Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River Basin Management Action Plan (BMAP)

Update Meeting

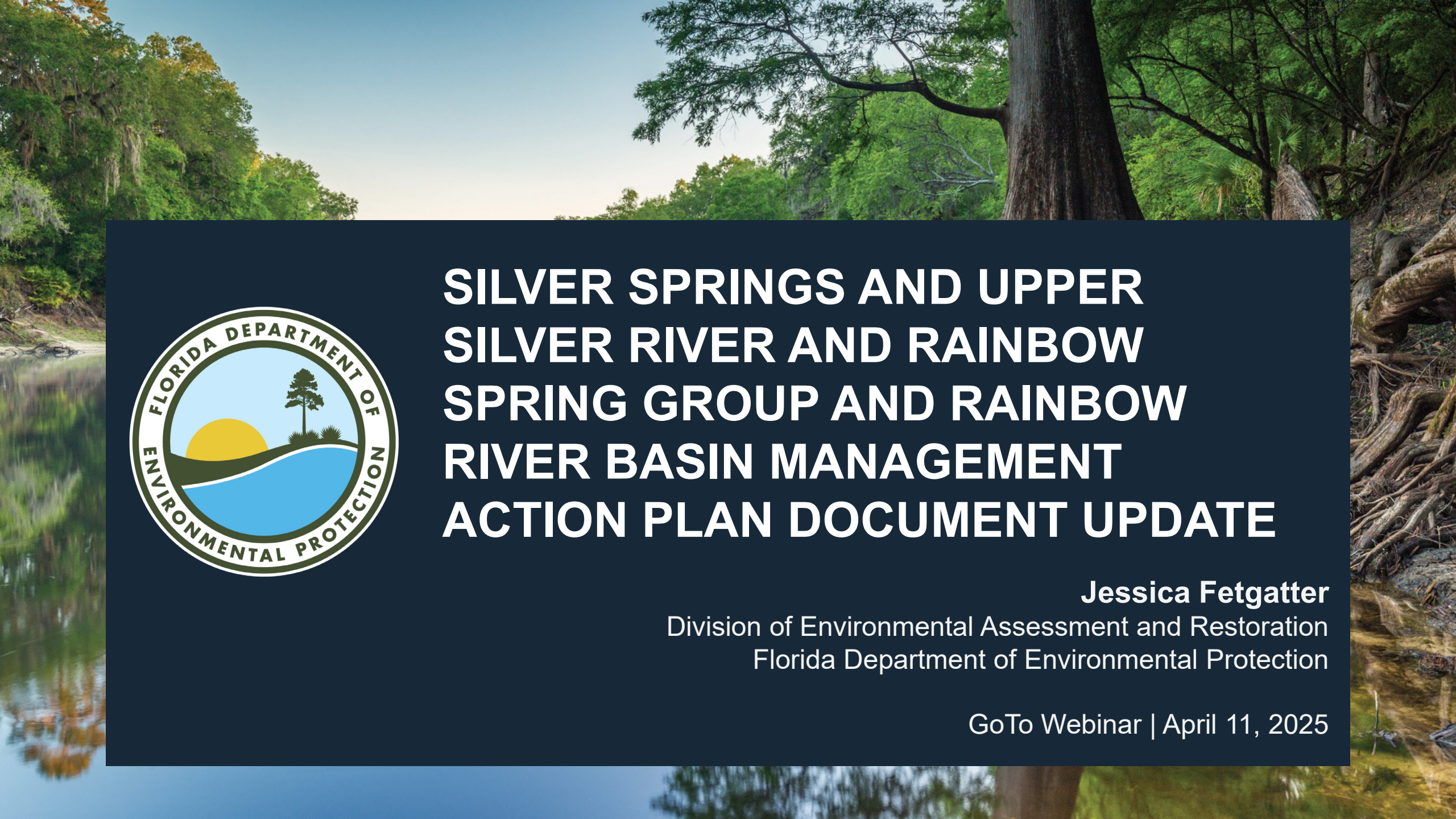
Via Webinar
Webinar Registration Link:
https://attendee.gotowebinar.com/register/6935859431224387930

April 11, 2025
10:00 AM EDT

Agenda

- Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River BMAP Background.
- Overview of Draft Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River BMAP.
- Next Steps.
- Questions/Comments.

Please note the site for documents pertaining to the Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River BMAP: BMAP Public Meetings | Florida Department of Environmental Protection
For more information on the Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River BMAP, contact: Jessica Fetgatter, 850-245-8107.
Jessica.Fetgatter@FloridaDEP.gov



SILVER SPRINGS AND UPPER SILVER RIVER AND RAINBOW SPRING GROUP AND RAINBOW RIVER BASIN MANAGEMENT ACTION PLAN DOCUMENT UPDATE

Jessica Fetgatter
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

GoTo Webinar | April 11, 2025

WEBINAR TIPS

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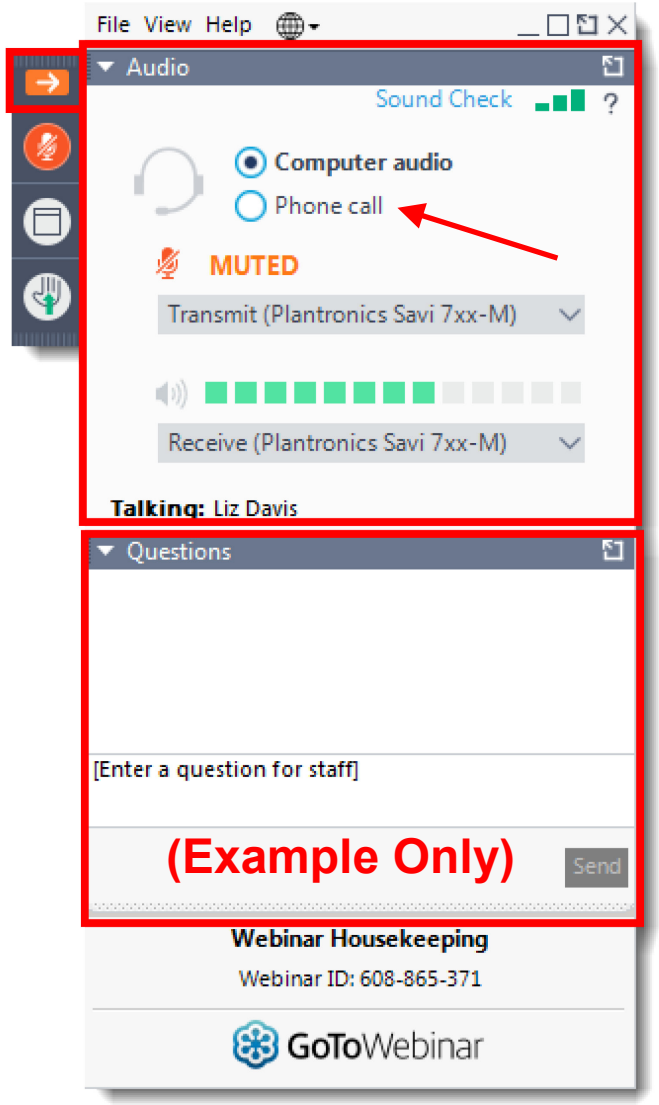
Note: Today's presentation is being recorded and will be provided on the website after the webinar.



AGENDA

- Basin Management Action Plan (BMAP) Background.
- Review of Previous Meetings.
- Document Update Walk-through.
- Next Steps.

Photo Credit: USFWS

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

- BMAP area is approximately 1,668 square miles.
- Impaired for the nitrate form of nitrogen.
- It includes areas of Alachua, Putnam, Levy, Marion, Lake and Sumter counties.

Waterbody or Spring Name	Waterbody Identification (WBID) Number	Parameter	TMDL (mg/L)
Silver Springs	2772A	Nitrate as monthly average	0.35
Silver Springs Group	2772C	Nitrate as monthly average	0.35
Upper Silver River	2722E	Nitrate as monthly average	0.35
Rainbow Springs Group	1320A	Nitrate as monthly average	0.35
Rainbow Springs Group Run	1320B	Nitrate as monthly average	0.35

mg/L: milligrams per liter.

