46	78
Lee County	147,883	156	779	1324
Cape Coral	30,756	32	162	275
Fort Myers	12,854	14	68	115

2040 Loading - Basin Totals	Scenario 1 Total	Scenario 2 Total	Scenario 3 Total
	680	**3,402**	**5,783**

In every scenario, additional loading is expected in the basin by 2040 due to increasing populations. However, entities should proactively be working to both remediate existing loading AND plan to mitigate loading from future growth.

CALOOSAHATCHEE RIVER AND ESTUARY BMAP

APPENDICES

- **Updated:** Important links.
- **Updated:** Agricultural Enrollment and Reductions.
  - Provided by DACS
- **NEW:** Planning for Additional Management Strategies.
  - Examples of project efforts entities can identify to meet their milestone reduction requirements.
- **NEW:** Golf Course Nutrient Management Plans.
- **NEW:** Wastewater Facilities.
  - List of facilities with reclaimed water that are causing or contributing to nutrient impairments.

UPCOMING SCHEDULE

November 2024, Technical BMAP update public meeting.

March 2025, Draft BMAP document available for review.

April 2025, Draft BMAP update public meetings.

April 2025, Draft BMAP update comment period.

July 1, 2025, Statutory deadline for updated nutrient BMAPs.

NEXT STEPS

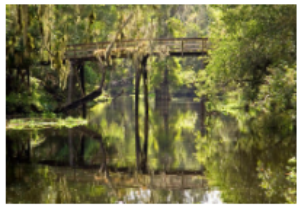
BMAP update document draft review:

- Draft document sent out via GovDelivery **April 2, 2025**.
- Stakeholder review comments due **April 30, 2025**.

Submit comments to:
Anthony.Tomalewski@FloridaDEP.gov

RESOURCES
BMAP WEBSITE AND STORYMAPS

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

Nutrient BMAPs	Springs BMAPs	Fecal Bacteria Impaired BMAPs
		
Nutrient BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to achieve pollutant reductions established by a total maximum daily load	Springs BMAPs identify the sources of nutrient pollution, list the specific projects and programs necessary to reduce nutrient pollution, and establish priority focus areas where statutory prohibitions on certain activities apply (such as installation of new conventional septic systems).	Bacteria basin management action plans (BMAPs) include management strategies or projects, to be implemented by local stakeholders, that aim to eliminate and prevent the release of waste, containing pathogens, to natural waterbodies.

THANK YOU

Tony Tomalewski
Environmental Consultant

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

Photo Credit: SFWMD

EVERGLADES WEST COAST BMAP
BACKGROUND

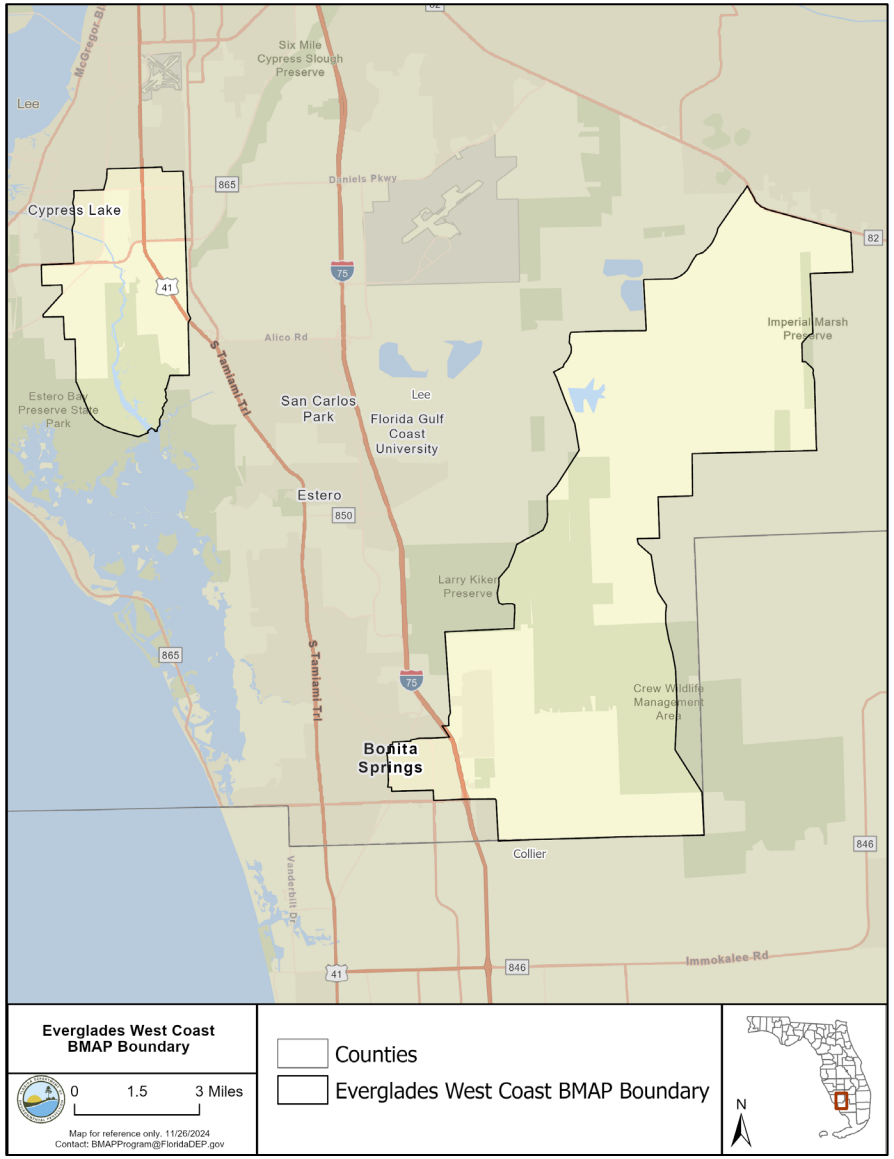
Everglades TMDLs

Hendry Creek and Imperial River
Adopted in 2008

- Dissolved oxygen (DO) impairments.
- TN reductions.

Target concentration 0.74 milligrams per liter (mg/L) TN.

Everglades West Coast BMAP
Initially adopted November 2012.



