# *DRAFT*
# *Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River Basin Management Action Plan*

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

**with participation from the**
**Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River Stakeholders**

**April 2025**

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**Tallahassee, FL 32399**
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# Acknowledgments

The Florida Department of Environmental Protection adopted the *Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River Basin Management Action Plan (BMAP)* by Secretarial Order as part of its statewide watershed management approach to restore and protect Florida's water quality. The plan was developed in coordination with stakeholders identified below, including participation from affected local, regional and state governmental entities, non-governmental organizations and entities, and private citizens.

Florida Department of Environmental Protection
Alexis A. Lambert, Secretary

**Table ES-1. Silver and Rainbow stakeholders**

| Type of Organization/Entity | Name |
|---|---|
| **Responsible Entities** | Agriculture<br>Alachua County<br>Lake County<br>Levy County<br>Marion County<br>Putnam County<br>Sumter County<br>City of Belleview<br>City of Dunnellon<br>City of Fruitland Park<br>City of Hawthorne<br>City of Leesburg<br>City of Micanopy<br>City of Ocala<br>City of Wildwood<br>City of Williston<br>Town of Bronson<br>Town of Lady Lake<br>Town of McIntosh<br>Town of Reddick<br>On Top of the World<br>The Villages<br>Private Wastewater Treatment Facilities<br>Private Golf Courses |
| **Responsible Agencies** | Florida Department of Agriculture and Consumer Services (FDACS)<br>Florida Department of Environmental Protection (DEP)<br>County Health Departments<br>Florida Department of Transportation (FDOT)<br>Southwest Florida Water Management District (SWFWMD)<br>St. Johns River Water Management District (SJRWMD) |

| Type of Organization/Entity | Name |
|---|---|
| **Other Interested Stakeholders** | Florida Farm Bureau<br>Florida Onsite Wastewater Association (FOWA)<br>Florida Department of Economic Opportunity<br>Marion County Farm Bureau<br>Oklawaha Valley Audubon<br>One Rake at a Time<br>Rainbow River Conservation Coalition<br>Residents/Homeowners<br>Sciences Extension<br>Septic Contractors<br>Sierra Club<br>University of Florida Institution of Food and Agriculture<br>Weyerhaeuser |

See **Appendix A** for links to resources referenced in this document. For additional information, contact:

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# List of Acronyms and Abbreviations

| | |
|---|---|
| ac | Acre |
| AC | Spatial Autocorrelation |
| AWT | Advanced Waste Treatment |
| ATU | Aerobic Treatment Unit |
| BAF | Biochemical Attenuation Factor |
| BEBR | Bureau of Economic and Business Research |
| BMAP | Basin Management Action Plan |
| BMPs | Best Management Practices |
| CASTNET | Clean Air Status and Trends Network |
| cfs | Cubic Feet Per Second |
| CMAQ | Community Multiscale Air Quality |
| CRF | Controlled Release Fertilizer |
| CRISPS | Collaborative Research Initiative on Sustainability and Protection of Springs |
| DEP | Florida Department of Environmental Protection |
| DMR | Discharge Monthly Report |
| DO | Dissolved Oxygen |
| DWTS | Distributed Wastewater Treatment System |
| ENR | Enhanced Nutrient Reducing |
| F.A.C. | Florida Administrative Code |
| F.A.R. | Florida Administrative Register |
| FAS | Floridan Aquifer System |
| FDACS | Florida Department of Agriculture and Consumer Services |
| FDOH | Florida Department of Health |
| FF | Farm Fertilizer |
| FGS | Florida Geological Survey |
| FLUCCS | Florida Land Use Cover and Forms Classification System |
| FLWMI | Florida Water Management Inventory |
| FNAI | Florida Natural Areas Inventory |
| FOWA | Florida Onsite Wastewater Association |
| F.S. | Florida Statutes |
| FSAID | Florida Statewide Agricultural Irrigation Demand |
| FSU | Florida State University |
| FYN | Florida Yards and Neighborhoods |
| GIS | Geographic Information System |
| gpd | Gallons Per Day |
| IA | Implementation Assurance |
| IV | Implementation Verification |
| in/yr | Inch Per Year |
| lbs | Pounds |
| lbs-N/yr | Pounds of Nitrogen Per Year |
| LID | Low Impact Development |
| LVS | Linear Vegetation Survey |

| | |
|---|---|
| LW | Livestock Waste |
| MCAVA | Marion County Aquifer Vulnerability Assessment |
| MFLs | Minimum Flows and Levels |
| mgd | Million Gallons Per Day |
| mg/L | Milligrams Per Liter |
| N | Nitrogen |
| N/A | Not Applicable |
| NADP | National Atmospheric Deposition Program |
| NELAC | National Laboratory Environmental Accreditation Conference |
| NELAP | National Environmental Laboratory Accreditation Program |
| NHD | National Hydrography Database |
| NNC | Numeric Nutrient Criteria |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge and Elimination System |
| NSF | NSF International (formerly National Sanitation Foundation) |
| NSILT | Nitrogen Source Inventory Loading Tool |
| NTN | National Trends Network |
| OAWP | Office of Agricultural Water Policy (FDACS) |
| OFS | Outstanding Florida Spring |
| OSTDS | Onsite Sewage Treatment and Disposal System |
| PBTS | Performance-based Treatment System |
| PFA | Priority Focus Area |
| PSA | Public Service Announcement |
| PWS | Public Water Systems |
| QA/QC | Quality Assurance/Quality Control |
| RIB | Rapid Infiltration Basin |
| RPS | Rapid Periphyton Survey |
| SAV | Submerged Aquatic Vegetation |
| SBIO | DEP Statewide Biological Database |
| SCI | Stream Condition Index |
| SJRWMD | St. Johns River Water Management District |
| SOP | Standard Operating Procedure |
| STF | Sports Turf Fertilizer |
| STORET | Florida Storage and Retrieval Database |
| SWFWMD | Southwest Florida Water Management District |
| SWIM | Surface Water Improvement and Management |
| TDEP | Total Atmospheric Deposition Model |
| TDS | Total Dissolved Solids |
| TMDL | Total Maximum Daily Load |
| TN | Total Nitrogen |
| TP | Total Phosphorus |
| TSS | Total Suspended Solids |
| UF | University of Florida |
| UFA | Upper Floridan aquifer |

| | |
|---|---|
| UF–IFAS | University of Florida-Institute of Food and Agricultural Sciences |
| USDA | U.S. Department of Agriculture |
| USGS | U.S. Geological Survey |
| UTF | Urban Turfgrass Fertilizer |
| WAFR | Wastewater Facility Regulation (Database) |
| WBID | Waterbody Identification (Number) |
| WIN | Florida Watershed Information Network Database |
| WMD | Water Management District |
| WMP | Watershed Management Plan |
| WWTF | Wastewater Treatment Facility |
| Year | yr |

# Executive Summary

The Florida Springs and Aquifer Protection Act (Chapter 373, Part VIII, Florida Statutes [F.S.]), along with the Watershed Restoration Act (section 403.067, F.S.), provide for the protection and restoration of Outstanding Florida Springs (OFS), which comprise 24 first magnitude springs, 6 additional named springs, and their associated spring runs. The DEP has assessed water quality in each OFS and has determined that 26 of the 30 OFS are impaired for the nitrate form of nitrogen. Silver Springs and the Rainbow Springs Group are impaired first magnitude OFS.

The Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP area includes Silver Springs, Silver Springs Group, the Silver River, Rainbow Springs Group, Rainbow Springs Group Run, and the Rainbow River, along with the groundwater contributing area for the springs (**Figure ES-1**). These waterbodies are collectively referred to as Silver and Rainbow in this document. The BMAP area is located largely within Marion County, with portions extending into Alachua, Levy, Putnam, Sumter, and Lake Counties, and encompasses all or portions of several municipalities including the City of Ocala, City of Belleview, City of Dunnellon, City of Hawthorne, Town of McIntosh, City of Fruitland Park, Town of Lady Lake, City of Wildwood, City of Williston, the On Top of the World CDD, and the Villages Community Development Districts (CDDs).

## Silver and Rainbow Springs Priority Focus Area (PFA)

Each spring area has a delineated PFA. These PFAs represent the areas in the basin where the aquifer is most vulnerable to inputs and where there are the most connections between groundwater and Silver Springs and the Rainbow Springs Group. The PFA areas are based on Marion County's identified Primary Protection Zones and supported by local ordinance. Consistency in the enactment of policy was a factor in DEP's consideration when basing PFA boundaries on the existing county ordinance at the time of development.

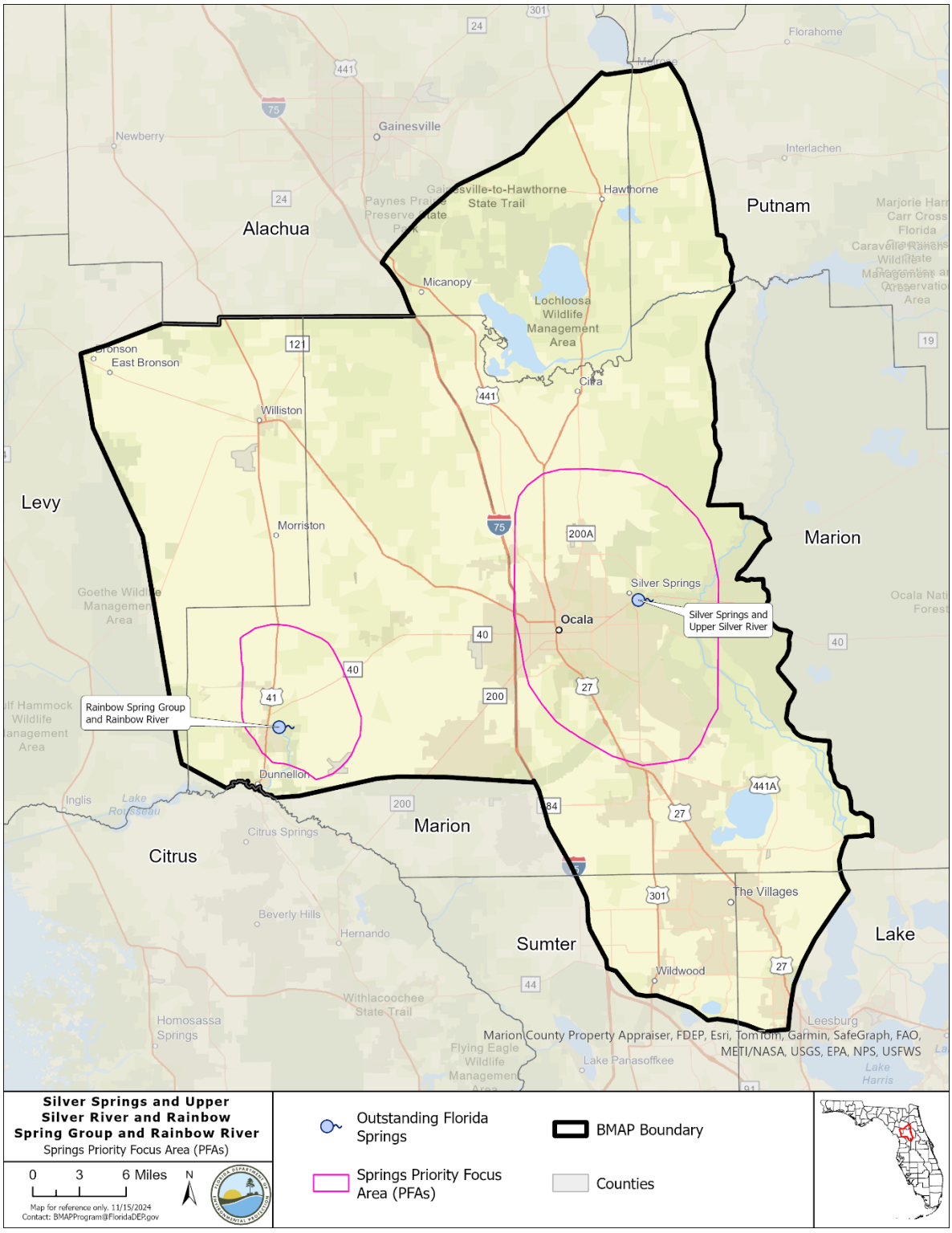


**Figure ES-1. Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP and PFA boundaries**

## Nitrogen Source Identification, Required Reductions, and Options to Achieve Reductions

At least 30 named springs comprising Silver Springs and Silver Springs Group are the main source of water to the Upper Silver River, which along with the springs was identified as impaired because of a biological imbalance caused by excessive concentrations of nitrate in the water. In 2012, total maximum daily loads (TMDLs) for nitrate were developed as water quality restoration targets for Silver Springs and the Upper Silver River. The TMDLs established a long- term monthly average nitrate target of 0.35 milligrams per liter (mg/L).

The springs associated with Rainbow Springs Group and the next segment of the Rainbow River, called Rainbow Springs Group Run, are the primary source of water for the Rainbow River. They were identified as impaired because of a biological imbalance caused by excessive concentrations of nitrate in the water. In 2013, TMDLs for nitrate were developed as water quality restoration targets for the Rainbow Springs Group and Rainbow Springs Group Run; they established a long-term monthly average nitrate target of 0.35 mg/L.

DEP developed the Nitrogen Source Inventory Loading Tool (NSILT) to provide information on the major categories of nitrogen sources in the groundwater and spring contributing areas for the springs. Among other sources, urban turfgrass fertilizer (UTF) represents 20% of the nitrogen loading to groundwater, onsite sewage treatment and disposal systems (OSTDS or septic systems) 32%, and agriculture 32% of the total loading to groundwater based on the DEP analysis conducted using the NSILT.

The total load reduction required to achieve the TMDL targets at the spring vents is 3,142,039 pounds of nitrogen per year (lbs-N/yr). The following milestones are being established to measure progress towards achieving the total necessary load reduction of 3,142,039 lbs/yr:

- 2028 - Reduction of 942,612 lbs-N/yr (30%).
- 2033 - Additional reduction of 1,571,020 lbs-N/yr (50%).
- 2038 - Additional reduction of 628,408 lbs-N/yr (20%).

While reductions to groundwater will benefit the springs systems, it is uncertain to know with precision how those reductions will impact the necessary reductions at the spring vents. DEP will continue to monitor the springs to better understand the benefits from the policies and implemented projects and management strategies within the springshed. The BMAP is designed to achieve 80% of the load reductions to the spring vents by 2033 and 100% by 2038. DEP will evaluate progress towards these milestones and will report to the Governor and Florida Legislature annually. Assessment of progress toward these milestones must be conducted every five years and revisions to the BMAP 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. If needed, policies and management strategies will be adjusted to ensure the target spring

vent concentrations are achieved. This may include requiring additional management strategies.. Any such change would be incorporated into a future updated BMAP through a formal adoption process.

Cost estimates were provided by stakeholders for approximately 50% of the projects and management actions listed in the BMAP. The total estimated cost for these projects exceeds $877 million. Approximately $334 million have been expended to date on completed projects. While stakeholders are required to implement additional projects listed in the BMAP, accurate cost estimates have not yet been developed for every project. The total cost estimate for all projects referenced in the BMAP is unknown until more cost information is provided. By the next 5-year BMAP milestone, stakeholders are anticipated to achieve additional reductions in annual nutrient loadings to the Silver and Rainbow Basin, including 35,469 pounds of TN, based on conservative estimates of the planned and underway projects listed to date.

For the list of water quality improvement projects and management strategies, see **Appendix B**. Included are owner- implemented best management practices (BMPs) for farm fertilizer (FF), livestock waste (LW) and STF; wastewater treatment facility (WWTF) upgrades; projects to reduce UTF application; and OSTDS remediation projects.

Successful BMAP implementation requires commitment, dedicated funding and ongoing follow-up. Stakeholders have expressed their intention to carry out the plan, monitor its effects, and continue to coordinate within and across jurisdictions to achieve nutrient reduction goals. As the BMAP and TMDLs must be achieved by 2038, the DEP, water management districts (WMDs), FDOH, and FDACS will also implement state-level management strategies using relevant state and federal funding.

## Restoration Approaches

Reduction in the nitrogen loading to the aquifer is needed to achieve the load reduction requirements at the spring vents. To ensure that load reductions are achieved at the spring vents, the restorations actions described below are being implemented. These actions are designed to reduce nutrient loading to the aquifer, which will reduce the load at the vents and ultimately achieve the TMDL targets. Monitoring at the spring vents during implementation will continue to assess progress.

- **New OSTDS** – Florida law (sections 373.811 and 403.067, F.S) prohibits new OSTDS on lots of one acre or less within the BMAP boundary, unless the systems are enhanced nutrient-reducing OSTDS systems or other wastewater treatment systems that achieve at least 65% nitrogen reduction. The OSTDS remediation plan pursuant to section 373.807, F.S. was updated in this BMAP iteration to prohibit the installation of new OSTDS on any lot size within the BMAP boundary unless the systems are enhanced nutrient-reducing OSTDS systems or other wastewater treatment systems that achieve at least 65%.

- **Existing OSTDS** –For the BMAP remediation plan required under subsection

373.807(3), F.S. (detailed in **Appendix E**), any existing OSTDS within the BMAP boundary that requires a permit to modify or replace an existing system pursuant to Chapter 62-6, F.A.C., must connect to sewer if available, or if not available, upgrade or replace the OSTDS to meet enhanced nutrient reducing OSTDS requirements that achieve at least 65% nitrogen reduction, unless sewer connections will be available based on a BMAP-listed project. All OSTDS subject to this policy must include enhanced nitrogen treatment by 2038. Local governments may expand the geographic extent of this requirement by incorporating it into their local ordinances and local government specific remediation plans required under section 403.067, F.S., however, local governments are responsible for implementing their ordinances. In the 2020 Clean Waterways Act, local governments were required to submit OSTDS remediation plans in accordance with section 403.067, F.S., if applicable, to DEP by Aug. 1, 2024, to address existing OSTDS and the potential for future OSTDS.

- **WWTFs** – The required treatment of wastewater effluent to advanced waste standards applies to all surface water disposal and certain reuse disposal determined to be necessary by the department within the BMAP area. In the 2020 Clean Waterways Act, local governments were required to submit wastewater treatment facility (WWTF) plans in accordance with section 403.067, F.S., if applicable, to DEP by Aug. 1, 2024, to address wastewater loads and the potential for future additional loads, including those created from sewering OSTDS. Subparagraph 403.067(7)(a)9., F.S., was amended in 2024 to clarify that private domestic wastewater facilities must provide this information to local governments effective July 1, 2024. Information related to private facilities will need to be included in future local government WWTF plans if not captured in the initial plans.

- **Local governments with OSTDS or WWTF** are expected to meet their overall reduction milestones and to keep their project lists current, including any efforts to address OSTDS loading and any necessary wastewater facility improvements. Private wastewater facilities are also expected to meet their assigned reductions and keep their project lists current. The projects identified in these plans have been included in the BMAP project list under **Appendix B** and are adopted as part of the BMAP requirements.

- **UTF** – UTF consists of fertilizers applied to turfgrass typically found in residential and urban areas (including residential lawns and public green spaces). Fertilizers are applied either by the homeowner or a lawn service company on residential properties. On nonresidential properties, fertilizers may be applied by contractors or maintenance staff. UTF sources are assigned to the applicable local government. Strategies to address UTF include education, enforcement of local government ordinances related to appropriate use of fertilizer, and stormwater projects.

- **STF –** STF sources include golf courses and other sporting facilities. Reductions from most sports facilities, including publicly-owned golf courses and school district sites, are

assigned to the applicable local government. Private sporting facilities are assigned to the owner. Sporting facilities are required to follow the 2025 Sports Turf BMP Manual to protect water resources. Reductions from private golf courses are assigned to the golf course owners. All golf courses within the BMAP are required to follow the 2021 DEP Golf Course BMP Manual and submit for approval a final nutrient management plan (NMP) to DEP within two years of BMAP adoption, and to follow their plan.

- **FF** – All FF sources are required to implement BMPs or perform monitoring to demonstrate compliance with the TMDL. A 15% reduction to groundwater is estimated for owner-implemented BMPs. Additional reduction credits could be attained through better documentation of nutrient reductions achieved through BMP implementation or implementation of additional agricultural cost-share BMPs, projects or practices, such as precision irrigation, soil moisture probes, controlled release fertilizer and cover crops.

- **LW** – All LW sources are required to implement BMPs or perform monitoring to demonstrate compliance with the TMDL. A 10% reduction to groundwater is estimated for owner-implemented BMPs. Additional credits could be attained through better documentation of nutrient reductions achieved through BMP implementation, NMP updates and implementation, and additional projects.

- **Other Agriculture** - Cooperative agricultural regional water quality improvement elements are being developed to reduce agricultural nutrient loading in combination with owner-implemented BMPs, cost-share BMPs, other measures, and state-sponsored regional projects. The BMAP outlines a collaborative framework for identifying, prioritizing and implementing regional projects that address nutrient loading from agricultural operations. Partner agencies will work in annual cycles with agricultural landowners to provide technical support, regulatory guidance and funding opportunities to enhance implementation and the success of regional water quality improvement initiatives.

# Section 1: Background

## 1.1 Legislation

Chapter 373, Part VIII, Florida Statutes (F.S.), the Florida Springs and Aquifer Protection Act, along with the Watershed Restoration Act (section 403.067, F.S.), provides for the protection and restoration of Outstanding Florida Springs (OFS), which comprise 24 first magnitude springs, six additional named springs, and their associated spring runs. DEP has assessed water quality in each OFS and determined that 26 of the 30 OFS are impaired for the nitrate form of nitrogen. Silver Springs and the Rainbow Springs Group are impaired first magnitude OFS. Development of the BMAP to meet the requirements of the Florida Springs and Aquifer Protection Act for the Silver and Rainbow Basin was initiated in 2018. Since adoption, additional statutory requirements in Chapter 373, F.S., and section 403.067, F.S., have been enacted into law that continue to enhance the protection and restoration of water quality throughout Florida. For specific requirements, please refer to the source management sections below.

## 1.2 Water Quality Standards and TMDLs

A TMDL represents the maximum amount of a given pollutant that a waterbody can assimilate and still meet water quality criteria. Upper Silver River, Silver Springs Group, Silver Springs, Rainbow Springs Group, and Rainbow Springs Group Run are Class III waterbodies with a designated use of recreation, propagation, and the maintenance of a healthy, well-balanced population of fish and wildlife. They are also designated as Outstanding Florida Waters (OFWs). These waters are impaired by nitrate nitrogen, which in excess has been demonstrated to adversely affect flora or fauna through the excessive growth of algae. Excessive algal growth results in ecological imbalances in springs and rivers and can produce human health problems, foul beaches, inhibit navigation, and reduce the aesthetic value of the resources.

DEP adopted nutrient TMDLs for Upper Silver River, Silver Springs Group, and Silver Springs in November 2012 (Chapter 62-304, Florida Administrative Code [F.A.C.]), and for the Rainbow Springs Group and Rainbow Springs Group Run in 2013 (Table 1). The TMDLs established the target of a long-term monthly average of 0.35 milligrams per liter (mg/L) of nitrate to be protective of the aquatic flora and fauna (Hicks and Holland 2012, Holland and Hicks 2013). The period of record for water quality data evaluated for the TMDLs were January 1, 2000, through December 30, 2011, for Silver Springs waterbodies, and January 1, 2000, through December 30, 2010, for Rainbow Springs waterbodies.

**Table 1. Restoration targets for Silver and Rainbow TMDLs**

| 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 |

| Waterbody or Spring Name | Waterbody Identification (WBID) Number | Parameter | TMDL (mg/L) |
|---|---|---|---|
| **Upper Silver River** | 2772E | 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 |

## 1.3 BMAP Requirements

Subsection 403.067(7), F.S., provides DEP with the statutory authority to develop and implement BMAPs. A BMAP is a comprehensive set of strategies to achieve the required pollutant load reductions. It requires any entity with a specific pollution load reduction to submit to DEP projects or strategies to meet 5-year pollution reduction milestones. In addition to this authority, the Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.) describes additional requirements and prohibitions for the 30 OFS.

## 1.4 BMAP Area

The Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP area (**Figure 1**) comprises approximately 1,668 square miles. The Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP area includes Silver Springs, Silver Springs Group, the Silver River, Rainbow Springs Group, Rainbow Springs Group Run, and the Rainbow River, along with the groundwater contributing area for the springs. These waterbodies are collectively referred to as Silver and Rainbow in this document.

The BMAP area is located mostly in Marion County, with portions extending into Alachua, Levy, Putnam, Sumter, and Lake Counties, and encompasses all or portions of several municipalities including the City of Ocala, City of Belleview, City of Dunnellon, City of Hawthorne, Town of McIntosh, City of Fruitland Park, Town of Lady Lake, City of Wildwood, City of Williston, the On Top of the World CDD, and the Villages Community Development Districts (CDDs). The Ocala National Forest is located along the eastern border of the BMAP area.

Silver Springs is a group of springs, with as many as 30 named springs and numerous other unnamed groundwater discharges. WBID 2772A is the head spring, also referred to as Mammoth Springs, and the largest of the group. Water discharged from this spring appears to originate from two distinct locations: Mammoth East and Mammoth West. WBID 2772C consists of a short section of the Silver River called Silver Springs Group, ending a short distance downstream from the confluence with Half Mile Creek, containing numerous other springs contributing flow to the Silver River. Half Mile Creek is the only significant surface tributary to the impaired segments of Silver River. WBID 2772E is a 1.7 - mile section of the Upper Silver River starting below the confluence of the Silver River with Half Mile Creek. Silver Springs and the Silver River are located in Silver Springs State Park.

Rainbow Springs Group (WBID 1320A) encompasses 11 named springs within the Head Springs area, defined as the first 1.5 miles of the Rainbow River (SWFWMD 2011). It is located in Rainbow River State Park. Rainbow Springs Group Run (WBID 1320B), the next segment of the Rainbow River, includes additional named springs and inputs from Indian Creek and its springs. Most of the land surrounding Rainbow Springs Run is in private ownership and developed with residential housing.

The northern portion of the BMAP area overlaps with the Orange Creek Basin. Water quality issues in the large lakes, Orange Creek, and connecting streams are addressed by the Orange Creek BMAP. Lake Weir is also located within the Silver and Rainbow BMAP area. Though Lake Weir is not directly addressed by the Silver and Rainbow BMAP it will benefit from the policies of this BMAP.

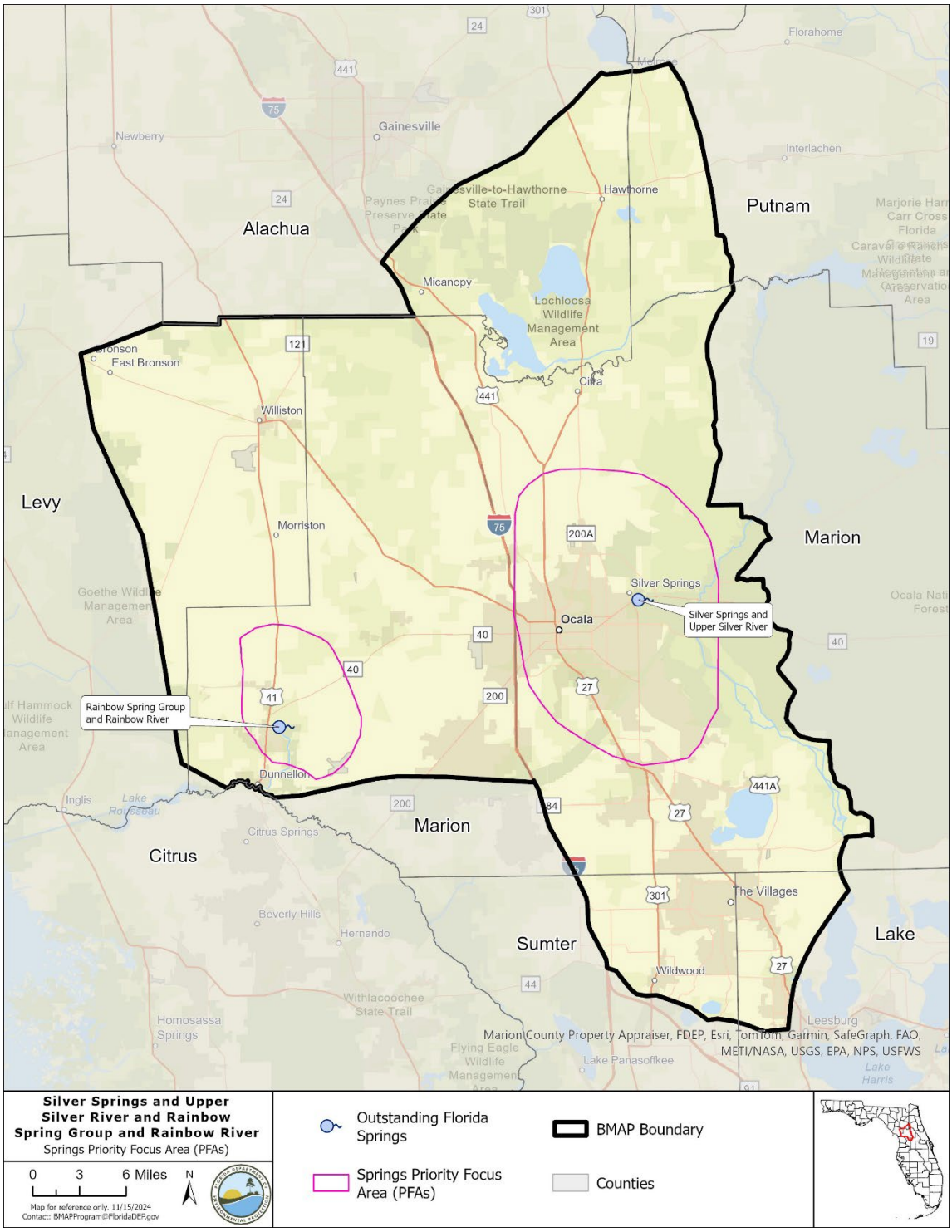


**Figure 1. Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP and PFA boundaries**

### *1.4.1 Hydrogeology*

Groundwater flow in the BMAP area originates from the karstic UFA. A surficial aquifer may overlie portions of the UFA, and in some places a confining unit may be present. The UFA is recharged from rainfall collected across the karst terrain.