BACKGROUND
SILVER AND RAINBOW BMAP STAKEHOLDERS

Type of Governmental or Private Entity	Participant
Responsible Entities	Agriculture Alachua County Lake County Levy County Marion County Putnam County Sumter County City of Belleview City of Dunnellon City of Fruitland Park City of Hawthorne City of Leesburg City of Micanopy City of Ocala City of Wildwood City of Williston Town of Bronson Town of Lady Lake Town of McIntosh Town of Reddick On Top of the World The Villages Private Wastewater Treatment Facilities Private Golf Courses

Type of Governmental or Private Entity	Participant
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection (DEP) Florida Department of Transportation (DOT) St. Johns River Water Management District Southwest Florida Water Management District
Other Interested Stakeholders	Florida Farm Bureau Florida Onsite Wastewater Association Septic Contractors Florida Department of Economic Opportunity Marion County Farm Bureau Residents Sierra Club Rainbow River Conservation Coalition Ocklawaha Valley Audubon Weyerhaeuser University of Florida Institution of Food and Agriculture Sciences Extension One Rake at a Time

BMAP UPDATE COMPONENTS

ADOPT BY JULY 1, 2025

- Nitrogen Source Inventory and Loading Tool (NSILT) update.
- Entity allocated reductions.
- 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.
  - Groundwater 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: DEP


Source: DEP


Source: DEP

PREVIOUS MEETINGS

Summary of BMAP update meetings in 2024:

- **January Public Meeting**
  - Virtual
  - Overview of NSILT methodology updates (all springs basins)
- **May Public Meeting**
  - Virtual
  - Legislative requirements and basin specific analyses
- **October/November Public Meeting**
  - In person
  - Basin and entity allocated reductions, poster session
- **Entity Specific Meetings**
  - Throughout summer and fall
  - 20+ meetings to discuss reduction allocations and project lists

Source: Crystal River and Kings Bay | WaterMatters.org

DRAFT DOCUMENT

Section 1: Background

Section 2: Implementation

Section 3: Monitoring and Reporting

Section 4: Commitment to Plan Implementation

Section 5: References

Appendices

Legislation

TMDLs

BMAP Requirements

BMAP Area

Priority Focus Area (PFA)

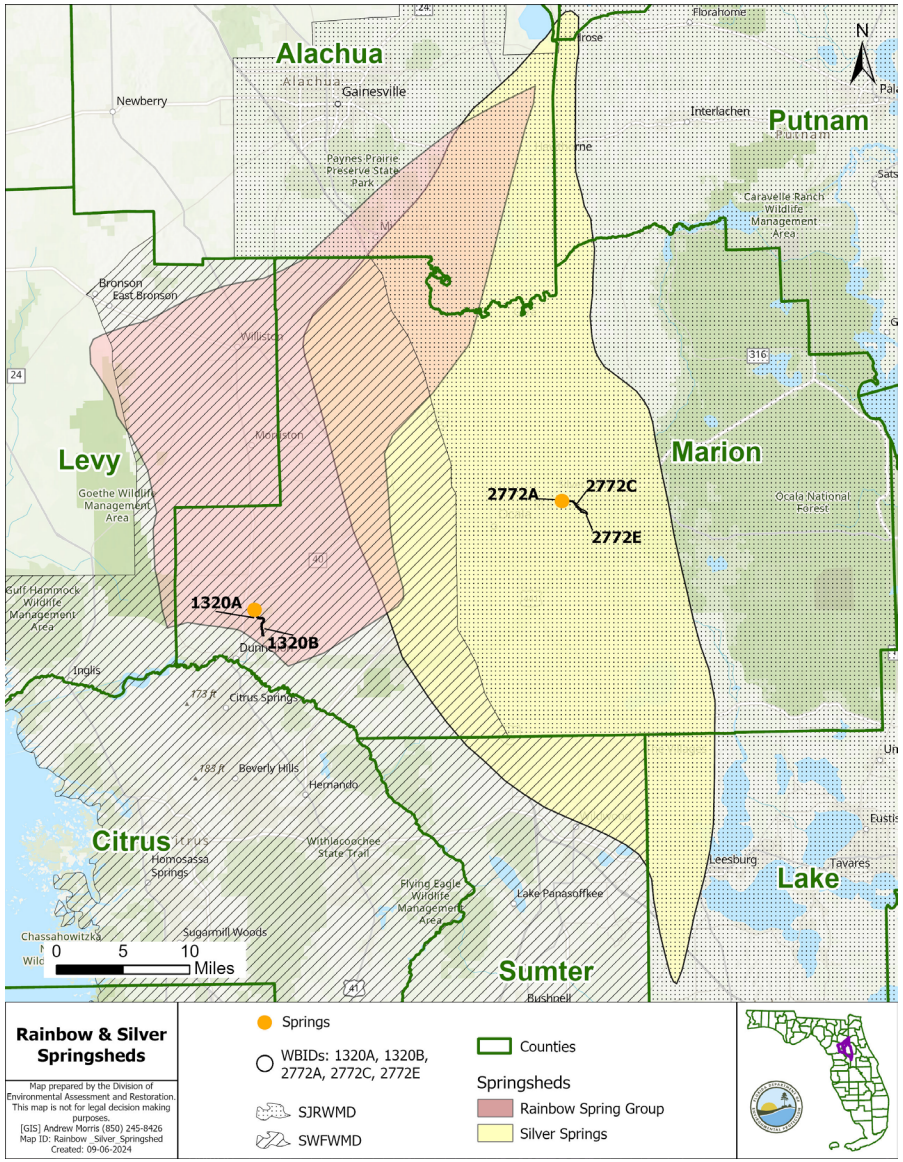
Other Scientific and Historical Information

Stakeholder Involvement

Best Management Practices (BMPs) Adopted by Rule

TMDL SPRINGSHEDS

SECTION 1: OTHER SCIENTIFIC AND HISTORICAL INFORMATION



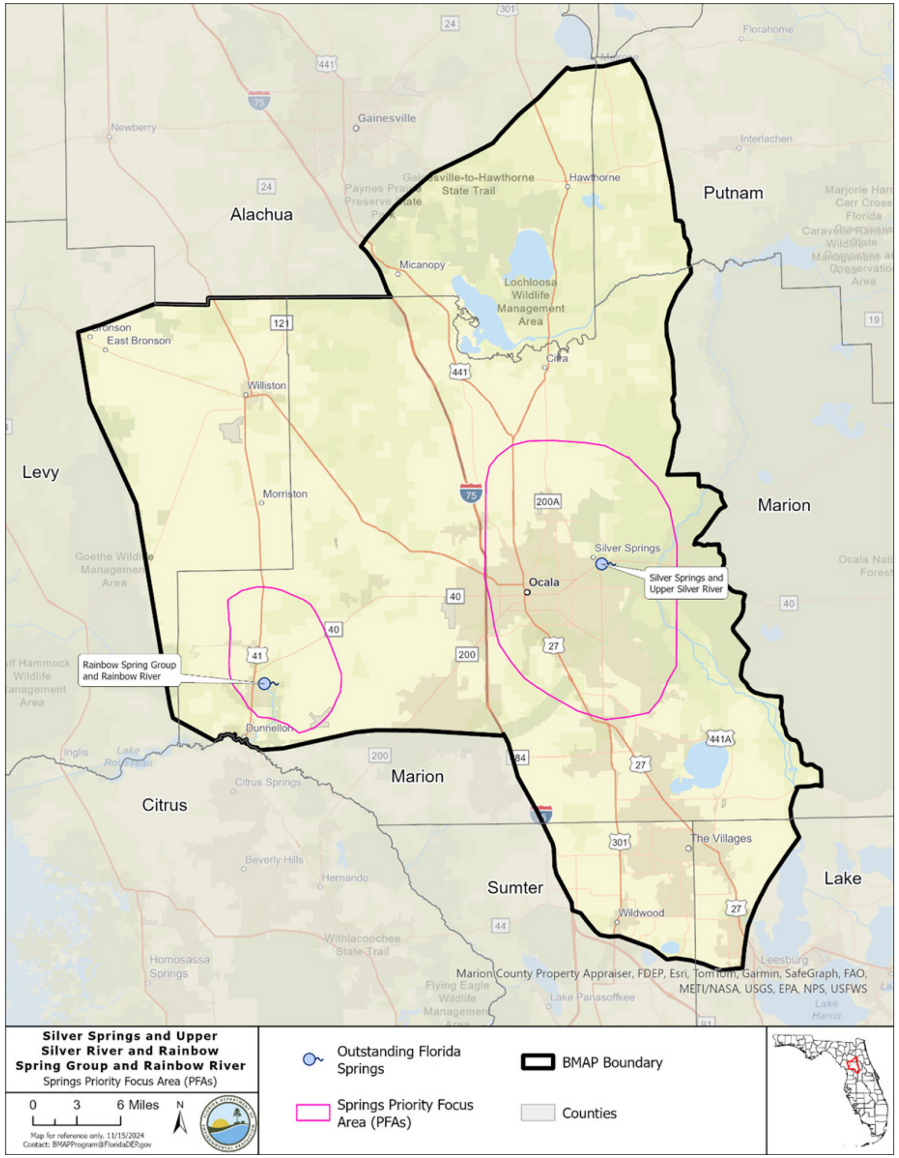
The decision to merge the BMAP areas was based on the following considerations:

- The two spring systems have a zone of interaction that influences the movement and direction of groundwater flow. There is no clear delineation between the two systems' groundwater contributing areas.
- Management strategies and policies implemented to address pollutant sources are the same for both spring systems.