EVERGLADES WEST COAST BMAP
STAKEHOLDERS

Type of Organization/Entity	Name
Responsible Entities	Agriculture Lee County City of Bonita Springs Catalina at Winkler Preserve Community Development District (CDD) Corkscrew Farms CDD Laguna Lakes CDD
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection (DEP) Florida Department of Transportation (DOT) District 1 South Florida Water Management District (SFWMD)

EVERGLADES WEST COAST BMAP

ADOPT BY JULY 1, 2025

- Loading estimates update.
- Management strategies.
- Future growth update.
- Incorporate the 2020 Clean Waterways Act, 2023 HB 1379 and 2024 HB 1557 requirements.
- Incorporate regional projects.
- Water quality data evaluation:
  - Evaluation of the monitoring networks.
  - Hotspot Analysis.
- Evaluate further OSTDS provisions.
- Evaluate the need for AWT or other more stringent effluent limits for domestic WWTFs.

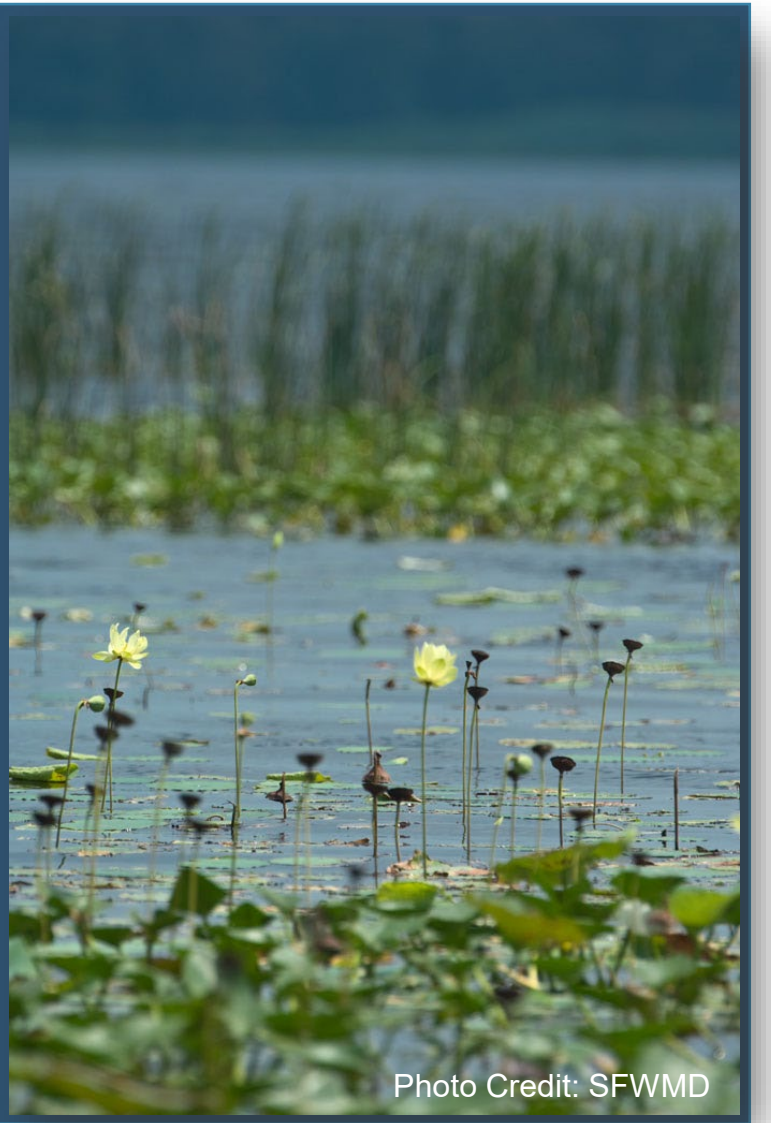


Photo Credit: SFWMD

EVERGLADES WEST COAST BMAP

DRAFT BMAP DOCUMENT

Chapter 1 – Context, Purpose and Scope of the Plan.

Chapter 2 – Modeling, Load Estimates and Restoration Approach.

Chapter 3 – Monitoring Strategy.

Chapter 4 – Commitment to Plan Implementation.

Appendices.

EVERGLADES WEST COAST BMAP

CHAPTER 1: CONTEXT, PURPOSE AND SCOPE OF THE PLAN

- Water Quality Standards and TMDLs
- Everglades West Coast BMAP
  - Pollutant sources
  - Assumptions
  - Considerations

Basin	Land Use Category	TN Load (% Basin Total)
Hendry Creek	Urban	72
Hendry Creek	Agriculture	2
Hendry Creek	Natural	26
Imperial River	Urban	20
Imperial River	Agriculture	36
Imperial River	Natural	43

EVERGLADES WEST COAST BMAP

CHAPTER 2: MODELING, LOAD ESTIMATION, AND RESTORATION APPROACH.

- Model Development.
  - Review of 2012 BMAP loading model.
  - New loading estimates.
- Allocations and Milestones.
- Basinwide Sources Approach.
  - Agriculture.
  - Stormwater.
  - WWTFs.
  - OSTDS.
  - Biosolids.
- Future Growth.

EVERGLADES WEST COAST BMAP

CHAPTER 2: MODELING, LOAD ESTIMATION, AND RESTORATION APPROACH.

Load Estimation

- This 2025 BMAP update uses the 2017-2019 South Florida Water Management District (SFWMD) land use information, which is the most current version available.
- Yearly total nitrogen loadings were calculated by multiplying each land use polygon's acreage by its appropriate loading rate.
  - Loading rates are consistent with the 2012 BMAP.
- Updated loading estimates and TMDL are used to determine the new required reductions in the BMAP.

Basin	TN Anthropogenic Starting Load (lb/yr)	TN TMDL Allowable Load (lbs/yr)	TN Natural Load (lbs/yr)	TN Anthropogenic Allowable Load (lbs/yr)	TN Required Reduction (lbs/yr)
Hendry Creek	44,856	44,414	15,711	28,703	16,154
Imperial River	134,089	192,202	101,565	90,637	43,452
Total	**178,945**	**236,616**	**117,276**	**119,340**	**59,606**

EVERGLADES WEST COAST BMAP

CHAPTER 2: ALLOCATIONS

Updated Allocations

- Re-evaluation of stakeholders in the BMAP.
- A series of geographic information system (GIS) clipping steps was used to assign the BMAP area and associated loading to the responsible entities based on jurisdictional boundaries or land use codes.
- Required reductions were assigned to stakeholders based on the percentage of the starting load from each stakeholder.

