North Indian River Lagoon Basin Management Action Plan (BMAP) Update Meeting

Council Chambers
Second Floor
555 South Washington Avenue
Titusville, FL 32796

May 8, 2025
9 AM EDT

Agenda

- North Indian River Lagoon Basin Management Action Plan (BMAP) Background.
- Overview of Draft North Indian River Lagoon Basin Management Action Plan (BMAP).
- Questions/Comments.

Please note the site for documents pertaining to the North Indian River Lagoon BMAP: BMAP Public Meetings | Florida Department of Environmental Protection
For more information on the North Indian River Lagoon BMAP, contact:
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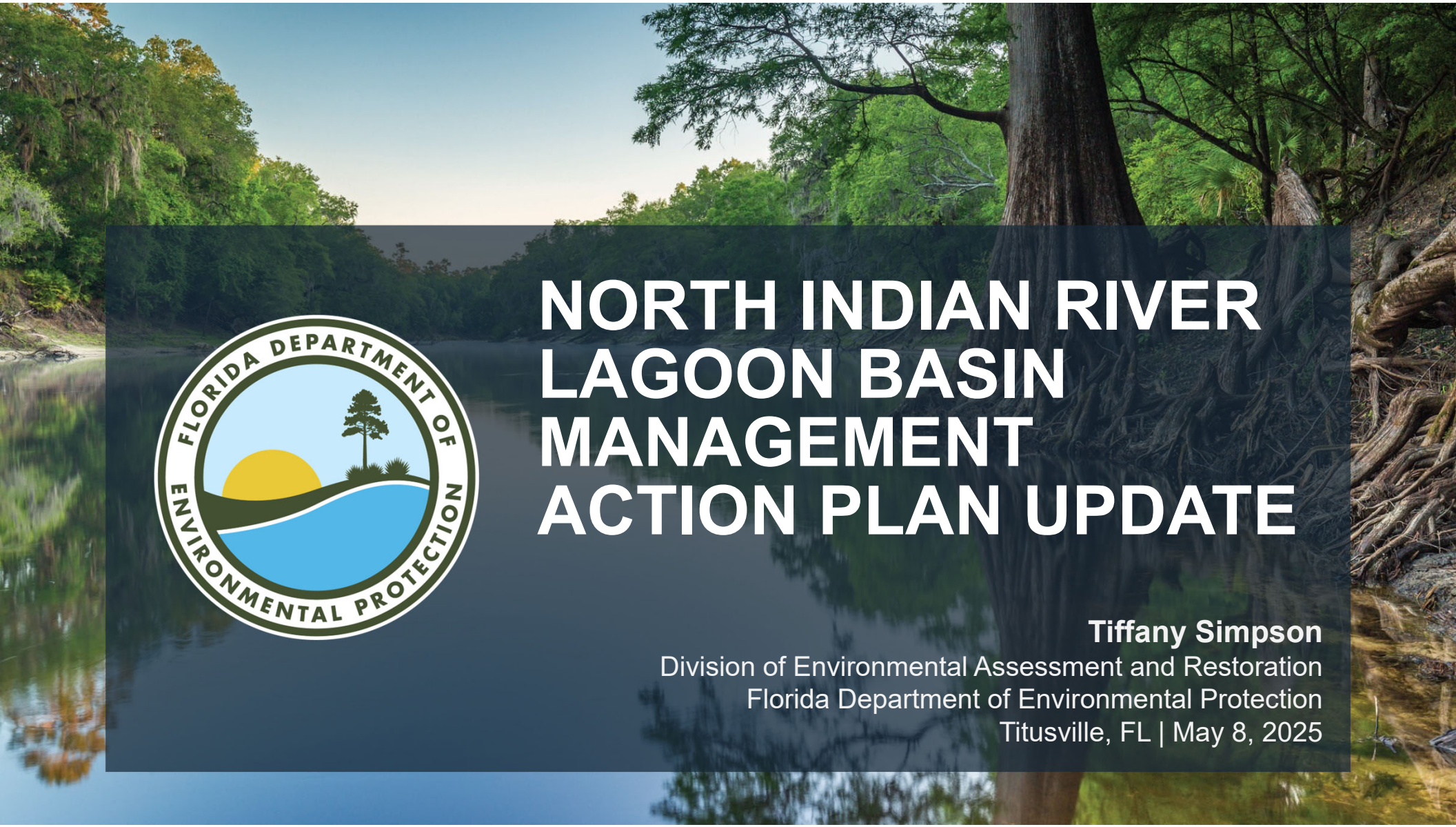
Tiffany.Simpson@FloridaDEP.gov

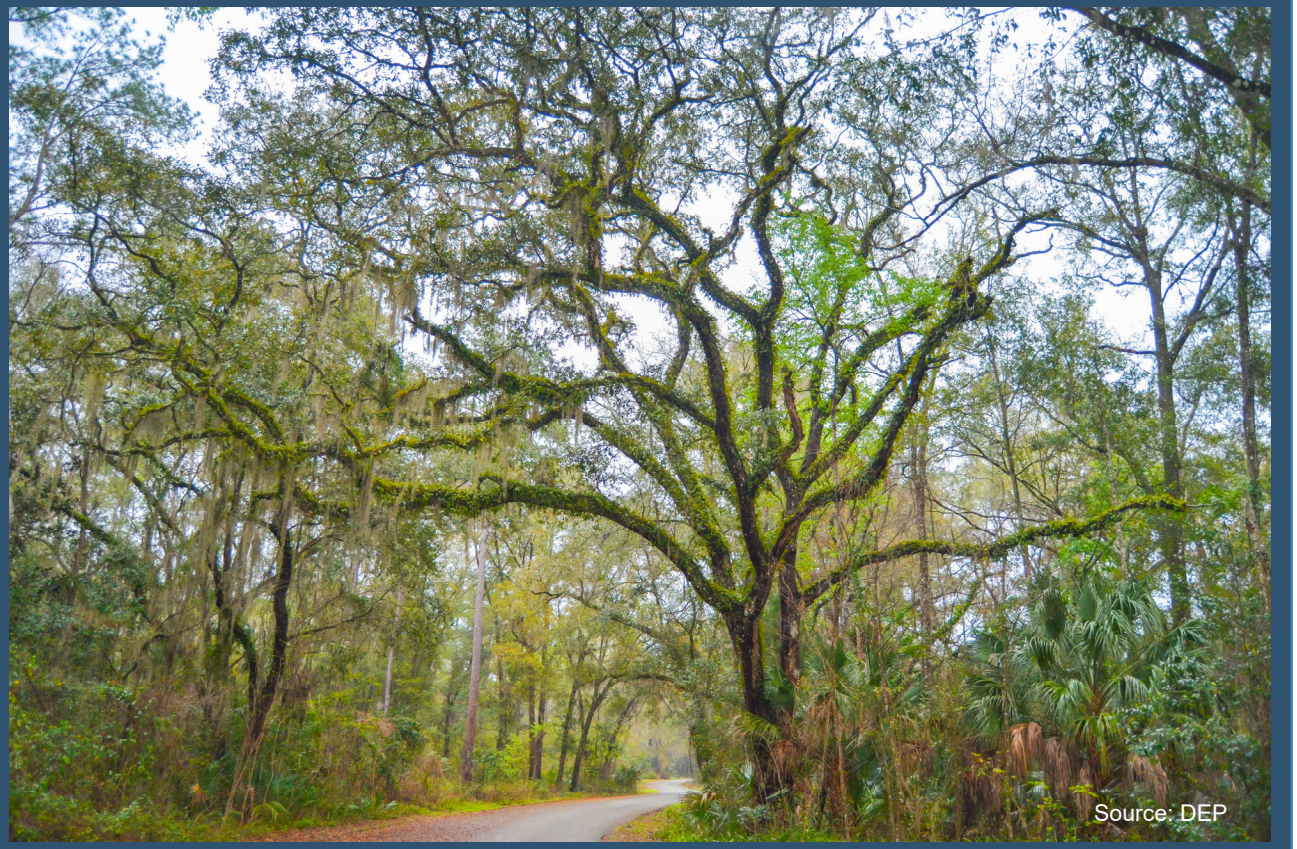


NORTH INDIAN RIVER LAGOON BASIN MANAGEMENT ACTION PLAN UPDATE

Tiffany Simpson
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
Titusville, FL | May 8, 2025