NEW BMAP BOUNDARY

SECTION 1: BMAP AREA

- Marion County has the largest land area within both springsheds — approximately 60% of Silver Springs and 65% of the Rainbow Springs Group. Alachua County and the City of Ocala also span both areas.
- For these systems, a single BMAP provides greater consistency in local jurisdiction planning and policymaking.



DRAFT DOCUMENT

Section 1: Background

Section 2: Implementation

Section 3: Monitoring and Reporting

Section 4: Commitment to Plan Implementation

Section 5: References

Appendices

Pollutant Loads

Load Reduction Strategy

Allocated Reductions

Management Strategies

OSTDS

WWTF

Urban Turfgrass Fertilizer (UTF)

Sports Turfgrass Fertilizer (STF)

Agriculture

Atmospheric Deposition

Future Growth

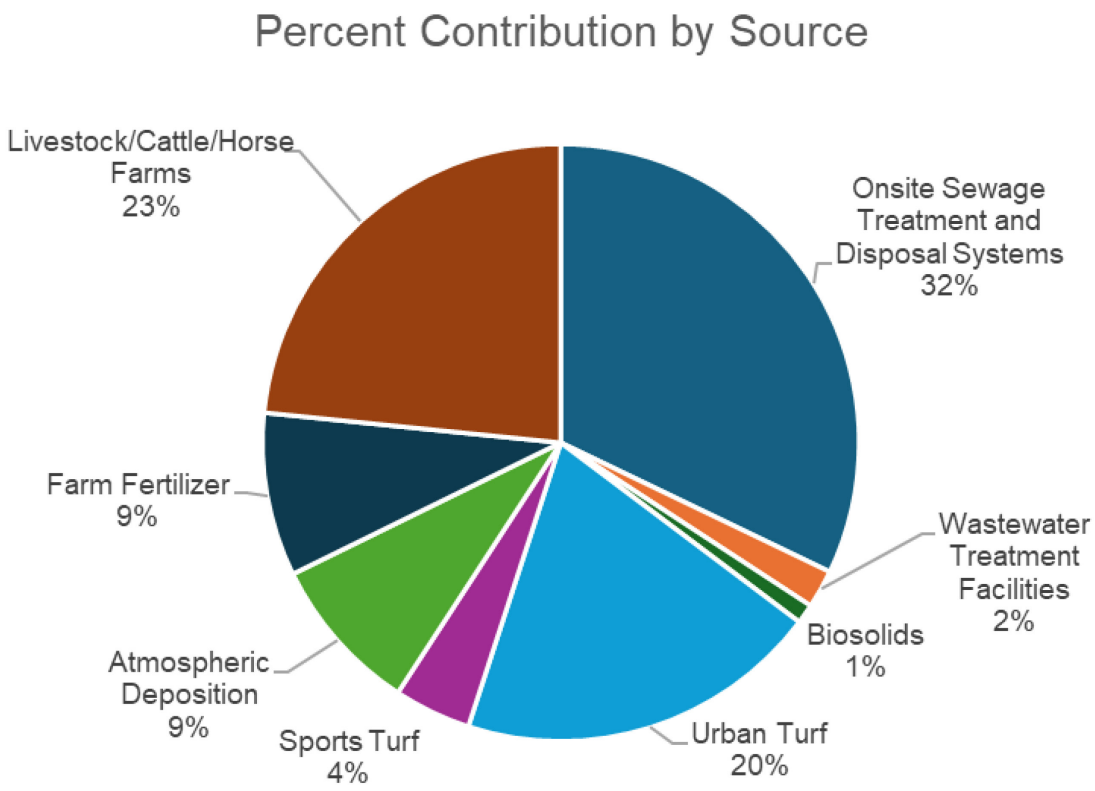
Funding Opportunities

POLLUTANT LOADS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Nitrogen Source	Total Nitrogen (TN) Load to Groundwater (lbs/yr)	% Contribution
OSTDS	1,265,209	32%
UTF	778,537	20%
Atmospheric Deposition	336,807	9%
STF	164,784	4%
Livestock Waste/Cattle/Horse Farms	921,420	23%
Farm Fertilizer	348,742	9%
Biosolids	41,561	1%
WWTFs	81,898	2%
Total	**3,938,958**	**100%**

TN = Total Nitrogen
lbs/yr = pounds/year



LOADING ALLOCATION

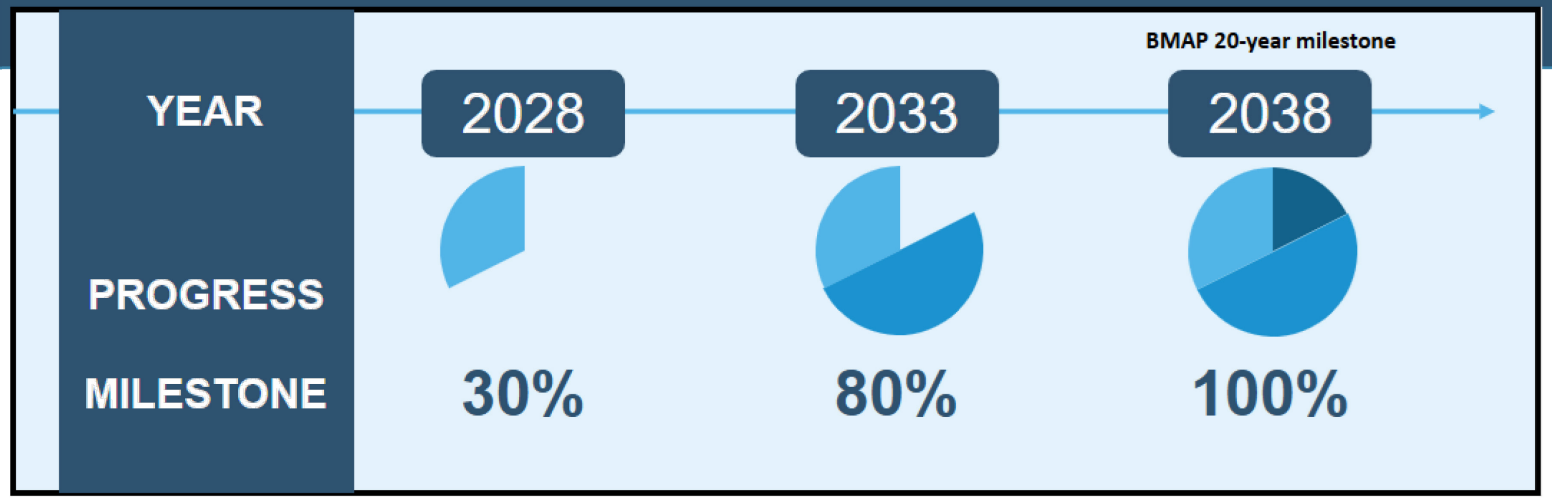
SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Description	TN Loads (lbs/yr)	Notes Regarding Data Used
Total Load at Spring Vents	4,313,434	Upper 95% confidence interval - nitrate data and flow data from 2012 to 2022
TMDL Load	872,682	TMDL target is 0.35 mg/L and using the same flow data and proportions
Percent Reduction	80%	Calculated reduction needed based on the total load at the spring vent and the TMDL load
NSILT Load	3,938,958	Total load to groundwater from the updated NSILT
Required Reduction	**3,142,039**	**Percent reduction multiplied by the NSILT load**

MILESTONES/REDUCTION SCHEDULE

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

- 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/REDUCTION SCHEDULE

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

- 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.

ENTITY ALLOCATIONS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Timeline

- 2028- 30%
- 2033- (+50%) 80%
- 2038- (+20%) 100%

Entity	2028 30% Milestone TN (lbs/yr)	2033 80% Milestone TN (lbs/yr)	2038 100% Milestone TN (lbs/yr)
Alachua County	4,801	12,803	16,004
City of Hawthorne	646	1,723	2,153
Town of Micanopy	812	2,165	2,706
Lake County	15,748	41,996	52,495
City of Fruitland Park	6,853	18,274	22,843
Town of Lady Lake	5,484	14,623	18,279
City of Leesburg	414	1,105	1,381
Levy County	24,247	64,660	80,825
Town of Bronson	1,042	2,779	3,474
City of Williston	5,579	14,879	18,598
Marion County	356,343	950,249	1,187,811
City of Bellview	2,302	6,139	7,674
Town of McIntosh	1,154	3,078	3,848
City of Ocala	31,779	84,745	105,931

lbs/yr = pounds/year

ENTITY ALLOCATIONS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Timeline

- 2028- 30%
- 2033- (+50%) 80%
- 2038- (+20%) 100%

Entity	2028 30% Milestone TN (lbs/yr)	2033 80% Milestone TN (lbs/yr)	2038 100% Milestone TN (lbs/yr)
Town of Reddick	1,155	3,081	3,848
The Villages	19,932	53,152	66,440
City of Dunnellon	1,467	3,913	4,891
On Top of the World	1,884	24,535	30,668
Putnam County	6,430	17,148	21,435
Sumter County	8,555	22,814	28,518
City of Wildwood	2,239	5,971	7,464
State of Florida (Fire Marshal and State Parks)	25	66	83
Agriculture	307,755	820,681	1,025,851
Private WWTFs*+ (see Appendix)	7,248	19,329	24,161
Golf Courses*+ (see Appendix)	27,736	73,962	92,452
Regional Projects	13,062	34,831	43,539

lbs/yr = pounds/year

+List of facilities and golf courses is included in the BMAP document.