Hendry Creek Basin

Entity	% of TN Starting Load (lbs/yr)	TN Required Reduction (lbs/yr)
Agriculture	2.3%	366
DOT District 1	0.8%	135
Catalina at Winkler Preserve CDD	1.0%	157
Laguna Lakes CDD	1.9%	314
Lee County	94.0%	15,182
Total	**100.0%**	**16,154**

Imperial River Basin

Entity	% of TN Starting Load (lbs/yr)	TN Required Reduction (lbs/yr)
Agriculture	64.3%	27,936
DOT District 1	0.2%	94
Corkscrew Farms CDD	2.6%	1,110
City of Bonita Springs	24.9%	10,814
Lee County	8.0%	3,498
Total	**100.0%**	**43,452**

EVERGLADES WEST COAST BMAP

CHAPTER 2: MILESTONES

- **Five Year Milestones**
  - Requirement under section 403.067, F.S. (amended in 2023 HB 1379).

Source: SJRMWD

EVERGLADES WEST COAST BMAP

CHAPTER 2: MILESTONES

- Consistent with statutes, entities must provide a list of projects and strategies to DEP that show how entities will meet their required reductions to achieve the next upcoming BMAP milestone, even if the identified project or strategy will not be completed by the milestone.

- All projects needed to achieve milestone targets should be included in the STAR, even if a funding mechanism is not currently identified, as this information gives the state an understanding of the support is necessary to achieve BMAP goals and assists with the prioritization of projects.

- It is critical for each BMAP that entities plan for and report projects and project updates to the state through the STAR process.

EVERGLADES WEST COAST BMAP

CHAPTER 2: MILESTONES

- Responsible entities must submit a **sufficient list** of additional projects and management strategies to DEP by **Jan. 14, 2026**, to be compliant with the upcoming BMAP milestone or be subject to further department enforcement.
- If any lead entity is unable to submit a sufficient project list, then specific project identification efforts must be submitted **by Jan. 14, 2026**:
  - These responsible entities must submit project identification efforts whose purpose and timeline will provide projects to meet the five-year milestone.
  - These efforts create a compliance schedule that must reflect the urgency of defining, funding and implementing projects to meet the upcoming and future milestones.
  - These planning efforts are ineligible for BMAP credit themselves but are necessary to demonstrate that additional eligible management actions will be forthcoming and BMAP compliance will be achieved.

EVERGLADES WEST COAST BMAP

CHAPTER 2: MILESTONES

Milestones Timeline

- 2027- 50%
- 2032- 100%

Hendry Creek Basin

Entity	2027 Required Reduction (50% Milestone) (lbs/yr)	2032 Required Reduction (100% Milestone) (lbs/yr)
Agriculture	183	366
FDOT District 1	68	135
Catalina at Winkler Preserve CDD	79	157
Laguna Lakes CDD	157	314
Lee County	7,591	15,182
Total	**8,077**	**16,154**

Imperial River Basin

Entity	2027 Required Reduction (50% Milestone) (lbs/yr)	2032 Required Reduction (100% Milestone) (lbs/yr)
Agriculture	13,968	27,936
FDOT District 1	47	94
Corkscrew Farms CDD	555	1,110
City of Bonita Springs	5,407	10,814
Lee County	1,749	3,498
Total	**21,726**	**43,452**

EVERGLADES WEST COAST BMAP

CHAPTER 2: PROJECT PROGRESS

- Total required reductions and the estimated reductions achieved for completed and ongoing projects.
- TN reductions were recalculated using the updated loadings.
- % of TN reductions achieved is based on the new BMAP entity allocations.

Hendry Creek Basin

Entity	TN Full Required Reduction (lbs/yr)	TN Completed and Ongoing Project Reductions Achieved (lbs/yr)	% of TN Reductions Achieved
Agriculture	366	0	0%
FDOT District 1	135	117	87%
Catalina at Winkler Preserve CDD	157	0	0%
Laguna Lakes CDD	314	0	0%
Lee County	15,182	7,468	49%
Totals	**16,154**	**7,585**	**47%**

Imperial River Basin

Entity	TN Full Required Reduction (lbs/yr)	TN Completed and Ongoing Project Reductions Achieved (lbs/yr)	% of TN Reductions Achieved
Agriculture	27,936	13,384	48%
FDOT District 1	94	77	82%
Corkscrew Farms CDD	1,110	0	0%
City of Bonita Springs	10,814	3,316	31%
Lee County	3,498	2,767	79%
Totals	**43,452**	**19,544**	**45%**

EVERGLADES WEST COAST BMAP

CHAPTER 2: BASINWIDE SOURCES APPROACH

Bills and legislation updates.

- 2020 Clean Waterways Act, 2021 SB 64, 2023 HB 1379 and 2024 HB 1557.

Management actions by source.

- Agriculture (BMPs and agricultural cooperative regional elements).
- Stormwater.
- Sports turfgrass.
- Wastewater — OSTDS, WWTFs and biosolids.

Source: DEP Staff Photo – Estero Bay Aquatic Preserve

EVERGLADES WEST COAST BMAP
CHAPTER 2: AGRICULTURE

Dairy Operations with CAFO Permits, Chapter 62-670 F.A.C.

- Waste storage ponds must be lined and demonstrate no leaking.
- Sampling for TN and TP or land-applied effluent/wastewater must be included in the monitoring plan.

Livestock Operations Without CAFO Permits

- Section 403.067, F.S., requires livestock operations not large enough to require an NPDES CAFO permit must enroll in and implement the applicable DACS BMP program **OR**
- Conduct a monitoring program approved by DEP or the water management district.

Aquaculture

- Chapter 597, F.S., required DACS to create a program that requires those who sell aquatic species to annually acquire an Aquaculture Certificate of Registration and implement Chapter 5L-3, F.A.C., Aquaculture BMPs. Permit holders must be certified every year.

Silviculture

- The Florida Forest Service implements Chapter 5I-6, F.A.C. and encourages both private and public forest landowners across the state to comply with BMPs and the rule.

EVERGLADES WEST COAST BMAP
CHAPTER 2: AGRICULTURE

Agricultural Cooperative Regional Elements (ACE)

- Section 403.067, F.S., requires DACS, DEP and agricultural producers to work together to establish an ACE.
- DACS is responsible for providing DEP a list of projects which, in combination with BMPs, state-sponsored regional projects and other management strategies will achieve the needed pollutant load reductions established for agricultural nonpoint sources.
- DACS is assigned the lead role on project solicitation, development, selection and implementation. However, they will work closely with all the key stakeholders, including DEP as a partner agency, to define and identify regional projects that will be included in the BMAP.
- DACS and DEP will work together to track progress on agricultural water quality projects under the ACE framework through the development of performance metrics and evaluation of water quality monitoring data in the basin.
- DACS will report on projects annually through the DEP STAR process and during BMAP update and/or development.
- Projects and other management strategies implemented through the ACE will be evaluated cooperatively by partner agencies using the predetermined performance metrics.