AGENDA

- Basin Management Action Plan (BMAP) background.
- 2025 BMAP update draft document walk-through.
- Next steps.



KEY BMAP COMPONENTS

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

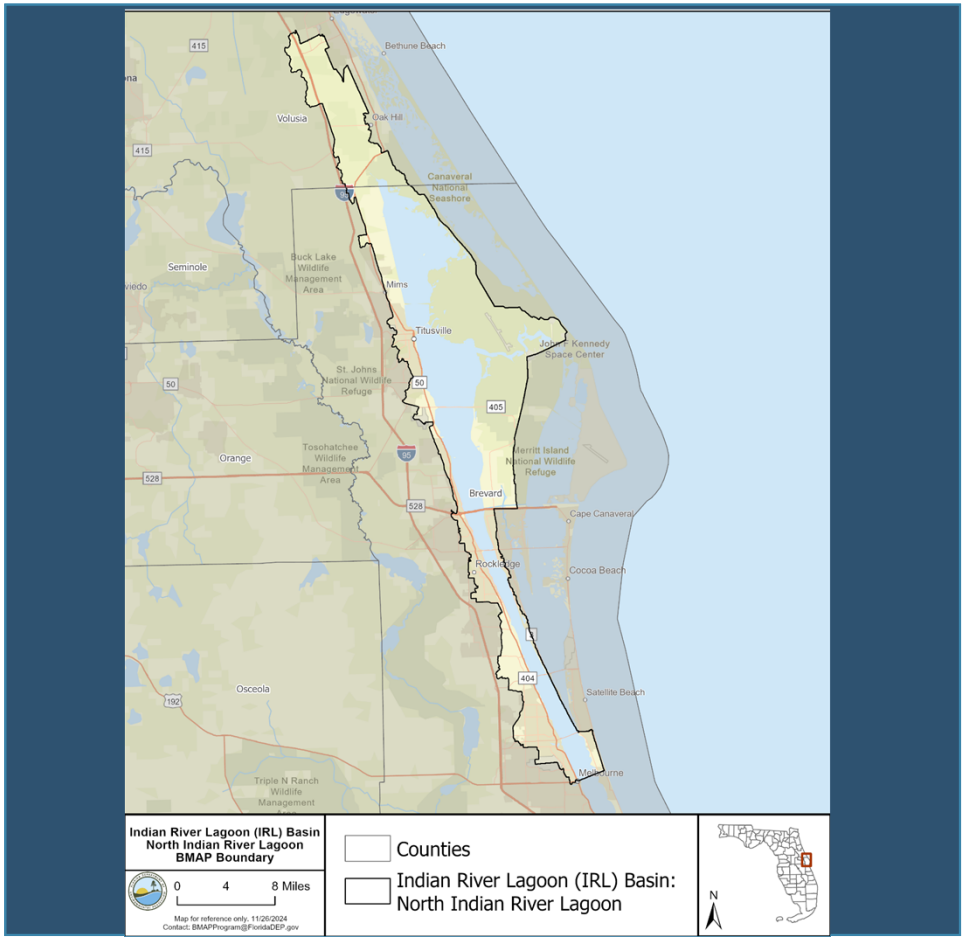
Projects to meet the TMDL:

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

Process to assess progress toward achieving the TMDL:

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

BACKGROUND
NORTH INDIAN RIVER LAGOON BMAP



North Indian River Lagoon (NIRL) TMDL:

- Adopted 2009 and 2013 (tributaries) for total phosphorus (TP) and total nitrogen (TN).

NIRL BMAP:

- Adopted 2013 to implement the Indian River Lagoon TMDLs.

BMAP BMAP:

- Adopted 2021.
- Provides information on changes since the 2013 BMAP was adopted.

- Total required reductions:
  - 252,495 lbs/yr TN.
  - 45,193 lbs/yr TP.

lbs/yr = pounds/year

BACKGROUND
NORTH INDIAN RIVER LAGOON BMAP STAKEHOLDERS

Type of Organization/Entity	Name
Responsible Entities	Agriculture Brevard County Volusia County City of Cocoa City of Edgewater City of Melbourne City of Oak Hill City of Rockledge City of Titusville Kennedy Space Center Town of Indialantic Town of Palm Shores
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection Florida Department of Transportation (DOT) District 5 Indian River Lagoon Estuary Program St. Johns River Water Management District

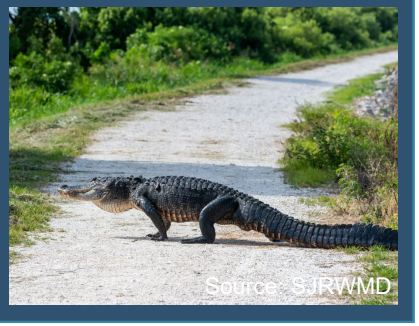
BMAP UPDATE COMPONENTS

ADOPT BY JULY 1, 2025

- Management strategies.
- Future growth update.
- Report update on seagrass compliance.
- 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.
  - Hotspot 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: SJRWMD


Source: DEP


Source: SJRWMD

DRAFT DOCUMENT

Section 1: Background Information.

Section 2: Seagrass and Water Quality Monitoring Plan.

Section 3: Modeling, Load Estimates and Restoration Approach.

Section 4: Compliance and Adaptive Management.

Section 5: References.

Appendices.

BMAP UPDATE DOCUMENT

Section 1: Context, Purpose and Scope of the Plan

- Review of the TMDLs, BMAP process and stakeholder involvement.
- Pollutant sources.
- Indian River Lagoon Protection Program.

Section 2: Seagrass and Water Quality Monitoring Plan.

- Water quality monitoring parameters, frequency and network.
- Water quality trends.
- Hot spot analysis.

BMAP UPDATE DOCUMENT

Section 3: Modeling, Load Estimates and Restoration Approach.