*Reductions for these entities will largely be tracked through permits and compliance actions.

PROGRESS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Entity	2028 Milestone Assigned Reductions (30%)(lbs/yr)	TN Completed and Ongoing Project Credits (lbs/yr)	TN Reductions from Planned and Underway Projects* (Not Verified) (lbs/yr)	Total Projected** Project TN Reductions by Entity Through 2028 (lbs/yr)
Alachua County	4,801	164	0	164
City of Hawthorne	646	26	774	800
Town of Micanopy	812	26	0	26
Lake County	15,748	1,128	0	1,128
City of Fruitland Park	6,853	620	0	620
Town of Lady Lake	5,484	372	0	372
City of Leesburg	414	0	0	0
Levy County	24,247	0	0	0
Town of Bronson	1,042	0	2,861	2,861
City of Williston	5,579	0	714	714
Marion County	356,343	30,712	10,981	41,693

lbs/yr = pounds per year

* Planned and underway project reduction estimates are not verified by DEP.

** Projected reductions include projects with a project status of completed, ongoing, planned and underway.

PROGRESS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Entity	2028 Milestone Assigned Reductions (30%)(lbs/yr)	TN Completed and Ongoing Project Credits (lbs/yr)	TN Reductions from Planned and Underway Projects* (Not Verified) (lbs/yr)	Total Projected** Project TN Reductions by Entity Through 2028 (lbs/yr)
City of Bellview	2,302	233	0	233
Town of McIntosh	1,154	50	0	50
City of Ocala	31,779	14,559	1,596	16,155
Town of Reddick	1,155	35	0	35
The Villages	19,932	3,356	0	3,356
City of Dunnellon	1,467	202	0	202
On Top of the World	1,884	693	0	693
Putnam County	6,430	378	0	378
Sumter County	8,555	676	0	676
City of Wildwood	2,239	364	0	364

lbs/yr = pounds per year

* Planned and underway project reduction estimates are not verified by DEP.

** Projected reductions include projects with a project status of completed, ongoing, planned and underway.

PROGRESS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Entity	2028 Milestone Assigned Reductions (30%)(lbs/yr)	TN Completed and Ongoing Project Credits (lbs/yr)	TN Reductions from Planned and Underway Projects* (Not Verified) (lbs/yr)	Total Projected** Project TN Reductions by Entity Through 2028 (lbs/yr)
State of Florida (Fire Marshal and State Parks)	25	0	0	0
Agriculture	307,755	124,399	39	124,438
Private WWTFs (see Appendix)	7,248	0	18,497	18,497
Golf Courses (see Appendix)	27,736	0	0	0
Regional Projects	13,062	10,573	7	10,580

lbs/yr = pounds per year

* Planned and underway project reduction estimates are not verified by DEP.

** Projected reductions include projects with a project status of completed, ongoing, planned and underway.

WASTEWATER
SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

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

Clean Waterways Act (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 Senate Bill (SB) 64 (2021)

- Subsection 403.064(16), Florida Statutes (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 2: IMPLEMENTATION TO ACHIEVE TMDL

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

WASTEWATER
SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

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 (gpd)	Surface Water Discharges (mg/L)	WWTFs Not Listed in Appendix G — Rapid Rate Land Application Effluent Disposal System (mg/L)	WWTFs Not Listed in Appendix G — All Other Disposal Methods, Including Reuse (mg/L)
Greater than 100,000	**3**	**3**	**3**
20,000 to 100,000	**3**	**3**	**6**
Less than 20,000	**3**	**6**	**6**

gpd = gallons per day.
mg/L = milligrams per liter.

OSTDS REMEDIATION

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Section 373.807, F.S.

- Requires BMAPs to include an OSTDS remediation plan if OSTDS contribute at least 20% of nonpoint source nitrogen pollution, or if DEP determines OSTDS remediation is needed to achieve the TMDL.
  - This remediation plan establishes a remediation policy (**Appendix E**) applicable to **all existing OSTDS** within **the BMAP.**
  - The remediation plan was updated to also establish a remediation policy requiring any **new OSTDS** within **the BMAP** to be an enhanced nutrient reducing system.

Subsection 403.067(7)(a)9., F.S.

- Requires local governments to develop an OSTDS remediation plan if DEP identifies OSTDS as contributors of at least 20% of point source or nonpoint source nutrient pollution or if DEP determines remediation is necessary to achieve the TMDL.
- This BMAP contains a remediation plan for OSTDS consisting of management actions, including those described in **Appendix B** in the draft BMAP document.

WASTEWATER

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

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, Florida Administrative Code (F.A.C.), apply to newly-permitted application sites and existing application sites upon permit renewal.

Source: DEP

URBAN TURFGRASS
SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Fertilizer Ordinance

- Subsection 373.807(2), F.S., requires local governments with jurisdictional boundaries within an OFS to develop, enact and implement a fertilizer ordinance by July 1, 2017.

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 Total Phosphorus (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.

SPORTS TURFGRASS
SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Sports Turfgrass and Golf Courses

- Sporting facilities are required to follow the 2025 Sports Turf BMP Manual.
  - DEP and University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) are collaborating the develop this manual.
- Superintendents of 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).
  - A draft NMP must be submitted to DEP within one year of BMAP adoption and a final document is due two years after adoption.

AGRICULTURE

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Dairy Operations with Confined Animal Feeding Operations (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 a NPDES CAFO permit must 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 2: IMPLEMENTATION TO ACHIEVE TMDL

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.

ATMOSPHERIC DEPOSITION

- Atmospheric sources of nutrients are local, national and international.
- Recent data indicate that the deposition of nitrogen has been generally decreasing in Florida with an up to 55% decrease in atmospheric deposition by 2028 possibly as result of the following:
  - Power plant fuel source changes.
  - Air treatment upgrades.
  - Increased use of electric vehicles.
  - Decreasing mobile sources.
- Nitrogen reductions from this source category were not assigned to responsible entities.
- Atmospheric deposition sources and trends will be re-evaluated periodically.

FUTURE GROWTH

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

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 per 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 turfgrass loading based on percentage of available acres developed using low and high intensity landscaping, based on a general percent turf cover and turfgrass species fertilization rates.
- Ran three management scenarios to look at loading by entity, source and overall basin.

FUTURE GROWTH

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Scenario 1

By 2040:

- **90%** or more of **new population** is connected to central sewer.
- All wastewater treating to **3 mg/L.**
- Remainder of new population has **enhanced OSTDS.**
- **2% of available land** developed using **low intensity** landscaping (10% turf cover using centipede grass).

Scenario 2

By 2040:

- **New population** is connected to central sewer at **same rate as today.**
- All wastewater treating to **3 mg/L.**
- Remainder of new population has **enhanced OSTDS.**
- **10% of available land** developed using **low intensity** landscaping (10% turf cover using centipede grass).

Scenario 3

By 2040:

- **New population** is connected to central sewer at **same rate as today**.
- All wastewater treating to **6 mg/L.**
- Remainder of new population has **conventional OSTDS.**
- **17% of available land** developed using high **intensity** landscaping (25% turf cover using St Augustine grass).

FUTURE GROWTH ANALYSIS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Entity	2040 People	Scenario 1 TN (lbs/yr)	Scenario 2 TN (lbs/yr)	Scenario 3 TN (lbs/yr)
Alachua County	4603	**1,855**	**7,005**	**53,366**
Hawthorne	418	**154**	**405**	**4,388**
Micanopy	66	**24**	**119**	**803**
Lake County	6366	**2,790**	**9,774**	**35,657**
Fruitland Park	1342	**588**	**1,566**	**6,527**
Lady Lake	1872	**399**	**653**	**6,043**
Leesburg	474	**110**	**183**	**1,566**
Marion County	69,601	**23,956**	**85,638**	**624,3**
Belleview	337	**79**	**204**	**2,603**
McIntosh	61	**14**	**26**	**449**
Ocala	4,076	**956**	**2,541**	**31,617**
Reddick	109	**26**	**48**	**806**

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

FUTURE GROWTH ANALYSIS

SECTION 2: IMPLEMENTATION TO ACHIEVE TMDL

Entity	2040 People	Scenario 1 TN (lbs/yr)	Scenario 2 TN (lbs/yr)	Scenario 3 TN (lbs/yr)
Putnam County	234	**185**	**1,734**	**29,431**
Sumter County	6731	**1,521**	**2,641**	**23,539**
Wildwood	2156	**498**	**856**	**7,560**
The Villages	5456	**1,375**	**2,418**	**21,837**
Levy County	1939	**1,326**	**10,947**	**140,578**
Bronson	17	**11**	**87**	**1,213**
Williston	63	**41**	**334**	**4,521**
Dunnellon	572	**263**	**497**	**4,716**
On Top of the World	1466	**375**	**961**	**11,467**

2040 Loading — Basin Totals

Scenario 1 Total	Scenario 2 Total	Scenario 3 Total
36,546	**128,636**	**1,013,062**

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

DRAFT DOCUMENT

Section 1: Background

Section 2: Implementation

Section 3: Monitoring and Reporting

Section 4: Commitment to Plan Implementation

Section 5: References

Appendices

Methods for Evaluating Progress

Adaptive Management

Water Quality and Biological Monitoring

Groundwater Analysis

WATER QUALITY MONITORING
SECTION 3: MONITORING AND REPORTING

Primary objectives:

- Measure the water quality and biological response in the impaired springs and groundwater at the beginning of the BMAP period and during implementation.
- Document nutrient trends in the springshed.