EVERGLADES WEST COAST BMAP
CHAPTER 2: STORMWATER FACILITIES

Stormwater

- The NPDES Stormwater Program will, within five years of BMAP adoption, evaluate any entity located in the BMAP area that serves a minimum resident population of at least 1,000 individuals that is not currently covered by an MS4 permit and designate eligible entities as regulated MS4s, in accordance with Chapter 62-624, F.A.C.
- Chapter 62-330 F.A.C. (2024).
  - Updated Florida's stormwater rule for design criteria and to strengthen the operation and maintenance requirements.
  - Applicants must demonstrate a level of treatment sufficient to accomplish the greater of the following nutrient load reduction criteria through calculations or modeling that the future stormwater management systems would provide additional treatment to meet new Environmental Resource Permits stormwater treatment performance standards of 80% reduction for TP and 55% reduction for TN or post-development condition average annual loading of nutrients does not exceed the predevelopment condition nutrient loading, along with additional requirements that would apply where a project discharges to Outstanding Florida Waters or impaired waters.

EVERGLADES WEST COAST BMAP

CHAPTER 2: SPORTING FACILITIES

Sports Turfgrass and Golf Courses

- Sporting facilities are required to follow the 2025 Sports Turf BMP Manual.
- Superintendents of all publicly owned golf courses within the BMAP must obtain a certification for golf course BMPs under section 403.9339, F.S. and all golf courses must implement the BMPs described in the 2021 DEP golf course BMP manual.
- All golf courses located within a BMAP are required to submit a Nutrient Management Plan (NMP).

EVERGLADES WEST COAST BMAP

CHAPTER 2: WWTFS AND OSTDS

Recent legislative updates have expanded the requirements for addressing wastewater sources within BMAPs.

Clean Waterways Act SB 712 (2020)

- Requires local governments within a nutrient BMAP to develop wastewater treatment plans and/or OSTDS remediation plans to be incorporated into BMAP updates.

Reclaimed Water SB 64 (2021)

- Subsection 403.064(16), F.S., requires domestic wastewater utilities that dispose of effluent, reclaimed water or reuse water by surface water discharge to submit for DEP review and approval, a plan for eliminating non-beneficial surface water discharge by Jan. 1, 2032.
  - A utility must fully implement the approved plan by Jan. 1, 2032.
- If a plan was not timely submitted or approved by DEP, the utility's domestic WWTFs may not dispose of effluent, reclaimed water or reuse water by surface water discharge after Jan. 1, 2028.

EVERGLADES WEST COAST BMAP

CHAPTER 2: WWTFS AND OSTDS

Recent legislative updates have expanded the requirements for addressing wastewater sources within BMAPs.

Environmental Protection HB 1379 (2023)

- Requires facilities discharging to a waterbody impaired for nutrients or subject to a BMAP to upgrade to AWT within 10 years.
- Requires applicants for new septic systems serving lots of one acre or less within BMAPs to connect to central sewer if available. If unavailable, requires applicants to install an enhanced nutrient-reducing system or other wastewater system that achieves a nitrogen reduction of 65%.

Environmental Protection HB 1557 (2024)

- Requires advanced treatment of reclaimed water within BMAPs (403.086, F.S.).
- DEP has determined that the use of reclaimed water is causing or contributing to the nutrient impairments being addressed in this BMAP area.
- The facilities listed in the BMAP — Appendix D have 10 years from BMAP adoption to meet the applicable AWT standards.

EVERGLADES WEST COAST BMAP

CHAPTER 2: WWTFS

The nitrogen and phosphorus effluent limits will be applied as an annual average, taken at end of pipe before any land disposal (or other authorized compliance point), to all new and existing WWTFs with a DEP-permitted discharge or disposal area within this BMAP.

Nitrogen effluent limits for wastewater facilities

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix D (mg/L)	WWTFs Not Listed in Appendix D — Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix D — All Other Disposal Methods, Including Reuse (mg/L)
≥ 0.5	3	3	3	10
< 0.5, ≥ 0.1	3	3	6	10
< 0.1	3	NA	10	10

Phosphorus effluent limits for wastewater facilities

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix D (mg/L)	WWTFs Not Listed in Appendix D — Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix D — All Other Disposal Methods, Including Reuse (mg/L)
≥ 0.5	1	1	1	6
< 0.5, ≥ 0.1	1	1	3	6
< 0.1	1	NA	6	6

mgd = million gallons per day. mg/L = milligrams per liter.
NA = not applicable

EVERGLADES WEST COAST BMAP

CHAPTER 2: WWTFS

Biosolids

- To provide assurance that nitrogen losses to surface water and groundwater are minimized from the permitted application of biosolids and septage in the BMAP, requirements in accordance with Chapter 62-640, F.A.C., apply to newly-permitted application sites and existing application sites upon permit renewal.

Source: SJRWMD

EVERGLADES WEST COAST BMAP

CHAPTER 2: FUTURE GROWTH

Assessed additional loading to the basin by 2040 under different growth management scenarios.

- 2040 population “additional people” based on Bureau of Business and Economic Research medium growth projections per county.
- Growth distributed to jurisdictional boundaries based on available land area.
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- Ran three management scenarios to look at loading by entity, source and overall basin.

EVERGLADES WEST COAST BMAP

CHAPTER 2: FUTURE GROWTH

Scenario 1

By 2040:

- **90%** or more of **new population** is connected to central sewer.
- All wastewater treating to **3 mg/L TN** and **1 mg/L TP.**
- Remainder of new population has **enhanced OSTDS.**
- **2% of undeveloped land** converted to low density development.

Scenario 2

By 2040:

- **New population** is connected to central sewer at **same rate as today.**
- All wastewater treating to **3 mg/L TN** and **1 mg/L TP.**
- Remainder of new population has **enhanced OSTDS.**
- **10% of undeveloped land** converted to low density development.

Scenario 3

By 2040:

- **New population** is connected to central sewer at **same rate as today**.
- All wastewater treating to **6 mg/L TN** and **3 mg/L TP.**
- Remainder of new population has **conventional OSTDS.**
- **17% of undeveloped land** converted to low density development.