Geology and hydrogeology influence the characteristics of Silver Springs and help explain many of the observed groundwater quality issues. Around Silver Springs and moving westward, the Ocala Group, the geological formation containing the limestone rocks of the UFA, is close to the land surface and typically under unconfined or water table aquifer conditions. The proximity of the UFA to the land surface continues west across the Rainbow Springs Group and Rainbow River area.

Overburden is thicker to the east of Silver Springs moving towards the Ocklawaha River. As a result, the Floridan Aquifer lies deeper under the land surface. East of Silver Springs, the Ocala Group may be overlain by the Hawthorn Group, a phosphate-rich clay layer, which can act as an intermediate confining unit and may contain an intermediate aquifer. The UFA typically is confined where the Hawthorn Group is present. As a confining layer, the Hawthorn Group may retard the downward movement of water to the UFA.

Several conclusions were drawn from modeling results and dye tracer tests completed for Silver Springs (Boniol 2013, McGurk 2012). The movement of groundwater to the springs is a mix of conduit flow and matrix flow. However, comparing modeled results with dye tracer results, it was concluded that most of the groundwater movement in the two-year capture zone (closest to the spring) is probably by conduit flow. Conduit flow moves groundwater more quickly toward the spring than matrix flow; thus, distance from the spring is not a completely reliable indicator of the potential effect of a nitrate source on the spring's nitrate concentration.

Both Alachua and Marion Counties have prepared detailed aquifer vulnerability maps using local information (Marion County Aquifer Vulnerability Assessment [MCAVA] and Alachua County Aquifer Vulnerability Assessment). In Alachua County, the portion of the Silver Springs and Upper Silver River area, including Orange Lake, is classified as moderately vulnerable, while east of Orange Lake is classified as low vulnerability. In Marion County, the Silver Springs and Upper Silver River area west of Silver Springs and the western half of Lake Weir are a mix of the two highest vulnerability classes: most vulnerable and more vulnerable. East of Silver Springs is classified as less vulnerable to the south and vulnerable to the north of the springs. The Florida Aquifer Vulnerability Assessment (Arthur et al. 2005) is less detailed than MCAVA, but classifies the parts of Sumter County and Lake County in the BMAP area as more vulnerable.

The Rainbow Springs Group and Rainbow River area is classified by Marion County's MCAVA as either most vulnerable or more vulnerable. The most vulnerable area is in southwestern Marion County. The Florida Aquifer Vulnerability Assessment (Arthur et al. 2005) classifies the part of Levy County in the BMAP area as more vulnerable.

### *1.4.2 BMAP Boundary Delineation*

The established BMAP boundary reflects both the approximate extent of the 1,000-year groundwater capture areas as modeled by SJRWMD and SWFWMD and potentiometric springshed delineations, but they are referenced to roads wherever possible to provide a readily

recognizable boundary tied to a permanent feature on the land surface. Springshed delineations are estimated based on the UFA's potentiometric surface, which can vary significantly from year to year because of climatic conditions such as rainfall and seasonality, and the density of measuring wells. For these reasons, the BMAP area does not coincide with any particular year's potentiometric surface, although variations in potentiometric surface were considered in its development.

The groundwater divide between Silver Springs and Rainbow Springs Group is not well defined **(Figure 2)**. Different authors have defined the extent of the Silver Springs Springshed west of I-75 (Phelps 2004) or farther north to include Lake Santa Fe or farther south almost to Lake Harris (Boniol 2013). A part of the contributing area for the Rainbow Springs Group Springshed delineated by SWFWMD extends across the Silver Springs contributing area into Alachua County (SWFWMD 2015, Jones 1996).

For this BMAP iteration, the two springsheds were combined into one BMAP boundary 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 policies implemented to address pollutant sources are largely the same for both spring systems. Two plans are not needed to implement most of these policies.
- Marion County has the largest land area within both BMAP areas: 60 % of Silver Springs and 65 % of Rainbow Springs. Alachua County and the City of Ocala spans both springshed areas. One BMAP provides for greater consistency in local jurisdiction planning and policy making.

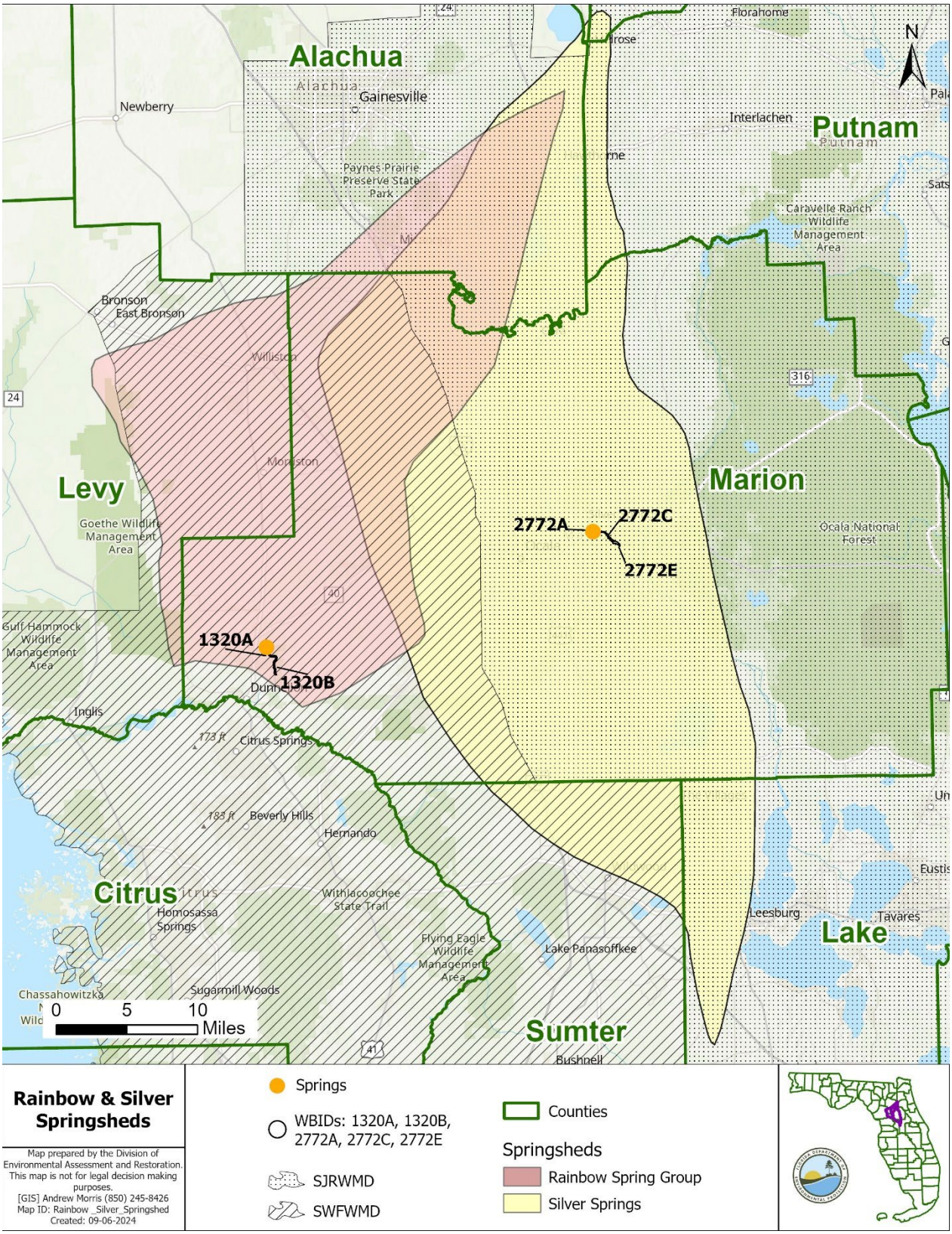


**Figure 2. Silver Springs and Rainbow Springs Group springsheds**

## 1.5 Priority Focus Area (PFA)

In compliance with the Florida Springs and Aquifer Protection Act, the 2018 BMAP delineated PFAs for the Silver Springs and Upper Silver River area and Rainbow Springs Group and Rainbow River area, defined as the area of a basin where the Floridan aquifer is generally most vulnerable to pollutant inputs and where there is a known connectivity between groundwater pathways and an OFS. The PFAs provide a guide for focusing restoration strategies where science suggests these efforts will most benefit the springs. The document describing the delineation process for the PFAs is on the DEP website (link is provided in **Appendix D)**.

### *1.5.1 Description*

The PFAs delineate the estimated modeled 10-year travel time to each spring system. Dye trace studies performed in the Silver Springs and Upper Silver River area confirm the movement of water to Silver Springs and Silver River in reasonably short times. The vulnerability of both PFAs is largely supported through the MCAVA.

Nitrogen sources are more likely to influence groundwater quality under certain conditions. For example, where soils are sandy and well drained, less nitrogen is converted to gas and released into the atmosphere or taken up by plants, compared with other soil types. Therefore, local soil types play a role in how much nitrogen travels from the land surface to groundwater in a specific springshed. Also, the underlying geologic material influences the vulnerability of the underlying aquifers and the rate of lateral movement within the Floridan aquifer toward the springs. These conditions, and others, were considered in the delineation of the PFA (see **Appendix D**). The geographic information system (GIS) files associated with the PFA boundary are available to the public on the DEP Map Direct webpage.

### *1.5.2 Additional Requirements*

In accordance with section 373.811, F.S., the following activities are prohibited in the BMAP boundary:

- New domestic wastewater disposal facilities, including rapid infiltration basins (RIBs), with permitted capacities of 100,000 gpd or more, except for those facilities that meet an advanced waste treatment (AWT) standard of no more than 3 mg/L TN on an annual permitted basis.

- New OSTDS (or septic systems) on lots one acre or less inside the BMAP where central sewer is available. If central sewer is unavailable, then the owner must install a DEP-approved enhanced nutrient-reducing OSTDS that achieves 65% nitrogen reduction, or other wastewater system that achieves 65% reduction.

- New facilities for the disposal of hazardous waste.

- The land application of Class A or Class B domestic wastewater biosolids not in accordance with a DEP-approved NMP establishing the rate at which all biosolids, soil amendments, and sources of nutrients at the land application site can be applied to the land for crop production, while minimizing the amount of pollutants and nutrients discharged to groundwater or waters of the state.

- New agricultural operations that do not implement BMPs, measures necessary to achieve pollution reduction levels established by DEP, or groundwater monitoring plans approved by a WMD or DEP.

### *1.5.3 Biosolids and Septage Application Practices*

The aquifer contributing to the springs is highly vulnerable to contamination by nitrogen sources and where soils have a high to moderate tendency to leach applied nitrogen. DEP previously documented elevated nitrate concentrations in groundwater beneath septage application zones in contributing areas to springs. Within BMAP areas for OFS, section 373.811, F.S. prohibits the land application of Class A or Class B domestic wastewater biosolids not in accordance with a department approved NMP establishing the rate at which all biosolids, soil amendments, and sources of nutrients at the land application site can be applied to the land for crop production while minimizing the amount of pollutants and nutrients discharges to groundwater or waters of the state. Further, there are additional requirements for biosolid and septage application practices under Chapter 62-640 F.A.C.

## 1.6 Other Scientific and Historical Information

In preparing this BMAP, DEP collected and evaluated credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and springs systems. Some of the information collected is specific to the Silver and Rainbow Basin, while other references provide information on related knowledge for restoring springs, such as nitrogen-reducing technologies, the treatment performance of OSTDS, and runoff following fertilizer applications.

## 1.7 Stakeholder Involvement

Stakeholder involvement is critical to develop, gain support for, and secure commitments in a BMAP. In the context of the BMAP, there are different organizations named in the plan.

- **R*esponsible entities*** are those organizations who are assigned load reductions and must comply with the BMAP provisions; these organizations are sometimes referred to as "***Lead Entities***."
- ***Responsible agencies*** may be accountable for reducing loads from their own activities or have an important public sector role in BMAP implementation such as regulatory oversight, monitoring, research, or other related duties.
- ***Interested stakeholders*** are those organizations that have engaged with BMAP development and implementation with the intention to influence the implementation process and outcomes.
- ***Stakeholders*** is a more general term often used in the BMAP context to include all three of the previously mentioned organizations—responsible entities, responsible agencies, and interested stakeholders.

The BMAP process engages responsible entities, responsible agencies, and interested stakeholders and promotes coordination and collaboration to address the pollutant load reductions necessary to achieve the TMDLs. DEP invited stakeholders to participate in the BMAP development process and encouraged public participation and consensus to the greatest practicable extent. **Table ES-1** identifies the stakeholders who participated in the development of this BMAP.

During the development and update of the Silver and Rainbow BMAP, DEP held a series of meetings involving stakeholders and the public. The purpose of these meetings was to consult with stakeholders to gather information, evaluate the best available science, define management strategies and milestones, update the NSILT, develop entity required reductions, and update monitoring requirements. Public meetings were held virtually in January 2024 and May 2024. An in-person meeting was held on October 30, 2024, in Ocala, Florida. All meetings were open to the public and noticed in the *Florida Administrative Register* (F.A.R.). Additionally, a final public meeting was held on April 11, 2025, that was noticed in the F.A.R. and in local newspapers.

In addition to public meetings, DEP held over 20 one-on-one meetings with the responsible stakeholders for this BMAP. Throughout the process, DEP made themselves available to answer stakeholder questions.

Upon BMAP adoption, DEP intends to facilitate annual meetings with stakeholders to review progress towards meeting entity required reductions identified for the milestones that are needed to achieve the TMDL.

## 1.8 Description of BMPs Adopted by Rule

**Table 2** identifies the FDACS adopted agricultural BMPs and BMP manuals relevant to this BMAP, along with environmental resource permitting requirements for certain land use activities.

**Table 2. BMPs and BMP manuals adopted by rule as of July 2025**

| Agency | F.A.C. Chapter | Chapter Title |
|---|---|---|
| **FDACS Office of Agricultural Water Policy (OAWP)** | 5M-1 | Office of Agricultural Water Policy |
| **FDACS OAWP** | 5M-6 | Florida Nursery Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-8 | Florida Vegetable and Agronomic Crop (VAC) Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-9 | Florida Sod Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-11 | Florida Cattle Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-12 | Conservation Plans for Specified Agricultural Operations |
| **FDACS OAWP** | 5M-13 | Florida Specialty Fruit and Nut Crop Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-14 | Florida Equine Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-16 | Florida Citrus Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-17 | Florida Dairy Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS OAWP** | 5M-18 | Florida Agriculture Wildlife Best Management Practices |
| **FDACS OAWP** | 5M-19 | Florida Poultry Operations, 2024 Edition: Water Quality and Water Quantity Best Management Practices |
| **FDACS Division of Agricultural Environmental Services** | 5E-1 | Fertilizer |
| **FDACS Division of Aquaculture** | 5L-3 | Aquaculture Best Management Practices, 2023 Edition |
| **FDACS Florida Forest Service** | 5I-6 | Best Management Practices for Silviculture, 2008 Edition |
| **FDACS Florida Forest Service** | 5I-8 | Florida Forestry Wildlife Best Management Practices for State Imperiled Species |
| **DEP** | 62-330 | Environmental Resource Permitting |

Additionally in 2024, the Florida Legislature ratified changes to the Statewide Stormwater Rule related to the minimum treatment requirements for Environmental Resource Permits for urban stormwater. The treatment requirements for nitrogen and phosphorus were increased to reduce the nutrient loading of future urban development and other structural changes to assist with water quality restoration in impaired waters.

# Section 2: Implementation to Achieve TMDLs

## 2.1 Allocation of Pollutant Loads

### *2.1.1 Nutrients in the Springs and Spring Systems*

DEP developed the NSILT to provide information on the estimated nitrogen loading from major sources to groundwater in the spring contributing area for the OFS (**Table 3**). The NSILT was updated in 2023 with more current data and some methodology improvements and revised in 2024 based on stakeholder feedback. The NSILT is a GIS- and spreadsheet-based tool that provides spatial estimates of the relative contribution of nitrogen from major nitrogen sources to groundwater and accounts for the transport pathways and processes affecting the various forms of nitrogen as they move from the land surface through the soil and geologic strata to groundwater.

The first major factor to be considered in estimating the loading to groundwater in the NSILT is the attenuation of nitrogen as it moves from its source through the environment, before it reaches the Upper Floridan aquifer (UFA). Biological and chemical processes that occur as part of the nitrogen cycle, as well as hydrogeological processes, control the movement of nitrogen from the land surface to groundwater. Many of these processes attenuate (impede or remove) the amount of nitrogen transported to groundwater. An understanding of how water moves through the subsurface and the processes that transform the different forms of nitrogen is essential for estimating nitrogen loading to groundwater from various sources.

A second major factor to consider in estimating the loading to groundwater is the geologic features in the springshed and the related "recharge rate." Water movement between the shallow groundwater (surficial aquifer, where present) and the deeper aquifer (UFA) is slowed by a low permeability layer of clay, silt and fine sand that retards the vertical movement of infiltrating water from the surface. The UFA is in limestone that can be prone to dissolving and, over geologic time, develop numerous karst features (sinkholes, caves and conduits). These features allow water to move directly and relatively rapidly from the land surface into the aquifer, and in some areas, the groundwater in the aquifer then moves rapidly to the springs.

Potential recharge rates from the surface to the UFA are affected by variations in geologic materials and the presence of karst features. DEP estimated three recharge rate categories, which were applied to the NSILT:

**Silver Springs and Upper Silver River area:**

- Low recharge (Less than 4 inches per year [in/yr]).
- Medium recharge (4 to 12 in/yr).
- High recharge (greater than 12 in/yr).

**Rainbow Springs Group and Rainbow River area:**

- Low recharge (Less than 4 in/yr).
- Medium recharge (4 to 10 in/yr).
- High recharge (greater than 10 in/yr).

In addition to the low-, medium-, and high-recharge categories for Silver Springs, there are areas located near Lochloosa Lake and Marshall Swamp where water is discharged from the UFA. Discharge areas were not included in the NSILT. There are no low recharge or discharge areas in the Rainbow Springs Group and Rainbow River area.

In the NSILT, DEP applied different attenuation factors to different types of sources to estimate the various biological, chemical and hydrogeological effects. Attenuation is the process where the nitrogen source is removed or stored by chemical and biological processes before it reaches the groundwater. In the NSILT estimates, the attenuation rates ranged from 90% (for atmospheric deposition) to 25% (for wastewater disposal in a RIB). This means that, for these examples, only 10% of nitrogen from atmospheric deposition is expected to reach the aquifer, while 75% of nitrogen from a RIB is expected to reach groundwater, because the remainder is attenuated by various chemical and biological processes.

Phosphorus is naturally abundant in the geologic material underlying much of Florida and is often present in high concentrations in surface water and groundwater. Monitoring and evaluation of phosphorus and other chemical and biological influences on the springs continues as the nitrate-nitrite TMDLs are implemented.

**Table 3. Estimated total nitrogen load to groundwater by source in the Silver and Rainbow BMAP area**

| Nitrogen Source | Total Nitrogen Load to Groundwater in Pounds of Total Nitrogen Per Year (lbs/yr) | % Contribution |
|---|---|---|
| **OSTDS** | 1,265,209 | 32% |
| **UTF** | 778,537 | 20% |
| **Atmospheric Deposition** | 336,807 | 9% |
| **STF** | 164,784 | 4% |
| **LW** | 921,420 | 23% |
| **FF** | 348,742 | 9% |
| **Biosolids** | 41,561 | 1% |
| **WWTFs** | 81,898 | 2% |
| **Total** | **3,938,958** | **100%** |

### *2.1.2 Assumptions and Considerations*

The NSILT estimates are based on the following assumptions and considerations:

- **NSILT Nitrogen Inputs** – The methods used to estimate nitrogen inputs for each pollutant source were based on a detailed synthesis of information, including direct water quality measurements, census data, surveys following University of Florida-Institute of Food and Agricultural Sciences (UF-IFAS) trainings, WWTF permits, published scientific studies and reports, and information obtained in meetings with agricultural producers, WMDs and FDACS. For some pollutant source categories, nitrogen inputs were obtained using assumptions and extrapolations and, as a result, these inputs may be further refined if more detailed information becomes available. More details on the NSILT methodology and assumptions are in the NSILT Technical Support Document in **Appendix F**.

- **OSTDS Inventory and Load Contribution** – A per capita contribution to an OSTDS of 10 lbs-N/year was used to calculate the loading from OSTDS. The average household contribution was estimated based on 2020 U.S. Census Bureau Data on the average number of people per household by county (2.48 for Alachua County, 2.56 for Lake County, 2.39 for Levy County, 2.4 for Marion County, 2.43 for Putnam County, and 2.04 for Sumter County).

  The total number of OSTDS in the basin is estimated based on the Florida Water Management Inventory (FLWMI) data. OSTDS loading calculations in future BMAPs may be adjusted based on improved information on the number, location and type (conventional and enhanced nutrient-reducing) of existing septic systems, and will include updates on additional OSTDS installed in the area since the previous BMAP adoption.

  Note that all values listed in this report are rounded, while the actual calculations were completed using whole numbers.

Other assumptions and considerations for BMAP implementation include the following:

- **Unquantified Project Benefits** – Nitrogen reductions for some of the projects and activities listed in this BMAP cannot currently be quantified. However, these projects are included because of their assumed positive impact to reduce pollutant loads, and estimated loading reductions may be determined at a later date.

- **Atmospheric Deposition** – Atmospheric sources of nitrogen are local, national and international. Local sources include the petroleum-fueled combustion engines of cars and trucks as well as fertilizers used for agricultural and residential uses. Other local or regional sources may include power plants and industrial facilities. Atmospheric sources have generally low nitrogen concentrations compared with other sources and are further reduced through additional biological and chemical processes before they reach groundwater. Recent data (Himes and Dawson, 2017) indicate that the deposition of nitrogen has been generally decreasing in Florida with an up to 55% decrease in atmospheric deposition by 2028,

possibly related to power plant fuel source changes and air treatment upgrades as well as the increased use of electric vehicles, decreasing mobile sources (Himes and Dawson, 2017) and increased use of solar energy. This gradual decrease in atmospheric deposition of nitrogen will assist with creating the necessary reductions for this source. However, atmospheric deposition is a nitrogen source and is, therefore, estimated as a loading factor to the springs. As other sources are addressed and decreased, the relative percentage contribution of atmospheric sources is expected to increase. For this BMAP, atmospheric deposition sources and trends will be re-evaluated periodically. The regulatory programs that limit atmospheric sources are primarily national or international, which limits how this BMAP can regulate these sources.

- **PFA** – The PFAs provide a guide for focusing strategies where science suggests efforts will best benefit the springs. The PFA boundaries may be adjusted in the future if additional relevant information becomes available.

- **Project Collection Period –** The BMAP project collection period is limited to projects after a certain date, based on the data used to calculate the reductions needed. Reductions from older projects are accounted for in the updated baseline loading. The timing eligibility for projects is dependent on the data used to estimate the NSILT loads, which also depend on the source type. The following project cutoff dates apply in this BMAP document, which are based on the data used in the most recent NSILT update.

    - Urban and agricultural stormwater projects: Projects completed in the BMAP, on or after January 1, 2003.

    - WWTF Improvements: Projects completed on or after January 1, 2022, or later. Prior projects were included in the NSILT estimates.

    - OSTDS Enhancements/50% Treatment or OSTDS Connection to Sewer: Projects completed on or after January 1 of the years listed below, based on the county in which the project is located and the FLWMI data year used in the 2023 NSILT update.

        - Alachua County: 2023

        - Lake County: 2022.

        - Levy County: 2022.

        - Marion Couty: 2022.

        - Putnam County: 2022.

        - Sumter County: 2023.

- **Legacy Sources** – Land uses, activities or management practices not currently active in the basin may still be affecting the nitrate concentration of the springs. The movement of water from the land surface through the soil column to the UFA and through the UFA to the spring system varies both spatially and temporally and is influenced by local soil and aquifer conditions. As a result, there may be a time lag between when nitrogen input to the UFA occurs and, ultimately, when that nitrogen arrives at the impaired springs. The timing of this delay is not fully known.

- **Milestones –** Assessment of progress toward the 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, or TMDL, remains the same.

- **Implementation Schedule** – Nutrient load reduction in BMAP implementation is intended to occur over 20 years. To meet the TMDLs within this timeframe, this plan defines nitrogen reduction milestones for 2028 (30%), 2033 (+50%) and 2038 (+20%) implementation (see **Section 2.1.5** for further details). Further, the total reductions and the project credits may be adjusted under the adaptive management approach used for the BMAP. This approach requires regular follow-up to ensure that management strategies are carried out and that their incremental effects are assessed. The process acknowledges that there is some uncertainty associated with the outcomes of proposed management strategies and the estimated response in nitrogen concentration at the springs. As more information is gathered and progress towards each milestone is reviewed, additional management strategies may be developed or existing strategies refined to better address the sources of nitrogen loading to achieve the TMDLs.

- **Changes in Spring Flows** – The role of this BMAP is specifically to address the implementation of projects that reduce nitrogen load to groundwater, while the minimum flows and levels (MFLs) established for specific springs address water flows and levels. To maximize efforts between the two programs, it is recommended that when practicable, springs protection projects provide both water quality and quantity benefits.

### *2.1.3 Loading by Source*

Based on the updated NSILT results, **Figure 3** depicts the estimated percentage of nitrogen loading to groundwater by source in the Silver and Rainbow BMAP area. For example, UTF represents 20% of the total nitrogen loading to groundwater, OSTDS loads are 32%, and STF loads are 4%. Stormwater loading to groundwater is incorporated into the various source categories.

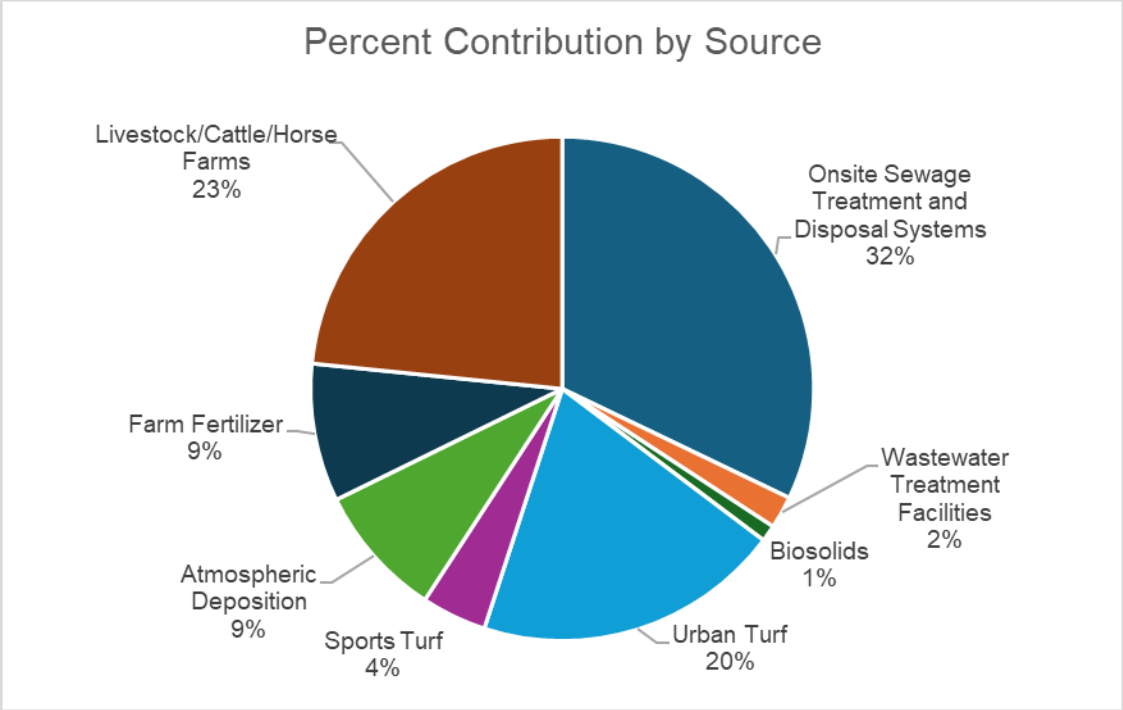


**Figure 3. Loading to groundwater by source in the Silver and Rainbow BMAP area**

### *2.1.4 Loading Allocation*

The nitrogen source reductions are based on the estimated current nitrogen loading to groundwater in the NSILT, the measured nitrate concentrations and flows at the vents, and the TMDL target nitrate concentration. **Table 4** lists the measured nitrate (as nitrogen) loads at the spring vents compared with the TMDL nitrate target concentrations of 0.35 mg/L. The difference between the spring vent loading and the TMDL loading target is the required percent reduction to meet the TMDLs. The total required load reduction is allocated to sources and to entities based on existing loads.

**Table 4. Total reduction required to meet the TMDL**

| Description | Nitrogen Loads (lbs/yr) | Notes Regarding Data Used |
|---|---|---|
| **Total Load at Spring Vent** | 4,313,434 | Upper 95% confidence interval - nitrate 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** |

### *2.1.5 Description of 2028, 2033, and 2038 Milestones/Reduction Schedule*

Under HB 1379 (2023), section 403.067, F.S., was amended to require that TMDL implementation be addressed through milestones that include a list of projects that will achieve the pollutant load reductions to meet the TMDLs or the load allocations established pursuant to subsection 403.067(6), F.S. Each project must include a planning-level cost estimate and an estimated completion date. Any responsible entity within the BMAP that has a pollutant load reduction requirement must identify projects or strategies to undertake to meet the current 5-year pollution reduction milestone. The overall load reduction targets are 30% of the total by 2028, 80% of the total by 2033, and 100% of the total by 2038. DEP will evaluate progress towards these milestones and will report implementation progress and project information to the Governor and Florida Legislature annually through the statewide annual report. DEP will adjust management strategies if needed to reduce loading to the aquifer to ensure the target concentrations at the spring vents are achieved. This may include expanding the area to which the OSTDS remediation policies apply, requiring additional projects or management strategies, or developing other nutrient reduction policies. Any changes would be incorporated into a future BMAP update through a formal adoption process.

**Table 5** lists the estimated nitrogen reduction schedule by milestone. Progress will be tracked yearly and adjustments made as needed. At the 2028 milestone, progress will be assessed and load reductions adjusted as necessary. Entities have flexibility in the types and locations of projects as long as they achieve their required load reductions. Consideration may be given to entities with projects that are planned or underway that will be completed in a future milestone phase, to allow adequate time for projects to be fully implemented. **Section 2.2** describes detailed source reduction strategies.