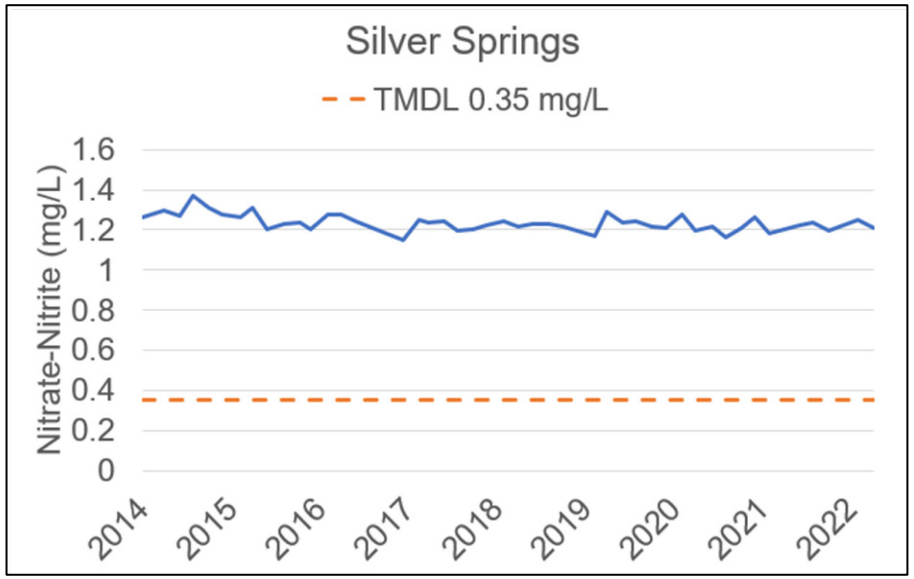
Secondary objectives:

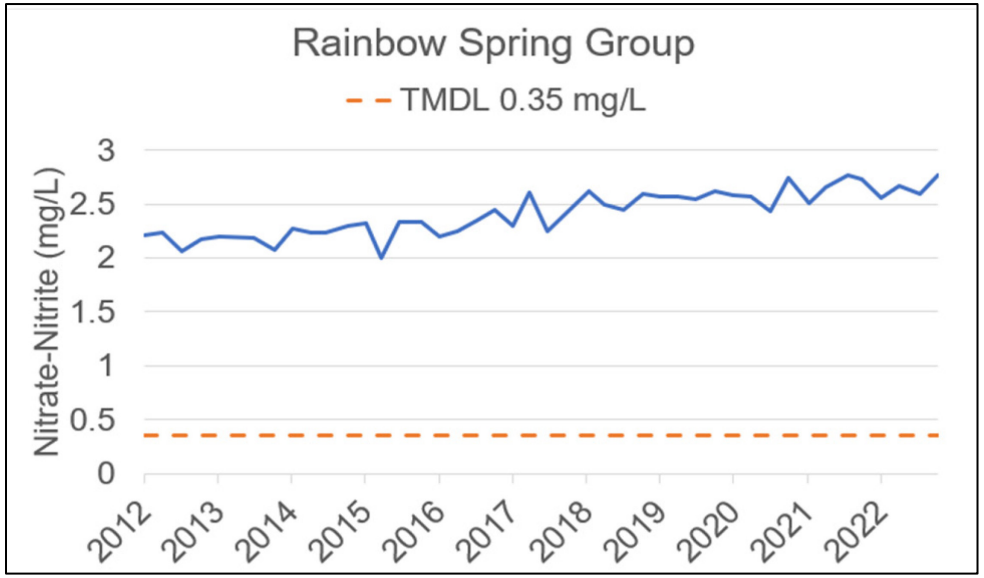
- Identify areas where groundwater data and modeling might help in understanding the hydrodynamics of the system.
- Evaluate groundwater quality trends and nutrient loading to the aquifer across the basin.
- Confirm and refine nutrient removal efficiencies of agricultural and/or urban BMPs, projects and other management efforts

WATER QUALITY MONITORING

SECTION 3: MONITORING AND REPORTING

- Available water quality data will be analyzed during BMAP implementation to determine trends in water quality and the health of the biological community.
- A wide variety of statistical methods are available for the water quality trend analyses.
  - The selection of an appropriate data analysis method will depend on the frequency, spatial distribution and period of record available from existing data. Specific statistical analyses were not identified during BMAP development.





GROUNDWATER MONITORING

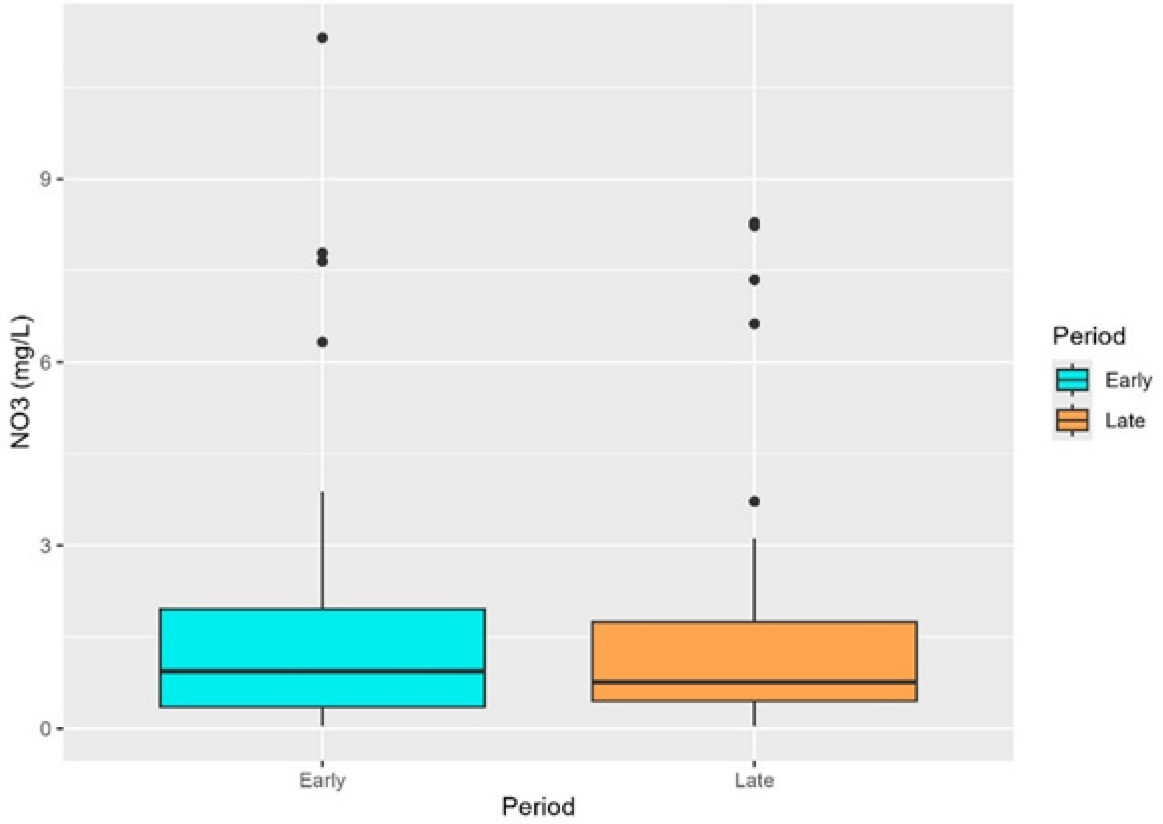
SECTION 3: MONITORING AND REPORTING

Groundwater monitoring gives us a look at the health of the aquifer before water discharges at spring vent.