EVERGLADES WEST COAST BMAP

CHAPTER 2: FUTURE GROWTH

Entity	2040 People	Scenario 1 TN (lbs/yr)	Scenario 2 TN (lbs/yr)	Scenario 3 TN (lbs/yr)
Lee County	11,453	6,451	12,402	24,769
Bonita Springs	4,175	2,254	2,288	4,564

2040 Loading — Basin Totals

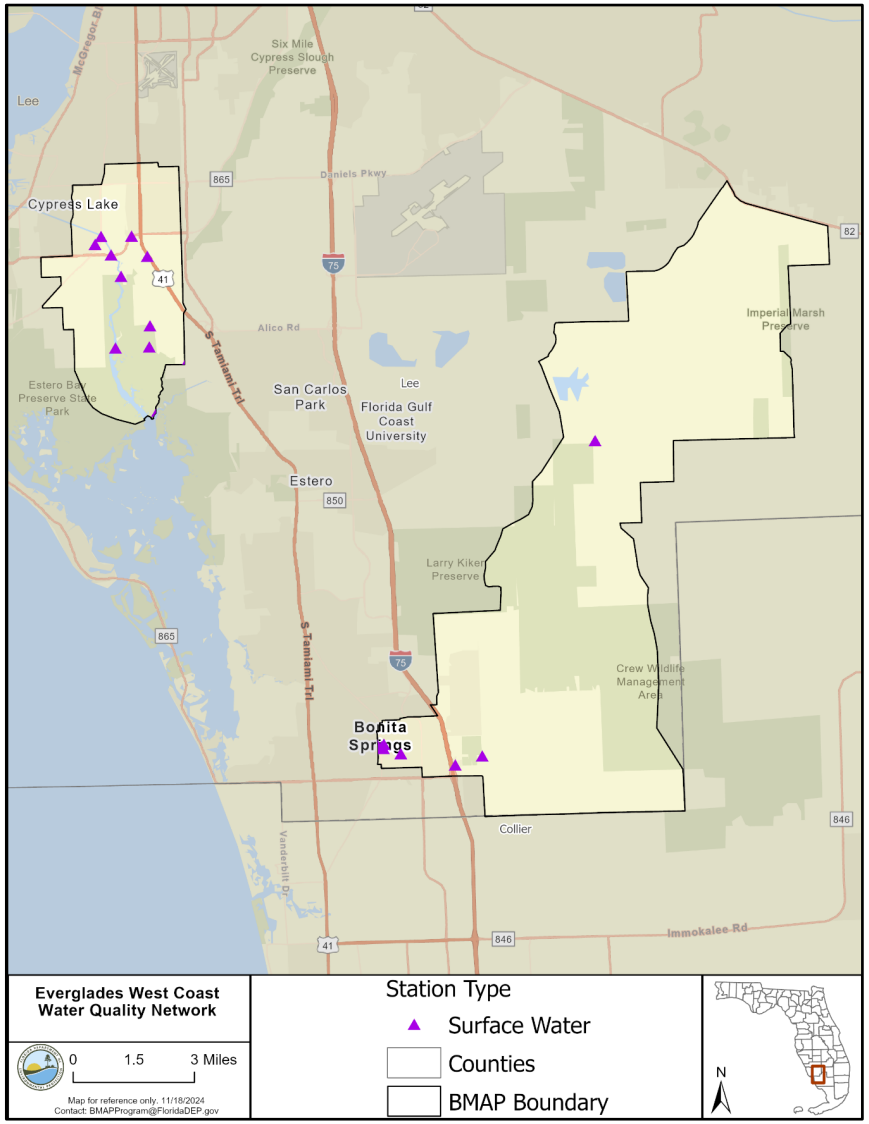
Scenario 1 Total	Scenario 2 Total	Scenario 3 Total
8,705	**14,690**	**29,333**

In every scenario, additional loading is expected in the basin by 2040 due to increasing populations. However, entities should proactively be working to both remediate existing loading AND plan to mitigate loading from future growth.

EVERGLADES WEST COAST BMAP

CHAPTER 3: MONITORING STRATEGY

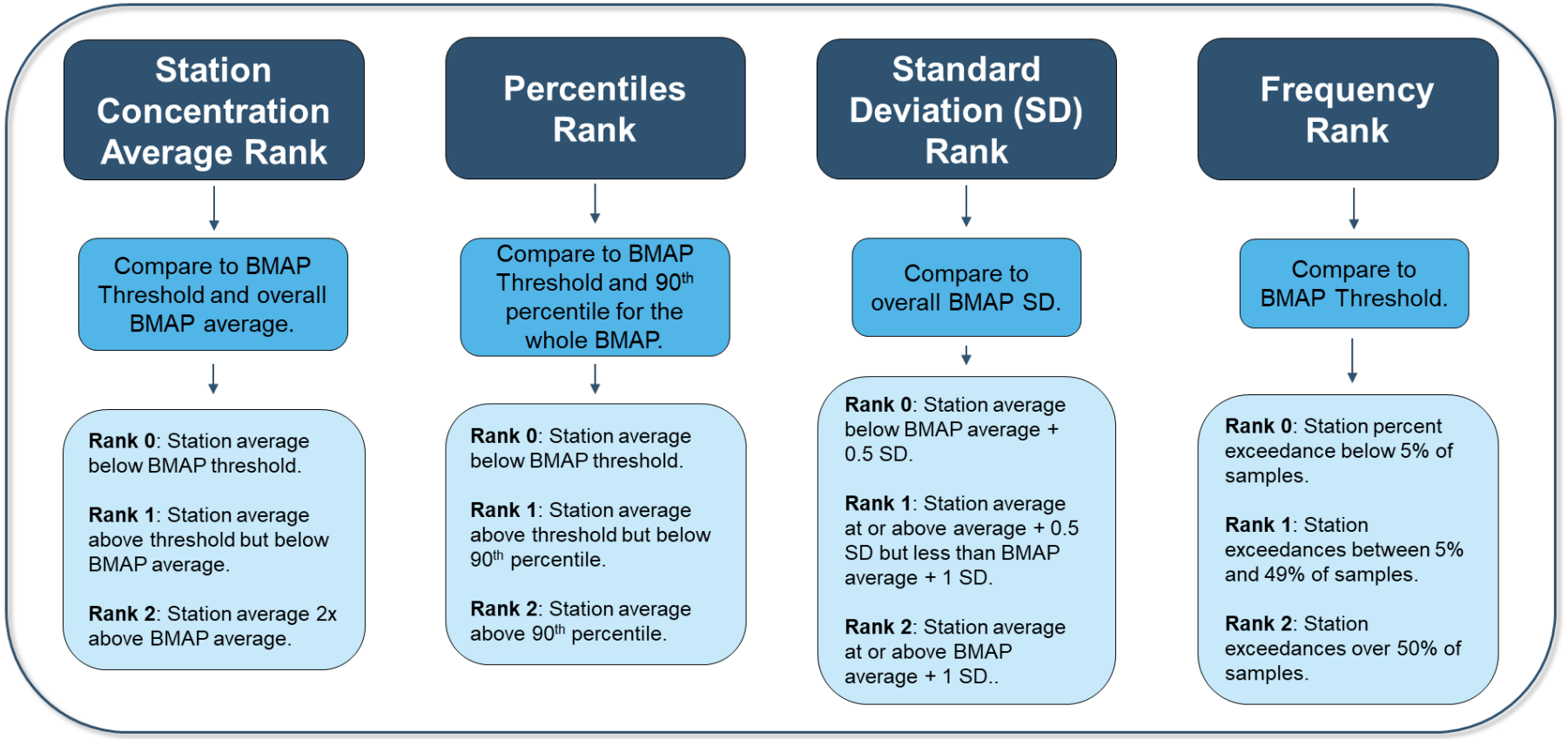
- Review of monitoring network.
- Hot spot analysis.
  - Tool to better prioritize and focus resources to most efficiently achieve restoration.
  - Not intended to measure progress towards restoration or compliance