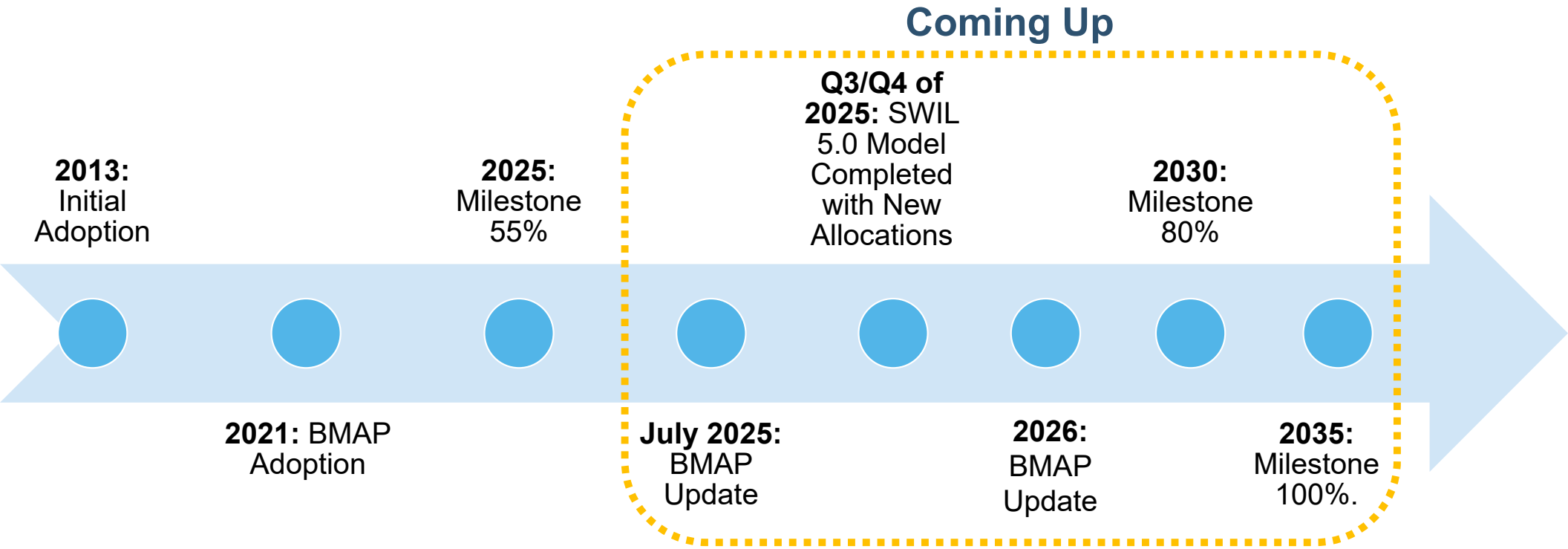
- Review of the 2013 BMAP and 2021 BMAP.
- Modeling from previous adopted documents will remain the same.
- Loading estimates and allocations of load reduction to the responsible stakeholders detailed in the 2021 BMAP will remain in effect with removal of low-priority status.
- Bills and legislation updates.
- Management actions by source.

Section 4: Compliance and Adaptive Management.

- Review of the TMDLs, BMAP process and stakeholder involvement.
- TMDL and BMAP compliance.
- Future growth management strategies.

BMAP TIMELINE AND MILESTONES

SECTION 1: BACKGROUND INFORMATION



IRL PROTECTION PROGRAM
SECTION 1: BACKGROUND INFORMATION

Indian River Lagoon Protection Program (IRLPP) was established in Section 373.469, Florida Statutes (F.S.) for the Banana River Lagoon (BRL), Central Indian River Lagoon (CIRL) and NIRL and includes:

- BMAP evaluations and updates every five years to evaluate whether reasonable progress in pollutant load reductions are being made.
- Requirement for DEP to coordinate with partners to incorporate BMAP/Reasonable Assurance Plan (RAP) strategies to meet the TMDL within the IRL watershed.

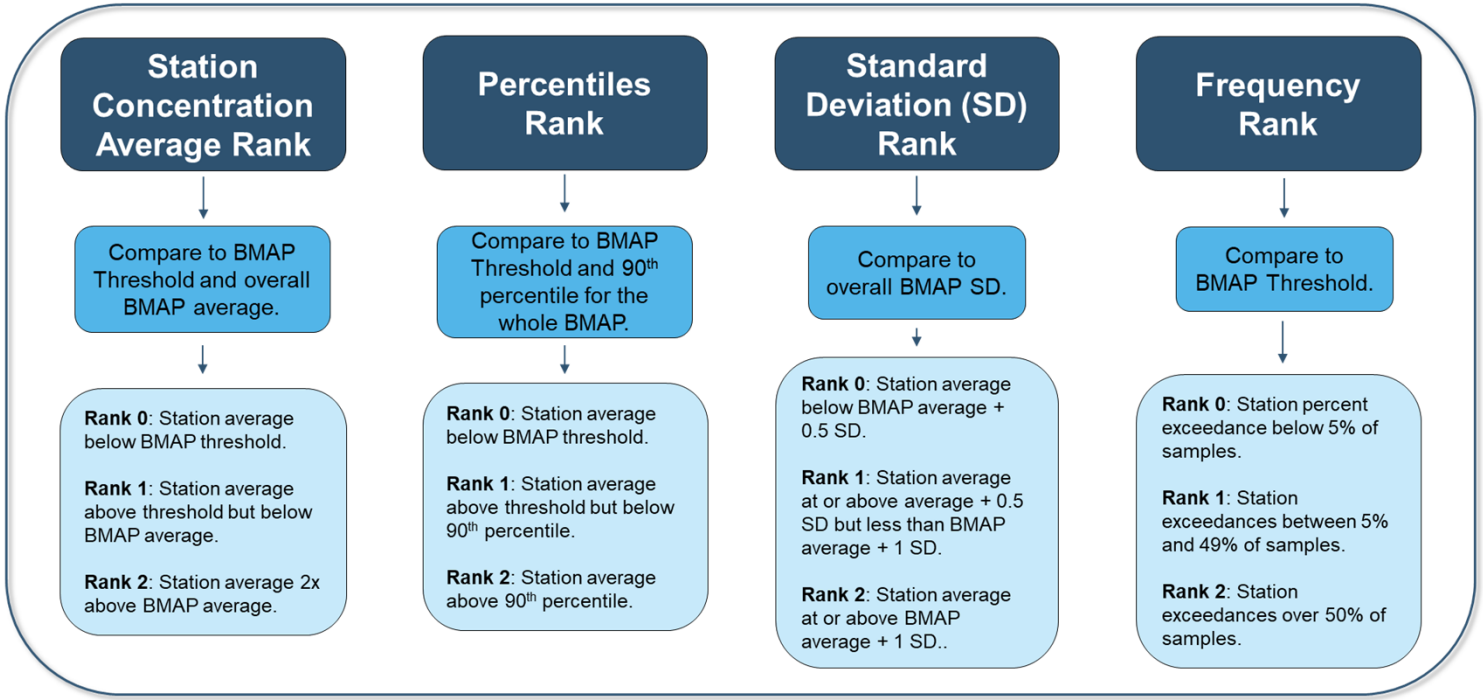
IRL PROTECTION PROGRAM
SECTION 1: BACKGROUND INFORMATION

- Requirement for DEP to work with partners to establish water quality monitoring network throughout the IRL and fund research to identify sources and prioritize projects for water quality and seagrass restoration.

- Beginning on Jan. 1, 2024, prohibits new conventional OSTDS where sewer is available. Where sewer is not available, enhanced-nutrient reducing systems are required. All existing (residential and commercial) conventional OSTDS must be connected to sewer or upgraded to enhanced nutrient-reducing OSTDS by July 1, 2030.