- Uses measured data (nitrate- total and dissolved) from groundwater monitoring wells from DEP's Water Information Network (WIN) and the water management districts.
- A visual analysis was performed using the annual median as boxplots.
- Wells that were sampled regularly through the period of record were considered “fixed”. Wells with inconsistent sampling (i.e. less than four samples over the period of record) were considered “sporadic”.
- Data from the fixed wells were preferred for analyses because comparisons between time periods represent changes in the same set of wells.
- To resolve seasonal autocorrelation, annual median values were used for wells with multiple samples in any given year.
- To create the box plots, the period of record was divided into early (2017-2020) and late (2021-2024) subperiods.
- Future considerations:
  - Stratifying data by land use, distance to spring vent, other factors.
  - Trends analysis to see changes over time.

GROUNDWATER MONITORING

SECTION 3: MONITORING AND REPORTING

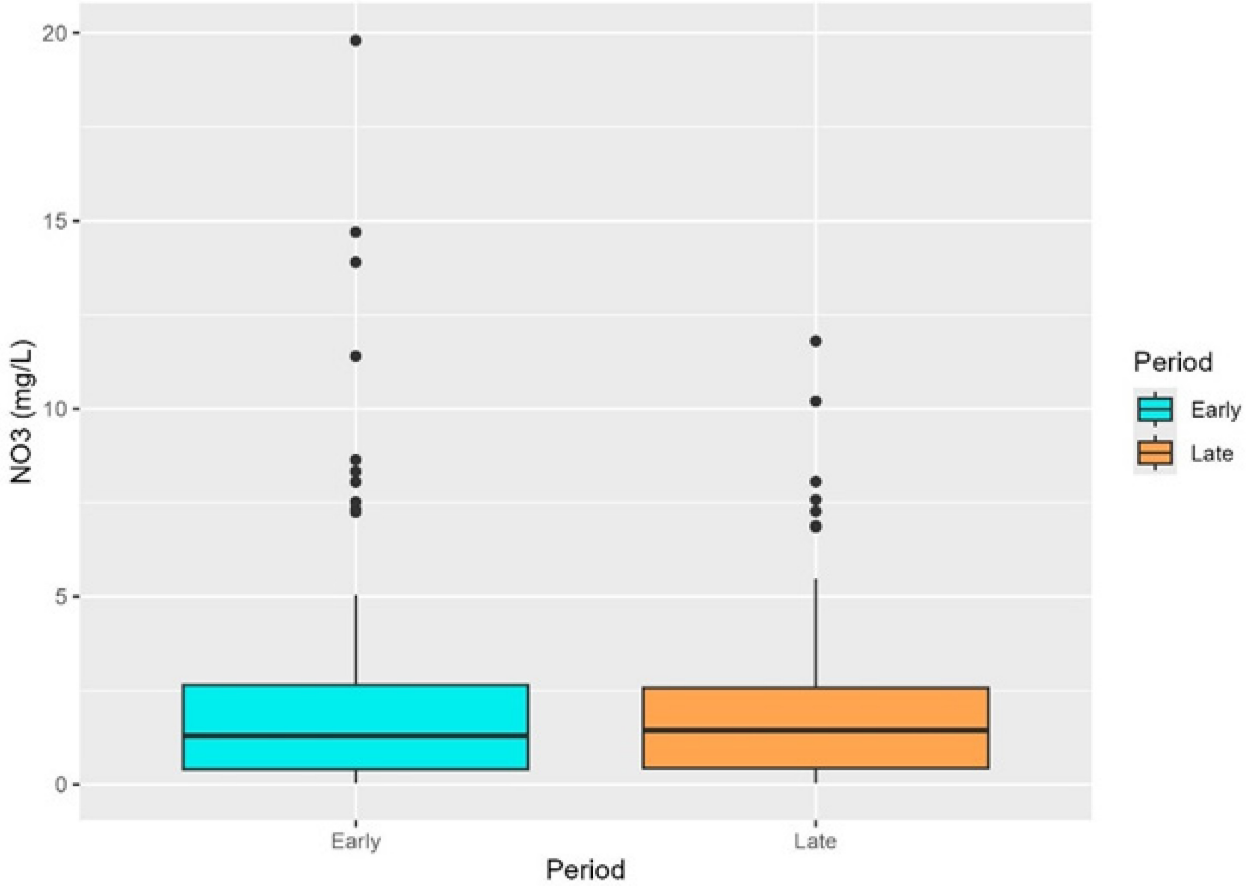


Silver Springs Springshed Early (2017-2020) and Late (2021-2024) Annual Median NO3 Concentrations, With Outliers.

In mg/L, Median Early = 0.94; Late = 0.76.

Rainbow Springs Basin Early (2017-2020) and Late (2021-2024) Annual Median NO3 Concentrations, With Outliers.

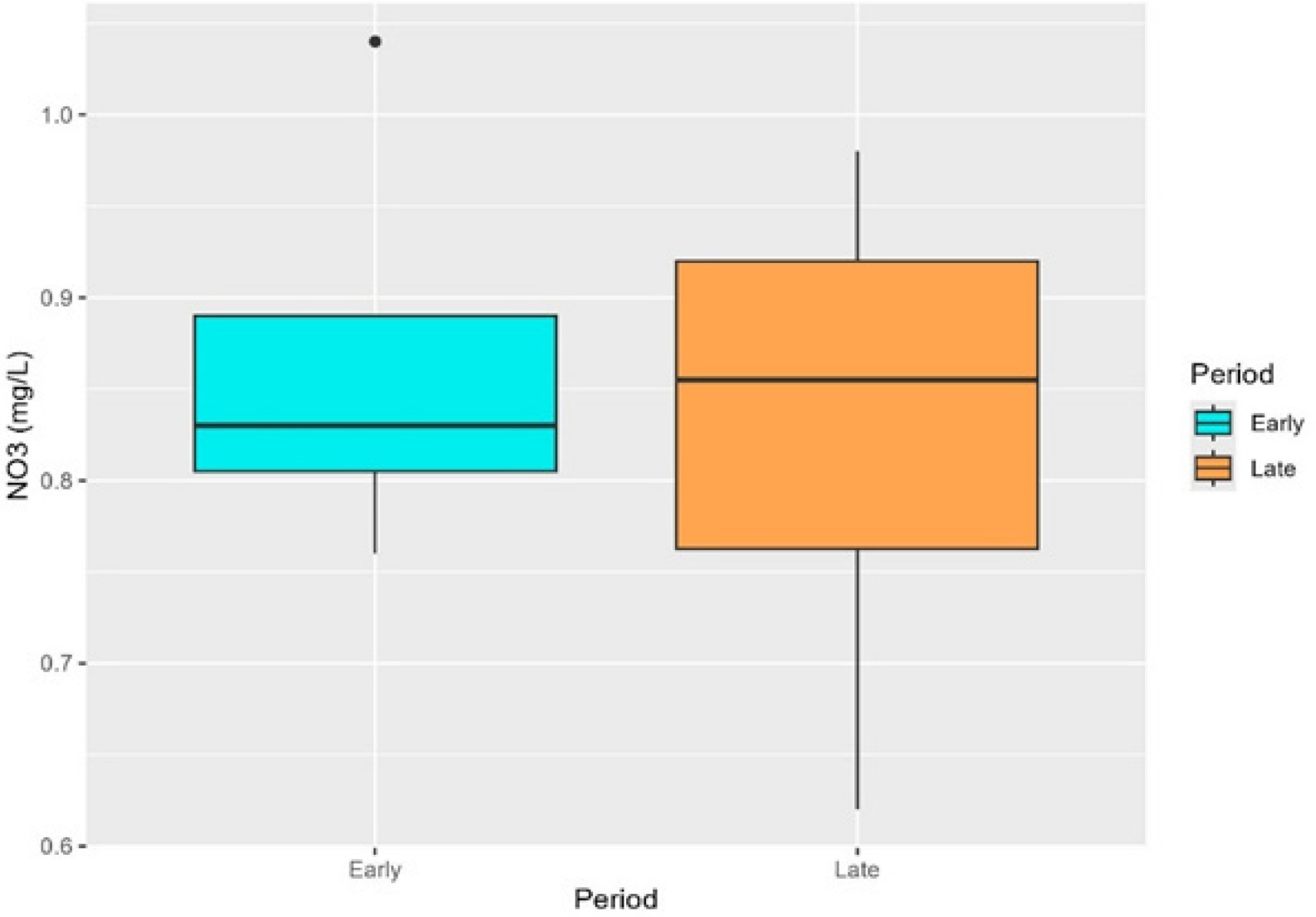
In mg/L, Median Early = 1.30; Late = 1.44.



GROUNDWATER MONITORING

SECTION 3: MONITORING AND REPORTING

Silver and Rainbow Basin Early (2017-2020) and Late (2021-2024) Weighted Annual Median NO3 Concentrations, With Outliers.
In mg/L, Median Early = 0.83; Late = 0.85.