EVERGLADES WEST COAST BMAP

CHAPTER 3: HOT SPOT ANALYSIS

- Uses measured data collected throughout the watershed to evaluate TN concentrations at monitoring stations.
- This process is not intended to be a management strategy under Chapter 403.067, F.S.
- The benchmarks are not intended to measure progress towards restoration; they will only be used to prioritize resources.

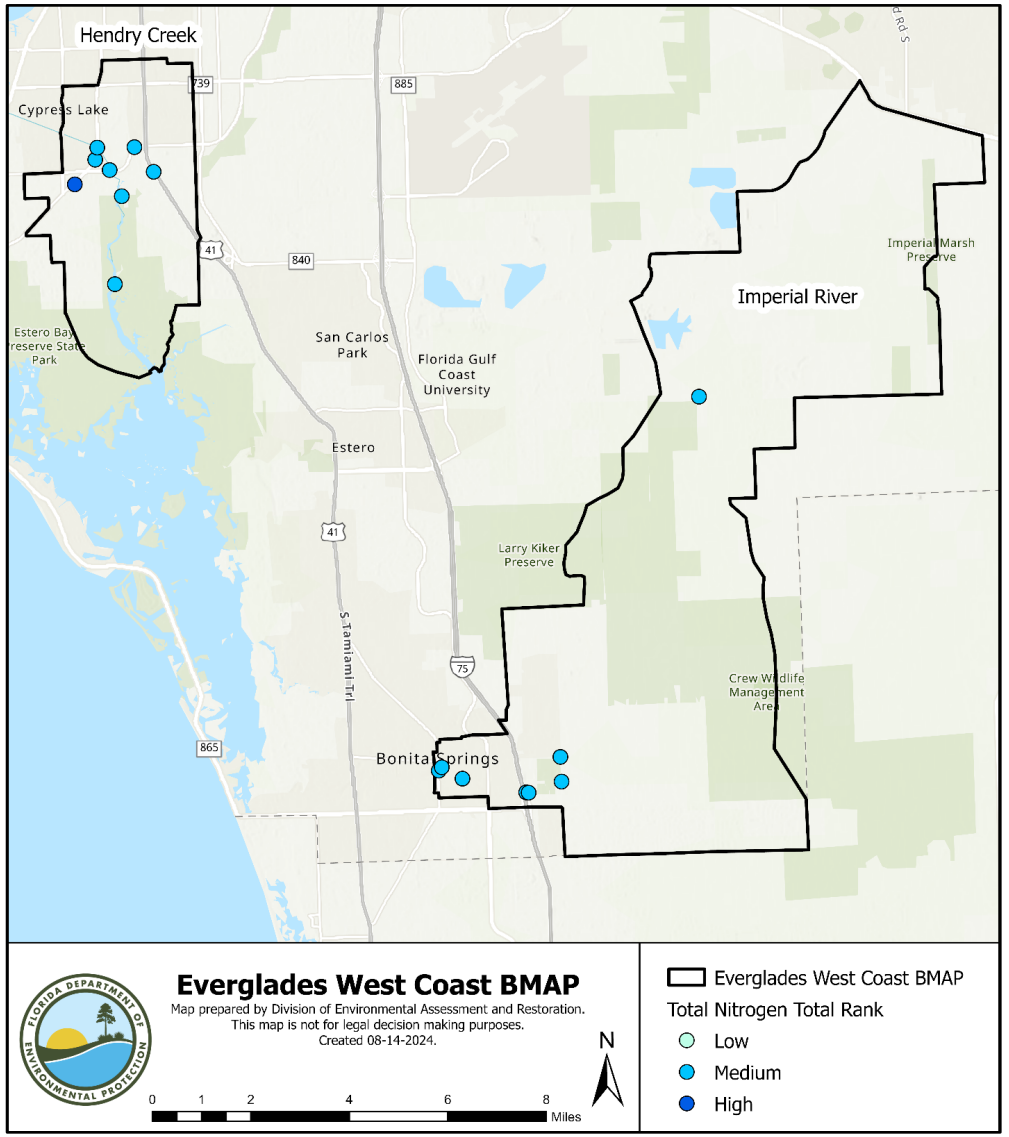


EVERGLADES WEST COAST BMAP

CHAPTER 3: HOT SPOT ANALYSIS

TN Hotspot Results

- Analysis will be run as needed and presented at annual meetings.



EVERGLADES WEST COAST BMAP

CHAPTER 4: COMMITMENT TO PLAN IMPLEMENTATION

- Review of process for BMAP adoption, tracking reductions and adaptive management.

Source: DEP

EVERGLADES WEST COAST BMAP

APPENDICES

- **Important links**
- **Project tables**
  - Projects submitted by responsible entities through the BMAP portal through Oct. 2024.
  - Includes projects from the 2020 Clean Waterways Act WWTF and OSTDS plans submitted by local governments Aug. 2024.
- **Additional Management Strategies**
  - Examples of project efforts entities can identify to meet their milestone reduction requirements.
- **Wastewater Facilities**
  - List of facilities with reclaimed water that are causing or contributing to nutrient impairments.
- **Golf Course NMPs**
- **Agricultural Enrollment and Reductions**
  - provided by DACS.

UPCOMING SCHEDULE

November 2024, Technical BMAP update public meeting.