**Table 5. Nitrogen reduction schedule (lbs/yr)**

| 2028 Milestone (30% of Total) | 2033 Milestone (+50% of Total) | 2038 Milestone (+20% of Total) | Total Nitrogen Reduction (100%) |
|---|---|---|---|
| 942,612 | 1,571,020 | 628,408 | 3,142,039 |

## 2.2 Load Reduction Strategy

A precise total load reduction to groundwater needed to meet the TMDLs is dependent on a number of complex factors and may be refined if additional information becomes available. Based on current information, there must be a reduction of at least 3,142,039 lbs/yr TN by 2038. However, due to the distance of some reductions in relation to the spring vents and the uncertainties of fate and transport in the karst geology, additional actions may be necessary to ensure that loading at the spring vents is reduced to achieve the TMDL targets within the timeline of the BMAP.

To increase our understanding of the relationship between project reductions and changes in concentrations at the spring vents, as well as the time lag of water movement within the

springsheds to the springs, water quality monitoring of existing groundwater within the BMAP and at the spring vents is essential.

## 2.3 Entity Allocations

The results from the NSILT and spring vent load analysis were used to calculate the nitrogen loads associated with each responsible stakeholder. **Table 6** summarizes the total required reductions assigned to each entity. Regional projects are state-sponsored management actions that treat nutrient loading from one or many sources.

**Table 6. Total required reductions by entity**

| Entity | Total Assigned Reductions by Entity (lbs/yr) |
|---|---|
| **Alachua County** | 16,004 |
| **City of Hawthorne** | 2,153 |
| **Town of Micanopy** | 2,706 |
| **Lake County** | 52,495 |
| **City of Fruitland Park** | 22,843 |
| **Town of Lady Lake** | 18,279 |
| **City of Leesburg** | 1,381 |
| **Levy County** | 80,825 |
| **Town of Bronson** | 3,474 |
| **City of Williston** | 18,598 |
| **Marion County** | 1,187,811 |
| **City of Bellview** | 7,674 |
| **Town of McIntosh** | 3,848 |
| **City of Ocala** | 105,931 |
| **Town of Reddick** | 3,851 |
| **The Villages** | 66,440 |
| **City of Dunnellon** | 4,891 |
| **On Top of the World** | 30,668 |
| **Putnam County** | 21,435 |
| **Sumter County** | 28,518 |
| **City of Wildwood** | 7,464 |
| **State of Florida (Fire Marshal and State Parks)** | 83 |
| **Agriculture** | 1,025,851 |
| **Private WWTFs (see Appendix J)** | 24,161 |
| **Golf Courses (see Appendix J)** | 92,451 |
| **Regional Projects** | 43,539 |
| **Total** | **2,873,374** |

**Table 7** includes the 5-year milestone required reductions for each entity. **Table 8** compares the current list of planned, underway, and completed projects compared to the first 5-year milestone. The management actions provided by responsible stakeholders to achieve these reductions are described in **Appendix B**.

Responsible entities must submit a sufficient list of additional projects and management strategies to DEP no later than January 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 list of eligible management strategies to meet their next 5-year milestone reductions, specific project identification efforts are required to be submitted by January 14, 2026. Any such project identification efforts must define the purpose of and a timeline to identify sufficient projects to meet the upcoming milestone. The project description and estimated completion date for any such project identification effort must be provided and reflect the urgency of defining, funding, and implementing projects to meet the upcoming and future BMAP 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. Examples of project identification efforts are included in **Appendix C**. Only those entities that provide sufficient project identification efforts will be deemed as possessing a defined compliance schedule. Those entities without an adequate project list nor a defined compliance schedule to meet their upcoming 5-year milestone may be subject to enforcement actions.

**Table 7. 5-year milestones/required reductions by entity**

| Entity | 2028 Milestone/ 30% Reduction TN (lbs/yr) | 2033 Milestone/ 80% Reduction TN (lbs/yr) | 2038 Milestone/ 100% Reduction 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 |

| Entity | 2028 Milestone/ 30% Reduction TN (lbs/yr) | 2033 Milestone/ 80% Reduction TN (lbs/yr) | 2038 Milestone/ 100% Reduction TN (lbs/yr) |
|---|---|---|---|
| **City of Ocala** | 31,779 | 84,745 | 105,931 |
| **Town of Reddick** | 1,155 | 3,081 | 3,851 |
| **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** | 7,248 | 19,329 | 24,161 |
| **Golf Courses** | 27,736 | 73,962 | 92,451 |
| **Regional Projects** | 13,062 | 34,831 | 43,539 |
| **Total** | **862,012** | **2,298,701** | **2,873,374** |

## Table 8. Progress towards next 5-year milestone by entity

** 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.*

| Entity | 2028 Milestone Assigned Reductions (30%)(lbs/yr) | TN Reductions from Completed & Ongoing Projects (lbs/yr) | TN Reductions from Planned & 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 |
| **City of Bellview** | 2,302 | 233 | 0 | 233 |
| **Town of McIntosh** | 1,154 | 50 | 0 | 50 |

| Entity | 2028 Milestone Assigned Reductions (30%)(lbs/yr) | TN Reductions from Completed & Ongoing Projects (lbs/yr) | TN Reductions from Planned & Underway Projects* (Not Verified) (lbs/yr) | Total Projected** Project TN Reductions by Entity Through 2028 (lbs/yr) |
|---|---|---|---|---|
| **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 |
| **State of Florida (Fire Marshal and State Parks)** | 25 | 0 | 0 | 0 |
| **Agriculture** | 307,755 | 124,399 | 39 | 124,438 |
| **Private WWTFs** | 7,248 | 0 | 18,497 | 18,497 |
| **Golf Courses** | 27,736 | 0 | 0 | 0 |
| **Regional Projects** | 13,062 | 10,573 | 7 | 10,580 |
| **Total** | **862,012** | **188,566** | **35,469** | **224,035** |

## 2.4 Prioritization of Management Strategies

Required under Chapter 373.807, F.S., management strategies listed in **Appendix B** are ranked with a priority of high, medium, or low. To help prioritize projects towards the next milestone as required under 403.067, F.S., planning-level details for each listed project, along with their priority ranking have been determined.

Project status was selected as the most appropriate indicator of a project's priority ranking based primarily on if the project is going towards the next 5-year milestone, as well as need for funding. Overall, any project that is needed by a responsible entity to meet their next reduction milestone is considered a priority. Projects classified as "underway" were assigned a high or medium priority because some resources have been allocated to these projects, but additional assistance may be needed for the project to be completed. High priority was assigned to projects listed with the project status "planned" that are needed to meet the next milestone, as well as certain "completed" projects that are designated as "ongoing" each year, and select projects that are elevated because substantial, subsequent project(s) are reliant on their completion.

## 2.5 OSTDS Management Strategies

### *2.5.1 Management of New OSTDS Loads*

Beginning July 1, 2023, sections 373.811 and 403.067, F.S., prohibit any new conventional OSTDS serving a lot of one acre or less where central sewer is available. Within the BMAP area, if central sewer is unavailable on any lot size, then the owner must install a DEP-approved enhanced nutrient-reducing OSTDS that achieves 65% nitrogen reduction, or other wastewater system that achieves 65% reduction. The OSTDS remediation plan pursuant to section 373.807, F.S., (**Appendix F**) was updated in this BMAP iteration to include this additional requirement for new systems.

### *2.5.2 Existing OSTDS Remediation*

Existing OSTDS on all lot sizes must receive additional nitrogen treatment. This BMAP contains remediation plans for OSTDS consisting of management actions, including those described in **Appendix B** and updated annually through the statewide reporting process that reduce loads from existing OSTDS through either sewer connection, adding enhancement nitrogen treatment to OSTDS, or installing another type of wastewater system on the property, as applicable.

Enhanced OSTDS can achieve an estimated 50% improvement in the load to groundwater compared to a conventional system. OSTDS replaced by sewer reduce the conventional nitrogen inputs by an estimated 95%, assuming a sewer connection to a WWTF meeting AWT levels. For projects addressing OSTDS loads, load reductions are estimated based on average nitrogen loads per person and the U.S. Census information on the county's average number of persons per household. The OSTDS location determines the applicable county. The improvement to groundwater is calculated by applying an attenuation rate as well as a location-based recharge factor, which estimates how likely the improved loading will travel into the deep groundwater system. For more information about how OSTDS loads were estimated, see the NSILT Technical Support Document in **Appendix F**.

#### *2.5.2.1 Section 373.807, F.S.*

Subsection 373.807(3), F.S., specifies that if, during the development of a BMAP for an Outstanding Florida Spring (OFS), DEP identifies OSTDS as contributors of at least 20% of nonpoint source nitrogen pollution in a PFA or if DEP determines OSTDS remediation is necessary to achieve the TMDL, the BMAP must include an OSTDS remediation plan. The OSTDS remediation plan requires policies for new and existing OSTDS to provide loading reductions consistent with achieving the TMDL within 20 years of plan adoption (subparagraph 373.807(1)(b)8., F.S.).

DEP assessed the overall OSTDS loading compared to other nitrogen sources in the BMAP area. Based on these assessments, DEP has determined that OSTDS contribute more than 20% of nonpoint source nitrogen pollution to the OFS. Based on the Silver and Rainbow NSILT update, OSTDS contribute 32% pollutant loading in the springshed areas (1,265,209 lbs/yr). Cumulatively, nitrogen loading from OSTDS within the springsheds results in significant degradation of groundwater that impacts the Silver and Rainbow BMAP area. Therefore, the comprehensive remediation of OSTDS, consistent with the requirements of this BMAP, is

necessary to restore associated groundwater and surface to achieve the TMDLs and to minimize nitrogen loads from future growth. The OSTDS remediation plan pursuant to section 373.807, F.S., is incorporated as **Appendix E**.

Based on FLWMI data (2023), there are approximately 28,188 known and likely OSTDS in the Silver PFA, 3,724 known and likely OSTDS in the Rainbow PFA, and approximately 103,960 known and likely OSTDS in the BMAP (**Figure 4**). **Table E-1** in **Appendix E** summarizes the estimated count of OSTDS throughout the basin. **Figure E-1** shows the locations of all OSTDS in the BMAP area based on FLWMI; however, local governments or utilities may have more current information about OSTDS locations in their jurisdiction.

This remediation plan (**Appendix E**) establishes the remediation policy applicable to all existing OSTDS within the BMAP on lots of all sizes, based on (a) potential for reducing nitrogen loads by converting existing OSTDS to enhanced nitrogen removing systems or other wastewater systems achieving 65% nitrogen reduction, or by connecting existing OSTDS to central sewer; (b) total nitrogen load that must be reduced to achieve the TMDLs; and (c) relative contribution of nitrogen load from existing OSTDS. Upon the need for a repair (major or minor) or a replacement OSTDS permit, an existing OSTDS must be upgraded to an enhanced nutrient-reducing OSTDS or other wastewater treatment system that achieves at least 65% nitrogen reduction.

#### *2.5.2.2 Subsection 403.067(7)(a)9., F.S*

Subparagraph 403.067(7)(a)9., F.S., also requires local governments within a BMAP to develop an OSTDS remediation plan that is adopted as part of the BMAP no later than July 1, 2025, 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 TMDLs. When applicable, the OSTDS remediation plans must be developed by each local government in cooperation with DEP, WMDs, and public and private domestic wastewater facilities. Each OSTDS remediation plan for this BMAP must contain the information outlined in DEP Final Order 23-0129.

This BMAP contains a remediation plan for OSTDS consisting of management actions, including those described in **Appendix B** and updated annually through the statewide reporting process that reduce loads from existing OSTDS through either sewer connection, adding enhancement nitrogen treatment to OSTDS, or installing another type of wastewater system on the property, as applicable. Local governments are required to submit projects describing how OSTDS loads are addressed as part of BMAP reporting and estimate the load reductions associated with each project. The estimated reductions to the springs from addressing these septic systems will be based on several factors, including how they are addressed (i.e., connection to sewer or enhancement) and the amount of attenuation and recharge that occurs. These projects are described in **Appendix B**.

#### *2.5.2.3 Local Government Ordinances*

Local governments may have existing ordinances or could adopt new ordinances that add additional requirements for enhancement of OSTDS. To expedite remediation of wastewater sources and to facilitate achievement of assigned milestones in this BMAP, DEP encourages local governments to adopt such ordinances.

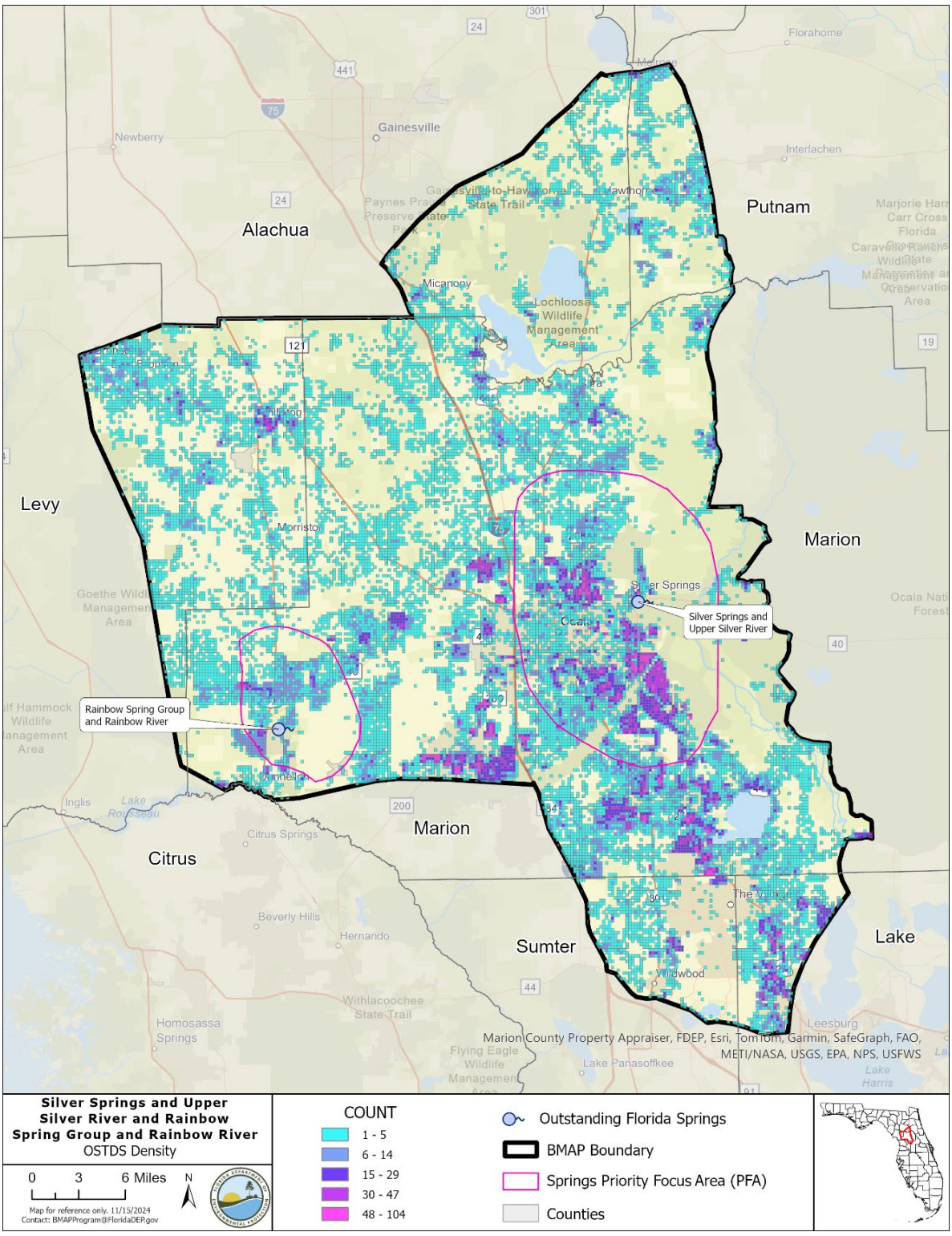


**Figure 4. Estimated OSTDS location density in the Silver and Rainbow BMAP area and PFA**

## 2.6 WWTF Management Strategies

### *2.6.1 Facility Improvements and Effluent Limits*

There are many WWTFs located in the Silver and Rainbow BMAP area, including 22 domestic WWTFs permitted to discharge more than 100,000 gallons of treated effluent per day (or 0.1 million gallons per day [mgd]). **Figure 5** shows the locations of domestic WWTFs in the Silver and Rainbow BMAP.

In the Silver and Rainbow BMAP area, treated effluent containing nitrogen is discharged to sprayfields and RIBs, or is reused for irrigation water. The nitrogen load from WWTFs is 81,898 lbs-N/year. The discharge location (such as proximity to the spring, highly permeable soils, etc.) and level of wastewater treatment are important factors to consider when calculating loadings to groundwater.

The U.S. EPA authorizes DEP to issue permits for discharges to surface waters under the National Pollutant Discharge and Elimination System (NPDES) Program. Permits for discharges to groundwater are issued by DEP based on Florida law and rules. Wastewater discharge permits establish specific limitations and requirements based on the location and type of facility or activity releasing industrial or domestic wastewater from a point source. In areas with an adopted, nutrient-related BMAP prior to July 1, 2023, section 403.086, 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.

Further, section 373.811, F.S., prohibits new domestic wastewater disposal facilities, including those discharging to RIBs, with permitted capacities of 100,000 gallons per day or more, unless the discharge meets the AWT standard of no more than 3 mg/L TN, on an annual permitted basis, or a more stringent treatment standard if the department determines the more stringent standard is necessary to attain a TMDL for the OFS.

The nitrogen effluent limits set forth in **Table 9** 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. If a facility is located in an area where the boundaries of a surface water and OFS BMAP overlap, the more stringent nitrogen effluent limits will be applied.

Because the Silver and Rainbow BMAP overlaps with multiple surface water BMAPs and Lake Weir, which have phosphorous impairments, phosphorous effluent limits set forth in **Table 10** 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. DEP will evaluate the need for more stringent nutrient effluent limits as appropriate.

**Table 9. Nitrogen effluent standards for the BMAP area**

| 95% of the Permitted 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 |

**Table 10. Phosphorous effluent standards for the BMAP area**

| 95% of the Permitted 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** | 1 | 1 | 6 |
| **20,000 to 100,000** | 1 | 3 | 6 |
| **Less than 20,000** | 1 | 6 | 6 |

Where the law does not provide a compliance timeframe, new effluent standards will take effect at the time of permit renewal or no later than five years after BMAP adoption, whichever is sooner.

Additionally, new and existing wastewater permits in the BMAP area must require at least quarterly sampling of the effluent discharge for TN concentrations and report these sampling results in the discharge monitoring reports (DMRs) submitted to DEP.

In 2021, subsection 403.064(16), F.S., was amended where domestic wastewater utilities that dispose of effluent, reclaimed water, or reuse water by surface water discharge were required to submit for DEP review and approval, a plan for eliminating non-beneficial surface water discharge by January 1, 2032. A utility must fully implement the approved plan by January 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 January 1, 2028. Violations are subject to administrative and civil penalties pursuant to sections 403.121, 403.131, and 403.141, F.S.

### *2.6.2 Reclaimed Water Effluent Limits*

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 total

phosphorous (TP), such that the reclaimed water product contains not more, on a permitted annual average basis, of 3 mg/L of TN and 1 mg/L of TP if the department has determined in an applicable basin management action plan or reasonable assurance plan that the use of reclaimed water as described in this subparagraph is causing or contributing to the nutrient impairment being addressed in such plan.. These requirements do not apply to reclaimed water that is land applied as part of a water quality restoration project or water resource development project approved by DEP to meet a TMDL or minimum flow or level and where the TN and TP will be at or below AWT standards prior to entering groundwater or surface water.

DEP has determined that the use of reclaimed water for the purpose of commercial or residential irrigation or that is otherwise being land applied within this BMAP area is contributing to the nutrient impairments being addressed in this BMAP area. Based on DEP's determination, facilities that land apply reclaimed water identified in **Appendix G** are subject to the nitrogen and phosphorous limits set forth in section 403.086, F.S. The facilities listed in **Table G-1** have 10 years from BMAP adoption to meet the applicable AWT standards. The facilities listed in **Table G-2** have one year from BMAP adoption to provide DEP with a plan for achieving a higher level of treatment, as described in **Appendix G.** This requirement does not prevent the department from requiring an alternative treatment standard, if the department determines the alternative standard is necessary to achieve the TMDLs or applicable water quality criteria. For facilities that did not have adequate information to complete an evaluation or where a change occurs to the facility's application of reclaimed water after the initial evaluation (e.g., an increase in facility capacity or change in location of reclaimed water application), the department will evaluate the land application of reclaimed water as more information becomes available pursuant to section 403.086, F.S.

All new permitted facilities providing reclaimed water that will be used for commercial or residential irrigation or be otherwise land applied within the BMAP area are required to meet AWT standards for TN in accordance with section 403.086, F.S.

DEP encourages the reuse of treated wastewater for irrigation as a water conservation measure. The expansion of reuse water for irrigation can reduce reliance on the Floridan aquifer for water supply. The nitrogen load to groundwater from reuse water is expected to be reduced through these WWTF policies, as improvements in reuse water quality will both reduce loads from this source and minimize future increases in nutrient loading from reuse because of higher treatment levels.

### *2.6.3 Wastewater Treatment Facility Plans*

Subparagraph 403.067(7)(a)9., F.S., requires local governments within a BMAP to develop WWTF plans to be adopted as part of nutrient BMAPs no later than July 1, 2025, if DEP identifies domestic wastewater 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. The WWTF plans must be developed by each local government in cooperation with DEP, WMDs, and public and private domestic wastewater facilities within the jurisdiction of the local government. Each local government's wastewater treatment plan for this BMAP must contain

the information outlined in Final Order 23-0131 for each existing or proposed domestic wastewater facility in the local government's jurisdiction.

Subparagraph 403.067(7)(a)9., F.S., was amended in 2024 to clarify that private domestic wastewater facilities must provide this information to local governments effective July 1, 2024. Information related to private facilities will need to be included in future local government WWTF plans if not captured in the initial plans.

### *2.6.4 Connection to Sewer*

The installation of new OSTDS within a BMAP area is prohibited where connection to sewer lines is available. For existing OSTDS, the owner must connect to sewer within 365 days of written notification by the utility that connection to its sewer line is available. A utility is statutorily required (section 381.00655, F.S.) to provide written notice to existing OSTDS owners regarding the availability of sewer lines for connection. Additionally, existing OSTDS needing repair or modification must connect to available sewer lines within 90 days of notification by DEP.

To facilitate an inventory of noncompliant properties, by February 2, 2026, and every two years thereafter, each utility with sewer lines in the BMAP shall provide DEP a list of properties with existing OSTDS where sewer is available but has not connected. For each identified property, include the date(s) which the utility provided written notice to the owners of the availability of sewer.

### *2.6.5 Biosolids and Septage*

To provide assurance that nitrogen and phosphorus losses to surface water and groundwater are minimized from the permitted application of biosolids and septage in the BMAP area, the requirements in Chapter 62-640 F.A.C. apply to newly permitted application sites and existing application sites upon permit renewal. Where biosolids materials mixed with yard waste or other organic materials are distributed as compost or soil amendments, DEP recommends the recipients of these materials be notified of their increased nutrient content, so that any fertilization practices on the site can be adjusted accordingly. FDACS and UF-IFAS are coordinating efforts to ensure that the distribution process for these kinds of materials includes notification of the nutrient content to the site manager.

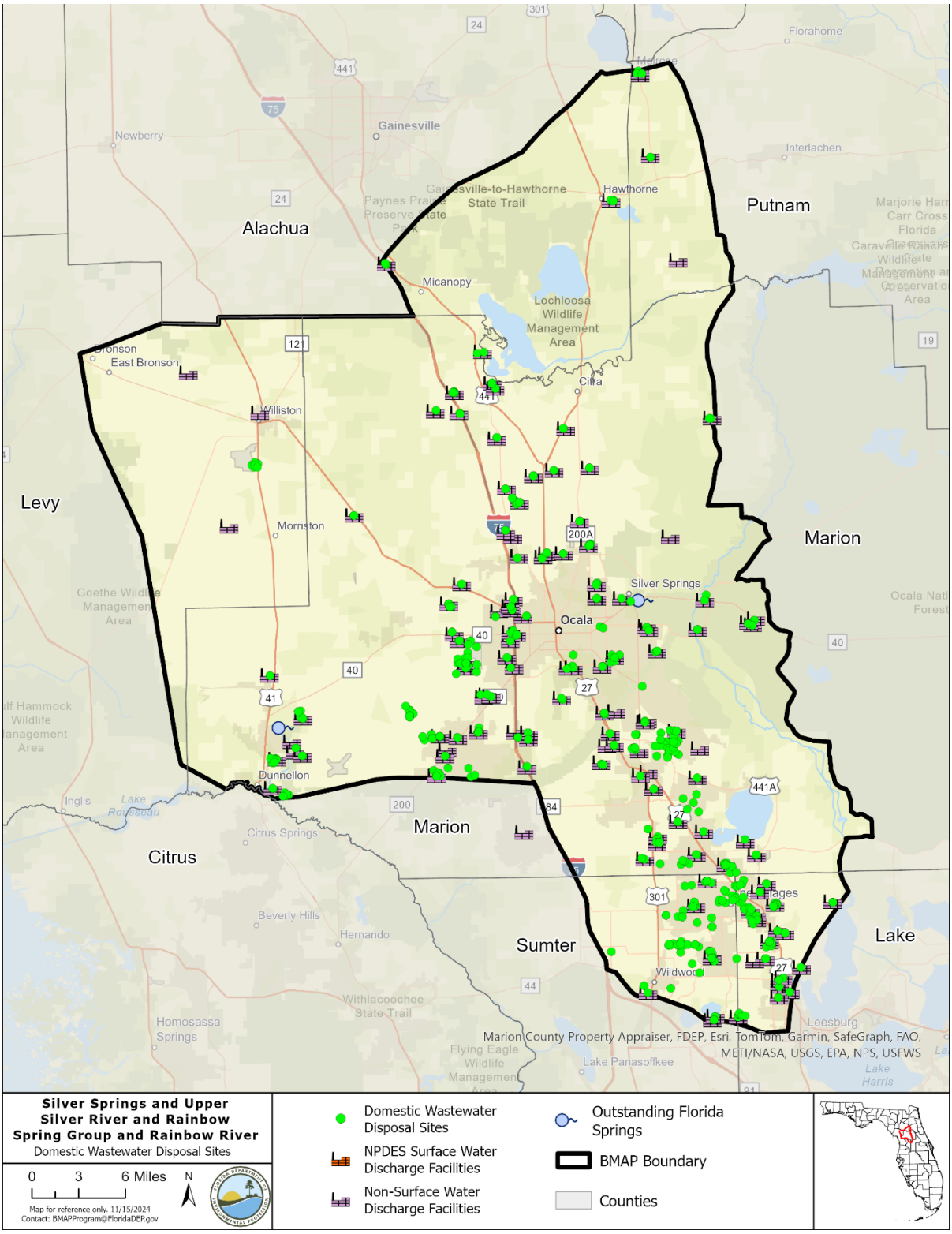


**Figure 5. Locations of domestic WWTFs in the Silver and Rainbow BMAP area**

## 2.7 UTF Management Strategies

UTF consists of fertilizers applied to turfgrass typically found in residential and urban areas (including residential lawns and public green spaces). It is applied by either the homeowner or a lawn service company on residential properties, while on nonresidential properties they may be applied by contractors or maintenance staff. UTF can be addressed through a mix of efforts, including public education, enforcement of local ordinances (regulating fertilizer use and irrigation), land development codes or stormwater projects. Based on progress towards meeting the TMDLs and water quality monitoring results, reduction requirements and crediting of projects such as fertilizer ordinances and education efforts may be reevaluated in future BMAP updates, particularly with respect to enforcement of fertilizer ordinances. As part of the annual reporting process, stakeholders will be required to provide a detailed and quantified description of their ordinance enforcement and environmental education activities to receive credits for these activities.

It is recommended that appropriate grasses are used based on soil characteristics, irrigation needs and fertilization needs. It is recommended that Bahia grass (*Paspalum notatum*), which is a durable grass that can be drought and heat tolerant should be used over St. Augustinegrass (*Stenotaphrum secundatum*) on sandy soils within spring BMAPs. Both homeowners and developers should follow the recommendations within the BMAP. If a local government has recommendations for what grasses should be used, DEP recommends that homeowners and developers follow them for the protection of water resources, if they are different than the BMAP.

Using reclaimed water is a way to distribute nutrients that need to be disposed of onto locations where nutrients are needed. However, caution needs to be exercised when applying nutrients (through fertilizer or reclaimed water) in the recharge area for the springs. For areas using reclaimed water for irrigation, it is important to understand the amount of nitrogen and phosphorus that is needed for the landscape and how much is being applied through reclaimed water. Monitoring the concentration of nitrogen and phosphorus in reclaimed water is important for understanding how much nutrients are being applied onto the urban landscape. The result may be that reclaimed water customers will not need to add more phosphorus or nitrogen, resulting in lower fertilizer costs and possibly fewer maintenance requirements and costs (e.g., mowing, turf replacement).

Given the limitations with the data used in the NSILT to estimate the UTF loading to groundwater, DEP will work with entities and other agencies to collect better data by requiring more detailed documentation on behavior changes and water quality improvements. In addition, DEP will work with stakeholders to improve on additional measures to reduce residential and commercial property fertilizer application, such as requiring annual reporting on ordinance enforcement and results from local governments.

### *2.7.1 Fertilizer Ordinance Adoption*

Subsection 373.807(2), F.S., requires local governments with jurisdictional boundaries that

include an OFS or any part of a springshed or delineated PFA of an OFS to develop, enact and implement a fertilizer ordinance by July 1, 2017. The ordinance is required to be based, at a minimum, on the DEP model ordinance for Florida-friendly fertilizer use on urban landscapes. As part of the annual reporting process, stakeholders will be required to provide a detailed and quantified description of their ordinance enforcement to receive credits for these activities.