DRAFT DOCUMENT

Section 1: Background

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Appendices

Adoption Process

Tracking Reductions

Revisions to the BMAP

ADAPTIVE MANAGEMENT

SECTION 4: COMMITMENT TO PLAN IMPLEMENTATION

Tracking Reductions:

- Required loading reductions are expected to be met by 2038.
- Each entity is responsible for implementing management actions to meet their upcoming 5-year milestone.
- The statewide annual report will provide an annual update of progress made in implementing load reductions tracking the implementation status of the management actions listed in the BMAP.

Revisions to the BMAP:

- Section 403.067, F.S., requires that the plan be revised, as appropriate.
  - Assessment of progress toward milestones must be conducted every five years and revisions to the plan must be made as appropriate.
  - BMAPs use an adaptive management approach that allows for incremental load reductions through the implementation of projects and management strategies; however, the restoration target, the TMDL, remains the same.

DRAFT DOCUMENT

Section 1: Background

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Appendices

BMAP UPDATE DOCUMENT

APPENDICES

- **Updated:** Important links
- **Updated:** Projects to Reduce Nitrogen Sources.
  - 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.
- **NEW:** Planning for Additional Management Strategies
  - Examples of project efforts entities can identify to meet their milestone reduction requirements.
- PFA Reports
- **Updated:** OSTDS Remediation Plan
- **NEW:** Technical Support Information
  - NSILT methodology.
- **NEW**: Wastewater Facilities
  - List of facilities with reclaimed water that are causing or contributing to nutrient impairments
- **NEW:** Golf Course Nutrient Management Plans
- **Updated:** Agricultural Enrollment and Reductions (provided by DACS)
- **NEW:** Private Wastewater Treatment Facilities Allocated Reductions
- **NEW:** Private Golf Course Allocated Reductions

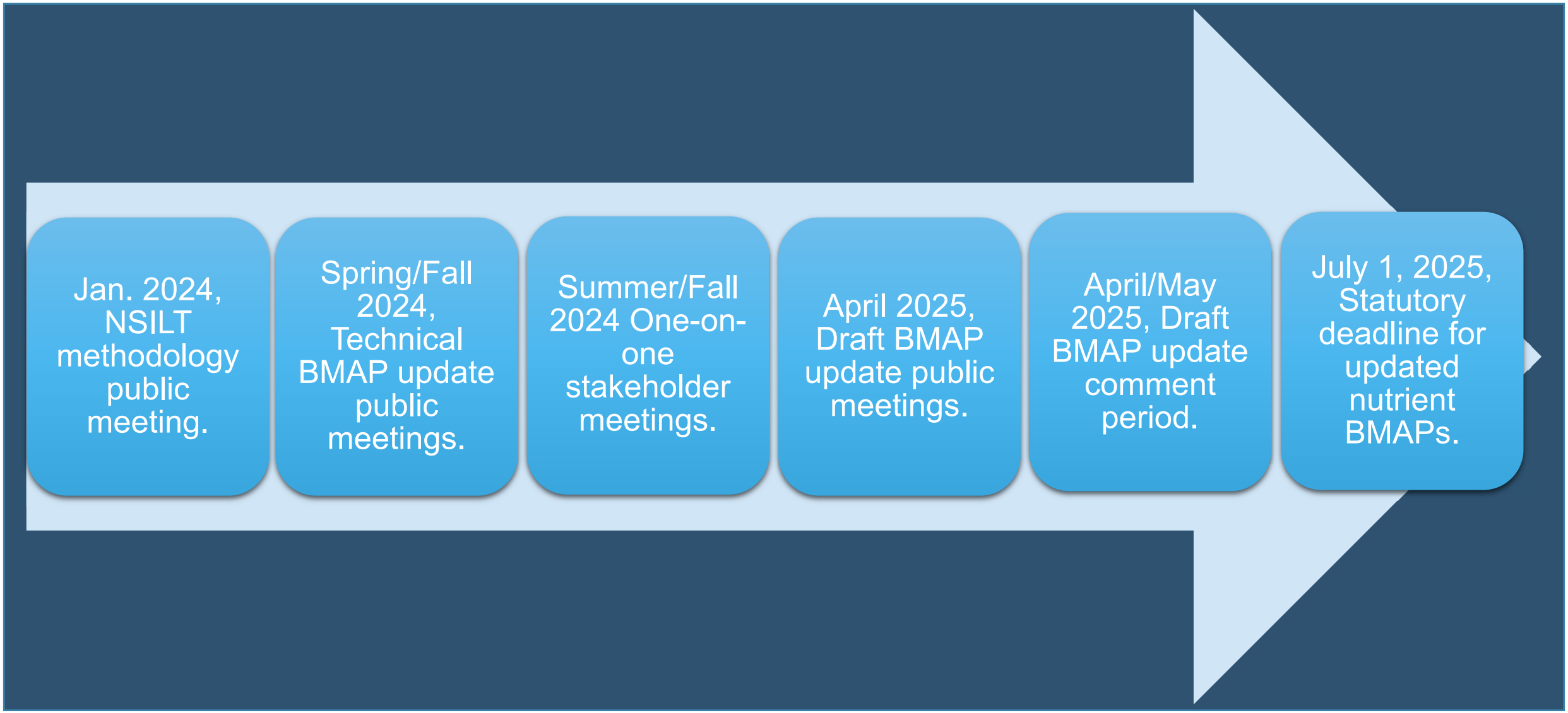
NEXT STEPS

BMAP update document draft review:

- Draft document sent out via GovDelivery **April 4, 2025**.
- Stakeholder review comments due **May 2, 2025**.

Submit comments to:
Jessica.Fetgatter@FloridaDEP.gov

UPCOMING SCHEDULE



RESOURCES
BMAP WEBSITE AND STORYMAPS

Florida Springs Basin Management Action Plans (BMAPs)

Welcome to the Florida Springs Basin Management Action Plan (BMAP) StoryMap

The springs BMAPs are developed with specific provisions for the protection and restoration of the state's Outstanding Florida Springs. This story map focuses on the springs-related BMAPs; for more details about other BMAPs or more information about the BMAP program in general, visit https://floridadep.gov/bmaps.

* The story map will display differently depending on the screen size and resolution being used. Story map best viewed in Chrome or Firefox.

Overview

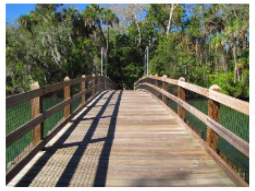
The Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.) provides for the protection and restoration of the state"s Outstanding Florida Springs (OFS), which comprise 24 first magnitude springs, 6 additional named springs, and their associated spring runs. The act provides specific requirements for OFS BMAPs beyond those