HOT SPOT ANALYSIS
SECTION 2: SEAGRASS AND WATER QUALITY MONITORING PLAN

- 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.



HOT SPOT ANALYSIS

SECTION 2: SEAGRASS AND WATER QUALITY MONITORING PLAN

TN:

TP:

WATER QUALITY TRENDS

SECTION 2: SEAGRASS AND WATER QUALITY MONITORING PLAN

Please note:

- Station status and trends assessments are conducted by St. Johns River Water Management District (SJRWMD) annually.
- Low, medium and high ranges are relative to each other, not the TMDL and do not necessarily indicate poor water quality.
- Methodology for this assessment is in the appendix.

Subbasin	Project Zone	Station	Total Nitrogen (ug/L as N)	Total Phosphorus (ug/L as P)
NIRL	NIRL-A	IRLBFRR	High-range, Stable	High-range, Stable
NIRL	NIRL-B	IRLEGU	Mid-range, Decreasing (<5%)	High-range, Stable
NIRL	NIRL-A	IRLI02	Mid-range, Stable	Low-range, Increasing (<5%)
NIRL	NIRL-A	IRLI06	Mid-range, Stable	Mid-range, Increasing (<5%)
NIRL	NIRL-A	IRLI07	Mid-range, Stable	Low-range, Increasing (<5%)

ug/L = micrograms per liter
N= Nitrogen
P= Phosphorus

WATER QUALITY TRENDS

SECTION 2: SEAGRASS AND WATER QUALITY MONITORING PLAN

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Subbasin	Project Zone	Station	Total Nitrogen (ug/L as N)	Total Phosphorus (ug/L as P)
NIRL	NIRL-A	IRLI09E	Mid-range, Stable	Low-range, Stable
NIRL	NIRL-B	IRLI10	Mid-range, Increasing (<5%)	Mid-range, Increasing (<5%)
NIRL	NIRL-B	IRLI13	High-range, Increasing (<5%)	Mid-range, Increasing (<5%)
NIRL	NIRL-B	IRLI15	High-range, Increasing (<5%)	Mid-range, Increasing (<5%)
NIRL	NIRL-B	IRLI16	Mid-range, Stable	Mid-range, Stable
NIRL	NIRL-B	IRLUPHC	Mid-range, Increasing (<5%)	Mid-range, Increasing (<5%)

WATER QUALITY TRENDS

SECTION 2: SEAGRASS AND WATER QUALITY MONITORING PLAN

Please note:

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- Methodology for this assessment is in the appendix.

Subbasin	Project Zone	Station	Total Nitrogen (ug/L as N)	Total Phosphorus (ug/L as P)
NIRL	NIRL-B	IRLI18	Mid-range, Increasing (<5%)	Mid-range, Increasing (<5%)
NIRL	NIRL-B	IRLI21	Mid-range, Stable	Mid-range, Increasing (<5%)
NIRL	NIRL-A	IRLIRCMTITUS01	Mid-range, Insufficient Data	Low-range, Insufficient Data
NIRL	NIRL-A	IRLTBC	Mid-range, Decreasing (<5%)	High-range, Stable
NIRL	NIRL-B	IRLUPEGWR	Mid-range, Stable	High-range, Increasing (<5%)

MILESTONES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

- 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.

MILESTONES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

- 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.

SPATIAL WATERSHED ITERATIVE LOADING (SWIL) 5.0 MODELING

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Modeling Updates Underway.

- Entire NIRL, CIRL and BRL BMAP areas.
- SWIL 5.0 more closely matches United States Geological Survey (USGS) measured data in comparison to SWIL 4.0.
- Updated land use, water quality data and rainfall with more recent information.
- We are still undergoing review of the load estimation tool (LET) and will have updated allocations coming soon.

BMAP UPDATE DOCUMENT

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Review of entity allocations calculated in 2021 BMAP.

Five Year Milestones

- Requirement under section 403.067, F.S. amended in 2023 HB 1379).

Source: SJRWMD

PROJECT PROGRESS

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Total required reductions and the estimated reductions achieved for completed and ongoing projects within project zone A

Entity	TN Full Required Reduction (lbs/yr)	TN Project Reduction Achieved* (lbs/yr)	% of TN Reduction Achieved	TP Full Required Reduction (lbs/yr)	TP Project Reduction Achieved* (lbs/yr)	% of TP Reduction Achieved
Brevard County	27,759	13,865	49.9%	4,809	3,355	69.8%
Edgewater	1,959	162	8.3%	297	22	7.4%
Titusville	37,334	47,297	126.7%	6,224	6,090	97.8%
Agriculture	20,550	353	1.7%	3,522	39	1.1%
DOT District 5	4,325	1,394	32.2%	631	342	54.2%
Kennedy Space Center	9,730	7,592	78%	1,422	1,084	76.2%
Volusia County	16,679	1,382	8.3%	2,724	199	7.3%
Oak Hill	269	0	0%	40	0	0%
Totals	**118,605**	**72,045**	**60.7%**	**19,669**	**11,131**	**56.6%**

lbs/yr = pounds/year
* Completed and ongoing projects

PROJECT PROGRESS

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Total required reductions and the estimated reductions achieved for completed and ongoing projects within project zone B

Entity	TN Full Required Reduction (lbs/yr)	TN Project Reduction Achieved* (lbs/yr)	% of TN Reduction Achieved	TP Full Required Reduction (lbs/yr)	TP Project Reduction Achieved* (lbs/yr)	% of TP Reduction Achieved
Brevard County	64,506	40,625	63.0%	12,667	8,913	70.4%
Cocoa	8,837	5,621	63.6%	1,726	1,234	71.5%
Melbourne	34,378	23,462	68.2%	6,292	4,474	71.1%
Rockledge	11,322	9,505	84.0%	2,135	1,552	72.7%
Titusville	2,619	865	33.0%	474	178	37.6%
Agriculture	4,714	247	5.2%	958	30	3.1%
DOT District 5	3,640	3,333	91.6%	641	691	107.8%
Kennedy Space Center	2,423	737	30.4%	353	129	36.5%
Indialantic	664	1,420	213.9%	131	211	161.1%
Palm Shores	787	91	11.6%	148	13	8.8%
Totals	**133,890**	**85,906**	**64.2%**	**25,525**	**17,425**	**68.3%**

lbs/yr = pounds/year * Completed and ongoing projects

MILESTONES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Entity	2030 80% Milestone Remaining Reductions for TN (lbs/yr)	2030 80% Milestone Remaining Reductions for TP (lbs/yr)	2035 100% Milestone Remaining Reductions for TN (lbs/yr)	2035 100% Milestone Remaining Reductions for TP (lbs/yr)
Brevard County	30,220	4,166	37,775	5,208
Edgewater	1,438	220	1,797	275
Titusville	1,403	344	1,754	430
Agriculture	19,731	3,529	24,664	4,411
DOT District 5	2,590	191	3,238	239
Kennedy Space Center	3,059	450	3,824	562
Volusia County	12,238	2,020	15,297	2,525

lbs/yr = pounds/year

MILESTONES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Entity	2030 80% Milestone Remaining Reductions for TN (lbs/yr)	2030 80% Milestone Remaining Reductions for TP (lbs/yr)	2035 100% Milestone Remaining Reductions for TN (lbs/yr)	2035 100% Milestone Remaining Reductions for TP (lbs/yr)
Oak Hill	215	32	269	40
Cocoa	2,573	394	3,216	492
Melbourne	8,733	1,454	10,916	1,818
Rockledge	1,454	466	1,817	583
Indialantic	0	0	0	0
Palm Shores	557	108	696	135
Totals	**84,210**	**13,374**	**105,263**	**16,718**

lbs/yr = pounds/year

BASINWIDE SOURCES APPROACH

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION 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 (Best Management Practices [BMPs] and agricultural cooperative regional elements).
  - Stormwater.
  - Sports turfgrass.
  - Wastewater — OSTDS, WWTFs and biosolids.