### *2.7.2 Municipal Separate Stormwater Sewer System (MS4) Designations*

Although loading from urban stormwater is not specifically estimated in the NSILT, urban stormwater is a considerable source of nutrient loading to Silver and Rainbow Springs and many urban areas are already regulated under the Municipal Separate Storm Sewer System (MS4) NPDES Stormwater Program. An MS4 is a conveyance or system of conveyances, such as roads with stormwater systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains. If an MS4 permittee is identified as a contributor in the BMAP, the permitted MS4 must undertake projects specified in the BMAP. Refer to **Appendix A** for a link to a list of MS4 permittees.

Regulated MS4s are required to implement stormwater management programs (SWMP) to reduce pollutants to the maximum extent practicable and address applicable TMDL allocations. Both Phase I and Phase II MS4 permits include provisions for the modification of SWMP activities. Phase I medium and large MS4s are regulated under an individual permit, with multiple permittees having coverage under the same permit as "co-permittees." Phase II small MS4s are regulated under a generic permit. Under the "NPDES Two-Step Generic Permit for Discharge of Stormwater from Phase II MS4s" (paragraph 62-621.300(7)(a), F.A.C.), regulated Phase II MS4s must develop a SWMP that includes BMPs with measurable goals and a schedule for implementation to meet six minimum control measures.

DEP can designate an entity as a regulated MS4 if its discharges meet the requirements of the rule and are determined to be a significant contributor of pollutants to surface waters of the state in accordance with Rule 62-624.800, F.A.C. A Phase II MS4 can be designated for regulation when a TMDL has been adopted for a waterbody or segment into which the MS4 discharges the pollutant(s) of concern. Because urban areas located in the BMAP that are not currently covered by an MS4 permit also significantly contribute to nutrient loading, individually or in aggregate, 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.

### *2.7.3 Stormwater Rule*

On June 28, 2024, Governor Ron DeSantis signed Senate Bill 7040 into law, which updates Florida's stormwater rules and design criteria, including Chapter 62-330 F.A.C., to protect the state's waterways. The new regulations aim to manage runoff from developments, ensuring that future stormwater systems are better maintained. Operation and maintenance entities will be required to have estimates for the expected routine maintenance costs and to certify that they

have the financial capability to maintain the stormwater system over time. The rule will also provide for more consistent oversight through a required periodic inspection routine and reporting on the inspection results to the permitting agency.

Additionally, under Chapter 62-330 F.A.C., the new rule establishes requirements for applicants to demonstrate, through calculations or modeling, that the future stormwater management systems would provide additional treatment to meet new Environmental Resource Permits stormwater treatment performance standards for an 80% reduction for TP and 55% reduction for TN, along with additional requirements that would apply where a project discharges to Outstanding Florida Waters or impaired waters. Additional permitting requirements to protect groundwater can be found within the Applicant Handbook Volume I, Section 8.5.2.

## 2.8 STF Management Strategies

Sports turfgrass areas fall into two main categories that are evaluated separately: golf courses and sporting facilities (such as baseball, football, soccer and other fields). There are over 40 golf courses covering approximately 8,612 acres in the Silver and Rainbow BMAP area as well as other sports fields. The majority of the golf course acreage is located in areas of medium and high recharge. DEP and UF-IFAS are collaborating to create a BMP manual addressing sports turfgrass management for public and private entities, which will be complete in 2025.

DEP will work with sports field managers and golf course superintendents to ensure relevant BMPs are implemented and to estimate reductions associated with these efforts. To improve the golf course loading estimate to groundwater over a literature-based approach, DEP will also confer with golf course superintendents to update fertilizer application rates based on site-specific data.

For other sports facilities besides golf courses, managers of sports fields can assist by reducing fertilizer use, using products that reduce leaching, and irrigating sports turf more efficiently irrigating.

### *2.8.1 Golf Courses*

All golf course superintendents within the BMAP must obtain certification for golf course BMPs under section 403.9339 F.S. and all golf courses must implement the BMPs described in the DEP golf course BMP manual, *Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses (DEP, 2021)*. All golf courses located within a BMAP are required to submit an NMP to DEP that is designed to sustain even plant growth while minimizing excessive growth and nutrient losses. Required information for the NMP is available in **Appendix H**. A draft NMP must be submitted to DEP within one year of BMAP adoption and a final document is due two years after adoption. All soil, water, and tissue sampling must include appropriate nitrogen and phosphorous analyses.

If a facility (either golf course or other sporting facility) uses fertilizer rates greater than those in the BMP manuals, the facility is required to conduct water quality monitoring prescribed by DEP

or a WMD that demonstrates compliance with water quality standards.

## 2.9 Agricultural Sources Management Strategies

Based on data including Florida Statewide Agricultural Irrigation Demand (FSAID) IX geodatabase land use, FDACS identified agricultural acreage within the BMAP. An estimated 275,544 acres of land in the BMAP are considered agricultural.

While agriculture is essential, it is important to manage potential environmental impacts associated with agricultural operations. Nitrogen and phosphorus, essential for crop growth, can enter waterways through various agricultural activities, including fertilizer application, livestock waste disposal and irrigation runoff. To address nutrient loading from agricultural operations effectively, it is necessary to have a balanced approach that supports agricultural productivity while safeguarding water resources. This entails promoting farming practices that optimize nutrient and water use efficiency, minimize runoff and enhance soil health.

Section 403.067, F.S., requires agricultural producers in adopted BMAPs either enroll and properly implement the applicable FDACS BMPs for their operation or to conduct water quality monitoring activities as required by Chapter 62-307, F.A.C. BMPs include practices such as nutrient management, irrigation management. and water resource protection. They can mitigate nutrient loading while promoting environmental stewardship. In many BMAPs, however, the implementation of BMPs alone will not be sufficient to meet water quality restoration goals, and regional projects and innovative technologies will be needed.

Information on agricultural enrollment and reductions in this BMAP was provided by FDACS and is available in **Appendix I.**

### *2.9.1 FF Loading*

Nitrogen in agricultural fertilizer is applied at varying rates, depending on the crop and individual farm practices. The NSILT estimated total nitrogen load to groundwater from FF is 348,742 lbs/yr TN, or 9% of the total nitrogen load to groundwater in the BMAP area**.** FF includes commercial inorganic fertilizer applied to row crops, field crops, pasture, hay fields, and nurseries.

### *2.9.2 LW Loading*

Agricultural practices specific to livestock management were obtained through meetings with UF-IFAS extension, FDACS, agricultural producers and stakeholders. The NSILT estimated total nitrogen load to groundwater from LW is 921,420 lbs/yr TN, or 23% of the total nitrogen load to groundwater in the BMAP area.

#### *2.9.2.1 Dairies and Other Concentrated Animal Feeding Operations (CAFOs)*

CAFO dairies permitted under Chapter 62-670, F.A.C., located within a BMAP, may not cause or contribute to a violation of water quality standards and must implement nutrient management practices identified in the permits. To minimize infiltration of liquid manure, waste storage

ponds must be lined using a concrete or geosynthetic liner. If a clay liner exists, then the operation will need to upgrade to a concrete or geosynthetic liner when funding is available, or it must demonstrate that the liner does not allow leaching that results in water quality exceedances.

Additionally, sampling for TN and TP of land applied effluent/wastewater must be included in the DEP-approved nutrient monitoring plan established in the permit and implemented in accordance with the monitoring plan.

#### *2.9.2.2 Livestock Operations Without CAFO Permits*

Livestock operations may not cause or contribute to a violation of water quality standards. Not all livestock operations are large enough to require an NPDES CAFO permit under Chapter 62-670, F.A.C. For these operations, section 403.067, F.S., requires the operation to enroll in the FDACS BMP Program and implement applicable BMPs or to conduct a monitoring program according to Chapter 62-307, F.A.C., that is approved by DEP or the applicable WMD.

### *2.9.3 Aquaculture*

Under the federal Clean Water Act, aquaculture activities are defined as a point source. In 1999, the Florida Legislature amended Chapter 597, F.S., Florida Aquaculture Policy Act, to create a program within FDACS 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.

### *2.9.4 Silviculture*

The Florida Forest Service (FFS) within FDACS is the lead entity responsible for assisting landowners, loggers, and forestry professionals with silviculture BMP implementation as well as for conducting statewide silviculture BMP training and compliance monitoring. The FFS 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. Compliance with the rule involves submitting a Notice of Intent to Implement BMPs (NOI) to the FFS and thereby committing to follow BMPs during all current and future forestry operations.

### *2.9.5 Prioritized Management Strategies and Milestones*

In addition to the above requirements, subsection 373.811(5), F.S., prohibits any new agricultural operations that do not implement either applicable FDACS BMPs, or measures necessary to achieve pollution reduction levels established by DEP, or groundwater monitoring plans approved by a WMD or DEP. Failure to implement BMPs or conduct water quality monitoring that demonstrates compliance with pollutant reductions may result in enforcement action by DEP (paragraph 403.067(7)(b), F.S.).

Every two years, FDACS is required to perform onsite inspections of each agricultural producer that enrolls in BMPs to ensure that the practices are being properly implemented. The verification includes: review and collection of nutrient application records that producers must maintain to demonstrate compliance with the BMP Program; verification that all other applicable BMPs are being properly implemented; verification that any cost shared practices are being properly implemented; and identification of potential cost share practices, projects or other

applicable BMPs not identified during enrollment. Rule 5M-1.008, F.A.C., outlines the procedures used to verify the implementation of agricultural BMPs. Producers not implementing BMPs according to the process outlined in Chapter 5M-1, F.A.C., are referred to DEP for enforcement action after attempts at remedial action by FDACS are exhausted. Failure to implement BMPs or conduct water quality monitoring that demonstrates compliance with pollutant reductions may result in enforcement action by DEP (paragraph 403.067(7)(b), F.S.).

Pursuant to paragraph 403.067(7)(c), F.S., where water quality problems are demonstrated the appropriate implementation, operation, and maintenance of adopted BMPs, DEP, a WMD or FDACS, in consultation with DEP, must conduct a reevaluation of the BMPs. If a reevaluation of the BMPs is needed, FDACS will also include DEP, the appropriate WMD, and other partners in the reevaluation and BMP update processes.

FDACS will work with applicable producers within the BMAP area to implement BMPs. As of July 2024, Notices of Intent (NOIs) covered 123,420 acres in the Silver and Rainbow BMAP area (123,420 of 275,544 agricultural acres). Currently, no producers are conducting water quality monitoring in lieu of implementing BMPs. **Appendix B** lists project information. **Appendix I** provides detailed information on BMPs and agricultural practices in the BMAP area.

### *2.9.6 Agricultural Cooperative Regional Elements*

Section 403.067, F.S., requires FDACS, DEP, and agricultural producers to work together to establish Agricultural Cooperative Regional Water Quality Elements (ACE) in BMAPs where agricultural nonpoint sources contribute at least 20% of nonpoint source nutrient discharges to impaired waterbodies, or where DEP determines this element is necessary to achieve the TMDLs. FDACS 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. The list of projects included in the ACE must include a planning-level cost estimate of each project along with the estimated amount of nutrient reduction that such project will achieve. Partner agencies and key stakeholders referred to in this process include FDACS, DEP and agricultural producers.

Addressing nutrient loading from agricultural sources in Florida's waterways requires collective action and partnership among the key stakeholders, and in consultation with the WMDs. By fostering cooperation and engagement, the ACE framework facilitates the exchange of knowledge, resources, and expertise, leading to innovative solutions and effective strategies for tackling water quality challenges. Engaging producers in the decision-making process ensures that projects are practical, feasible, and tailored to the needs and realities of agricultural operations. Partner agencies provide technical support, regulatory guidance, and funding opportunities that will enhance the implementation and success of regional water quality improvement initiatives. This cooperative effort is essential for implementing targeted actions that balance the economic and social benefits of agriculture with the obligation to address agricultural nonpoint source loading beyond BMP implementation and cost share.

The ACE framework leverages resources and technical expertise to efficiently identify regional projects and other strategies tailored to the diverse agriculture production methods, landscapes, and watersheds that will need to be implemented to achieve the TMDLs. Regional project types will vary among the different BMAPs, and can include, but are not limited to, a combination of traditional projects that focus on water treatment, land acquisition in fee or conservation easements on the lands of willing sellers, site-specific water quality improvement projects, dispersed water management projects, innovative technologies, and regional projects funded through existing or enhanced cost share programs administered by FDACS or the WMDs.

While FDACS is assigned the lead role on project solicitation, development, selection, and implementation, 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 and to leverage existing programs and resources. FDACS will lead engagement with producers and industry groups through workshops to identify potential regional projects. Identified projects will be implemented through various mechanisms, such as existing agency cost share or grant programs or through a legislative budget request and eventual appropriation. Upon identification of a project, FDACS will update DEP on project development and implementation, including the funding strategy.

FDACS 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 or, if necessary, at the project level. The default performance measures will be the expected range of pollutant removal efficiencies associated with a project or strategy. Tools may be needed to determine the effectiveness of projects, such as modeling and where feasible onsite water quality monitoring.

FDACS will report on projects annually through DEP's Statewide Annual Report (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. The ACE process provides for adaptive management, allowing flexibility to adapt and improve based on regional project or management strategy results.

Agricultural nonpoint sources contribute 32% of the TN nutrient sources in the Silver and Rainbow BMAP. Pursuant to subparagraph 403.067(7)(e)1., F.S., an ACE is required in this BMAP. Most agricultural lands are engaged in livestock production. **Table 11** shows the three dominant crop types within the Silver and Rainbow BMAP.

**Table 11. Dominant crop types in the Silver and Rainbow BMAP**

| Crop Type | Acres |
|---|---|
| Grazing Land | 145,759 |
| Row Crops | 81,386 |
| Livestock | 64,219 |

Targeting future funding toward precision agriculture, manure management, innovative technologies or soil health practices, including combining practices where applicable, to address nutrient impacts from row crop production on a regional scale could provide additional reductions.

FDACS will continue to work with key stakeholders in the Silver and Rainbow BMAP to identify additional options for addressing agricultural nonpoint source nutrient loading. For more information on the FDACS Regional Projects Program, see the links in **Appendix I**.

## 2.10 Atmospheric Deposition Management Strategies

### *2.10.1 Summary of Loading*

Atmospheric deposition is largely a diffuse, albeit continual, source of nitrogen. Nitrogen species and other chemical constituents are measured in wet and dry deposition at discrete locations around the U.S. In 2014, Schwede and Lear developed a hybrid model for estimating the total atmospheric deposition of nitrogen and sulfur for the entire U.S., referred to as the total atmospheric deposition model (TDEP). Deposition data from several monitoring networks--including the Clean Air Status and Trends Network (CASTNET); the National Atmospheric Deposition Program (NADP) Ammonia Monitoring Network; the Southeastern Aerosol Research and Characterization Network; and modeled data from the Community Multiscale Air Quality (CMAQ) Modeling System—are combined in a multistep process with National Trends Network (NTN) wet deposition values to model total deposition. The TDEP model run used for the NSILT included data from 2019 to 2020.

### *2.10.2 Description of Approach*

Atmospheric sources of nutrients are local, national, and international. Nitrogen atmospheric sources are generally of low concentration compared with other sources and are further diminished through additional biological and chemical processes before they reach groundwater. Recent data (Himes and Dawson, 2017) indicate that the deposition of nitrogen has been generally decreasing in Florida with an up to 55% decrease in atmospheric deposition by 2028, possibly related to power plant fuel source changes and air treatment upgrades as well as the increased use of electric vehicles, decreasing mobile sources (Himes and Dawson, 2017). This gradual decrease in atmospheric deposition will result in the necessary reductions from this source to meet the next 5-year milestone (**Figure 6**). Currently, since the scale of the national and international programs to address these air deposition loads are difficult to integrate into the much smaller scale of this water quality plan, there are no specific reductions assigned to this source category. Atmospheric deposition sources and trends will be re-evaluated periodically.

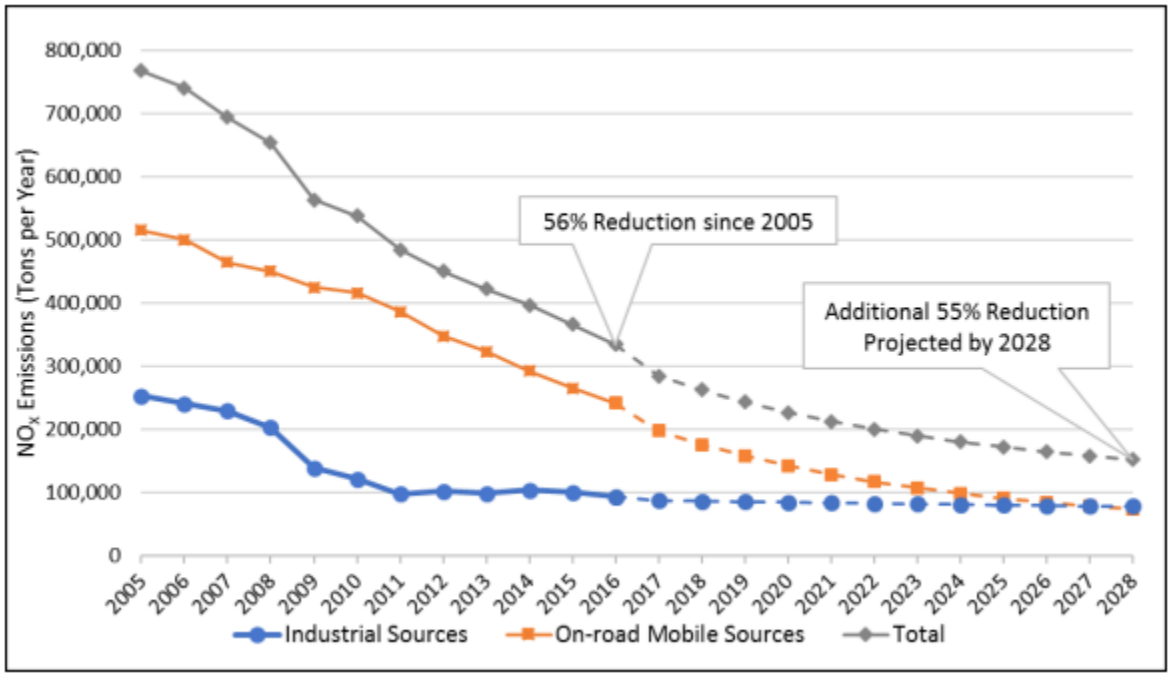


**Figure 6. Florida NOx emissions for 2005 to 2016 and projected emission decreases for 2017 to 2028 from industrial and on-road mobile sources.**

## 2.11 Future Growth Management Strategies

Nutrient impacts from new development are addressed through a variety of mechanisms outlined in this BMAP, as well as provisions of Florida law. While most of the restoration projects and management strategies listed in this BMAP address current nutrient loading, the need to plan and implement sound management strategies to address additional population growth must be considered.

DEP has included in this BMAP specific elements to address current and future WWTF effluent, OSTDS loading and stormwater sources. Broader requirements—such as local land development regulations, comprehensive plans, ordinances, incentives, environmental resource permit requirements, and consumptive use permit requirements—all provide additional mechanisms and avenues to protect water resources and reduce the impact of new development and other land use changes as they occur.

Further strengthening of comprehensive plans is required under section 163.3177, F.S., which required local governments to amend their comprehensive plans with the following considerations:

- Identify and prioritize projects to meet the TMDLs.
- Update the wastewater section to include plans for treatment updates--not just capacity--and AWT must be prioritized.
- In developments with more than 50 lots with more than one OSTDS per acre, the plan must consider the feasibility of providing sanitary sewer within a 10-year planning

horizon and identify the facility that could receive the flows. The plan must review the capacity of the facility and any associated transmission facilities; projected wastewater flow at that facility for the next 20 years, including expected future new construction and connections of OSTDS to sanitary sewer; and timeline for the construction of the sanitary sewer system. The plan was required to be updated by July 1, 2024.

- Comprehensive plans must contain capital improvements element to consider the need for and the location of public facilities:
    - Construction, extension, or increase in capacity of public facilities as well as principals for correcting existing public facility deficiencies. Components must cover at least a 5-year period.
    - Costs, timeline, general location, and projected revenue sources to fund the facilities.
    - Standards to meet an acceptable level of service.
    - Schedule of capital improvements, which may include privately funded projects.
    - A list of projects necessary to achieve the pollutant load reductions attributable to the local government, as established in a BMAP.
    - The element must address coordinating the extension of, increase in the capacity of, or upgrade in treatment of facilities to meet future needs; prioritizing AWT while maximizing the use of existing facilities and discouraging urban sprawl; conserving potable water resources; and protecting the functions of natural groundwater recharge areas and natural drainage features.

Through this array of laws and the requirements in this BMAP, new development must undertake certain nutrient-reduction measures before the development is complete. DEP recommends that local governments revise their planning and land use ordinance(s) to adequately address future growth and the associated environmental impact. Maintaining land at lower intensity uses through land purchases or easements for conservation and recreational use is one strategy that can help reduce water quality impacts in the basin. Any additional nutrient loading from land use intensification will be evaluated during future BMAP update efforts. If an increase in loading occurs, a responsible entity may receive additional reduction allocations that will require additional management actions by the responsible entity to mitigate those water quality impacts.

### *2.11.1 Future Growth Analysis*

An analysis was done to consider the impacts of future population growth and urban development on loading in the basin. Wastewater sources were evaluated using per-person estimations calculated for portions of the population estimated to be served by OSTDS and those connected to central sewer. Stormwater sources were evaluated using per-acre estimations calculated for portions of a jurisdictional area that may be developed.

First, population growth for each county was taken from the Bureau of Economic and Business

Research (BEBR) 2040 Medium Growth Projections. Then, a spatial analysis was performed to determine the proportion of developable land area attributed to each entity within each county. Areas where there are permanent waterbodies, or which have been set aside for conservation are unlikely to see future development or increased population so the National Hydrography Database (NHD) for lake and ponds and the Florida Natural Areas Inventory conservation lands were used to remove lands from the analysis. The percentage of remaining land attributed to each entity was applied to the county projected population growth to determine the number of additional people anticipated to contribute to loading by 2040.

The next step was to distinguish the future population expected to be served by sewer versus those with OSTDS based on the most recent FLWMI for each BMAP county. For this, FLWMI parcels within each entity's jurisdiction were counted and categorized based on the Wastewater Type field. The number of points in "Known Sewer," "Likely Sewer," and "Somewhat Likely Sewer" divided by the total number of points estimated a portion of the population that are served by central wastewater collection system. The remainder are assumed to have an OSTDS.

Per person loading calculations were used to estimate future loads from WWTFs and OSTDS under different planning scenarios, described below. DEP's Domestic Wastewater Program estimates each person in Florida generates 100 gallons of wastewater per day. For OSTDS, FDOH estimates each person in Florida generates 10 lbs TN/yr. Average attenuation for wastewater effluent disposal and a weighted basin recharge factor were applied to loading calculations to derive the estimated future load to groundwater.

Per acre loading calculations were used to estimate future loads from increased urban turfgrass as a result of development under different planning scenarios, described below. First, a number of developed acres were derived by applying percentages to the developable lands from the initial GIS analysis for each entity. Then, the loadings were based on UF-IFAS recommended fertilization rates for different turfgrass species. Finally, attenuation for UTF and a weighted basin recharge factor were applied to loading calculations to derive the estimated future load to groundwater.

Scenario 1 represents a future planning scenario with the highest levels of treatment feasible. It assumes all local governments within the BMAP have a minimum of 90% of their population served by centralized sewer, and all domestic wastewater will be treated to AWT standards (3 mg/L TN or less and 1mg/L TP or less) by 2040 based on current Florida law and BMAP management strategies. This scenario also assumes that all future OSTDS will be enhanced nutrient-reducing systems or other wastewater systems with a nitrogen treatment efficiency of at least 65%. For urban development, this scenario represents a conservative growth future where 2% of developable land is converted to urban, development codes only allow a 10% coverage of turfgrass, and the species used is centipedegrass, which has low TN fertilization requirements.

Scenario 2 utilizes the current rates of sewer availability based on the FLWMI parcels to estimate the population served by central wastewater collection system. This future planning scenario assumes that all domestic wastewater will be treated to AWT standards (3 mg/L TN or

less and 1 mg/L TP or less) by 2040 based on current Florida law and BMAP management strategies. This scenario also assumes that all future OSTDS will be enhanced nutrient-reducing systems or other wastewater systems with a nitrogen treatment efficiency of at least 65%. For urban development, this scenario represents a moderate growth future where 10% of developable land is converted to urban, development codes only allow a 10% coverage of turfgrass, and the species used is centipedegrass, which has low TN fertilization requirements.

Scenario 3 represents a future planning scenario with the lowest levels of treatment feasible. It utilizes the current rates of sewer availability based on the FLWMI parcels to estimate the population served by central wastewater collection system and assumes that all domestic wastewater will be treated to 6 mg/L TN and 3 mg/L TP by 2040. This scenario also assumes that all future OSTDS will be conventional systems. For urban development, this scenario represents an extreme growth future where 17% of developable land is converted to urban, development codes allow up to 25% coverage of turfgrass, and the species used is St. Augustine grass, which has higher TN fertilization requirements.

Based on the methodology above, **Table 12** shows the estimated future loads from wastewater and urban stormwater sources that may be assigned to local governments if growth continues as projected under the three planning scenarios. DEP encourages local governments to consider these additional nutrient loads when authorizing new development or changes in land uses, and when developing local plans for wastewater infrastructure expansion and maintenance, to ensure that the TMDL targets are achieved and maintained.

**Table 12. Estimated nitrogen load from future growth in the BMAP area**

| Entity | BEBR 2040 Additional Population | 2040 Additional Nitrogen Loading – Scenario 1 (lbs/yr) | 2040 Additional Nitrogen Loading – Scenario 2 (lbs/yr) | 2040 Additional Nitrogen Loading - Scenario 3 (lbs/yr) |
|---|---|---|---|---|
| **Alachua County** | 4603 | 1,855 | 7,005 | 53,366 |
| **City of Hawthorne** | 418 | 154 | 405 | 4,388 |
| **City of Micanopy** | 66 | 24 | 119 | 803 |
| **Lake County** | 6366 | 2,790 | 9,774 | 35,657 |
| **City of Fruitland Park** | 1342 | 588 | 1,566 | 6,527 |
| **Town of Lady Lake** | 1872 | 399 | 653 | 6,043 |
| **City of Leesburg** | 474 | 110 | 183 | 1,566 |
| **Marion County** | 69,601 | 23,956 | 85,638 | 624,3 |

| Entity | BEBR 2040 Additional Population | 2040 Additional Nitrogen Loading – Scenario 1 (lbs/yr) | 2040 Additional Nitrogen Loading – Scenario 2 (lbs/yr) | 2040 Additional Nitrogen Loading - Scenario 3 (lbs/yr) |
|---|---|---|---|---|
| **City of Belleview** | 337 | 79 | 204 | 2,603 |
| **Town of McIntosh** | 61 | 14 | 26 | 449 |
| **City of Ocala** | 4,076 | 956 | 2,541 | 31,617 |
| **Town of Reddick** | 109 | 26 | 48 | 806 |
| **Putnam County** | 234 | 185 | 1,734 | 29,431 |
| **Sumter County** | 6731 | 1,521 | 2,641 | 23,539 |
| **City of Wildwood** | 2156 | 498 | 856 | 7,560 |
| **The Villages** | 5456 | 1,375 | 2,418 | 21,837 |
| **Levy County** | 1939 | 1,326 | 10,947 | 140,578 |
| **Town of Bronson** | 17 | 11 | 87 | 1,213 |
| **City of Williston** | 63 | 41 | 334 | 4,521 |
| **City of Dunnellon** | 572 | 263 | 497 | 4,716 |
| **On Top of the World** | 1466 | 375 | 961 | 11,467 |
| **Total** | **108,297** | **36,546** | **128,636** | **1,013,062** |

Scenario 1 resulted in an additional basin load of 36,546 lbs/yr TN. Scenario 3 resulted in an additional basin load of 1,013,062 lbs/yr TN. When compared to the results of the Silver and Rainbow NSILT (3,938,958 lbs/yr TN), it is estimated that growth in the basin could result in a 1% to 26% increase in nitrogen loading to the groundwater by 2040.

While it is unlikely that additional nutrient loading from future populations can be entirely avoided, the results of this analysis provide local governments information on how they can mitigate future nitrogen loading by pursuing planning scenarios which prioritize the expansion of centralized sewer services that meet or exceed AWT standards for wastewater effluent. Entities with minor changes in 2040 loading under Scenarios 1 and 2 already have a high rate of sewering in their jurisdiction.

This broad analysis is not being used to determine allocated reductions for responsible entities because it does not capture all local considerations and complexities of mixed land use, or current allocation approaches for wastewater. In addition, changes in nutrient loading from future

population and development are difficult to model because much of it is dependent on the type and location of development, enforcement of local ordinances, future home values, and future social attitudes towards lawn maintenance and waste management. There are also complex dynamics associated with new urban development in which loading from human activities is compounded by potential removal or conversion of forest lands or green spaces, which had previously provided natural remediation of atmospheric and soil nutrients, as well as other ecosystem benefits. However, the results show trends in how loading in the basin might change in the coming decades without comprehensive local and regional planning.

Other mechanisms discussed in this section are available to local governments to further mitigate future nutrient loading from existing and future developed land. For example, strengthening and enforcing fertilizer ordinances, working with homeowners' associations or neighborhood groups to reduce fertilizer use on community landscaping, or incentivizing Florida Friendly development practices could reduce the overall impact of additional nutrient loading associated with urban fertilizer. Additionally, wastewater can be treated to higher standards than those built into this analysis through upgrades to WWTFs and use of enhanced nutrient-reducing OSTDS certified with higher nitrogen treatment efficiencies or other wastewater treatment systems with higher treatment levels. Local governments can use this information to incorporate water quality considerations when developing and implementing local ordinances, comprehensive plans, stormwater planning, and enhanced OSTDS incentive programs in areas of urban expansion.

## 2.12 Funding Opportunities

Chapter 2023-169, Laws of Florida, expanded grant opportunities for local governments and eligible entities working to address a TMDL or impaired water. Through the Water Quality Improvement Grant program, eligible entities can apply for grant funding for wastewater, stormwater and regional agricultural projects. Projects are prioritized that have the maximum nutrient load per project, demonstrate project readiness, are cost-effective, have cost-share by the applicant (except for Rural Areas of Opportunity), have previous state commitment, and are in areas where reductions are most needed. There are multiple competitive funding resources available under the Protecting Florida Together website, including $50 million in springs-specific funding.