1 Legislative Requirements


2 Crystal River - Kings Bay BMAP StoryMap


3 DeLeon Spring Story Map


4 Gemini Springs Story Map


5 Homosassa and Chassahowitzka Springs...

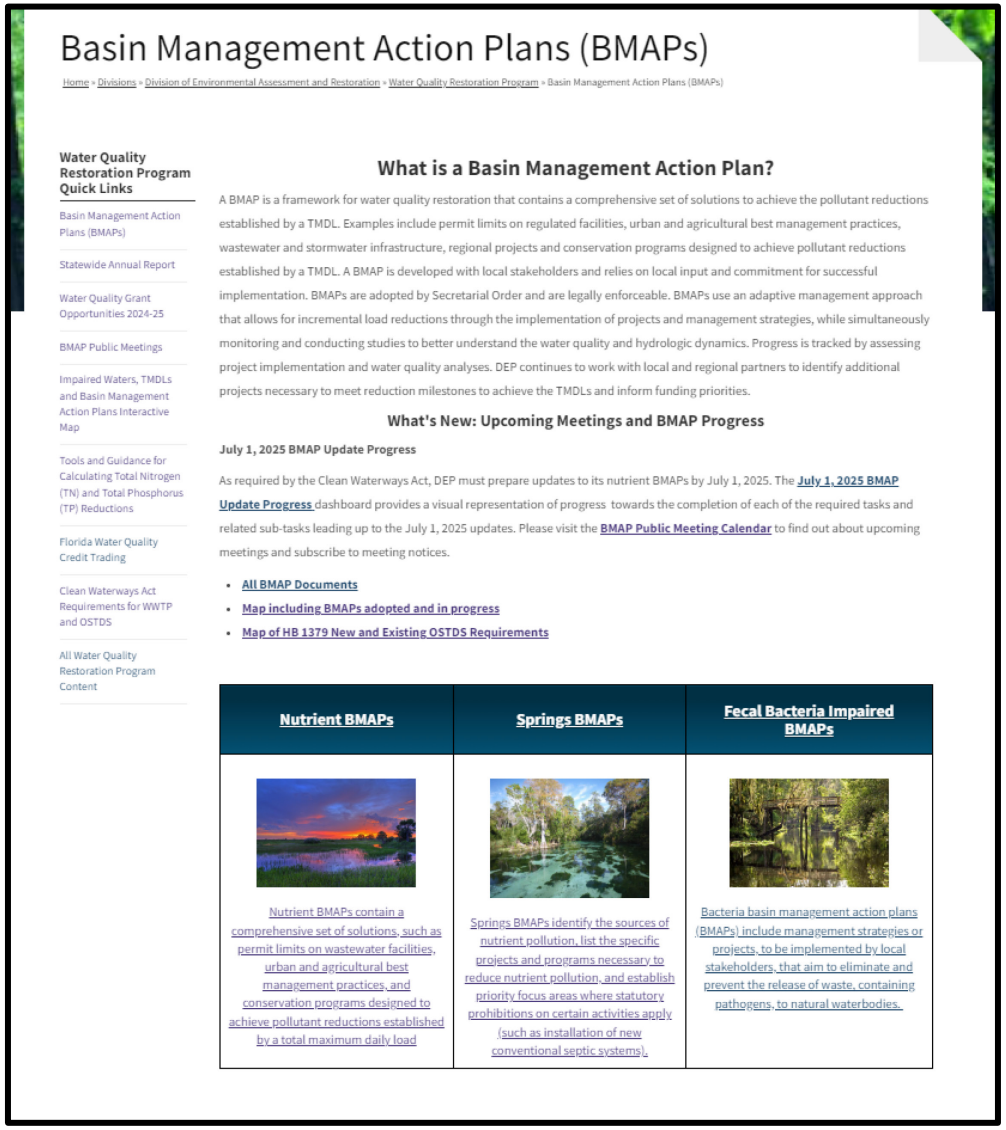

6 Jackson Blue and Merritts Mill Pond BMAP Story Map


7 Rainbow Springs Group and Rainbow Springs Group Run...


8 Santa Fe River BMAP Story Map


9 Silver Springs and Upper Silver River BMAP Story Map

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



THANK YOU

Jessica Fetgatter
Environmental Consultant

Contact Information:
850-245-8107
Jessica.Fetgatter@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: BMAPProgram@FloridaDEP.gov.

Florida Department of Environmental Protection (DEP)
Silver Springs and Rainbow Springs Basin Management Action Plan (BMAP)
Virtual Public Meeting via GoToWebinar
April 11, 2025
10:00 am – 11:27 am EDT

Attendees

Michael Arnold, Citrus County Chronicle
Donald Barber, City of Willison
Sue Beaudet, City of Willison
Evelyn Becerra, DEP
Julianna Belitz, DEP
Vivianna Bendixson, SWFWMD
Jonathen Bishop, City of Willison
Matthew Bledsoe, DEP
Tiffany Busby, Wildwood Consulting
Carol Caroll, Citizen
Andrew Carswell, Levy County
Cathie Catasus, Lake County
Carolin Ciarlariello, DEP
Doneda Cole, Putnam County
Hillary Daley, DEP
Dennis Davis, Wright-Pierce
Marsha DeBroske, Citizen
Jian Di, SJRWMD
Chloe Dougherty, Florida Springs Council
Pat Duane, Southern Pine Plantations
Jeff Earhart, Lake County
Bryanna Edgar, Citizen
Burton Eno, Citizen
Kristine Eskelin, SRWMD
David Fennell, Jacobs
Jessica Fetgatter, DEP
Agustin Francisco, FDACS
Alan Garri, Kimley-Horn
Lawrence Glenn, DEP
Trisha Green, DEP
Aaron Grimes, FDACS
Sam Hankinson, DEP
Tracy L Hauserman, Citizen
Kenny Hayman, DEP
Jonathan Healion, Onsite Solutions
Margarita Hernandez, DEP
Robin Holland, FDACS
Moira Homann, DEP
Jason Icerman, City of Tallahassee
Jennifer Johnson, FDOT
Jennifer Kampwerth, City of Ocala
Chandler Keenan, DEP
Tracy Kelley, City of Wildwood
Trevor Knight, Marion County
Joy Kokjohn, SJRWMD
Carmen Lamothe, Citizen
Sue Lamothe, Citizen
Charles Legros, DEP
Celeste Lyon, RES
Sandra Mangro, Citizen
Ryan Matthews, Gray-Robinson
Bonnie Meyer, Citizen
Jessica Mostyn, DEP
James Moulton, CPH
Mark Nelson, Jones Edmunds
Walter Nickel, Wright-Pierce
Jarek Nowak, FDACS
Kevin O'Donnell, DEP
Randall Oliver, Vikus Water
Estenia Ortiz, SWFWMD
Steven Peene, ATM
Wendy Poag, Lake County
Robyn Preston, City of Ocala
Beth Robertson, DEP
Martin Schumann, DEP
Jodi Slater, SJRWMD
Renee Smith, Vikus Water
Nadine Stokes, Citizen
Mary Szoka, Alachua County
Bob Titterington, City of Belleview
Anthony Tomalewski, DEP
Madison Trowbridge, SWFWMD
Diana Turner, DEP
Lisa Van Houdt, DEP

Sylvia Vellios, DEP
Tammy Warren, City of Ocala
Ken Weaver, DEP
Carol White, Citizen
Catherine Wolden, SWFWMD

Overall

The draft BMAP document can be downloaded here: https://floridadep.gov/dear/water-quality-restoration/documents/250411-silv-rain-bmap-document. Comments on the draft BMAP document are due by May 2, 2025. Verbal comments at this meeting were welcome. Written comments submitted during the meeting were invited. Comments after the meeting should be sent to BMAPProgram@FloridaDEP.gov by May 2, 2025.

Questions and Answers

Question (Q): We are one of the municipalities that are in the BMAP. How do we possibly meet the requirements being asked without more implementation of septic-to-sewer?
Answer (A): We can follow up to schedule a one-on-one meeting with you to discuss in more detail different types of projects that you could consider for project implementation.

Q: We applied for three grants to address this very issue (septic system loading) but received no funding?
A: Funding decisions are ultimately made by the DEP-Division of Water Restoration Assistance; however, if the BMAP group is aware of certain projects, or if we've had conversations with entities about certain projects, we do provide the Division of Water Restoration Assistance feedback on projects that could have a big impact to the BMAP reductions needed.

Q: How do the legislative requirements to have wastewater treatment facilities (WWTFs) go to advanced waste treatment (AWT) impact on the future growth calculations? Also, are current ordinances taken into account for future estimates? For example, On Top of the World has committed to Florida Water Star practices, so St. Augustinegrass would likely be in very small areas or not placed at all.
A: The future growth calculations did not take that level of local fertilizer data or WWTFs allocation details into account. This was a broad analysis meant to show the potential ranges of future loading if different management strategies were implemented.

Q: Is there a link to this presentation?
A: Yes, the presentation and meeting materials will be posted online. A link to the meeting materials will be sent out via GovDelivery after the meeting.

Q: Wasn't the 2018 Silver and Rainbow Springs BMAP version struck down by the court? So, it reverted to the 2015 BMAP version?

A: That is correct; however, the requirement for enhancement of existing septic systems was outlined in the 2018 BMAP document, so it was discussed with stakeholders during development of that BMAP.

Q: Does the act of implementing regulations to lower loading from new growth count toward the existing allocations?
A: No, credits for nitrogen and phosphorus reductions are applied only towards the existing loads, and not to future potential loads. However, it is beneficial for local governments to use their regulations to minimize future increases in loads to avoid additional reduction assignments in future BMAP updates.

Q: Can existing septic systems be replaced with standard septic systems? I thought existing septic systems were grandfathered?
A: In the Silver and Rainbow Springs BMAP area, existing septic systems must be either replaced with a treatment system that provides enhanced nitrogen treatment or connected to central sewer. This requirement applies to the entire BMAP area, to all lot sizes, and parcels beyond the priority focus area (PFA) that are within the BMAP boundary. Note that the extent of this requirement varies among springs BMAPs, so in other BMAP areas, the requirement might be different.

Q: Does the Health Department handle the enhanced permitting requirements at septic permitting time?
A: Yes, the enhancement requirements are implemented during the permit process for new, repair, or modification permits for septic systems. The Florida Legislature has moved the septic system permitting function to the DEP from the Florida Department of Health (FDOH). The state level program staff have already transferred to DEP. This is a transition time at the county level where the permitting functions are being moved from FDOH to DEP. So, depending on the county, at present the county-level permitting may be handled by either FDOH or DEP. However, soon all OSTDS permitting will be handled by DEP.

Q: For projects that capture stormwater and infiltrate as part of a stormwater treatment project, how does DEP deal with credit in springs BMAPs?
A: The DEP crediting methodology for stormwater projects in the springs require data such as a treatment area, best management practice (BMP) design, output of the BMPTrains tool, or measured data, where available. In the springs, credits to surface water are adjusted to account for attenuation and recharge to measure project reductions in terms of groundwater benefits. Within springs BMAPs, treating stormwater more thoroughly on the surface with longer residence times, the use of appropriate media, and other strategies before infiltration are recommended.

Comments

No verbal or written comments were provided during the meeting.

Adjournment

The meeting ended at 11:27 am EDT.