WASTEWATER

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

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.

WASTEWATER

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

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.
- Established the IRLPP
  - Beginning on January 1, 2024, unless previously permitted, prohibits new septic systems within the IRL BMAPs where connection to central sewer is available. If unavailable, requires applicants to install an enhanced nutrient-reducing system or other wastewater system that achieves a nitrogen reduction of 65%
  - All existing conventional OSTDS must be remediated by July 1, 2030.

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 — have 10 years from BMAP adoption to meet the applicable AWT standards.

AGRICULTURE

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

Dairy Operations with Concentrated 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 a NPDES CAFO permit to enroll in and implement the applicable DACS BMP Program **OR**
- Conduct a monitoring program approved by DEP or the applicable 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 requires both private and public forest landowners across the state to comply with BMPs and the rule.

AGRICULTURE

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

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.

STORMWATER AND SPORTING FACILITIES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

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 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.

STORMWATER AND SPORTING FACILITIES

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

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).

WASTEWATER

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

The nitrogen and phosphorus effluent limits will be applied as an annual average, taken at the 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 (mg/L)	WWTFs Not Listed in Appendix — Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix — All Other Disposal Methods, Including Reuse (mg/L)
≥ 0.5	3	3	3	10
< 0.5, ≥ 0.01	3	3	6	10
< 0.01	3	NA	10	10

Phosphorus effluent limits for wastewater facilities

Facility Capacity (mgd)	Surface Water Discharges (mg/L)	WWTFs Listed in Appendix (mg/L)	WWTFs Not Listed in Appendix — Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix — All Other Disposal Methods, Including Reuse (mg/L)
≥ 0.5	1	1	1	6
< 0.5, ≥ 0.01	1	1	3	6
< 0.01	1	NA	6	6

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

WASTEWATER

SECTION 3: MODELING, LOAD ESTIMATES AND RESTORATION APPROACH

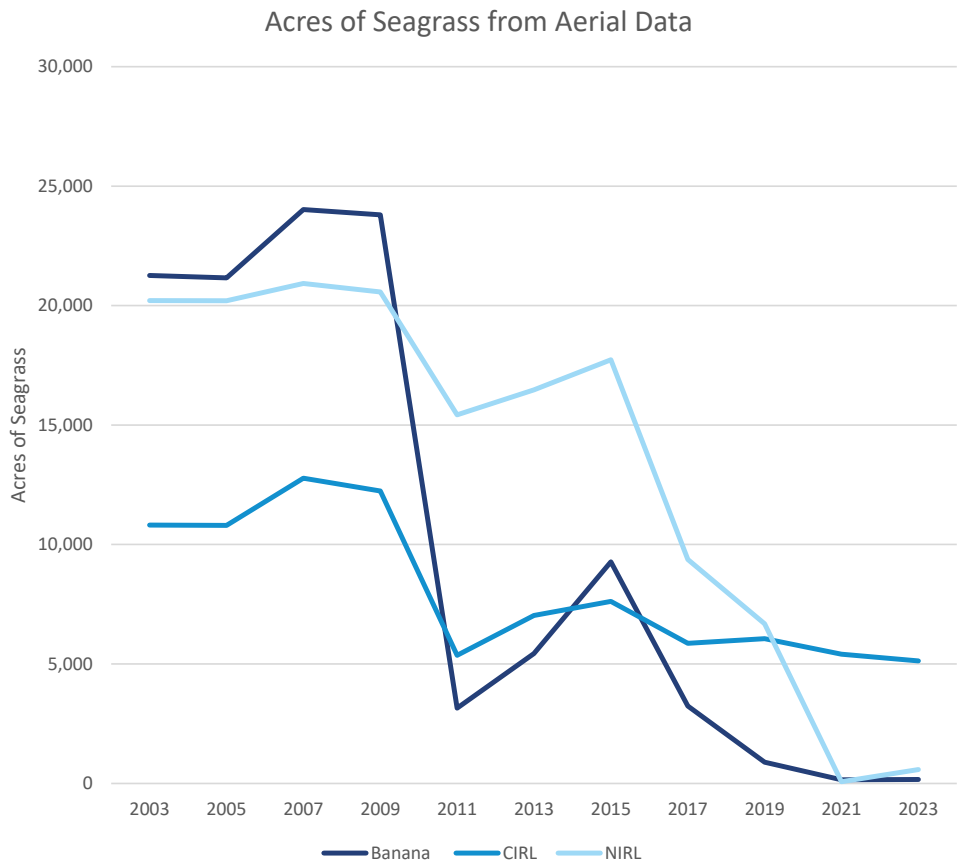
Biosolids

- 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.

SEAGRASS COMPLIANCE

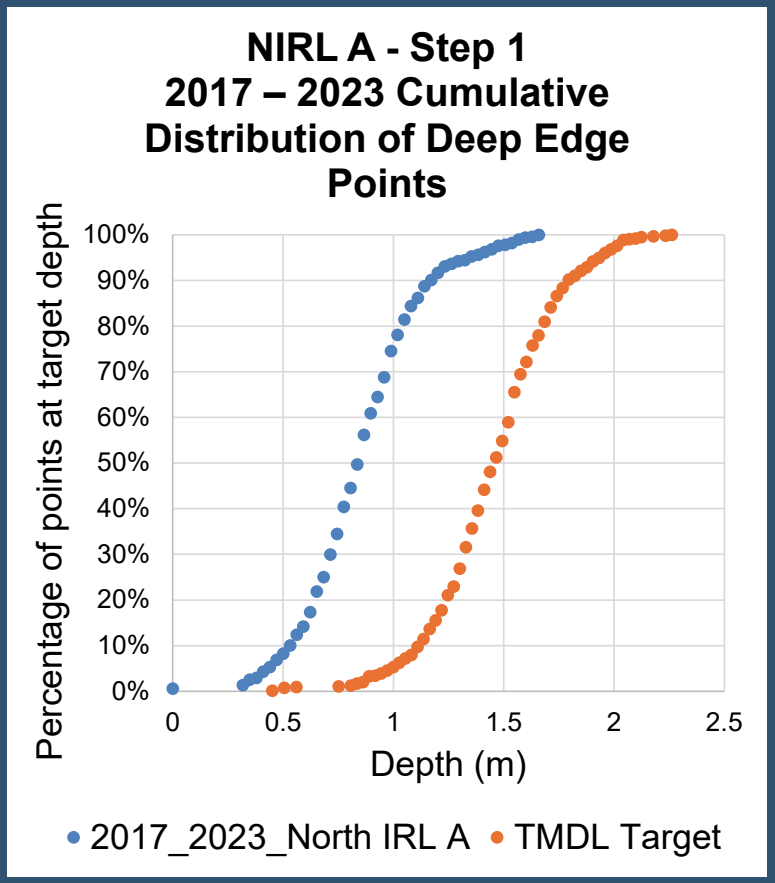
SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT

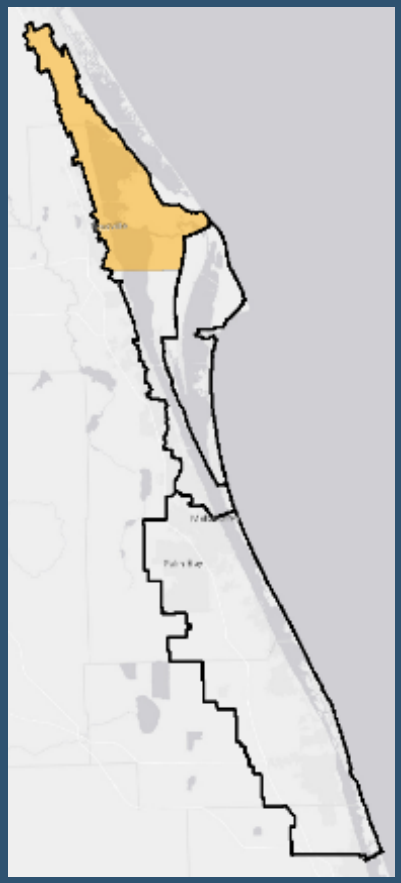
2-step compliance metrics evaluate depth of seagrasses. Overall seagrass coverage has been decreasing.