Financial and technical assistance through FDACS, SJRWMD, and SWFWMD are available to agricultural producers within the Silver and Rainbow BMAP. FDACS provides outreach and education on BMP implementation for enrolled operations, as well as work with interested producers to provide cost share funding for projects to improve on-farm nutrient and irrigation efficiencies that work in tandem with the applicable practices from the producer’s BMP checklist. The SJRWMD and SWFWMD cost share programs also provide outreach and funding for projects that provide nutrient and irrigation management benefits. FDACS and the WMD’s work closely to ensure their cost share programs complement each other to meet the needs of the producers while considering the characteristics of the region.

# Section 3: Monitoring and Reporting

## 3.1 Methods for Evaluating Progress

DEP will work with stakeholders to track project implementation and organize and evaluate the monitoring data collected each year. The project and monitoring information will be presented in an annual update. Stakeholders have agreed to meet annually after the adoption of the BMAP to follow up on plan implementation, share new information, and continue to coordinate on TMDL restoration related issues. The following activities may occur at annual meetings~

Implementation data and reporting:

- Collect project implementation information from stakeholders, including FDACS agricultural BMP enrollment and FDOH-issued permits, and compare with the BMAP schedule.
- Discuss the data collection process, including any concerns and possible improvements to the process.
- Review the monitoring plan implementation, as detailed in **Section 3.3**.

Sharing new information:

- Report on results from water quality monitoring and trend information.
- Provide updates on new management strategies in the basin that will help reduce nutrient loading.
- Identify and review new scientific developments on addressing nutrient loads and incorporate any new information into annual progress reports.

Coordinating on TMDL restoration-related issues:

- Provide updates from DEP on the basin assessment cycle and activities related to any impairments, TMDLs, and BMAP.
- Obtain reports from other basins where tools or other information may be applicable to the TMDLs.

## 3.2 Adaptive Management Measures

Adaptive management involves making adjustments in the BMAP when circumstances change or monitoring indicates the need for additional or more effective restoration strategies. Adaptive management measures may include the following:

- Implementing procedures to determine whether additional cooperative strategies

are needed.

- Using criteria/processes for determining whether and when plan components need revision because of changes in costs, project effectiveness, social effects, watershed conditions or other factors.

- Revising stakeholders' roles during BMAP implementation and after BMAP completion.

- Updating information on corrective actions (and any supporting documentation) being implemented as data are gathered to refine project implementation schedules and performance expectations.

Key components of adaptive management to share information and expertise are tracking plan implementation, monitoring water quality and pollutant loads, and holding periodic meetings.

## 3.3 Water Quality Monitoring

The purpose of the monitoring network is to support the evaluation of progress made toward achieving the TMDL target nitrate concentration of 0.35 mg/L. The sampling locations, frequency, and sampled parameters identified in this chapter represent the minimum requirements needed to achieve this purpose. The monitoring strategy includes the following distinct sampling networks:

- A *Surface Water Network* to evaluate the water quality of Silver River and Rainbow River and their associated springs and identify and track changes.
- A *Groundwater Network* to evaluate changes in groundwater quality in the Silver Springs and Rainbow Springs BMAP areas, as well as the response of the aquifer to different land uses.
- An *Aquatic Vegetation Monitoring Network* for Silver River and Rainbow River.

### *3.3.1 Objectives*

Focused objectives are critical for a monitoring strategy to provide the information needed to evaluate implementation success. Since the BMAP implementation involves an iterative process, the monitoring efforts are related to primary and secondary objectives. The primary objectives focus on achieving water quality targets, while the secondary objectives focus on sub-regional effectiveness of projects and management strategies and other water quality parameters that can be used to provide information for future refinements of the BMAP. The monitoring strategy may be updated as necessary.

**Surface Water Monitoring Network Goals and Objectives:**

- Primary Objective: Identify and track changes in nitrate concentration in spring discharges and in Silver River and Rainbow River to determine if TMDL targets are being achieved.

- Secondary Objective: Estimate TN loadings and track changes in TN loading for Silver River and Rainbow River.

**Groundwater Monitoring Network Goals and Objectives:**

- Primary Objective: Identify and track changes in nitrate concentration in the UFA at specific well locations to estimate progress made towards achieving the TMDL target concentration.
- Secondary Objective: Determine the response of UFA nitrate concentrations to different land uses.
- Secondary Objective: Provide a comparison of nitrate concentrations between the surficial and Floridan Aquifers.

**Aquatic Vegetation Monitoring Network**

- Primary Objective: Map, monitor, and evaluate submerged aquatic vegetation (SAV).
- Secondary Objective: Identify and track the biological response of the springs and rivers to changes in nitrate concentration.

### *3.3.2 Parameters, Frequency and Network*

To achieve the objectives listed above, the monitoring strategy will focus on two types of indicators to track improvements in water quality at the spring vents and in the groundwater: core and supplemental (**Table 13** and **Table 14**, respectively). The core indicators are directly related to the parameters causing impairment in the associated springs. Supplemental indicators will be monitored primarily to support the interpretation of core water quality parameters. The monitoring network is established for a variety of purposes.

For this BMAP, nitrate is the core parameter measured, to track progress in decreasing nitrogen concentrations in groundwater and the water surfacing at the spring vents. The other parameters are considered supplementary parameters for the BMAP, as they build information about groundwater and the springs but are not direct measurements of impairment.

At a minimum, the core parameters will be tracked to determine the progress that has been made towards meeting the TMDLs and/or achieving the numeric nutrient criteria (NNC). Resource responses to BMAP implementation may also be tracked. A significant amount of time may be needed for changes in water chemistry to be observed.

**Table 13. Core water quality indicators and field parameters for spring vents and groundwater**

| Core Parameters |
|---|
| Total Nitrogen (TN) |
| Total Kjeldahl Nitrogen |
| Nitrate as Nitrogen |

| Core Parameters |
|---|
| Orthophosphate as Phosphorus |
| Total Phosphorus (TP) |

**Table 14. Supplemental water quality indicators and field parameters for spring vents and groundwater**

| Supplemental Parameters |
|---|
| Specific Conductance |
| Dissolved Oxygen (DO) |
| pH |
| Temperature |
| Total Suspended Solids (TSS) |
| Total Dissolved Solids (TDS) |
| Turbidity |
| Chloride |
| Color |
| Ammonia (as nitrogen [N]) |
| Total Organic Carbon |
| Calcium |
| Magnesium |
| Sodium |
| Potassium |
| Sulfate |
| Fluoride |
| Alkalinity |

Surface Water and Groundwater Monitoring Network locations were selected to represent the minimum density of data collection sites needed to track changes in water quality and allow the evaluation of progress toward achieving the TMDLs.

**Figure 9** shows the location of active Silver and Rainbow water quality monitoring stations. SJRWMD and SWFWMD conduct most of the groundwater sampling for the Silver Springs and Upper Silver River and Rainbow Springs Group and Rainbow River BMAP area.

Station locations for the monitoring networks will be reviewed and modified as needed.

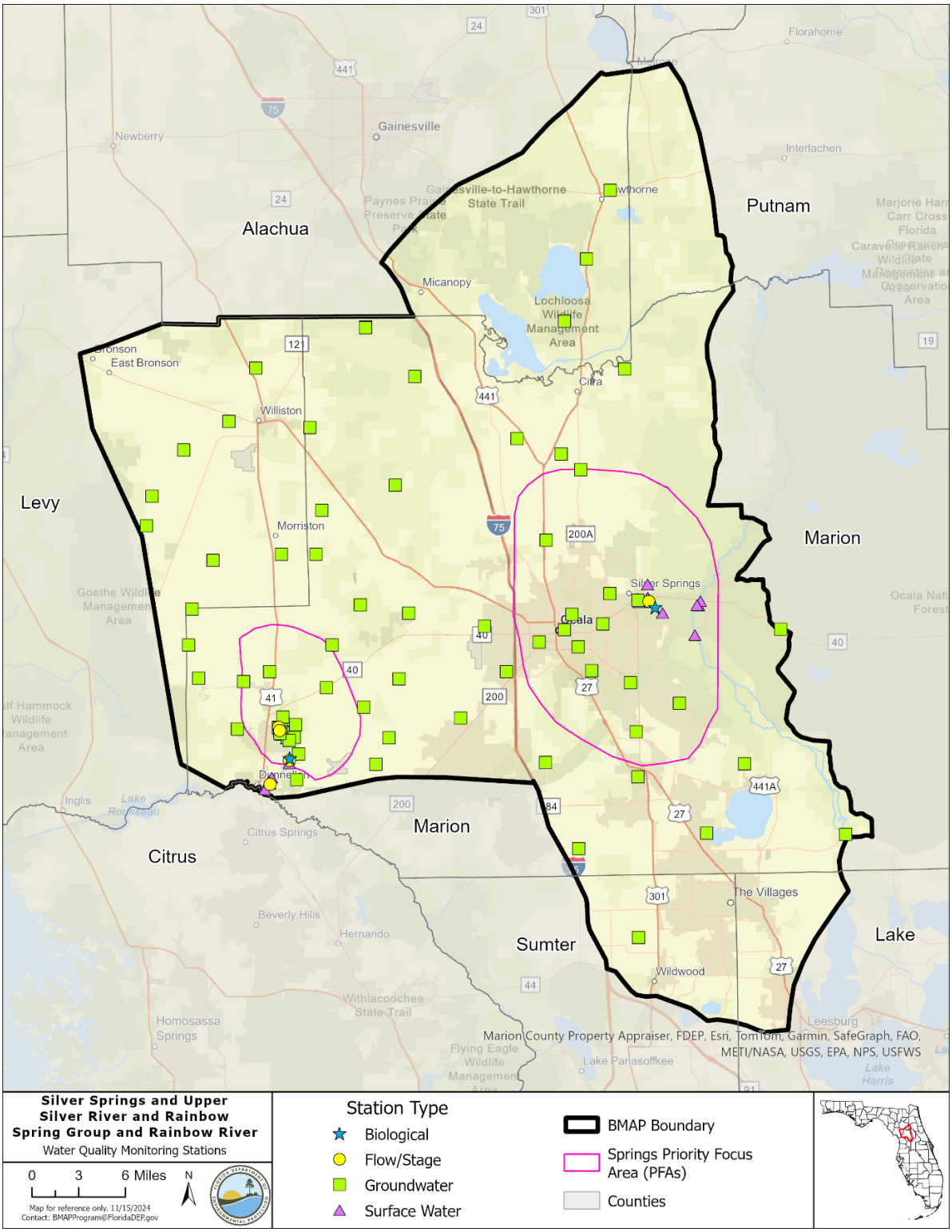


**Figure 7. Water quality monitoring stations in Silver and Rainbow BMAP**

### *3.3.3 Nutrient Monitoring*

Water quality is monitored to evaluate progress towards achieving the TMDL targets

of 0.35 milligrams per liter (mg/L) of nitrate-nitrite to be protective of the aquatic flora and fauna. Surface water quality data are collected at the spring vents to determine if the TMDL nitrate targets are being achieved, and once achieved, are being maintained. Flow data are collected in support of the secondary objective of estimating total mass loading of nitrate at the vent and can be used to evaluate TN loading in the BMAP. Groundwater well data are collected to evaluate aquifer conditions in the source water for the springs. A robust groundwater monitoring program can be used to evaluate TN loading in the BMAP and may give an indication of future changes in spring vent concentrations as nutrient levels in the groundwater are expected to respond to changes in loading prior to the spring vents due to transport time to the spring vents.

#### *3.3.3.1 Spring Sampling*

Surface water data are collected to represent conditions in each of the impaired waterbodies as well as downstream conditions. SJRWMD, SWFWMD, DEP's Oklawaha River Aquatic Preserve, and DEP's Rainbow River Aquatic Preserve collect surface water quality data. SJRWMD typically samples at stations every other month, or six times per year, and the Oklawaha River Aquatic Preserve samples quarterly for Silver. Discharge information is collected downstream of Mammoth Spring, at USGS site number 02239501, Silver River near Ocala, Fl. There are additional sampling locations in the Ocklawaha River upstream and downstream of Silver River. SWFWMD and DEP's Rainbow River Aquatic Preserve staff collect samples quarterly for Rainbow. Rainbow River discharge information is collected downstream near Dunnellon, at USGS site number 02313100, Rainbow River at Dunnellon, Fl.

**Figure 8** and **Figure 9** display the nitrate plus nitrite concentration at the spring vents.

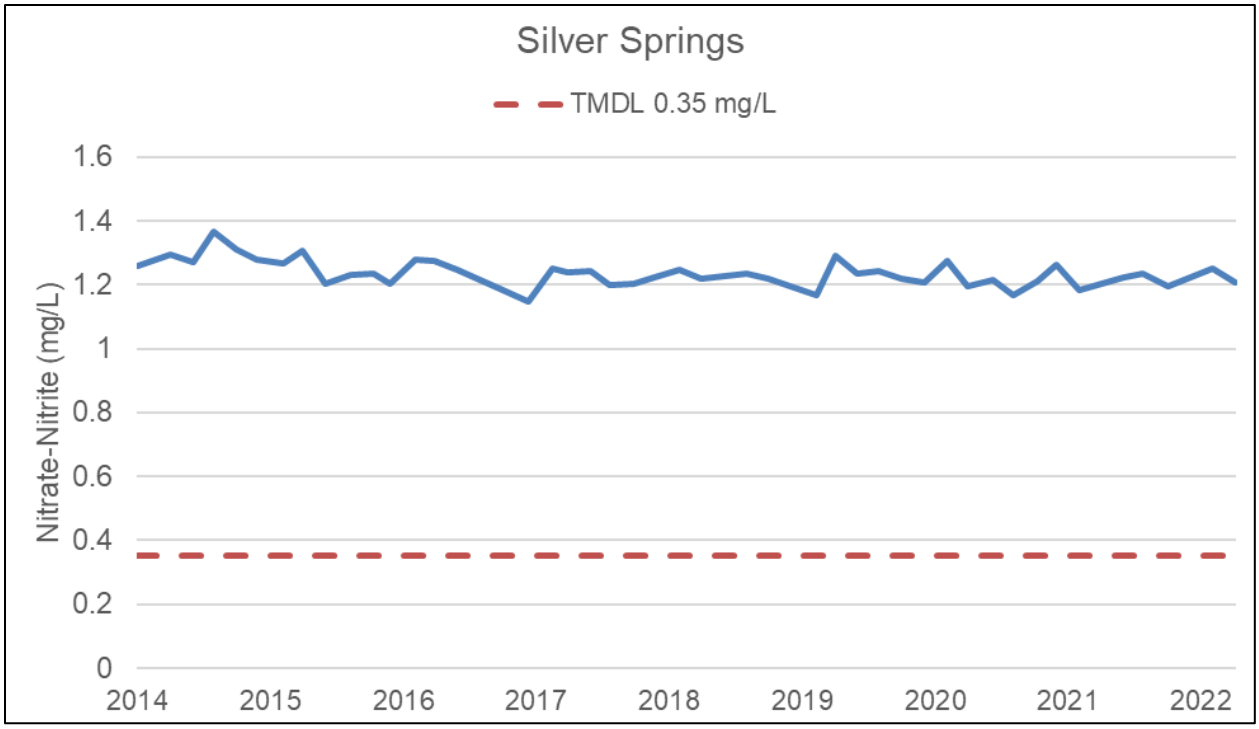


**Figure 8. Nitrate plus nitrite concentration over time for Silver Springs**

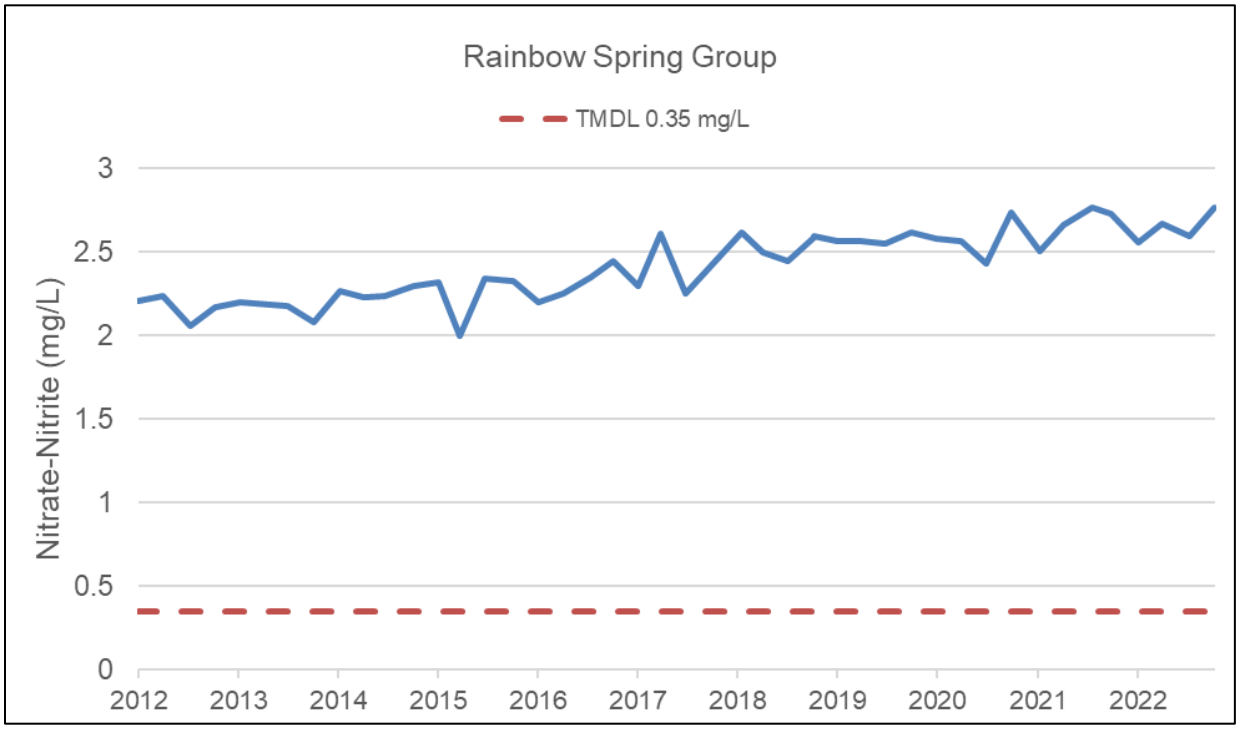


**Figure 9. Nitrate plus nitrite concentration over time for the Rainbow Springs Group**

### *3.3.3.2 Groundwater Results and Discussion*

Data from groundwater monitoring wells were obtained from DEP's Water Information Network

(WIN) database, SJRWMD and SWFWMD. The analyte of concern is nitrate, including both the total and the dissolved species. For these analyses, no differentiation between the two species was made. There was insufficient data to perform statistically robust trends analyses in many of the springs BMAPs. Available data was evaluated to perform a visual analysis using box plots to review change in nitrate concentrations for two periods of time (early and late) within the available period of record. To determine what wells would be included in the analysis, the frequency of sampling was considered. 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 analysis because comparisons between time periods represent changes in the same set of wells. Silver and Rainbow had enough data from fixed wells so no sporadic well data was used.

Groundwater data is subject to serial and spatial autocorrelation (AC), meaning that sampling that occurs temporally or spatially close can potentially affect the results of any trend-analysis hypothesis test. The effect of serial correlation in groundwater samples can be accounted for by using increments of time one year or longer, (Helsel, 2006). Regarding spatial AC, nitrate concentrations from wells located close to each other (clusters) often have significant correlations. Using the annual medians of all samples within the basins was determined to be the best way to reduce the effect of spatial AC before a more thorough correlation matrix can be completed. For these reasons, after initial data clean up to remove qualified data results, an annual grand median of the median nitrate concentration from each well in its corresponding basin were used for the visual analysis of the resulting dataset.

Box plots were generated for each spring basin as seen in **Figure 10** and **Figure 11** below. To create the box plots, the period of record was divided into early (2017 to 2020) and late (2021 to 2024) subperiods. For each box plot, the upper horizontal line of the box represents the 75th percentile. The lower horizontal line of the box represents the 25th percentile (Q1). The middle horizontal line in the box represents the median (50th percentile or Q2). The top of the point of the upper whisker is the 95th percentile. The bottom point of the lower whisker is the 5th percentile. Circles represent outliers.

In the Silver springshed, 19 fixed sampling points were evaluated and used to develop 69 median annual nitrate values for the early period and 58 for the late period. The overall basin median value in the early period was 0.94 mg/L nitrate, and the basin median for the late period was 0.76 mg/L nitrate.

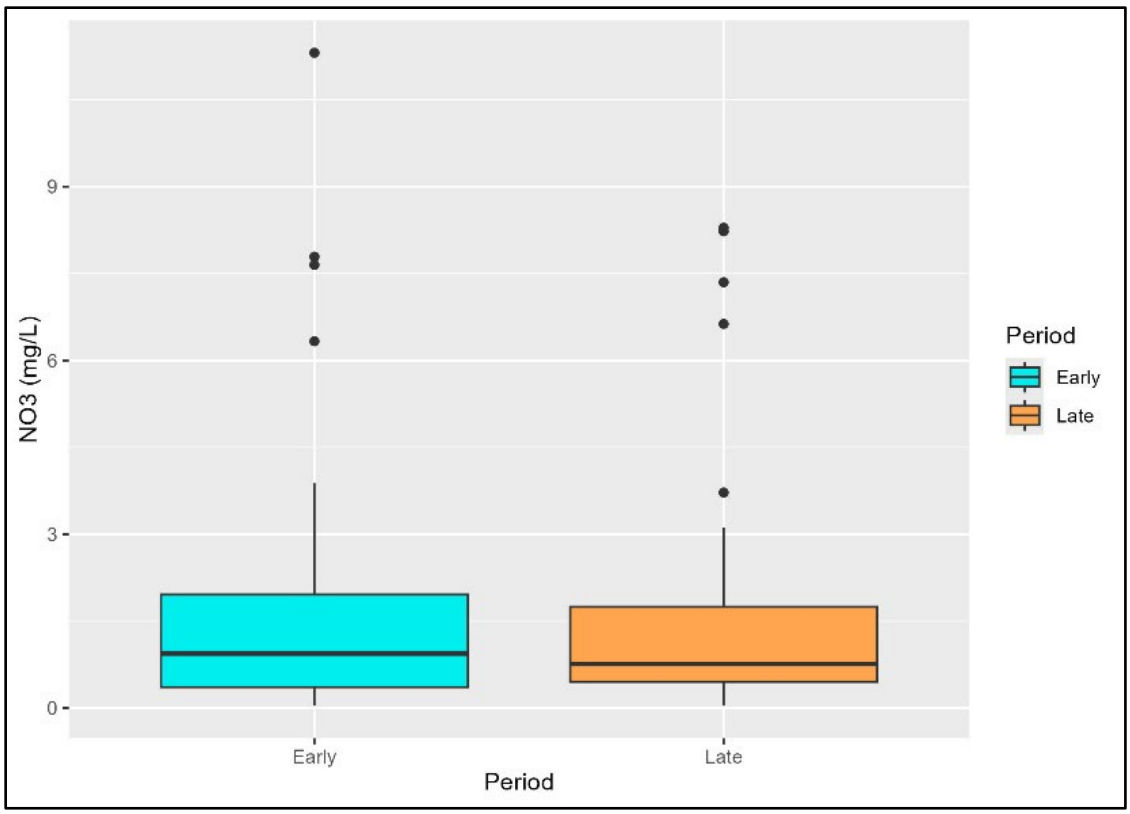


**Figure 10. Silver springshed nitrate concentrations of early and late periods with outliers**

In the Rainbow springshed, 39 fixed sampling points were evaluated and used to develop 117 median annual nitrate values for the early period and 107 for the late period. The overall basin median value in the early period was 1.30 mg/L nitrate, and the basin median for the late period was 1.44 mg/L nitrate.

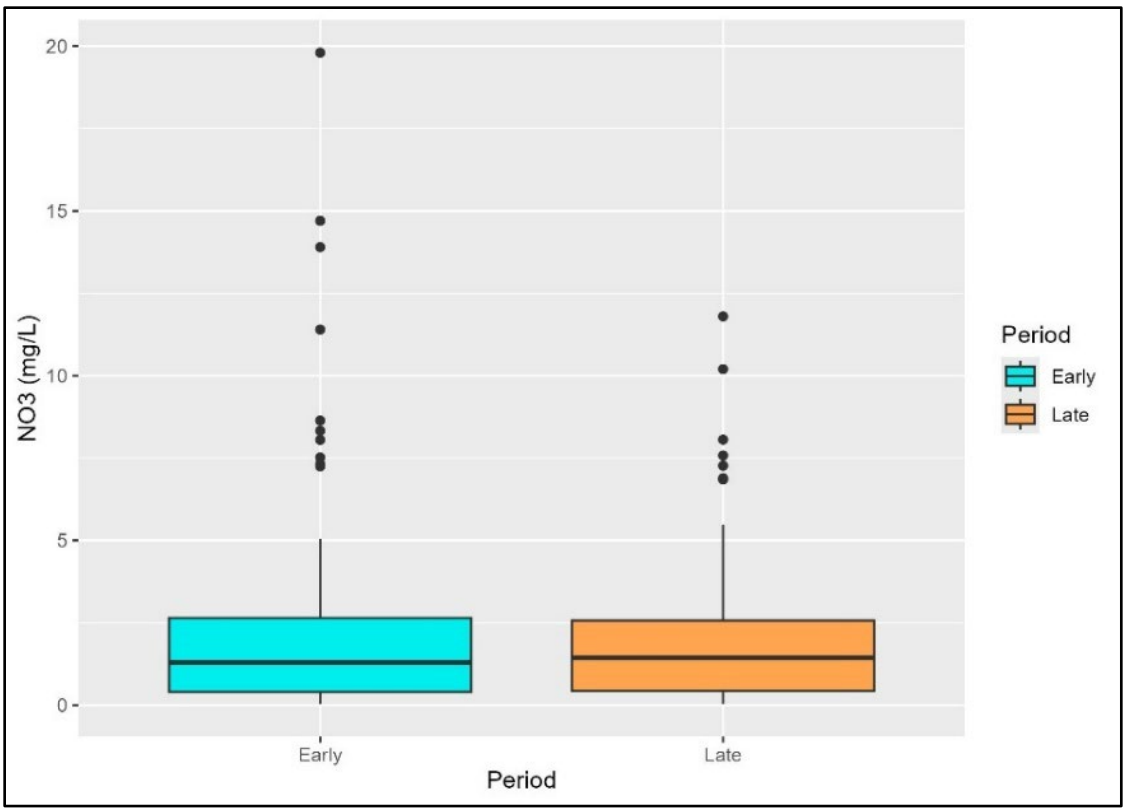


**Figure 11. Rainbow springshed nitrate concentrations of early and late periods with outliers**

In a combined Silver and Rainbow Basin (**Figure 12**), annual weighted medians were generated per year. For this portion, the weighted mean formula was used to determine the annual weighted mean of the grand medians of the two springsheds. The weighted median equation favors the variable with the greatest weight. In this exercise, only two variables are used (e.g. the two grand medians). Since weights are based on area, the medians in the Silver Springs Springshed would always be used. To avoid this bias, the weighted mean, not the weighted median, equation was used. As a result, for the Silver and Rainbow Basin, for each of the eight years of the investigation, the weighted mean of the grand medians for each of the two springsheds was generated. There were 186 median annual nitrate values for the early period and 165 for the late period. The overall basin median value in the early period was 0.83 mg/L nitrate, and the basin median for the late period was 0.85 mg/L nitrate.

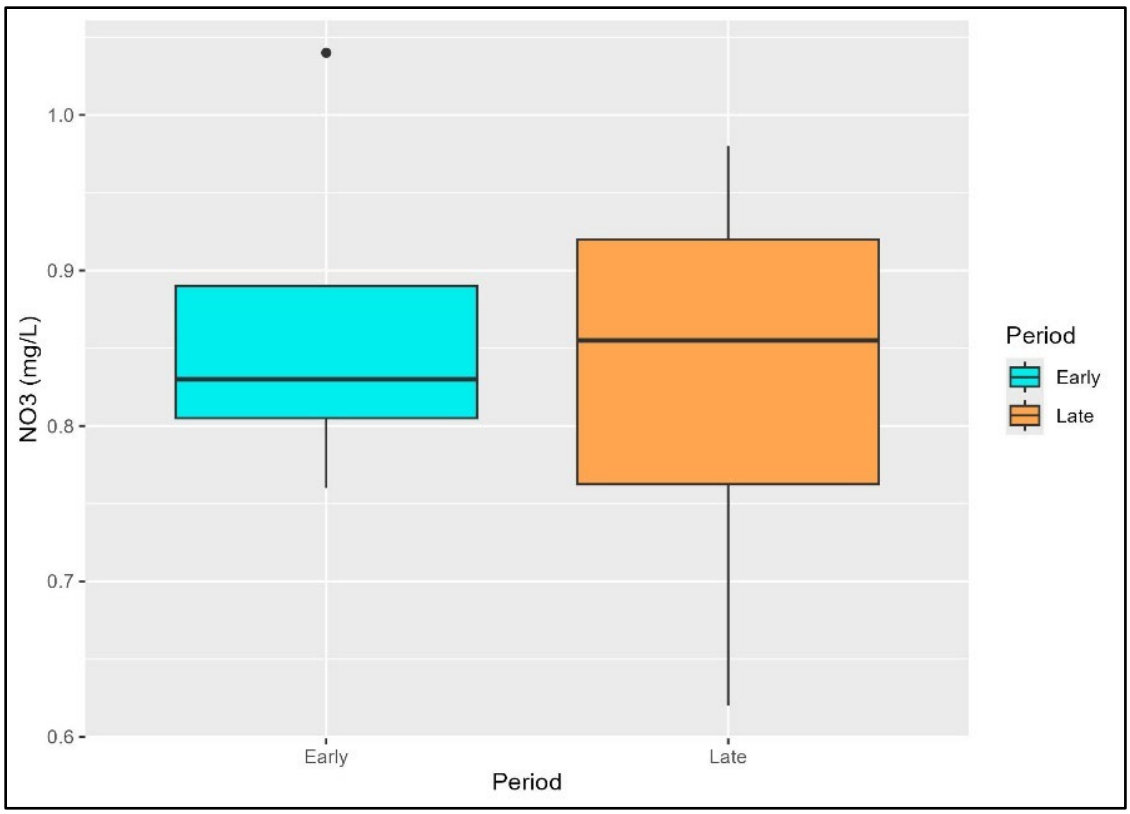


**Figure 12. Combined Silver and Rainbow springsheds nitrate concentrations of early and late periods with outliers**

DEP is working to evaluate monitoring networks in these basins and develop a sampling schedule that will allow for trend analysis of groundwater conditions in future iterations of the BMAP. A review of spatial distribution and well construction details will allow DEP to focus monitoring efforts that will provide the most informative data about groundwater trends and potentially nitrogen loading in the Upper Floridan aquifer.