March 2025, Draft BMAP document available for review.

April 2025, Draft BMAP update public meetings.

April 2025, Draft BMAP update comment period.

July 1, 2025, Statutory deadline for updated nutrient BMAPs.

NEXT STEPS

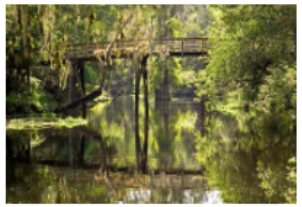
BMAP update document draft review:

- Draft document sent out via GovDelivery **April 2, 2025**.
- Stakeholder review comments due **April 30, 2025**.

Submit comments to:
Evelyn.Becerra@FloridaDEP.gov

RESOURCES
BMAP WEBSITE AND STORYMAPS

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

Nutrient BMAPs	Springs BMAPs	Fecal Bacteria Impaired BMAPs
		
Nutrient BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to achieve pollutant reductions established by a total maximum daily load	Springs BMAPs identify the sources of nutrient pollution, list the specific projects and programs necessary to reduce nutrient pollution, and establish priority focus areas where statutory prohibitions on certain activities apply (such as installation of new conventional septic systems).	Bacteria basin management action plans (BMAPs) include management strategies or projects, to be implemented by local stakeholders, that aim to eliminate and prevent the release of waste, containing pathogens, to natural waterbodies.

THANK YOU

Evelyn Becerra
Everglades West Coast BMAP Coordinator

Contact Information:
850-245-8547
Evelyn.Becerra@FloridaDEP.gov

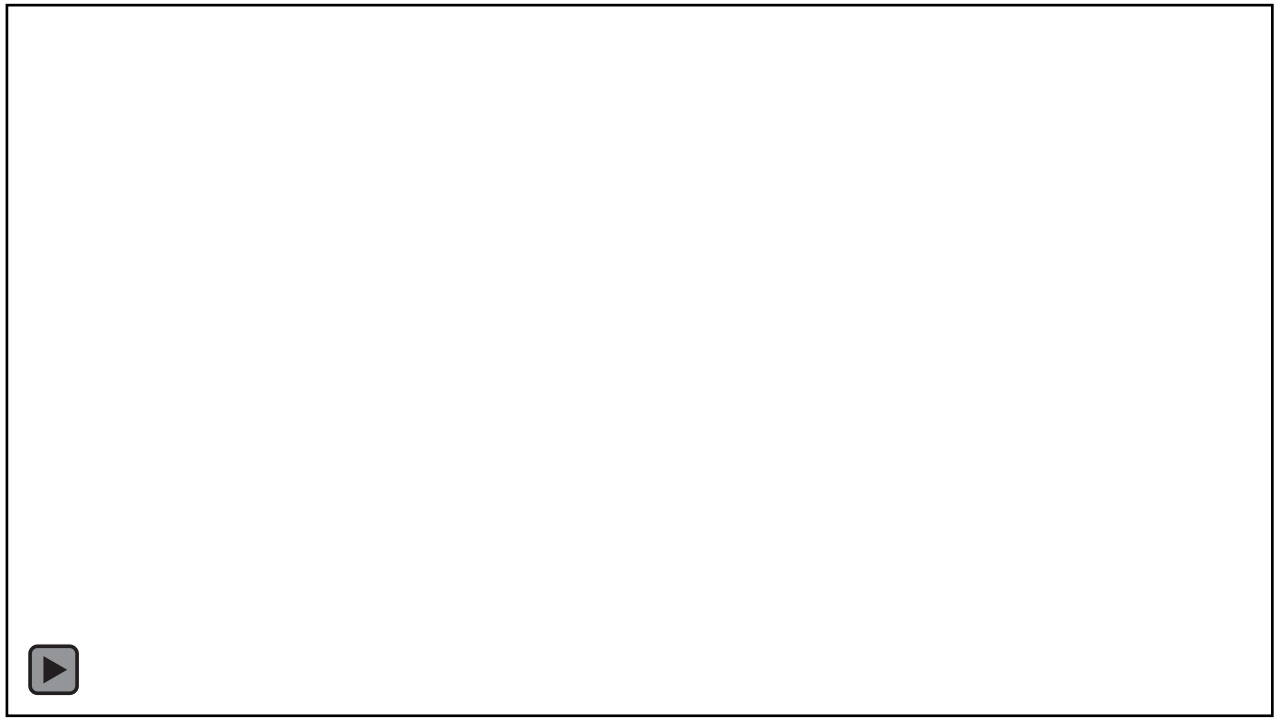
BMAP MEETING
PUBLIC QUESTIONS PERIOD

Verbal Questions

- We ask that questions and comments be limited to **two minutes** so that we may hear from everyone.

Written Comments

- Submit written comments concerning today's meeting to: Evelyn.Becerra@FloridaDEP.gov or Anthony.Tomalewski@floridaDEP.gov.



Caloosahatchee River and Estuary and Everglades West Coast
Basin Management Action Plans (BMAPs) Update Meeting
Webinar Summary
Tuesday, April 8, 2025
10:00 am – 11:13 am

Participants

Santiago Acevedo, SFWMD
Charles Avery, Citizen
Christian Avila, SFWMD
Bill Baker, MacVicar Consulting
Lisa Bally, ATM
Terrie Bates, Citizen
Evelyn Becerra, DEP
Karen Bliss, Charlotte County
Patricia Burke, SFWMD
Dan Carney, Citizen
Carolin Ciarlariello, DEP
Edward Clarke, Citizen
June Hunter-Clarke, Citizen
Brad Cornell, Audubon
David Crain, Citizen
Rebecca Cray, DEP
Susan Dahod, Citizen
Sara Davis, DEP
Diane DiPascale, Collier County
Jessica Douglas, DEP
Robert Dye, Citizen
Kate English, Pavese Law Firm
Phil Flood, SFWMD
Stacie Flood, SFWMD
Jake Fojtik, FFBF
Marcy Frick, Tetra Tech
Nick Gagliano, Clear Stream Systems
Stan Ganthier, DEP
Christina Gauthier, SFWMD
Melissa Gindling, CDD Management
Roxanne Groover, FOWA
Patricia Grunwald, Tetra Tech
Noah Handley, Lykes
Sam Hankinson, DEP
Maddy Hart, FDACS
Moira Homann, DEP
Laila Hudda, EPA
Nenad Iricanin, SFWMD
Megan Jacoby, SFWMD
Craig Johnson, Polk County
Wes Kayne, Barraco & Associates
Chandler Keenan, DEP
Steven Kelly, FDOT
Alison Kinch, Citizen
Lisa Kreiger, Lee County
Katie Laakkonen, Naples
Jacob Landfield, SFWMD
Laura Layman, SFWMD
Donald Lees, Citizen
Andrew Luering, DEP
Celeste Lyon, RES
Jonathan Madden, SFWMD
Justin Mahon, Fort Myers
Gary Maier, DEP
Michelle Meyerhoff, Royal Consulting
Jessica Mostyn, DEP
Valentin Nechita, SFWMD
Kevin O'Donnell, DEP
Stacey Ollis, SFWMD
Steffany Olson, SFWMD
Jose Otero, SFWMD
Roland Ottolini, Lee County
Sara Ouly, SFWMD
Steve Peene, Geosyntec
Luna Philips, Gunster
Jason Pim, Sharkinetics
Ray Pribble, Janicki Environmental
Irene Quincey, Pavese Law
Maxwell Redan, DEP
Mary Kay Robbins-Kralapp, Citizen
Rhonda Roff, Citizen
Maria Romero, Lee County
Zack Sampson, Tampa Bay Times
Warren Schirado, Citizen
David Schmitt, Bowman
Brent Setchell, FDOT
Eric Simpson, DEP
Tiffany Simpson, DEP