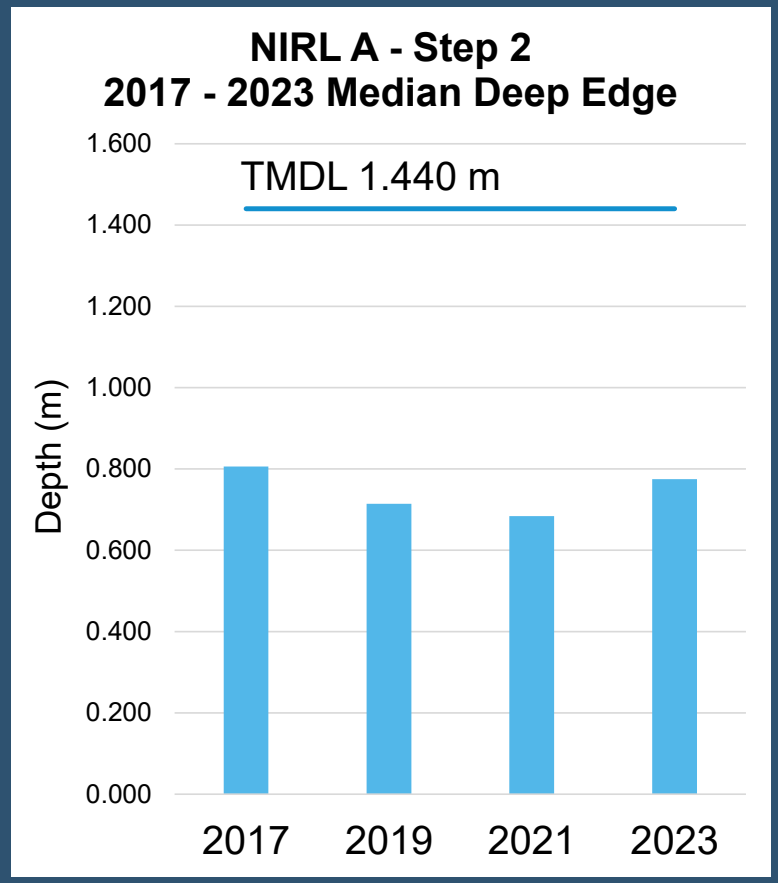


SEAGRASS COMPLIANCE

SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT

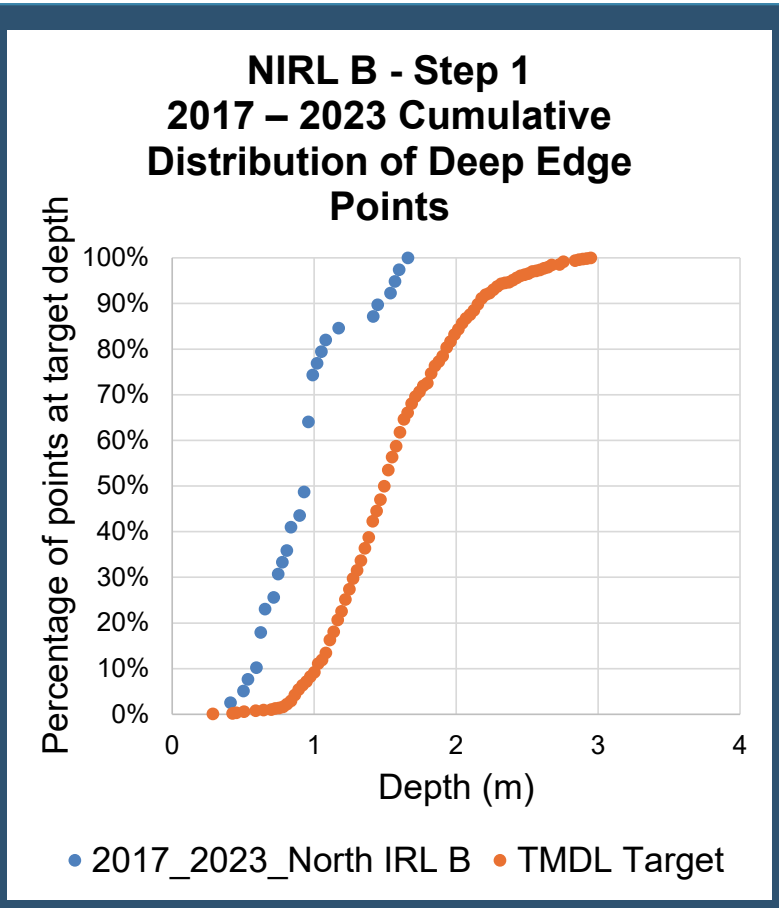


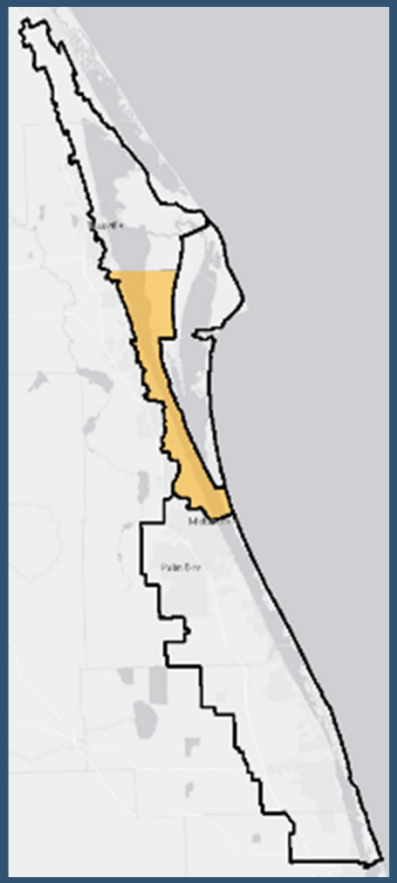


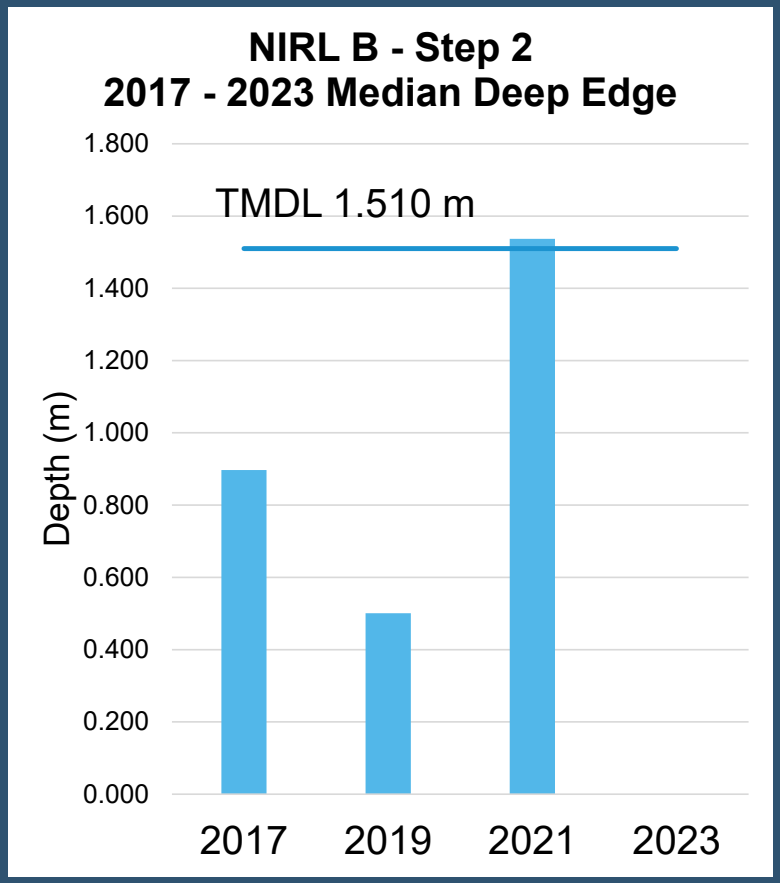


SEAGRASS COMPLIANCE

SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT







FUTURE GROWTH

SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT

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.
- Determined percentage of population sewered based on Florida Water Management Inventory 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 and runoff coefficients.
- Ran three management scenarios to look at loading by entity, source and overall basin.

FUTURE GROWTH

SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT

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.

FUTURE GROWTH

SECTION 4: COMPLIANCE AND ADAPTIVE MANAGEMENT

Entity	2040 People	Scenario 1 TN (lbs/yr)	Scenario 2 TN (lbs/yr)	Scenario 3 TN (lbs/yr)
Brevard County	11,803	**6,661**	**8,022**	**15,989**
Cocoa	745	**421**	**445**	**887**
Indialantic	59	**34**	**37**	**73**
Melbourne	3,427	**1,657**	**1,700**	**3,384**
Palm Shores	122	**69**	**99**	**197**
Rockledge	1,019	**575**	**693**	**1,380**
Titusville	2,308	**1,109**	**1,138**	**2,266**
Volusia County	3,289	**1,860**	**4,620**	**9,218**
Edgewater	811	**459**	**1,140**	**2,274**
Oak Hill	55	**31**	**77**	**154**

2040 Loading — Basin Totals

Scenario 1 Total	Scenario 2 Total	Scenario 3 Total
12,876	**17,971**	**35,822**

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.

BMAP UPDATE DOCUMENT
APPENDICES

- **Important links.**
- **Allocation calculations.**
- **Updated project tables.**
  - Projects submitted by responsible entities through the BMAP portal through October 2024.
  - Includes projects from the 2020 Clean Waterways Act WWTF and OSTDS plans submitted by local governments August 2024.
- **Seagrass analysis methods.**
- **Updated agricultural enrollment and reductions (provided by DACS).**
- **Plan for additional management strategies.**
- **Nutrient management plan requirements.**
- **New wastewater facilities.**
  - List of facilities with reclaimed water that are causing or contributing to nutrient impairments.
- **Water Control Districts (WCDs) and other special districts.**
- **Methods for SJRWMD status and trends assessment.**

UPCOMING SCHEDULE

- April 2024, Technical BMAP update public meeting.
- April 2025, Draft BMAP document available for review.
- May 2025, Draft BMAP update public meeting.
- May 2025, Draft BMAP update comment period.
- July 1, 2025, Statutory deadline for updated nutrient BMAPs.

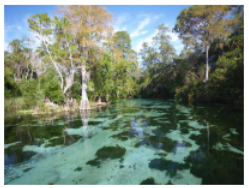
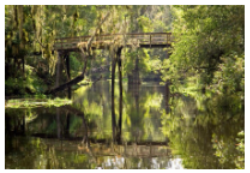
NEXT STEPS

BMAP update document draft review:

- Draft document sent out via GovDelivery April 30, 2025.
- Stakeholder review comments due **May 23, 2025**.

Submit comments to:
Tiffany.Simpson@FloridaDEP.gov

RESOURCES
BMAP WEBSITE AND STORYMAPS

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.

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

BMAP Public Meetings | Florida Department of Environmental Protection

BMAP MEETING
PUBLIC QUESTIONS PERIOD

Verbal Comments

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

Written Comments

- Submit written comments concerning today's meeting to: BMAPProgram@FloridaDEP.gov.

THANK YOU

Tiffany Simpson
Indian River Lagoon BMAP
Coordinator

Contact Information:
850-245-8560
Tiffany.Simpson@FloridaDEP.gov

Florida Department of Environmental Protection (DEP)
North Indian River Lagoon Basin Management Action Plan (BMAP)
Public Meeting
555 S Washington Ave, Titusville, Florida 32796
May 8, 2025
9:00 am – 10:31 am EDT

Attendees

Lisa Bally, Geosyntec
Dr. Peter Barile, MRC
Kyndall Baver, FFBF
Terri Breeden, Brevard County - SOIRL
Tiffany Busby, Wildwood Consulting
Caitlyn Butler, SJRWMD
Stacy Cecil, SJRWMD
Patricia Coffey, FDACS - OAWP
Kayleigh Douglass, Applied Ecology
Sara Driggers, Wildwood Consulting
Charlie Esr, Brevard County Utilities
Chris Fagarstrom, Mead and Hunt
Sarah Fayed, DEP
Lily Galleo, City of Titusville
Mike Gill, City of Cocoa
Jeff Greenburg, SWIRL; IRL Roundtable
Matt Heyden, Citizen
Moira Homann, DEP
Chandler Keenan, DEP
Lora Losi, Citizen
Celeste Lyon, RES for DOT District 5
Frank Mirabito, City of Cocoa
James Moir, Indian Riverkeeper
Timothy Parker, Freedom Boat Club
Mawees Reepe, League of Women Voters Space Coast
Sonora Reller, City of Titusville
Toni Shifalo, Titusville Tree Team
Stacey Simmons, FDACS - OAWP
Lorae Simpson, SJRWMD
Tiffany Simpson, DEP
Anita Stine, DEP
Jennifer Thera, FDACS
Diana Turner, DEP
Ken Weaver, DEP
Kelly Young, Volusia County Environmental Management

Overall

The draft BMAP document can be downloaded here: https://floridadep.gov/dear/water-quality-restoration/content/bmap-public-meetings. Comments on the draft BMAP document are due by May 23, 2025. Verbal comments at this meeting were welcome. Written comments submitted at the meeting were invited. Comments after the meeting should be sent to BMAPProgram@FloridaDEP.gov by May 23, 2025.