### *3.3.4 Biological Monitoring*

Biological resource responses represent improvements in the overall ecological health of the Silver and Rainbow BMAP area (see **Table 15**). DEP recommends that several types of biological monitoring be conducted to assess the health of the Silver and Rainbow Springs and Rivers.

**Table 15. Biological response measures for spring runs**

| Biological Response Measures | Target Community | Sampling Methods |
|---|---|---|
| Chlorophyll *a* | Phytoplankton | DEP standard operating procedure (SOP) FS 2100 |
| Stream Condition Index (SCI) score | Aquatic Macroinvertebrates | DEP SOP SCI 1000 |
| Linear Vegetation Survey (LVS) score | Aquatic Vegetation | DEP SOP FS 7320 |
| Rapid Periphyton Survey | Attached Algae | DEP SOP FS 7230 |

| | | |
|---|---|---|
| (RPS) score | (Periphyton) | |

The RPS is a rapid assessment tool for evaluating streams' ecological condition based on the attached algae. The RPS quantifies periphyton length and extent in a 100-meter stretch of a stream by assigning a rank category to the length of periphyton filaments. The LVS is a rapid assessment tool for evaluating the ecological condition of streams based on the nativity status and relative human disturbance tolerance of vascular plants. The RPS, LVS, and chlorophyll *a* are used to evaluate the floral integrity of the springs.

The SCI evaluates the aquatic macroinvertebrate community present in the river and/or springs. In addition, habitat assessments are conducted per DEP SOP FT 3100 to assess the habitat present to support the aquatic macroinvertebrates. For the Silver River, SJRWMD collects annual SAV data. SWFMWD surveys the Rainbow River for SAV biannually. Water quality samples and field measurements of physical water quality are collected with the biological monitoring.

### *3.3.5 Data Management and Assessment*

As of June 30, 2017, entities that collect water quality data in Florida enter the data into the Florida Watershed Information Network (WIN) Database, which replaced the Florida Storage and Retrieval System (STORET). DEP pulls water quality data directly from WIN and U.S. Geological Survey (USGS) databases to evaluate waters according to the Impaired Waters Rule, Chapter 62-303, F.A.C., and for TMDL development. Data providers must upload their data regularly, so DEP can use the information as part of the water quality assessment process, for annual reporting and trend analyses. Data providers should upload their data to WIN upon completion of the appropriate quality assurance/quality control (QA/QC) checks. All data collected in the last quarter of the calendar year should be uploaded no later than April 1 of the following year.

DEP sampling teams enter their biological data into the DEP Statewide Biological (SBIO) database. Biological data should be collected and regularly provided to DEP following the applicable standard operating procedures. All biological data collected in the last quarter of the calendar year should be uploaded or provided no later than April 1 of the following year.

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.

### *3.3.4 QA/QC*

Stakeholders participating in the BMAP monitoring plan must collect water quality data in a manner consistent with Chapter 62-160, F.A.C. Therefore, field samples must be collected following the DEP SOPs, and lab analyses must be conducted by National

Environmental Laboratory Accreditation Conference (NELAC)–accredited laboratories.

# Section 4. Commitment to Plan Implementation

## 4.1 Adoption Process

The 2025 BMAP update is adopted by Secretarial Order and assigns TN load reductions to the responsible stakeholders in the Silver and Rainbow BMAP area.

## 4.2 Tracking Reductions

The required loading reductions are expected to be met by 2038. Each entity responsible for implementing management actions to meet their upcoming 5-year milestone as part of the BMAP will provide DEP, via the statewide annual report process, with an annual update of progress made in implementing load reductions. The update will track the implementation status of the management actions listed in the BMAP and document additional projects undertaken to further water quality improvements in the basin. FDACS will continue to report acreage enrolled in NOIs at least annually to DEP.

## 4.3 Revisions to the BMAP

Adaptive management involves setting up a mechanism for making course corrections in the BMAP when circumstances change, or feedback mechanisms indicate that a more effective strategy is needed. Section 403.067, F.S., requires that the plan be revised, as appropriate, in collaboration with basin stakeholders. All or part of a revised BMAP must be adopted by Secretarial Order. Adaptive management measures include the following:

- Need to update based on new information, including model updates.
- New law requirements.
- Procedures to determine whether additional cooperative actions are needed.
- Criteria/process for determining whether and when plan components need to be revised because of changes in costs, environmental impacts, social effects, watershed conditions, or other factors.
- Descriptions of the stakeholders' role after BMAP completion.

Tracking implementation, monitoring water quality and pollutant loads, and holding periodic meetings to share information and expertise are key components of adaptive management.

# Section 5. References

Arthur, J.D., A.E. Baker, J.R. Cichon, A.R. Wood, and A. Rudin. 2005. *Florida Aquifer Vulnerability Assessment (FAVA): Contamination potential of Florida's principal aquifer systems.* A report submitted to the Division of Water Resource Management, Florida Department of Environmental Protection. Tallahassee, FL: Division of Resources Assessment and Management, Florida Geological Survey, Florida Department of Environmental Protection.

Baker, A.E., A.R. Wood, J. R. Cichon, and J.D. Arthur. 2005. *Alachua County aquifer vulnerability assessment*. Report submitted to the Alachua County Planning & Development Office. Tallahassee, FL: Florida Geological Survey, Florida Department of Environmental Protection

Baker, A.E., A.R. Wood, and J.R. Cichon. 2007. *The Marion County aquifer vulnerability assessment A ground-water protection and management tool*. Prepared for the Marion County Board of County Commissioners by Advanced GeoSpatial Inc. Tallahassee, FL.

Boniol, D. March 2013. "*Silver Springs Group Springshed Delineation and Dye Trace Studies*" presentation given at March 14, 2013 Silver Springs BMAP meeting. St. Johns River Water Management District.

Canion, A., D. Dobberfuhl, and l. McCloud. 2017. *Predictive modeling of elevated groundwater nitrate in major springsheds of the St. Johns River Water Management District*. Draft Report. Palatka, FL: St. Johns River Water Management District.

Florida Department of Environmental Protection. 2021. *Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses*. Tallahassee, FL.

Florida Stormwater Association. 2012. *Methodology for calculating nutrient load reductions using the FSA assessment tool.*

Helsel, D.R., and Frans, L.M., 2006, Regional-Kendall test for trend. Environmental Science and Technology, v. 40, no. 13, pp. 4066-4073.

Hicks, R.W., and K. Holland. November 2012. *Nutrient TMDL for Silver Springs, Silver Springs Group, and Upper Silver River (WBIDs 2772A, 2772C, and 2772E)*. Tallahassee, FL: Florida Department of Environmental Protection, Division of Environmental Assessment and Restoration, Bureau of Watershed Restoration

Himes, B., and J. Dawson. 2017. *Florida Nitrogen Oxides Emissions Trends*. Florida Department of Environmental Protection.

Holland, K. and R.D. Hicks. 2013. *Nutrient TMDL for Rainbow Springs Group and Rainbow Springs Group Run (WBIDs 1320A and 1320B)*. Tallahassee, FL: Florida Department of Environmental Protection.

Jones, G.W. et al. 1996. *Origin of nitrate in ground water discharging from Rainbow Springs, Marion County, Florida*. Brooksville, FL: Southwest Florida Water Management District.

McGurk, B. E., J. B. Davis, J. A. Stokes, D. J. Toth, with URS Corporation and Karst Environmental Services. 2012. *Silver Springs nutrient pathway characterization project*. Special Publication SJ2012-SP3. Palatka, FL: St. Johns River Water Management District.

Phelps, G.G. 2004. *Chemistry of ground water in the Silver Springs Basin, Florida, with an emphasis in nitrate*. United States Geological Survey Scientific Investigations Report 2004-5144.

Schwede, D.B., and G.G. Lear. 2014. A novel hybrid approach for estimating total deposition in the United States. *Atmospheric Environments* 92:207–220.

Southwest Florida Water Management District (SWFWMD). 2014. *2013–2017 springs management plan*. Brooksville, FL: Southwest Florida Water Management District.

———. 2016. *2015–2019 springs management plan*. Brooksville, FL: Southwest Florida Water Management District.

———. 2001. *Springs Coast comprehensive watershed management plan*. Brooksville, FL: Southwest Florida Water Management District.

———. 2002. *Springs Coast initiative*. Brooksville, FL: Southwest Florida Water Management District.

———. 2015. *Rainbow River Surface Water Improvement and Management (SWIM) Plan A Comprehensive Conservation and Management Plan*. Brooksville, FL: Southwest Florida Water Management District.

University of Wisconsin. December 2024. *National Trends Network*. National Atmospheric Deposition Program. Retrieved December 31, 2024, from https://nadp.slh.wisc.edu/networks/national-trends-network/.

# Appendices

## Appendix A. Important Links

The links below were correct at the time of document preparation. Over time, the locations may change and the links may no longer be accurate. None of these linked materials are adopted into this BMAP.

DEP Website: http://www.floridadep.gov

DEP Map Direct Webpage: https://ca.dep.state.fl.us/mapdirect/

PFA information: https://floridadep.gov/dear/water-quality-restoration/content/bmap-public-meetings

Florida Statutes: http://www.leg.state.fl.us/statutes:
Florida Watershed Restoration Act (Section 403.067, F.S.)
Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.)

DEP Model Ordinances: https://ffl.ifas.ufl.edu/ffl-and-you/gi-bmp-program/fertilizer-ordinances/

DEP Onsite Sewage Program: https://floridadep.gov/water/onsite-sewage/content/permitting-enhanced-nutrient-reducing-onsite-sewage-treatment-and

DEP Standard Operating Procedures for Water Quality Samples: https://floridadep.gov/dear/quality-assurance/content/dep-sops

NELAC National Environmental Laboratory Accredidation Program (NELAP): https://floridadep.gov/dear/florida-dep-laboratory/content/nelap-certified-laboratory-search

FDACS BMPs: https://www.freshfromflorida.com/Business-Services/Best- Management-Practices-BMPs/Agricultural-Best-Management-Practices

FDACS BMP and Field Staff Contacts: https://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy/Organization-Staff

Florida Administrative Code (Florida Rules): https://www.flrules.org/

SJRWMD 2025 Consolidated Annual Report: https://aws.sjrwmd.com/SJRWMD/plans/SJRWMD-2025-Consolidated-Annual-Report.pdf

SJRWMD Springs: https://www.sjrwmd.com/waterways/springs/

UF–IFAS Research: http://research.ifas.ufl.edu/

# Appendix B. Projects to Reduce Nitrogen Sources

## B.1 Prioritization of Management Strategies

BMAPs must now include projects that show how responsible entities will meet their 5-year milestones. To help prioritize projects towards the next milestone as required under 403.067, F.S., planning-level details for each listed project, along with their priority ranking have been determined. The management strategies listed in **Appendix B** are ranked with a priority of high, medium, or low.

Project status was selected as the most appropriate indicator of a project's priority ranking based primarily on if the project is going towards the next 5-year milestone, as well as need for funding. Overall, any project that is needed by a responsible entity to meet their next reduction milestone is considered a priority. Projects classified as "underway" were assigned a high or medium priority because some resources have been allocated to these projects, but additional assistance may be needed for the project to be completed. High priority was assigned to projects listed with the project status "planned" that are needed to meet the next milestone, as well as certain "completed" projects that are designated as "ongoing" each year, and select projects that are elevated because substantial, subsequent project(s) are reliant on their completion.

## B.2 Description of the Management Strategies

Responsible entities submitted these management strategies to the department with the understanding that the strategies would be included in the BMAP, thus requiring each entity to implement the proposed strategies as soon as practicable. However, this list of strategies is meant to be flexible enough to allow for changes that may occur over time. Any change in listed management strategies, or the deadline to complete these actions, must first be approved by the department. Substituted strategies must result in equivalent or greater nutrient reductions than expected from the original strategies.

While the 20-year planning period for this BMAP is 2018 to 2038, urban and agricultural stormwater projects completed since January 1, 2003 and OSTDS and wastewater projects completed since January 1, 2022 for Lake County, Levy County, Marion County and Putnam County and January 1,2023 for Alachua County and Sumter County, count toward the overall nitrogen reduction goals. Estimated nitrogen reductions provided by the responsible entity are subject to refinement based on DEP verification and/or on adjustment to calculations based on loading to groundwater that takes into consideration recharge and attenuation.

Projects with a designation of TBD (to be determined) denote information is not currently available but will be provided by the responsible entity when it is available. Projects with a designation of NA (not applicable) indicate the information for that

category is not relevant to that project. Projects with a designation of "Not Provided" denote that information was requested by DEP but was not provided by the responsible entity.