Jordan Skaggs, DEP
Philip Sliger, Gunster
Mailin Sotolongo- Lopez, DEP
Vanessa Stephen, US Sugar
Courtney Stevenson, Bonita Springs Utilities
Jennifer Thera, FDACS
Richard Thompson, City of Fort Myers
Todd Thurlow, Thurlow & Thurlow
Tony Tomalewski, DEP
Diana Turner, DEP
David Tyler, DEP
Youchao Wang, SFWMD
Chad Ward, Collier County
Rhonda Watkins, Collier County
Ken Weaver, DEP
Sarina Weiss, CHNEP
Tanya Welborn, DEP
Michael Weston, FDACS
Manual Zamorano, SFWMD

The 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-public-meetings.

Questions and Answers

Question: If the wastewater treatment facility (WWTF) does not have a direct outfall discharge pipe to the impaired waterway, but reclaimed water from the facility is demonstrated through monitoring to be entering the waterbody through groundwater baseflow, would the WWTP be required to meet advanced waste treatment (AWT)?
Answer: If facilities have reclaimed water within the BMAP boundary, it will be considered in the determination regarding the requirement to go to AWT.

Question: Does the hot spot analysis look at the total nitrogen (TN) and total phosphorus (TP) species as this may be informative to natural versus anthropogenic sources.
Answer: For the hot spot analysis, we are currently only evaluating TN and TP. We can consider looking at the species in areas where we are finding hot spots

Question: Are "trends of decreased loading" in the tidal basin are based on estimates, or actual water year data/monitoring?
Answer: The trend evaluations are based on monitoring data.

Question: The slide said impaired waterbodies, too. Are you saying the WWTF has to be in a BMAP?
Answer: There are a couple of different statutory requirements. 1) In areas with an adopted, nutrient-related BMAP prior to July 1, 2023, section 403.086, Florida Statutes (F.S.), requires any facility discharging to a waterbody to upgrade to AWT by January 1, 2033. Further, waterbodies determined not to be attaining nutrient or nutrient-related standards after July 1, 2023, or subject to a BMAP or reasonable assurance plan (RAP) after July 1, 2023, have 10 years to provide AWT after such determination or adoption. 2) In accordance with section 403.086. F.S., by July 1, 2034, any WWTF providing reclaimed water that will be used for commercial or residential irrigation or be otherwise land applied within a nutrient BMAP or RAP area is required to meet AWT standards for TN and TP, such that the reclaimed water product contains not more, on a permitted annual average basis, of 3 milligrams per liter (mg/L) of TN and 1 mg/L of TP if DEP has determined in an applicable BMAP or RAP that the use of reclaimed water as described in this subparagraph is causing or contributing to the nutrient impairment being addressed in such plan.

Comment: My concern is that most water body identification numbers (WBIDs) in south Florida will never get to BMAP status because they cannot be declared impaired for nutrients because we do not have any numeric nutrient criteria for the canals. So, if all AWT is tied to BMAPs, our estuaries, which are all nutrient impaired, will never have a chance for this critical BMP. We do not have WWTF that direct discharge to these estuaries, but we have multiple that have reuse water as a "disposal" method.

Question: Are publicly owned golf courses considered agriculture? Or where are they considered in the "responsible entity" breakdown?
Answer: The local government that owns the golf course is considered the responsible entity and the load from the golf course is considered stormwater.

Question: In the Everglades, is it all golf courses or just publicly owned ones?
Answer: Superintendents of all publicly owned golf courses within the BMAP must obtain a certification for golf course BMPs under section 403.9339, F.S. and all golf courses must implement the BMPs described in DEP's golf course manual, Best Management Practices (BMPs) for the Enhancement of Environmental Quality on Florida Golf Courses (DEP, 2021). All golf courses located within a BMAP are required to submit a nutrient management plan (NMP) to DEP that is designed to sustain even plant growth while minimizing excessive growth and nutrient losses.

Question: What is the current rate of sewer connection?
Answer: It varies by local government. For the future growth analysis, we used percentages of parcels based on the latest Florida Water Management Inventory (FLWMI) dataset. Updated information about sewer rates were outlined in each entity's remediation plans.

Question: When will the Everglades West Coast BMAP include other total maximum daily loads (TMDLs) within the Everglades West Coast boundary?
Answer: Currently, there are no other adopted TMDLs within the Everglades West Coast Basin boundary.

Comment: There are six TMDLs in Everglades West Coast in Collier County: Lake Trafford, Gordon River Extension, Cocohatchee River, Rock Creek, Naples Bay, and Haldeman Creek (lower).
Response: DEP will follow up with the TMDL program staff but these do not appear to be nutrient TMDLs, which is the focus of this BMAP.

Question: Other than estimated loads and reductions, have the nutrient loadings been ground-truthed by water, sediment and/or vegetative analyses?
Answer: The estimated reductions are based on a combination of monitoring, where that is available, as well as literature values for the different types of BMPs and using information from the model on starting loads. There is a combination of some model estimates as well as some monitoring data depending on where those are available.

Question: Who verifies that sporting facilities are actually following the sports turf BMPs?
Answer: This is a new requirement and DEP is still working out the details. They are in the process of developing the 2025 Sports Turf Manual so more information will be provided when that is completed.