Questions and Answers

Question (Q): Is atmospheric deposition being tracked?

Answer (A): It is unclear the extent to which atmospheric deposition is currently being monitored directly in the Indian River Lagoon. However, program staff will reach out to the DEP - Division of Air for more details about monitoring in the region.

Q: Related to the sites being established now, will the new atmospheric deposition data be included in the Spatial Watershed Iterative Loading (SWIL) Model 5.0?

A: No, the data collection part of the modeling is already complete.

Q: Do you anticipate another watershed model update before the 2030 BMAP update?

A: The watershed model updates are not always conducted in the same cycle as the BMAP updates; the next model update is not scheduled yet.

Q: Are additional chemical pollutants included in the BMAP update? Why does DEP say "the BMAP"? Should there not be additional North Indian River Lagoon BMAPs that address other pollutants in addition to nutrient impairments?

A: There is one BMAP for this area that focuses on total nitrogen (TN) and total phosphorus (TP) reductions—nutrient reductions. The BMAP implements the nutrient total maximum daily loads (TMDLs) and is legally adopted to have a more detailed plan than the TMDLs to meet water quality standards. Other types of TMDLs are implemented through other mechanisms such as permits related to those pollutants.

Q: Does the TMDL get updated?

A: There are currently no plans to update the TMDLs, which set the targets; only the loading into the lagoon is being updated because the loading sources can change rapidly, where the targets generally do not change rapidly.

Q: Does DEP have plans to reduce the amount of freshwater runoff going into the lagoon?

A: This BMAP focuses on the reduction of nutrient loads, not freshwater flows. However, there have been efforts to help redirect freshwater runoff into the lagoon, which has provided some nutrient load reductions. So, flows and loads are related, but reducing freshwater flows are not the primary focus of the BMAP.

Q: Have you considered adding aerospace organizations to your list of responsible entities related to loads from rocket launches and wastewater facilities?

A: All domestic wastewater facilities are included as responsible entities in the BMAP. Additionally, the Kennedy Space Center is currently a responsible stormwater entity with reduction requirements in the BMAP. However, DEP may consider adding private aerospace entities for future BMAP updates.

Q: Has there been any consideration for mechanical collection of aquatic vegetation instead of chemical applications?

A: The Indian River Lagoon has a unique BMAP crediting policy for aquatic vegetation harvesting, which provides nutrient reduction credits in specific settings for the complete removal of non-native and nuisance aquatic vegetation in lieu of spraying and allowing the material to decay in the water. These credits are limited to the removal of vegetation that is not already required by permit, such as the maintenance required for stormwater detention ponds. Responsible entities can receive credits for aquatic vegetation harvesting in some types of conveyances to remove the vegetation instead of chemical applications, if they meet certain requirements which are described in detail in the DEP guidance document.

Q: Are golf course reductions reported by the local governments in STAR?
A: Local governments will report on publicly owned golf course-related reductions in STAR. Privately-owned golf courses will report their own reductions in STAR or another DEP approved reporting mechanism.

Q: Are sod/turf grass growers also required to submit reports like other agricultural commodities? What are the biosolids application requirements? Do they need to report both?
A: Yes, there is a best management practice (BMP) manual for sod/turf grass. Enrolled sod producers must follow their BMP guidelines. All agricultural operations that land apply biosolids must follow the state biosolid guidelines and their approved nutrient management plan (NMP). Producers must enroll in the applicable BMP program for the commodity they produce to get approval of their NMP.

Q: For the golf course NMP record requirement, is the statewide annual report (STAR) submission deadline of January 14, 2026? What dates are the 2026 draft and the final 2027 submission due?
A: The draft NMP deadline is one year after BMAP adoption (not the STAR submission deadline), and the final NMP is due two years after BMAP adoption. So, the due dates will be established by the BMAP adoption date, which has not yet occurred.

Q: Some projects in STAR have total nitrogen (TN) amounts listed as “to be determined (TBD)” and are older projects. How and when are those TN amounts updated in STAR? Does DEP calculate those reductions?
A: If older projects are completed, local entities should be working with the DEP to provide updated or missing information so the project reductions can be verified. Some projects still need supporting documentation to verify the reductions. Also, note that projects cannot be removed from STAR once they have been added, so some projects have reductions listed as “not applicable (N/A)” if they were later determined to be ineligible for credit or are a project type that was never expected to receive credits (i.e., studies, land conservation).

Q: Will there be progress tracking for the OSTDS enhancements and how far we are towards meeting the 2030 deadline to enhance or sewer all OSTDS in the Indian River Lagoon?
A: Some septic-to-sewer conversions will be captured in STAR if they are reported by the local government or utility that connects them; the DEP Onsite Sewage System Program may also track progress.

Q: Are the final wastewater remediation plans submitted in 2024 viewable to the public?
A: The projects from the WWTF and OSTDS remediation plans are listed in Appendix B of the BMAP document. DEP is currently working to make the 2024 plans accessible online.

Q: Has the transfer of the OSTDS Program to DEP from the Florida Department of Health (FDOH) been completed?
A: Some of the OSTDS regulatory program staff and functions have been transferred to DEP, but not all. The headquarters staff have been moved to DEP and a few county health department functions have been transferred so far. The remaining county regulatory functions will be transferred gradually in 2025 and 2026. The transfer of all county health departments OSTDS permitting functions to the DEP permitting process will be completed by December 2026.

Q: The future growth estimates seem so high compared to the current required reductions. Can this be clarified?
A: The future growth loading amounts are estimated additional loads, not reductions, if you want to compare them. The future growth analysis was created using a similar approach to the springs BMAPs' loading tool, using the best available data for the lagoon region. The analysis does not include atmospheric deposition or account for the lack of growth that local entities that are fully built out might experience because of space limitations for additional growth. The future growth estimates use very broad assumptions, but the results are meant help everyone gain insight to future growth possibilities and the potential for additional load reduction responsibilities, particularly for local governments.

Q: Is DEP going to require the space centers to monitor nitrogen oxide (NOx) loads and plumes from all the rocket launches?
A: One former atmospheric deposition monitoring station is being reactivated, and a new station is being set up in the Sebastian area. These stations are being funded by the Indian River Lagoon National Estuary Program (NEP) and are approved by the U.S. Environmental Protection Agency (EPA).

Comments

Verbal Comment: The ships docked at Port Canaveral create a tremendous amount of smoke and they discharge ballast water into the Indian River Lagoon. The port should

provide shore power for the ships, so they do not have to create so much smoke while docked.

Written Comment: Herbicides and freshwater runoff need to stop being allowed in the Indian River Lagoon. Too many unexplained acronyms. And please do not read the slides to audience unless you are expanding on the information. I can read.

Written Comment: #1 Must these BMAP assessments consider only nutrient loading while ignoring all the other harmful contaminants involved? #2 So much in report devoted to projects that neglect the horrible effect of desalination from stormwater.

Written Comment: Thank you. I am quite concerned that population growth in the area are not being effectively analyzed and reflected in future growth models for nutrient reduction. Nox loads from Space Center must be included in BMAP.

Adjournment

The meeting ended at 10:31 am EDT.