**Table B-1. Stakeholder projects to reduce nitrogen sources**

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3730 | Alachua County | S166 | Public Education and Outreach Activities | Implement social marketing campaign designed to get citizens to make landscaping behavior changes that reduce nutrients in stormwater. Reduces nutrients sources in all watersheds. | Education Efforts | Ongoing | NA | 164 | 0 | Alachua County | Alachua County - $0.00 |
| 3880 | Alachua County | S001 | Fertilizer and Landscape Irrigation Codes | Adopt and enforce Fertilizer Management and Landscape Irrigation Ordinances to reduce volume of runoff from over irrigation and reduce nutrient loading from the use of fertilizers. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Alachua County | Alachua County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3909 | Alachua County | S012 | Freddy Wood Land Tract Acquisition | Conservation Easement Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2008 | 0 | 1,136,000 | Alachua County; FFLP | Alachua County - $0.00; FFLP - $0.00 |
| 3910 | Alachua County | S011 | Rayonier Tract Acquisition (River Styx) | Land Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2008 | 0 | 4,603,600 | SJRWMD; Alachua County | SJRWMD - $0.00; Alachua County - $0.00 |
| 3911 | Alachua County | S010 | Longleaf Flatwoods Preserve Land Acquisition | Land Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and | Land Acquisition | Completed | 2003 | 0 | 2,191,500 | Alachua County | Alachua County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ecosystem/habitat preservation. | | | | | | | |
| 3912 | Alachua County | S009 | Phifer Flatwoods Land Acquisition #2 - Lochloosa Creek; Little Lochloosa Creek | Land Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2009 | 0 | 1,170,864 | Alachua County | Alachua County - $0.00 |
| 3913 | Alachua County | S008 | Phifer Flatwoods Land Acquisition #1 - Lochloosa Creek | Land Acquisition in Little Lochloosa Creek watershed. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2006 | 0 | 2,882,239 | Alachua County | Alachua County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3914 | Alachua County | S007 | Little Orange Creek Land Acquisition | Land Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2012 | 0 | 1,775,000 | Alachua County; Wild Spaces and Public Places; North American Wetland Act; Alachua Conservation Trust | Alachua County - $0.00; Wild Spaces and Public Places - $0.00; North American Wetland Act - $0.00; Alachua Conservation Trust - $0.00 |
| 3991 | Alachua County | S111 | Higginbotham Ranch Acquisition | Conservation Easement Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2014 | 0 | 756,000 | Wild Spaces Public Places; FRPP | Wild Spaces Public Places - $0.00; FRPP - $0.00 |
| 3992 | Alachua County | S110 | Cypress Point Creamery Land Acquisition | Conservation Easement Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer | Land Acquisition | Completed | 2014 | 0 | 461,000 | Wild Spaces Public Places; FRPP | Wild Spaces Public Places - $0.00; FRPP - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | recharge and ecosystem/habitat preservation. | | | | | | | |
| 4015 | Alachua County | S074 | Landscaping Behavior Change Social Marketing | Implement social marketing campaign designed to get citizens to make landscaping behavior changes that reduce nutrients in stormwater. Reduces nutrients sources in all watersheds. | Education Efforts | Underway | TBD | 0 | 0 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |
| 4019 | Alachua County | S073 | Quantifying Nutrient Improvement in Street Sweeping | Monitor and assess street sweepings to quantify nutrient reductions and subsequent potential water quality improvements. | Study | Completed | 2016 | 0 | 38,940 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |
| 4020 | Alachua County | S072 | Water Conservation and LID | Conduct targeted public outreach to encourage | Education Efforts | Ongoing | NA | 0 | 0 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | water conservation and rain harvesting. Includes rain barrel sales and LID promotion. | | | | | | | |
| 4023 | Alachua County | S071 | Landscape Debris Social Marketing | Implement social marketing campaign designed to get citizens to keep landscaping debris out of the roads and stormwater collection systems to reduces bacteria and nutrient sources in all watersheds. | Education Efforts | Ongoing | NA | 0 | 0 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |
| 4024 | Alachua County | S070 | Pet Waste Outreach | Implement social marketing campaign to motivate citizens to scoop, bag, and trash dog wastes at home and in the | Education Efforts | Ongoing | NA | 0 | 40,655 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | community. Benefits: Reduces bacteria and nutrient sources in all watersheds. | | | | | | | |
| 4025 | Alachua County | S069 | Water Quality Protection BMP Training | Alachua County. Training and education for contractors, government, and citizens in sedimentation and erosion control to improve stormwater quality. | Education Efforts | Ongoing | NA | 0 | 0 | Gainesville Clean Water Partnership | Gainesville Clean Water Partnership - $0.00 |
| 4571 | Alachua County | S177 | Aquifer Model | Mobile model used for outreach to children and adults designed and created to teach the public about the connection between how what we do on the land surface and how we use water affects our springs, | Education Efforts | Ongoing | NA | 0 | 6,000 | Wildlife Foundation of Florida Springs Protection License Plate Grant; Alachua County | Wildlife Foundation of Florida Springs Protection License Plate Grant - $0.00; Alachua County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | rivers, and aquifer. | | | | | | | |
| 4572 | Alachua County | S178 | Fertilizer Social Marketing Campaign | Implement a social marketing campaign designed to reduce fertilizer use and to estimate the resultant load reduction. Benefits: Reduces nutrient sources in all watersheds. | Enhanced Public Education | Ongoing | NA | 0 | 435,000 | DEP | DEP - $135,000.00 |
| 4573 | Alachua County | S179 | Interactive Stormwater/Wastewater Model | Interactive table top model for teaching children and adults about the difference between storm sewers and sanitary sewers. Benefits: Reduces nutrient sources and bacteria | Education Efforts | Ongoing | NA | 0 | 6,500 | SJRWMD; Gainesville Clean Water Partnership | SJRWMD - $0.00; Gainesville Clean Water Partnership - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | sources in all watersheds. | | | | | | | |
| 4574 | Alachua County | S180 | Alachua County Water Quality Code Implementation | Alachua County Water Quality Code Implementation, includes Public education, outreach, and enforcement. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 17,400 | SJRWMD; Gainesville Clean Water Partnership | SJRWMD - $0.00; Gainesville Clean Water Partnership - $0.00 |
| 5477 | Alachua County | S203 | Smith & Smith | Alachua County. Land donation from owner. No increase in surface runoff of pollutants because of land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2019 | 0 | 0 | Donation | Donation - $0.00 |
| 5478 | Alachua County | S204 | Lochloosa Slough | Conservation Easement Acquisition. No increase in surface runoff of pollutants due to land use change, | Land Acquisition | Completed | 2019 | 0 | 4,821,882 | Wild Spaces Public Places; FRPP | Wild Spaces Public Places - $4,821,882.00 ; FRPP - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | continued aquifer recharge and ecosystem/habitat preservation. | | | | | | | |
| 5479 | Alachua County | S205 | Franklin Crates | Conservation Easement Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2019 | 0 | 313,797 | Wild Spaces Public Places | Wild Spaces Public Places - $313,796.83 |
| 5481 | Alachua County | S207 | Brown | Fee Simple Conservation Land Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. Lochloosa Creek Basin. | Land Acquisition | Completed | 2022 | 0 | 1,539,807 | Wild Spaces Public Places | Wild Spaces Public Places - $1,539,806.88 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5482 | Alachua County | S208 | Fox Pen - Lochloosa Slough Connector | Fee Simple Land Conservation Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2021 | 0 | 10,588,781 | Wild Spaces Public Places II Surtax | Wild Spaces Public Places II Surtax - $10,588,781.00 |
| 5483 | Alachua County | S209 | Stephens | Alachua County. Land donation from owner. No increase in surface runoff of pollutants because of land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Completed | 2020 | 0 | 0 | Donation | Donation - $0.00 |
| 5488 | Alachua County | S200 | Countywide Stormwater Treatment Code | Adopt a stormwater treatment code for new development. Code requires | Regulations, Ordinances, and Guidelines | Completed | 2019 | 0 | 0 | Alachua County | Alachua County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 70/80% TN/TP reductions in stormwater discharges. 95% for OFWs and 10% below predevelopment for impaired waters. LID techniques are required in sensitive karst area. | | | | | | | |
| 5489 | Alachua County | S201 | Countywide Florida Friendly Landscaping Homeowner Association Code | Adopt a FFL HOA Code that prohibits HOAs from prohibiting FFL. The Code also prohibits neighborhood Codes, Covenants, and Regulations adopted after 2016 from requiring irrigation . | Regulations, Ordinances, and Guidelines | Completed | 2019 | 0 | 0 | Alachua County | Alachua County - $0.00 |
| 5490 | Alachua County | S202 | Aquifer Awareness Campaign | Billboards and social media to teach the public about | Enhanced Public Education | Completed | 2020 | 0 | 20,000 | Alachua County; Gainesville Clean Water | Alachua County - $0.00; Gainesville |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | the connection between our water use, the aquifer, and the health of our springs. | | | | | | Partnership; Wildlife Foundation of Florida Springs Protection License Plate Grant; SJRWMD | Clean Water Partnership - $0.00; Wildlife Foundation of Florida Springs Protection License Plate Grant - $0.00; SJRWMD - $0.00 |
| 5933 | Alachua County | S225 | Turf Swap | Rebates to property owners that convert irrigated turf to FFL or implement water saving irrigation retrofits. | Education Efforts | Ongoing | NA | 0 | 1,000,000 | DEP; SRWMD; SJRWMD | DEP - $0; SRWMD - $150,000; SJRWMD - $300,000 |
| 5934 | Alachua County | S226 | Springs Protection Videos | Five to six 30-second videos on various aspects of springs protection for social media and paid media outlets. | Education Efforts | Ongoing | NA | 0 | 17,000 | Alachua County; Wildlife Foundation of Florida Springs Protection License Plate Grant | Alachua County - $12,000.00; Wildlife Foundation of Florida Springs Protection License Plate Grant - $0.00 |
| 5935 | Alachua County | S227 | White Pond | Fee Simple Land Conservation Acquisition. No increase in | Land Acquisition | Completed | 2020 | 0 | 0 | Wild Spaces Public Places | Wild Spaces Public Places - $104,976.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | | | | | | | |
| 5936 | Alachua County | S228 | Colasante | Fee Simple Land Conservation Acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. Includes Lochloosa Slough. | Land Acquisition | Completed | 2023 | 0 | 1,815,441 | Wild Spaces Public Places | Wild Spaces Public Places - $1,815,440.63 |
| 5937 | Alachua County | S229 | General Land Acquisition | Fee Simple & Conservation Easement acquisition. No increase in surface runoff of pollutants due to land use change, | Land Acquisition | Planned | 2026 | 0 | 0 | Wild Spaces Public Places | Wild Spaces Public Places - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | continued aquifer recharge and ecosystem/habitat preservation. | | | | | | | |
| 7066 | Alachua County | S257 | Sherouse Acquisition | Fee Simple acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Underway | 2024 | 0 | 0 | Wild Spaces Public Places II Surtax | Wild Spaces Public Places II Surtax - $0.00 |
| 7071 | Alachua County | S268 | Rimes Acquisition | Fee Simple acquisition. No increase in surface runoff of pollutants due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | Land Acquisition | Underway | 2024 | 0 | 0 | SJRWMD; Wild Spaces Public Places II Surtax | SJRWMD - $290,669.40; Wild Spaces Public Places II Surtax - $0.00 |
| 7074 | Alachua County | S269 | Jackson Heirs Acquisition | Fee Simple acquisition. No increase in surface runoff of pollutants | Land Acquisition | Underway | 2024 | 0 | 0 | Wild Spaces Public Places II Surtax | Wild Spaces Public Places II Surtax - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | due to land use change, continued aquifer recharge and ecosystem/habitat preservation. | | | | | | | |
| 4179 | Bay Laurel Center CDD | R072 | Operational Improvements | Operational staff utilizing oxidation-reduction potential probes and cyclic aeration to provide denitrification. | WWTF Nutrient Reduction | Completed | 2017 | 0 | 1,500 | Bay Laurel Center CDD | Bay Laurel Center CDD - $0.00 |
| 4180 | Bay Laurel Center CDD | R073 | Public Access Reuse | Design and construction of a reclaimed water system including, pumping, storage, and distribution main which provides reclaimed water for irrigation at the On Top of the World and Candler Hills golf courses. | WWTF Diversion to Reuse | Completed | 2010 | 0 | 2,198,000 | SWFWMD; Bay Laurel Center CDD | SWFWMD - $0.00; Bay Laurel Center CDD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5457 | Bay Laurel Center CDD | R116 | On Top of the World North Advanced Wastewater Treatment Facility | A 2.5 MGD advanced WWTF to replace a 1.25 MGD conventional WWTF. Biosolids will no longer be land applied on site and will be disposed of off site outside the Rainbow Spring basin. Estimated TN Reduction of 17,556 lbs/year. | WWTF Nutrient Reduction | Underway | 2025 | 9,814 | 120,000,000 | Bay Laurel Center CDD; DEP | Bay Laurel Center CDD - $60,000,000.00; DEP - $60,000,000.00 |
| 3770 | City of Belleview | S129 | Providing Water and Sewer to Residents in Utility Service Area Adjacent to and West of SE 92nd Loop | A Utility System Master Plan and Septic to Sewer Planning Study were completed. The studies addressed upgrades to water delivery systems, wastewater collection systems, and | Study | Completed | 2022 | 0 | 300,000 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | conversion of OSTDS for 1300 residences currently on wells and OSTDS. | | | | | | | |
| 3771 | City of Belleview | S128 | Provide Reuse Irrigation Water to the Belleview Sportplex | Meets a requirement of the Springs Protection by reducing ground water withdrawals. | WWTF Diversion to Reuse | Planned | TBD | 0 | 500,000 | City of Belleview | City of Belleview - $0.00 |
| 3772 | City of Belleview | S127 | Sanitary Sewer and Water Main Loop along SE 132nd from US 441/27 to CR 484 | Economic engine to promote residential and commercial growth along SE 132nd Street (Belleview Beltway). | Wastewater Service Area Expansion | Completed | 2019 | 0 | 1,300,000 | DEP | DEP - $0.00 |
| 3896 | City of Belleview | S034 | US 441 Sewer Main Expansion | New sewer line south of City along US 441 will allow commercial and residential area hook up to centralized system. Project estimated to provide 79 central sewer | OSTDS Phase Out | Completed | 2016 | 0 | 1,000,000 | Marion County; DEP | DEP - $0.00; Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | connections to a developing corridor, with potential for up to 60 more connections. Original credit of 414 lbs-TN/yr. Project was captured in the updated loading estimates. | | | | | | | |
| 4006 | City of Belleview | S054 | Collection System Maintenance Program | Rehabilitation of 200 brick manholes to date and pipe replacement as needed. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Completed | 2010 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4570 | City of Belleview | S176 | Collection System Maintenance Program Continued | Rehabilitation of brick manholes and pipe replacement as needed. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 325,000 | Utility Funds; American Rescue Plan Act Local Fiscal Recovery Funds | Utility Funds - $100,000.00; American Rescue Plan Act Local Fiscal Recovery Funds - $225,000.00 |
| 5491 | City of Belleview | S215 | Septic to Sewer Green Meadows Subdivision | Design and permit sewer system for Green Meadows Subdivision, 115 lots. Original credit | OSTDS Phase Out | Completed | 2020 | 0 | 150,000 | DEP | DEP - $150,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | of 610 lbs-TN/yr. Project was captured in the updated loading estimates. | | | | | | | |
| 6759 | City of Belleview | S261 | City of Belleview WWTF Expansion | Upgrade and expand plant capacity from 0.76 MGD to 1.5 MGD. | WWTF Capacity Expansion | Underway | 2027 | 0 | 30,000,000 | DEP SRF | DEP SRF - $30,000,000.00 |
| 7413 | City of Belleview | S276 | Education and Regulation | Project consists of the passed ordinances for Florida Yards and Neighbors Program, Florida Friendly Fertilizer, Landscape Ordinance, and Irrigation Ordinance. | Education Efforts | Ongoing | 2045 | 233 | 0 | City of Belleview | City of Belleview - $0.00 |
| 4174 | City of Dunnellon | R057 | Rio Vista WWTF Decommissioning | Planned project will decommission the Rio Vista WWTP and convert an existing lift station to pump waste water to the Rainbow Springs plant. | Decommission/ Abandonment | Completed | 2015 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4205 | City of Dunnellon | R099 | Public Education and Outreach Activities | Outreach program (4.5 % credit) to residents of the City of Dunnellon that enhances knowledge and awareness of stormwater management. Includes FYN program; ordinance for fertilizer; PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 202 | 0 | City of Dunnellon | City of Dunnellon - $0.00 |
| 4220 | City of Dunnellon | R081 | Dunnellon City Beach | Proposed project located at Dinkins Park/City Beach. The project would construct a riverwalk along the Rainbow River and provide for water quality for untreated stormwater runoff that currently | Regional Stormwater Treatment | Completed | 2018 | 0 | 110,000 | City of Dunnellon | City of Dunnellon - $110,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | sheetflows into the Rainbow River. | | | | | | | |
| 4255 | City of Dunnellon | R001 | River Protection Corridors | The City of Dunnellon River Protection Corridor Areas for both the Rainbow and Withlacoochee River. Corridor extends 150 feet from the ordinary high water line and implements specific standards based on Ordinance 2008-01. | Regulations, Ordinances, and Guidelines | Completed | 2015 | 0 | 0 | Marion County | Marion County - $0.00 |
| 4257 | City of Dunnellon | R003 | Blue Cove Emergency Overflow Project | Project to construct a retention pond with a control structure and pipe conveyance system to treat flood overflows from Blue Cove to the | On-line Retention BMPs | Completed | 2011 | 0 | 9,305 | City of Dunnellon | City of Dunnellon - $9,305.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rainbow River. Prior to construction, overflows sheet flowed through residential neighborhood to the river. | | | | | | | |
| 4259 | City of Dunnellon | R058 | Rio Vista Collection System Maintenance | Companion project to the Rio Vista WWTP decommissioning. The collection system is subject to high infiltration into the system after storm events resulting in overflows from the plant holding pond. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Completed | 2015 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4267 | City of Dunnellon | R004 | Datesman Park Overflow Parking Lot Improvement | Project retrofitted a car and boat trailer overflow parking lot with pervious pavers and a stormwater retention pond. | On-line Retention BMPs | Completed | 2010 | 0 | 116,195 | City of Dunnellon | City of Dunnellon - $116,195.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4269 | City of Dunnellon | R019 | Sewer Conversion Project, Phases 1-4 | Project constructed new sewer system within the City limits allowing properties previously on OSTDS (140 in Phase 2) to hook up to central sewer. Original credit of 1153 lbs-TN/yr. Project was captured in the updated loading estimates. | OSTDS Phase Out | Completed | 2012 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4272 | City of Dunnellon | R022 | Dunnellon WMP | Includes a hydrologic and hydraulic model and water quality treatment recommendations for nine stormwater discharge outfalls to the Rainbow and Withlacoochee rivers. | Study | Completed | 2005 | 0 | 50,000 | City of Dunnellon | City of Dunnellon - $0.00 |
| 4549 | City of Dunnellon | R111 | City of Dunnellon New Watershed | City of Dunnellon will implement a | Study | Underway | 2026 | 0 | 275,000 | SWFWMD | SWFWMD - $275,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Management Plan | watershed management plan. This project will perform the Watershed Evaluation and develop a WMP. This funding request is for FY 2020. | | | | | | | |
| 6752 | City of Dunnellon | R135 | Granada & Palmetto Way Drainage Improvements | This project will improve the drainage system along the Granada, Palmetto Way, and Magnolia Street to facilitate reduced flooding and improved water quality treatment. Swales will be installed with ditchblocks to improve nutrient uptake and delay runoff. | BMP Treatment Train | Underway | 2025 | 0 | 1,000,000 | City of Dunnellon | City of Dunnellon - $1,000,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3727 | City of Fruitland Park | S170 | Public Education and Outreach Activities to Protect Groundwater | Outreach program (6% credit) to residents of Fruitland Park enhances knowledge and awareness of stormwater management. Includes FYN program; ordinances for fertilizer, landscaping, irrigation, and pet waste; PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 620 | 0 | City of Fruitland Park | City of Fruitland Park - $0.00 |
| 3981 | City of Fruitland Park | S121 | Fruitland Park NPDES Permit Education and Outreach | Landscaping, irrigation, fertilizer, and pet waste ordinances. The city utilizes a consultant for education and outreach. Activities include PSAs, pamphlets, website, illicit discharge | Education Efforts | Ongoing | NA | 0 | 0 | City of Fruitland Park | City of Fruitland Park - $9,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | program, utility bill inserts, and informational displays. | | | | | | | |
| 3982 | City of Fruitland Park | S120 | Street Sweeping and Storm Drain Inlet Cleaning | Sweep streets 4 times per year and clean out 12 storm drain inlets. | Street Sweeping | Ongoing | NA | 0 | 0 | City of Fruitland Park | City of Fruitland Park - $0.00 |
| 3984 | City of Fruitland Park | S118 | Fruitland Park WWTF Decommissioning | Remove existing WWTF from service. Construction of lift station to allow transfer of wastewater to Lady Lake for treatment. Improved treatment at Lady Lake facility. | WWTF Upgrade | Completed | 2020 | 0 | 1,500,000 | Not provided | Not provided - $0.00 |
| 3728 | City of Hawthorne | S169 | Public Education and Outreach Activities | Outreach program (4.0 % credit) to residents of the City of Hawthorne that enhances knowledge and awareness of stormwater management. Includes | Education Efforts | Ongoing | NA | 26 | 0 | City of Hawthorne | City of Hawthorne - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ordinances for irrigation and fertilizer. | | | | | | | |
| 5938 | City of Hawthorne | S231 | 0.2 MGD AWT Package Plant, Ph. I | Construction of a 0.2 MGD AWT Package Plant. Existing WWTF is failing, does not provide any level of redundancy or reliability, fails to meet AWT standards and nutrient reduction goals of the BMAP and has deteriorating components. | WWTF Upgrade | Planned | 2026 | 774 | 9,798,000 | DEP Water Quality Improvement Grants Program | DEP Water Quality Improvement Grants Program - $9,798,000.00 |
| 7047 | City of Hawthorne | S275 | Lift Station Rehabilitation | This project is to rehabilitate three (3) of the City's sanitary sewer lift stations. The project will also provide emergency generators at the three (3) lift station | Sanitary Sewer - Alum Injection System | Planned | 2026 | 0 | 1,861,000 | Florida Legislature | Florida Legislature - $1,861,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | sites. This project ensures the sewer system can remain fully accessible during storms. | | | | | | | |
| 3723 | City of Ocala | S174 | Public Education and Outreach Activities | Outreach program (2 % credit) to residents of the City of Ocala that enhances knowledge and awareness of stormwater management. Includes PSAs; pamphlets; website; and inspection program. FYN credit of 3% and fertilizer ordinance. | Education Efforts | Ongoing | NA | 3,744 | 0 | City of Ocala | City of Ocala - $0.00 |
| 3758 | City of Ocala | S141 | SkimBoss™ Filtration System | Retrofit Installation of SkimBossTM Filtration System with Bold & GoldTM media for Lake | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2020 | 153 | 660,000 | DEP; Legislative Appropriation; City of Ocala | DEP - $328,000; Legislative Appropriation - $250,000; City of Ocala - $82,000 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Anderson, Yum Yum Pond, and Heritage Pond. | | | | | | | |
| 3764 | City of Ocala | S135 | Wetland Recharge Park | The wetland will utilize treated wastewater, along with some stormwater. The wetland area will receive 3-5 million gallons of treated waste/storm water a day. This water will then recharge the UFA. The wetland plants will reduce TN to near zero. | WWTF Diversion to Reuse | Completed | 2020 | 0 | 10,000,000 | DEP Springs; SJWRMD; City of Ocala | DEP Springs - $0; SJWRMD - $0; City of Ocala - $0 |
| 3774 | City of Ocala | S136 | Southwood Villas and Lake Weir Sewer Expansion Project | The objective of this project is to design and construct a sanitary sewer system which will remove from service | OSTDS Phase Out | Completed | 2020 | 0 | 2,565,950 | DEP Springs; SJWRMD; City of Ocala | DEP Springs - $1,282,976; SJWRMD - $0; City of Ocala - $0 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | approximately 100 septic tanks from the associated single family residential lots. Original credit of 525 lbs-TN/yr. Project was captured in the updated loading estimates. | | | | | | | |
| 3907 | City of Ocala | S014 | City of Ocala Silver Spring/ River Pollution Reduction Project | Addresses surface water discharge. Project provided water quality treatment for four drainage basins in the city. Basins historically discharged untreated stormwater runoff to Half Mile Creek via the SR 40/Silver Springs Blvd. storm sewer system. | Regional Stormwater Treatment | Completed | 2018 | 94 | 3,501,034 | DEP; FDOT; SJRWMD; CBIR; City of Ocala | DEP - $0; FDOT - $0; SJRWMD - $0; CBIR - $0; City of Ocala - $0 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3926 | City of Ocala | S124 | City of Ocala - Retrofit Installation of SkimBoss™ Filtration System with Bold & Gold™ | The installation of the SkimBoss Filtration Systems using Bold & Gold™ media to treat water leaving ponds and flowing into recharge wells at 613 SE 13th Ave, NE 10th St. @ 1200 Block, NE 14th St. and 12th Ct. | Biosorption Activated Media (BAM) | Completed | 2020 | 0 | 485,650 | DEP; DEP TMDL; City of Ocala | DEP - $350,776; DEP TMDL - $0; City of Ocala - $0 |
| 3929 | City of Ocala | B056 | Utility Public Education and Outreach | Programming focuses on water conservation, wetland education, what not to flush, and fats, oils, and grease. This is facilitated through public presentations, brochures, social media, special events, facility tours, workshops, and handouts. | Education Efforts | Ongoing | NA | 0 | 0 | City of Ocala | City of Ocala - $50,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3931 | City of Ocala | B049 | Meadow Oaks Sewer Expansion Project | The objective of the project is to design and construct a sanitary sewer system which can remove from service ~100 OSTDS from the associated single family residential lots. This project did not include OSTDS remediation and sewer connection. | Wastewater Service Area Expansion | Completed | 2023 | 0 | 4,705,000 | DEP; Equity Lifestyle | DEP - $0.00; Equity Lifestyle - $0.00 |
| 3946 | City of Ocala | S086 | SkimBoss™ Filtration System - Chazal Park Pond | Addresses drainage well discharge. Retrofit installation of SkimBoss™ filtration system with Bold & Gold™ media - Chazal Park Pond. | Biosorption Activated Media (BAM) | Completed | 2020 | 0 | 711,594 | DEP; City of Ocala | DEP - $490,474.00; City of Ocala - $0.00 |
| 3952 | City of Ocala | S092 | City of Ocala WRF 2 Nutrient Reduction Plan | Upgrade WWTP for advanced treatment and expand the | WWTF Nutrient Reduction | Completed | 2016 | 0 | 12,144,000 | DEP; SJRWMD; City of Ocala | DEP - $1,275,620.00 ; SJRWMD - $1,920,000.00 ; City of Ocala |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | availability of reclaimed water for irrigation use. The project consists of construction of two 3.25 mgd Carrousels. This will allow the City of Ocala to reduce effluent TN <3 mg/L. | | | | | | | - $8,304,000.00 |
| 3953 | City of Ocala | S091 | City of Ocala Nitrogen Reduction Project | Upgrade of WRF 2 to AWT standard for TN and decommission WRF 1. WRF 1, a trickling filter facility and is not designed for the removal of nitrate. WRF 2 and #3 will handle the flows from WRF 1 and all of the plants will be interconnected. | WWTF Nutrient Reduction | Completed | 2016 | 0 | 16,000,000 | City of Ocala | City of Ocala - $9,600,001.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3958 | City of Ocala | S087 | Silver Springs Protection/ Stormwater Nutrient Reduction Project (Cameo Pond) | Addresses surface water discharge. Silver Springs Protection/Stormwater Nutrient Reduction Project. | Wet Detention Pond | Completed | 2019 | 0 | 3,000,000 | DEP TMDL; FDOT; City of Ocala | DEP TMDL - $706,321; FDOT - $0; City of Ocala - $0 |
| 3969 | City of Ocala | S085 | SkimBoss™ Filtration System - Tuscawilla Pond | Addresses drainage well discharge. Retrofit installation of SkimBoss filtration system with Bold & Gold™ media- Tuscawilla Pond. | Biosorption Activated Media (BAM) | Completed | 2020 | 0 | 711,594 | DEP; City of Ocala | DEP - $490,474.00; City of Ocala - $0.00 |
| 3987 | City of Ocala | S115 | Miscellaneous Water and Sewer | Miscellaneous extension of existing water, sewer, and reuse facilities to provide services. | Wastewater Service Area Expansion | Underway | 2024 | 0 | 500,000 | City of Ocala | City of Ocala - $0.00 |
| 3990 | City of Ocala | S035 | Citywide Septic Tank and Well Elimination Program | This project includes the connection of OSTDS within the City of Ocala at no cost to the | OSTDS Phase Out | Completed | 2018 | 0 | 10,500,000 | DEP; SJRWMD; City of Ocala | DEP - $5,500,000; SJRWMD - $5,000,000; City of Ocala - $0 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | homeowners. Elimination of the OSTDS in this project is estimated to provide a reduction in nitrogen loading to the Silver Springs basin. Original credit of 4612 lbs-TN/yr. Project was captured in the updated loading estimates. | | | | | | | |
| 3997 | City of Ocala | S116 | Sanitary Sewer Smoke Testing, Televising, and Lining Program | Smoke testing and inspection of existing sanitary sewer system. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Underway | 2024 | 0 | 3,000,000 | City of Ocala | City of Ocala - $0.00 |
| 4008 | City of Ocala | S042 | Reuse Projects | Public access reuse system provides reclaimed water for irrigation of golf courses and roadways. | WWTF Diversion to Reuse | Completed | 2016 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4014 | City of Ocala | S036 | Package Plant Abatement | Connection of White Oak Mobile Home Park (MHP), | Decommissio n/ Abandonment | Completed | 2016 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Magnolia Gardens, and 301 Plaza to central sewer. | | | | | | | |
| 4022 | City of Ocala | S055 | Collection System Maintenance Program | TV inspection on entire collection system. Slip lining 175,000 ft. of clay pipe is complete and 40,000 feet/year scheduled through 2020. Approx. 3 lift stations are upgraded per year. System and plants are SCADA controlled and flows can be rerouted. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Completed | 2020 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4204 | City of Ocala | R098 | Public Education and Outreach Activities | Outreach program (2.0 % credit) to residents of the City of Ocala that enhances knowledge and awareness of stormwater management. Includes PSAs, | Education Efforts | Planned | TBD | 501 | 0 | City of Ocala | City of Ocala - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | pamphlets, website, and inspection program. Includes 3% credit for FYN Program. | | | | | | | |
| 4252 | City of Ocala | B049 | Meadow Oaks Sewer Expansion Project | The objective of the project s to design and construct a sanitary sewer system which will remove from service ~100 OSTDS from the associated single family residential lots. Connections were not included. | Wastewater Service Area Expansion | Completed | 2024 | 0 | 4,705,000 | DEP; City of Ocala; Equity Lifestyle | DEP - $1,436,953.00; City of Ocala - $0.00; Equity Lifestyle - $1,436,953.00 |
| 4253 | City of Ocala | B050 | Fairfield Village Sewer Expansion Project | The objective of the project s to design and construct a sanitary sewer system which will remove from service ~350 OSTDS from the associated single family | OSTDS Phase Out | Completed | 2022 | 5,027 | 900,000 | City of Ocala; DEP | DEP - $450,000.00; City of Ocala - $450,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | residential lots. The OSTDS contribute to the TN impairment of Rainbow Springshed. | | | | | | | |
| 4586 | City of Ocala | S192 | Wetland Groundwater Recharge Park Education | This is the education effort specifically for the Wetland Park Project. This project will include an educational location at the park facility. The focus is on kinesthetic learning about the park's purpose and inciting behavior modifications. | Enhanced Public Education | Completed | 2021 | 0 | 500,000 | DEP | DEP - $319,208.00 |
| 4587 | City of Ocala | S193 | OSTDS Abandonment and Connection to City Sewer NW 35th Street | In the future, this project will remove 52 OSTDS from properties located along NW 35th St. in Ocala | Wastewater Service Area Expansion | Completed | 2023 | 0 | 0 | City of Ocala | City of Ocala - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | between NE Jacksonville Rd and N. Pine Ave | | | | | | | |
| 4588 | City of Ocala | S194 | OSTDS Abandonment and Connection to City Sewer SW 27th Avenue | In the future, this project will remove approx. 50 OSTDS from properties located along SW 27th Ave in Ocala between SW 16th St and SW 16th Pl. | Wastewater Service Area Expansion | Completed | 2024 | 0 | 0 | City of Ocala | City of Ocala - $0.00 |
| 4589 | City of Ocala | S195 | Retrofit Installation of SkimBoss Filtration System with Bold & Gold Media on three drainage wells at Lake Tuscawilla | The installation of the SkimBoss Filtration Systems using media to treat water leaving ponds and flowing into recharge wells at Lake Tuscawilla. | Biosorption Activated Media (BAM) | Completed | 2021 | 0 | 760,000 | DEP; City of Ocala | DEP - $380,000; City of Ocala - $0 |
| 5456 | City of Ocala | B055 | Saddle Oak Sewer Expansion Project | The objective of the project is to design and construct a sanitary sewer system which will remove from service ~320 | OSTDS Phase Out | Completed | 2022 | 4,596 | 600,000 | DEP; City of Ocala | DEP - $300,000.00; City of Ocala - $300,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | OSTDS from the associated single family residential lots. The OSTDS contribute to the TN impairment of Rainbow Springshed. | | | | | | | |
| 5486 | City of Ocala | S213 | Retrofit Installation of SkimBoss Filtration System with Bold & Gold Media on Three Drainage Wells at NW 10th St, NW 8th St. and SE 11th Ave | The installation of the SkimBoss Filtration Systems using media to treat water leaving ponds and flowing into recharge wells at NW 10th St, NW 8th St. and SE 11th Ave. | Biosorption Activated Media (BAM) | Completed | 2022 | 0 | 600,000 | City of Ocala; DEP | City of Ocala - $0.00; DEP - $600,000.00 |
| 5912 | City of Ocala | B058 | Miscellaneous Force Main and Gravity Main Lining | Miscellaneous extension of existing water, sewer, and reuse facilities to provide services. | Wastewater Service Area Expansion | Underway | 2024 | 0 | 1,000,000 | DEP; City of Ocala | DEP - $500,000.00; City of Ocala - $500,000.00 |
| 5913 | City of Ocala | B059 | Hazard Mitigation Grant Program | The purchase and installation of twenty permanent | Sanitary Sewer and Wastewater Treatment Facility | Underway | 2024 | 0 | 2,000,000 | City of Ocala; FEMA | City of Ocala - $484,753.00; FEMA - $1,454,259.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | generators, automatic transfer switches and other electrical components for designated lift stations. | (WWTF) Maintenance | | | | | | |
| 5914 | City of Ocala | B060 | OSTDS Abandonment and Connection to City Sewer | This project is set to remove 200 OSTDS and connect them to City sewer. | OSTDS Phase Out | Planned | 2024 | 1,596 | 1,000,000 | City of Ocala; DEP | City of Ocala - $0.00; DEP - $800,000.00 |
| 5928 | City of Ocala | B058 | Miscellaneous Force Main and Gravity Main Lining | Miscellaneous extension of existing water, sewer, and reuse facilities to provide services. | Wastewater Service Area Expansion | Underway | 2024 | 0 | 1,000,000 | DEP; City of Ocala | DEP - $500,000.00; City of Ocala - $500,000.00 |
| 5929 | City of Ocala | B059 | Hazard Mitigation Grant Program | The purchase and installation of twenty permanent generators, automatic transfer switches and other electrical components for designated lift stations. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Underway | 2024 | 0 | 2,000,000 | FEMA; City of Ocala | FEMA - $1,454,259.00; City of Ocala - $484,753.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5930 | City of Ocala | B060 | OSTDS Abandonment and Connection to City Sewer | This project removed 100 OSTDS and connected them to City sewer. | OSTDS Phase Out | Completed | 2023 | 945 | 1,000,000 | DEP; City of Ocala | DEP - $800,000.00; City of Ocala - $0.00 |
| 5931 | City of Ocala | S238 | Retrofit Installation of Nutrient Removing Filtration System with Bold & Gold Media on Three Drainage Wells at Edgewood Park Pond | The installation of the Nutrient Removing Filtration Systems using media to treat water leaving ponds and flowing into recharge wells at Edgewood Park Pond. | Biosorption Activated Media (BAM) | Completed | 2023 | 0 | 420,000 | DEP; City of Ocala | DEP - $420,000.00; City of Ocala - $0.00 |
| 5932 | City of Ocala | S239 | Lake Wyomina Drainage Area Retrofit Project | Reshape drainage retention area, relocation of recharge well and installation of 24" thick layer or Bioactivated Media at Lake Wyomina drainage area. | Biosorption Activated Media (BAM) | Completed | 2021 | 0 | 648,000 | DEP; SJRWMD; City of Ocala | DEP - $162,000; SJRWMD - $162,000; City of Ocala - $324,000 |
| 3722 | City of Wildwood | S175 | Wildwood Street Sweeping | Sweeping of local streets. | Street Sweeping | Ongoing | NA | 17 | 0 | City of Wildwood | City of Wildwood - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3725 | City of Wildwood | S172 | Public Education and Outreach Activities | Outreach program (1 % credit) to residents of City of Wildwood that enhances knowledge and awareness of stormwater management. Includes SWFWMD requirements for water conservation and FFL recommendations for fertilizing and irrigating landscapes. | Education Efforts | Ongoing | NA | 347 | 0 | City of Wildwood | City of Wildwood - $0.00 |
| 7401 | City of Wildwood | S278 | Huey Street Parking and Pond | Construction of a parking lot and the construction of a Stormwater Pond to improve the local drainage existing conditions. | 100% On-site Retention | Completed | 2024 | 0 | 336,936 | Sumter County School Board | Sumter County School Board - $336,935.50 |
| 7444 | City of Wildwood | S279 | Pleasantdale Drive Improvements | Project site consists of the right-of-way (ROW) along | 100% On-site Retention | Completed | 2024 | 0 | 1,204,699 | City's CIP | City's CIP - $1,204,698.79 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pleasantdale Drive, north of Cleveland Avenue and a proposed stormwater pond on Parcels G05N012 and G05E030. | | | | | | | |
| 4184 | City of Williston | R077 | Williston WWTP Upgrade | Upgrade of the City of Williston WWTF to improve nitrogen removal. The new operating permit has a discharge limit of 6 mg/L N. | WWTF Nutrient Reduction | Underway | 2025 | 714 | 4,945,000 | DEP Springs; CDBG; City of Williston; DEP WW Grant Program | DEP Springs - $2,300,000.00 ; CDBG - $750,000.00; City of Williston - $0.00; DEP WW Grant Program - $1,895,000.00 |
| 4027 | DEP | S066 | Groundwater - Surface Water Interaction Study Lake Lochloosa Area, Alachua and Marion Counties | Study of ground water pathways for nutrients to enter Lochloosa and Orange Lakes. Field investigation determined levels of TP and TN in different aquifers land use categories. | Study | Completed | 2007 | 0 | 64,000 | USGS | USGS - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Radon studies estimated ground water seepage into Lochloosa Lake. | | | | | | | |
| 4244 | DEP | B012 | Implementation of Outreach Program for Small Equine BMP Manual | An outreach program will be developed to implement the Small Equine BMP Manual on non-commercial horse farms in the Silver and Rainbow Springs BMAP areas. | Agricultural BMPs | Planned | TBD | 0 | 0 | Not provided | Not provided - $0.00 |
| 3915 | DEP - Division of State Lands | S006 | Silver Springs Conservation Area | Acquisition of 346 acres of undeveloped land directly across SR 35 from Silver Springs State Park. The land was acquired under Florida's First Magnitude Springs Project by the Division of State Lands. Leased to and | Land Acquisition | Completed | 2005 | 0 | 7,847,000 | FCT | FCT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | managed by Marion County. | | | | | | | |
| 3916 | DEP - Division of State Lands | S005 | Acquisition of Indian Lake State Forest | Purchase of 4,400 acres previously known as the Avatar Property. The forest is within the 2 and 10 year modeled capture areas and contains Indian Lake, a karst feature connected to the Upper Floridan aquifer, and numerous sinkholes. | Land Acquisition | Completed | 2007 | 0 | 78,000,000 | FCT; Marion County | FCT - $0.00; Marion County - $0.00 |
| 4175 | DEP - Division of State Lands | R067 | Bear Hammock | The Bear Hammock project in southern Marion County would enhances goals of better coordination of land-acquisition efforts by acting as a | Land Acquisition | Planned | TBD | 0 | 32,576,529 | FCT | FCT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | connector between Goethe State Forest and the Marjorie Harris Carr Cross Florida Greenway. No land acquired to date. | | | | | | | |
| 4185 | DEP - Division of State Lands | R068 | Carr Farm/Price's Scrub | The Carr Farm/Price's Scrub located between Alachua County and Marion County is Peninsular Florida's northernmost example of scrub community. 962 acres, in Marion County, have been acquired to date with purchase of 305 acres to complete acquisition. | Land Acquisition | Underway | TBD | 0 | 1,975,000 | FCT; Office of Greenways and Trails | FCT - $0.00; Office of Greenways and Trails - $0.00 |
| 4256 | DEP - Division of State Lands | R002 | Rainbow River Corridor | The Rainbow River Corridor project protects | Land Acquisition | Underway | NA | 0 | 2,926,164 | FCT | FCT - $2,606,164.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | undeveloped or minimally developed private land remaining along the Rainbow River. Acquisition of 42 acres leaves the southern parcels 1,129 acres for future purchase as funds and sales agreements allow. | | | | | | | |
| 4265 | DEP - Division of State Lands | R066 | South Goethe | Provides a corridor from the Goethe State Forest to Marjorie Harris Carr Cross Florida Greenway State Recreation and Conservation Area along Withlacoochee River, links to the Etoniah Cross Florida | Land Acquisition | Planned | TBD | 0 | 11,574,303 | FCT | FCT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Greenway Florida Forever project. No land acquired yet. | | | | | | | |
| 4282 | FDACS | B048 | Enhanced IA Program | FDACS will implement the enhanced IA Program and more detailed reporting, as prescribed by the legislation, on site visits and surveys will be provided on an annual basis. | Agricultural BMPs | Ongoing | NA | 0 | 0 | NA | NA - $0.00 |
| 4287 | FDACS | FDACS-03 | Cost-Share BMP Projects | Cost-share projects paid for by FDACS. Project treatment areas and reductions based on FDACS June 2024 Enrollment and NSILT Loading tool (based on FSAID IX) | Agricultural BMPs | Ongoing | NA | 41,820 | 0 | FDACS | FDACS - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | developed by FDACS. | | | | | | | |
| 5923 | FDACS | FDACS-01 | BMP Implementation and Verification - Farm Fertilizer | Enrollment and verification of BMPs by agricultural producers. Acres treated and reductions estimated using FDACS June 2024 Enrollment and NSILT Loading tool (based on FSAID IX) developed by FDACS. | Agricultural BMPs | Ongoing | NA | 31,346 | 0 | FDACS | FDACS - $0.00 |
| 5924 | FDACS | FDACS-02 | BMP Implementation and Verification - Livestock Waste | Enrollment and verification of BMPs by agricultural producers. Acres treated and reductions estimated using FDACS June 2024 Enrollment and NSILT Loading tool (based on | Agricultural BMPs | Ongoing | NA | 12,633 | 0 | FDACS | FDACS - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | FSAID IX) developed by FDACS. | | | | | | | |
| 3818 | FDOT District 2 | S125 | Fertilizer Cessation | FDOT O&M fertilizer cessation. | Fertilizer Cessation | Completed | 2012 | 826 | 0 | NA | NA - $0.00 |
| 3917 | FDOT District 2 | S015 | SR 20 Widening | Addresses surface water. Eastern urban area of Gainesville and Alachua County. Widening of SR 20 from 2 lane to 4 lane road with stormwater runoff treatment. Three wet detention ponds installed to treat stormwater runoff. | Wet Detention Pond | Completed | 2006 | 444 | 10,763,788 | DEP | DEP - $0.00 |
| 4036 | FDOT District 2 | S064 | State Road Street Sweeping | Limited street sweeping of state roads within urbanized areas that have curb and gutter. | Street Sweeping | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Includes SR 20 and SR26. | | | | | | | |
| 4194 | FDOT District 2 | R080 | Wet Detention/ Retention Ponds in FDOT Roads | Nitrogen reduction from wet detention/retention ponds on SR 500 (US 27A). Ponds 1 and 5 were completed in 2002 and Pond 10 was completed in 2004. | Wet Detention Pond | Completed | 2004 | 31 | 0 | Not provided | Not provided - $0.00 |
| 4225 | FDOT District 2 | R096 | Sweeping of State Roads | Monthly street sweeping of SR 500 and SR 121. Total solids collected per year is approximately 7,356 pounds. | Street Sweeping | Ongoing | NA | 1 | 0 | Not provided | Not provided - $0.00 |
| 4233 | FDOT District 2 | R079 | Fertilizer Cessation | FDOT Operations and Maintenance Fertilizer Cessation on SR 121 and SR 500 (US 27A). Cessation | Fertilizer Cessation | Completed | 2012 | 872 | 0 | NA | NA - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | began in 2009 and is ongoing. | | | | | | | |
| 3786 | FDOT District 5 | S145 | State Road Street Sweeping | Street sweeping of state roads within urbanized areas that have curb and gutter. | Street Sweeping | Ongoing | NA | 539 | 0 | FDOT | FDOT - $0.00 |
| 3903 | FDOT District 5 | S027 | SR35 Design Project - Pond 9 | 238677-1, SR 35 from SR 464 (Maricamp Rd.) to SR 40 - Basin 9 (Pond 9) / Dry Retention. | On-line Retention BMPs | Completed | 2012 | 1 | 0 | DEP | DEP - $0.00 |
| 3904 | FDOT District 5 | S019 | SR500 (US441) Design Project - Basin E | 238395-4, SR 500 (US 441) From Martin Luther King to Lake Ella Rd. - Basin E / Dry Retention; Open Basin Discharge to Lake Griffin. | On-line Retention BMPs | Completed | 2014 | 16 | 0 | DEP | DEP - $0.00 |
| 3905 | FDOT District 5 | S017 | SR500 (US441) Design Project - Basin C | 238395-4, SR 500 (US 441) From Martin Luther King to Lake Ella Rd.- Basin C / | Wet Detention Pond | Completed | 2014 | 3 | 0 | DEP | DEP - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Wet Detention; Open Basin Discharge to Lake Griffin. | | | | | | | |
| 3999 | FDOT District 5 | S053 | SR40 Stormwater Pump Station Operation and Maintenance | O&M of the pump station and collection system constructed as part of the Marion County portion of the Silver/Springs River Pollution Reduction Project. Activities include servicing and repair of the pump station. | Regional Stormwater Treatment | Completed | 2010 | 38 | 595,927 | DEP | DEP - $0.00 |
| 4005 | FDOT District 5 | S047 | Fertilizer Cessation | FDOT O&M fertilizer cessation. | Fertilizer Cessation | Completed | 2010 | 5,314 | 0 | DEP | DEP - $0.00 |
| 4227 | FDOT District 5 | R095 | Street Sweeping | Not provided. | Street Sweeping | Ongoing | NA | 31 | 0 | FDOT | FDOT - $0.00 |
| 4245 | FDOT District 5 | B022 | State Road (SR) 40 Design Project - Pond 3 | 238719-1, SR 40 from CR 328 to SW 80th Ave. (CR 225A) - Pond | On-line Retention BMPs | Completed | 2016 | 3 | 0 | FDOT | FDOT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 3/dry retention; closed basin in poorly drained soils. | | | | | | | |
| 4246 | FDOT District 5 | B023 | SR 40 Design Project - Pond 4 | 238719-1, SR 40 from CR 328 to SW 80th Ave. (CR 225A) - Pond 4/dry retention; closed basin in poorly drained soils. | On-line Retention BMPs | Completed | 2016 | 4 | 0 | FDOT | FDOT - $0.00 |
| 4247 | FDOT District 5 | B024 | SR 40 Design Project - Pond 5 | 238719-1, SR 40 from CR 328 to SW 80th Ave. (CR 225A) - Pond 5/dry retention; closed basin in poorly drained soils. | On-line Retention BMPs | Completed | 2016 | 4 | 0 | FDOT | FDOT - $0.00 |
| 4248 | FDOT District 5 | B025 | SR 40 Design Project - Pond 6 | 238719-1, SR 40 from CR 328 to SW 80th Ave. (CR 225A) - Pond 6/dry retention; closed basin in poorly drained soils. | On-line Retention BMPs | Completed | 2016 | 3 | 0 | FDOT | FDOT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4263 | FDOT District 5 | R064 | Blue Cove Lake Water Quality Structure | Load reduction estimated using efficiency for baffle box. However, the box includes filter media which may reduce the estimated pollutant load more than estimated. | Baffle Boxes-Second Generation with Media | Completed | 2013 | 0 | 0 | FDOT | FDOT - $0.00 |
| 4271 | FDOT District 5 | R021 | Fertilizer Cessation | FDOT operations and maintenance fertilizer cessation. | Fertilizer Cessation | Completed | 2012 | 2,443 | 0 | FDOT | FDOT - $0.00 |
| 6801 | FDOT District 5 | S260 | FM: 238395-5 | SR 500 Pond F2. | On-line Retention BMPs | Underway | 2024 | 3 | 0 | Florida Legislature | Florida Legislature - $0.00 |
| 6802 | FDOT District 5 | S259 | FM: 238395-5 | SR 500 Pond G1. | On-line Retention BMPs | Underway | 2024 | 2 | 0 | Florida Legislature | Florida Legislature - $0.00 |
| 6804 | FDOT District 5 | S258 | FM: 238395-5 | SR 500 Pond H2. | On-line Retention BMPs | Underway | 2024 | 0 | 0 | Florida Legislature | Florida Legislature - $0.00 |
| 6807 | FDOT District 5 | S256 | FM: 238395-5 | SR 500 Pond H1. | On-line Retention BMPs | Underway | 2024 | 2 | 0 | Florida Legislature | Florida Legislature - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7105 | FDOT District 5 | S270 | FM: 438562-1 | I-75 (SR 93) Rest Area Marion County from N of SR 484 to S of SR 200 - Dry Retention Ponds. | Dry Detention Pond | Underway | 2025 | 0 | 0 | Florida Legislature | Florida Legislature - $0.00 |
| 3897 | FDOT Districts 2 and 5 | B038 | FDOT Public Education | FDOT conducts inspections and provides annual illicit discharge, spill prevention, and erosion and sediment control training to staff and contractors. | Education Efforts | Ongoing | NA | 0 | 0 | DEP | DEP - $0.00 |
| 4266 | FDOT Districts 2 and 5 | B038 | FDOT Public Education | FDOT conducts inspections and provides annual illicit discharge, spill prevention and erosion & sediment control training to staff and contractors. | Education Efforts | Ongoing | NA | 0 | 0 | FDOT | FDOT - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3942 | FFS | B009 | Silviculture BMP Implementation and Compliance | Silviculture BMPs are applied to industrial, public, and private forestlands. Developed in mid-1970s as the minimum standards for protecting water quality on forestry activities. Projects include biennial surveys, training, and technical assistance. | Agricultural BMPs | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |
| 4250 | FFS | B009 | Silviculture BMP Implementation and Compliance | Silviculture BMPs are applied to industrial, public, and private forestlands. Developed in mid-1970s as the minimum standards for protecting water quality on forestry activities. | Agricultural BMPs | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Projects include biennial surveys, training, and technical assistance. | | | | | | | |
| 4169 | Florida Governmental Utility Authority | R052 | Wastewater Level of Service Coordination - System Upgrade | Coordination between FGUA, MCU, and City of Dunnellon utility to improve level of treatment of wastewater in the Rainbow Springs area. The project would improve the existing level of treatment by constructing a new WWTF that meets AWT. | WWTF Nutrient Reduction | Planned | NA | 0 | 0 | TBD | TBD - $0.00 |
| 4176 | Florida Governmental Utility Authority | R053 | Wastewater Level of Service Coordination - OSTDS Abatement | Coordination between FGUA, MCU and City of Dunnellon utility to improve treatment of | OSTDS Phase Out | Planned | NA | 2,123 | 0 | TBD | TBD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | wastewater in the Rainbow Springs area. Project would allow about 266 OSTDS to hook up to central sewer, with the potential for additional connections in future. | | | | | | | |
| 4192 | Florida Governmental Utility Authority | R054 | Wastewater Level of Service Coordination - Package Plant Abatement P113 Rainbow Springs Infrastructure Development | The project would initially allow 5 package plants to hook up to central sewer and dispose of wastewater at the City of Dunnellon WWTP, with the potential for additional connections in the future. Dunnellon water and sewer sold to FGUA October 2018. | Wastewater Service Area Expansion | Planned | TBD | 0 | 0 | SWFWMD; City of Dunnellon | SWFWMD - $0.00; City of Dunnellon - $0.00 |
| 4207 | Florida Governmental Utility Authority | R101 | Burkett Road Septic to Sewer Project | The primary objective of the project is to design and | OSTDS Phase Out | Underway | 2023 | 158 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | construct a sanitary sewer system which will remove from service approximately 11 septic tanks from the associated single family residential lots. | | | | | | | |
| 4209 | Florida Governmental Utility Authority | R103 | Rainbow River and Rio Vista Septic-to-Sewer Project | The primary objective of this project is to design and construct a sanitary sewer system which will remove from service approximately 329 septic tanks from the associated single family residential lots. | OSTDS Phase Out | Underway | 2023 | 4,726 | 0 | Not provided | Not provided - $0.00 |
| 4217 | Florida Governmental Utility Authority | R102 | Chatmire Septic to Sewer Project | The primary objective of the project is to design and construct a sanitary sewer system which will remove from service | OSTDS Phase Out | Underway | 2024 | 1,676 | 3,700,000 | DEP Springs; Not provided | DEP Springs - $3,700,000.00; Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | approximately 210 septic tanks from the associated single family residential lots. | | | | | | | |
| 4223 | Florida Governmental Utility Authority | R084 | Rainbow Springs Water Reclamation Facility (WRF) Decommissioning | A force main from Rainbow Springs WRF to FGUA's Dunnellon WRF and decommissioning of Rainbow Springs WRF is under contract for design. Estimated reduction upon completion is 8,943 lbs/yr TN. | Decommission/ Abandonment | Underway | 2024 | 0 | 0 | DEP | DEP - $2,742,000.00 |
| 4251 | Florida Governmental Utility Authority | R059 | Supervisory Control and Data Acquisition (SCADA) Installation | Planned phased project for installation of SCADA at city WWTPs followed by installation at lift stations. | WWTF Upgrade | Underway | TBD | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4548 | Florida Governmental Utility Authority | R110 | Rainbow Springs Infrastructure Development | Design and construct approximately 33,000 feet of wastewater force main, upgrades to one lift station and wastewater stub-outs to allow for future connections to approximately four existing WWTP sites. | Decommissio n/ Abandonment | Completed | 2022 | 0 | 0 | DEP | DEP - $2,279,183.00 |
| 3732 | Lake County | S167 | Public Education and Outreach Activities | Outreach program (5.5 % credit) to residents that enhances knowledge and awareness of stormwater management. Includes FYN program; ordinances for landscaping, irrigation, and fertilizer; PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 1,128 | 0 | Lake County | Lake County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3761 | Lake County | S138 | Lake County Enhanced Fertilizer Ordinance | November 2017 Lake County Board of County Commissioners adopted an enhanced fertilizer ordinance. Includes 15 foot setback from water bodies, 50 % slow release requirement, and a summer TP and TN blackout period from June 1 to September 30. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |
| 3766 | Lake County | S133 | Erosion Control Inspection Training and Certification | Recurring training provided by Lake County to instruct and certify contractors on erosion and sediment control BMPs. Reduces nutrient load by reducing sediment discharge to water bodies. | Education Efforts | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3817 | Lake County | S084 | Landscaper BMP Training | Landscape BMP education. | Education Efforts | Completed | 2020 | 0 | 1,276 | Lake County | Lake County - $0.00 |
| 3886 | Lake County | S003 | Golf Course Resource Management Plan | Golf course resource management plans are applicable to the unincorporated portion of Lake County for new and existing golf courses. Regulatory approach will provide protection to ground and surface waters. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |
| 3888 | Lake County | S004 | Lake County Shoreline Protection Guide | Education outreach information provided on an ongoing basis through Adopt-a-Lake and Lake County Stormwater program outreach. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3961 | Lake County | S101 | Lake County Irrigation Ordinance | Irrigation Ordinance 2009-17 implements SJRWMD watering requirements and encourages water efficient landscape design: codified into LDR. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |
| 3962 | Lake County | S100 | Lake County Landscaping Ordinance | Landscaping Ordinance 2009-062 implements Water Wise and FFL, tree protection and buffer requirements: codified into land development regulations (LDR). | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |
| 3970 | Lake County | S083 | Lake County NPDES Permit Education and Outreach | Education outreach information provided on an ongoing basis through Adopt-a-Lake and Lake County | Education Efforts | Ongoing | NA | 0 | 0 | Lake County | Lake County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Stormwater program outreach. | | | | | | | |
| 5484 | Lake County | S223 | Nutrient Pollution Awareness Campaign | Paid TV, Radio and Social Media advertising campaign to educate citizens on nutrient pollution and benefits of fertilizer ordinance. | Education Efforts | Ongoing | NA | 0 | 45,000 | DEP; Lake County | DEP - $45,000.00; Lake County - $0.00 |
| 3790 | Management Strategies | S150 | Wastewater Treatment Facility Approach | Achieved by WWTF policy if implemented BMAP-wide. The policy will be implemented through the permit renewal process. | WWTF Upgrade | Planned | TBD | 0 | 0 | TBD | TBD - $0.00 |
| 3792 | Management Strategies | S148 | Private Golf Course Approach | Private golf courses are expected to follow the BMP manual. Additionally, all golf courses will be required to | Golf Course or Sports Field BMPs | Planned | TBD | 0 | 0 | NA | NA - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | submit nutrient management plans to DEP. | | | | | | | |
| 3729 | Marion County | S168 | Public Education and Outreach Activities | Outreach program (5.5 % credit) to residents that enhances knowledge and awareness of stormwater management. Includes FYN program; ordinances for landscaping, irrigation, and fertilizer; PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 15,076 | 0 | Marion County | Marion County - $0.00 |
| 3734 | Marion County | S130 | Silver Springs Shores Unit 7 Stormwater Retrofit - CP #77 | Retrofit of Drainage Retention Areas 7244 and 7396 with Bold & Gold™ biosorption activated media for nitrogen reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2017 | 7 | 1,400,000 | DEP Springs; SJRWMD; Marion County | DEP Springs - $0; SJRWMD - $482,500; Marion County - $1,407,196 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3878 | Marion County | B036 | Public Education Coordination | Comprehensive Education Plan prepared and implemented stakeholders to ensure uniform information and messaging regarding springs protection. | Education Efforts | Ongoing | NA | 0 | 21,000 | Marion County; DEP | Marion County - $7,000.00; DEP - $14,000.00 |
| 3889 | Marion County | B034 | Marion County WMP | Countywide WMPs prepare that include creation and maintenance of a comprehensive geodatabase for Marion County storm sewer system data, watershed boundaries and hydrologic features county-wide. | Study | Completed | NA | 0 | 337,000 | SWFWMD; Marion County | SWFWMD - $0.00; Marion County - $0.00 |
| 3891 | Marion County | B032 | Sinkhole Repair Program in County DRAs | Part of ongoing stormwater system maintenance | Stormwater System Rehabilitation | Completed | 2018 | 0 | 0 | Marion County | Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | activities. Performed as needed by county crews or contractors depending on size and scope of repair. 2021 Silver Springs BMAP costs for sinkhole repairs was $332,958. | | | | | | | |
| 3893 | Marion County | B029 | West Highway 316 at 119th Ave. Stormwater Retrofit | Proposed project to construct a stormwater pond to address a stormwater conveyance issue and reduce nitrate in stormwater runoff from adjacent land uses. The project was completed in 2016. | Wet Detention Pond | Completed | 2016 | 4 | 52,654 | SWFWMD; Marion County | SWFWMD - $27,000.00; Marion County - $132,819.00 |
| 3894 | Marion County | B028 | SW 85th St/SW 40th Ave. Stormwater Retrofit | Construction of a drainage retention area lined with Bold & Gold™ soil amendment to | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2012 | 26 | 330,000 | SWFWMD; Marion County | SWFWMD - $105,000.00; Marion County - $225,347.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | enhance nitrogen removal. Post construction event monitoring has shown a 70 % reduction in TN through the soil amendment layer. | | | | | | | |
| 3899 | Marion County | S033 | Country Gardens Stormwater Retrofit | Design complete. Proposed project to construct a retention area to treat stormwater runoff from residential land uses that currently discharging to a relic sinkhole/quarry. This project will be constructed with project S211. | On-line Retention BMPs | Underway | 2026 | 0 | 338,873 | Marion County | Marion County - $254,155.00 |
| 3900 | Marion County | S032 | Hunter's Trace Retention Area Retrofit | The first use of the innovative Bold & | Retention/Detention BMP Retrofit with Nutrient | Completed | 2009 | 0 | 500,000 | DEP; SWFWMD; Marion County | DEP - $0.00; SWFWMD - $0.00; Marion |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Gold™ soil amendment. This research project confirmed the types of retention ponds/soil types the amendment would be successful in and to what degree. | Reducing Media | | | | | | County - $0.00 |
| 3901 | Marion County | S031 | Marion County Silver Springs River Pollution Reduction Project | Construction of stormwater management system to address historically untreated flow into the Half-Mile Creek, a tributary to Silver River. The system uses a dual-pump system to pump water to a retention pond for treatment. | Regional Stormwater Treatment | Completed | 2010 | 293 | 1,766,828 | DEP; FDOT; SJRWMD; Marion County | DEP - $262,014; FDOT - $500,000; SJRWMD - $670,901; Marion County - $0 |
| 3902 | Marion County | S030 | 31st Street Stormwater Retrofit | Construction of stormwater wetland to treat runoff from US 441 | Constructed Wetland Treatment | Completed | 2009 | 1 | 600,000 | DEP; SJRWMD; Marion County | DEP - $110,000; SJRWMD - $115,000; Marion |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | and adjacent commercial land uses prior to discharge to an active sinkhole. Target pollutant: nitrogen. | | | | | | | County - $356,063 |
| 3928 | Marion County | B001 | Marion County TDR | TDR Program designed to protect natural resources, listed in Policy 1.1.2 of Conservation Element of Marion County Comprehensive Plan and locally important and prime farmlands. Program definition contained in Article 3 of Land Development Code. | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |
| 3938 | Marion County | B003 | Marion County Hamlet Design Option | Comprehensive Plan Future Land Use Element Policy 2.1.13 | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | establishes Hamlet Development Option, for clustered low-density development patterns in rural designated lands. Article 3 of Land Development Code defines Hamlet design provisions. | | | | | | | |
| 3941 | Marion County | B010 | Clean Farms Initiative | Marion County. The Clean Farms Initiative was originally passed under Resolution 04-R-384 and has evolved using a Farm Outreach Coordinator to educate farms regarding BMPs. The number of farm visits are tracked yearly. Amount of | Agricultural BMPs | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | acres treated is unknown. | | | | | | | |
| 3943 | Marion County | B008 | Marion County Fertilizer Ordinance | Florida-friendly fertilizer ordinance (2008) and land development code for urban landscapes regulates use of fertilizers by any applicator; training/licensing requirements; application rates/methods, fertilizer-free & low-maintenance zones. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |
| 3944 | Marion County | B007 | Marion County Irrigation Ordinance | Ordinance sets enforceable irrigation schedule and rates of irrigation for Marion County. It also identifies efficient irrigation | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | systems that are exempt from schedule. | | | | | | | |
| 3945 | Marion County | B006 | Marion County Springs Protection Zones | Comprehensive Plan Future Land Use Element Objective 7.2 establishes Springs Protection Overlay Zones (SPOZ) and identifies extent of Primary and Secondary Zones. Articles 5 and 6 of Land Development Code defines design and development criteria. | Regulations, Ordinances, and Guidelines | Completed | 2005 | 0 | 0 | Not provided | Not provided - $0.00 |
| 3947 | Marion County | B004 | Marion County Rural Community Land Use Designation | Comprehensive Plan Future Land Use Element Policy 2.1.18 establishes rural community future land use designation. | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Article 3 of Land Development Code defines rural community design provisions. | | | | | | | |
| 3948 | Marion County | B037 | Marion County Stormwater Program NPDES MS4 Permit | Implementation of Stormwater Education Plan to ensure compliance with NPDES MS4 permit public education requirements. | Education Efforts | Ongoing | NA | 0 | 49,415 | Marion County | Marion County - $0.00 |
| 3949 | Marion County | B002 | Marion County TVR | TVR Program to minimize dense development of vested properties without supporting infrastructure, permitting county to better plan for future growth. Article 3 of Land Development Code defines TVR Program | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | and eligible sending and receiving areas. | | | | | | | |
| 3950 | Marion County | S094 | Sports Field Maintenance Equipment Washdown Area | Construction of a "closed system equipment wash down area", allowing parks staff to wash down equipment used for maintaining sports fields. Four sites close to Silver Springs are a priority for construction of the wash down facilities. | Regulations, Ordinances, and Guidelines | Planned | TBD | 0 | 0 | Marion County | Marion County - $0.00 |
| 3957 | Marion County | B005 | Marion County Community Redevelopment Area Program | Comprehensive Plan Future Land Use Element Objective 2.2 establishes limited density and specialized design standards for wetland areas | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | slated for development. Articles 5 and 6 of Land Development Code lays out design and development criteria. | | | | | | | |
| 3963 | Marion County | S099 | Aquifer-Friendly Fertilization Program for Sports Facilities | Creation and use of specific fertilizer formulas on the playing fields at the various sports complexes that the Marion County Parks Department manages to reduces pollutant loading while maintaining the health and safety of the fields. | Golf Course or Sports Field BMPs | Planned | TBD | 0 | 0 | Marion County | Marion County - $0.00 |
| 3965 | Marion County | S097 | Gore's Landing Package Plant Upgrade | DEP has one wastewater package plant located at Gore's Landing, in a flood prone area located | WWTF Upgrade | Planned | TBD | 0 | 0 | Marion County | Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | along the Ocklawaha River. The current system is antiquated and needs to be brought into compliance with current sewage disposal standards. | | | | | | | |
| 3967 | Marion County | S095 | Parks Retention Pond Retrofits | Inventory of stormwater facilities in Marion County Parks to identify potential retrofits to enhance nitrogen removal. Retrofits involve removal of a layer of soil from bottom of the basins and the construction of an engineered soil matrix. | Study | Planned | TBD | 0 | 0 | Marion County | Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3977 | Marion County | S096 | Septic System Connection Removal in County Parks | Project focuses on the removal of OSTDS and connection to centralized WWTF in parks which are in close proximity to existing or planned wastewater facilities (Brick City Adventure Park, Rotary Sportsplex, and Baseline Road Trailhead). | OSTDS Phase Out | Planned | TBD | 107 | 0 | Marion County | Marion County - $0.00 |
| 3978 | Marion County | B035 | Marion County Aquifer Vulnerability Assessment | Marion County. The MCAVA project provides a scientifically defensible water-resource management and protection tool that uses a map to show relative aquifer vulnerability | Study | Completed | 2007 | 0 | 82,850 | Marion County | Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | for use in guiding growth. | | | | | | | |
| 3979 | Marion County | S123 | Silver Springs Shores Unit 55 Stormwater Retrofit | Retrofit of two retention areas adjacent to Baseline Golf Course with the Bold & Gold™ biosorption activated media for nitrogen reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2016 | 29 | 370,000 | Marion County | Marion County - $323,041.00 |
| 3988 | Marion County | S112 | OSTDS 9-1-1 Strategy | Develop a strategy for addressing OSTDS and other wastewater management issues. Goal is to enhance communication and coordination among utilities and agencies. | Study | Completed | 2018 | 0 | 0 | Not provided | Not provided - $0.00 |
| 3989 | Marion County | S113 | Silver Springs Sandhill Acquisition | Preserved 465 acres of high recharge sandhills within a mile of Silver | Land Acquisition | Completed | 2017 | 0 | 4,432,979 | Florida Forever; Marion County | Florida Forever - $0.00; Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Springs. The project is located just south of Indian Lake State Forest and east of the Cohadjoe Park (county). Property is managed by Marion County Parks and Recreation. | | | | | | | |
| 4162 | Marion County | B029 | West Highway 316 at 119th Ave Stormwater Retrofit- CP #41 | Proposed project to construct a stormwater pond to address a stormwater conveyance issue and reduce nitrate in stormwater runoff from adjacent land uses. The project was completed in 2016. | On-line Retention BMPs | Completed | 2016 | 4 | 52,654 | SWFWMD; Marion County | SWFWMD - $27,000.00; Marion County - $132,819.00 |
| 4164 | Marion County | B036 | Public Education Coordination | Comprehensive Education Plan prepared and implemented | Education Efforts | Ongoing | NA | 0 | 21,000 | DEP; SWFWMD; Marion County | DEP - $14,000.00; SWFWMD - $0.00; Marion |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | stakeholders to ensure uniform information and messaging regarding springs protection. | | | | | | | County - $7,000.00 |
| 4165 | Marion County | B035 | Marion County Aquifer Vulnerability Assessment | Marion County. The MCAVA project provides a scientifically defensible water-resource management and protection tool that uses a map to show relative aquifer vulnerability for use in guiding growth. | Study | Completed | 2010 | 0 | 82,850 | Marion County | Marion County - $82,850.00 |
| 4166 | Marion County | B034 | Marion County Watershed Management Plan (WMP) | Countywide WMPs prepare that include creation and maintenance of a comprehensive geodatabase for Marion | Study | Completed | 2011 | 0 | 337,000 | Marion County; SWFWMD | Marion County - $0.00; SWFWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | County storm sewer system data, watershed boundaries and hydrologic features county-wide. | | | | | | | |
| 4168 | Marion County | B032 | Sinkhole Repair Program in County DRAs | Part of ongoing stormwater system maintenance activities. Performed as needed by county crews or contractors depending on size and scope of repair. 2019 Rainbow Springs BMAP costs for sinkhole repairs was $57,010.66. | Stormwater System Rehabilitation | Completed | 2003 | 0 | 0 | Marion County | Marion County - $38,677.00 |
| 4170 | Marion County | R071 | OSTDS 9-1-1 Strategy | Springs protection educational effort targeting Marion County students. | Study | Completed | 2015 | 0 | 0 | SWFWMD | SWFWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4183 | Marion County | R076 | Rainbow Springs 5th Replat Stormwater Retrofit - CP #72 | Retrofit of DRAs 2166, 2176 and 2188 with biosorption-activated media for nitrogen reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2019 | 36 | 414,000 | SWFWMD; Marion County | SWFWMD - $242,778.00; Marion County - $0.00 |
| 4203 | Marion County | R097 | Public Education and Outreach Activities | Outreach program (5.5 % credit) to residents of Marion County that enhances awareness of stormwater management. Includes FYN program; ordinances for landscaping, irrigation, and fertilizer; PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 10,841 | 0 | SWFWMD; Marion County | SWFWMD - $0.00; Marion County - $0.00 |
| 4236 | Marion County | B004 | Marion County Rural Community Land Use Designation | Comprehensive Plan Future Land Use Element Policy 2.1.18 establishes rural | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | community future land use designation for clustered urban density development patterns in rural designated lands. | | | | | | | |
| 4237 | Marion County | B005 | Marion County Community Redevelopment Area Program | Comprehensive Plan Future Land Use Element Objective 2.2 establishes specific limited density and specialized design standards for wetland and floodplain areas slated for development. | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4238 | Marion County | B006 | Marion County Springs Protection Zones | Comprehensive Plan Future Land Use Element Objective 7.2 establishes Springs Protection Overlay Zones | Regulations, Ordinances, and Guidelines | Completed | 2005 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (SPOZ) and identifies extent of Primary and Secondary Zones. | | | | | | | |
| 4239 | Marion County | B007 | Marion County Irrigation Ordinance | Ordinance sets enforceable irrigation schedule and rates of irrigation for Marion County. It also identifies efficient irrigation systems that are exempt from schedule. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | NA | NA - $0.00 |
| 4240 | Marion County | B008 | Marion County Fertilizer Ordinance | Florida-friendly fertilizer ordinance (2008) and land development code for urban landscapes regulates use of fertilizers by any applicator; training/licensing requirements; | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | NA | NA - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | application rates/methods, fertilizer-free & low-maintenance zones. | | | | | | | |
| 4241 | Marion County | B037 | Marion County Stormwater Program NPDES MS4 Permit | Implementation of Stormwater Education Plan to ensure compliance with NPDES MS4 permit public education requirements. | Education Efforts | Ongoing | NA | 0 | 49,415 | Marion County | Marion County - $0.00 |
| 4242 | Marion County | B010 | Clean Farms Initiative | Marion County. The Clean Farms Initiative was originally passed under Resolution 04-R-384 and has evolved using a Farm Outreach Coordinator to educate farms regarding BMPs. The number of farm visits are tracked yearly. | Agricultural BMPs | Ongoing | NA | 0 | 0 | NA | NA - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4243 | Marion County | B001 | Marion County Transfer of Development Rights (TDR) | TDR Program designed to protect natural resources, listed in Policy 1.1.2 of Conservation Element of Marion County Comprehensive Plan and locally important and prime farmlands. Program definition contained in Article 3 of Land Development Code. | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4258 | Marion County | B003 | Marion County Hamlet Design Option | Comprehensive Plan Future Land Use Element Policy 2.1.13 establishes Hamlet Development Option, for clustered low-density development patterns in rural | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | designated lands. | | | | | | | |
| 4260 | Marion County | B002 | Marion County Transfer of Vested Rights (TVR) | TVR Program designed to minimize dense development of vested properties without supporting infrastructure, permitting county to better plan for future growth. | Regulations, Ordinances, and Guidelines | Completed | 2000 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4261 | Marion County | R062 | Sa-Te-Ke Village Stormwater Retrofit | Construction of retention storage along the Rainbow River to treat direct discharge to the river from a culvert discharging along SW 183rd Court and SW 102nd St. | On-line Retention BMPs | Completed | 2011 | 1 | 73,512 | SWFWMD; Marion County | SWFWMD - $18,245.00; Marion County - $42,496.00 |
| 4262 | Marion County | R063 | Rainbow Springs 5th Replat Stormwater | This project will retrofit three drainage retention areas (2165, 2167, | Retention/Detention BMP Retrofit with Nutrient | Completed | 2019 | 68 | 931,510 | SWFWMD; Marion County | SWFWMD - $319,927.00; Marion County - $551,460.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Retrofit- CP #67 | 3166) in Rainbow Springs 5th replat with the nitrogen reducing media. After geotech received, DRA 2165 was switched for DRA 2216. Please see project R113 for new project details. | Reducing Media | | | | | | |
| 4274 | Marion County | B028 | SW 85th St./SW 40th Ave. Stormwater Retrofit | Construction of a drainage retention area lined with Bold & Gold™ soil amendment to enhance nitrogen removal. Post construction event monitoring has shown a 70 % reduction in TN through the soil amendment layer. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2012 | 26 | 330,000 | SWFWMD; Marion County | SWFWMD - $105,000.00; Marion County - $225,347.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4276 | Marion County | R016 | Rainbow Park Unit 8 Stormwater Retrofit | Construction of three wet detention ponds to provide treatment of runoff prior to discharge to a relic karst feature and isolated surface wetlands. | Wet Detention Pond | Completed | 2013 | 11 | 443,399 | SWFWMD; Marion County | SWFWMD - $216,626.00; Marion County - $216,626.00 |
| 4293 | Marion County | R017 | Rolling Hills unit 5 Stormwater Retrofit | Construction of an interconnected system of four retention ponds and one wet retention pond to treat stormwater runoff from roads, residential, and agricultural land uses. | BMP Treatment Train | Completed | 2013 | 19 | 484,097 | SWFWMD; Marion County | SWFWMD - $244,280.00; Marion County - $244,280.00 |
| 4294 | Marion County | R011 | Village of Rainbow Springs Stormwater Retrofit | Retrofit of a retention area with aerobic filtration cells for conversion of TN to nitrate and an infiltration cell lined with | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2015 | 8 | 336,800 | SWFWMD; Marion County | SWFWMD - $169,709.00; Marion County - $169,709.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bold & Gold™ for nitrate removal. The project included a created wetland to treat runoff discharged into Section 16 Lake. | | | | | | | |
| 4295 | Marion County | R012 | CR 484 Stormwater Retrofit, Phase 1 | Construction of a bioretention area and collection system to treat runoff from bridge spanning the Rainbow River. | Bioswales | Completed | 2010 | 1 | 62,081 | SWFWMD; Marion County | SWFWMD - $42,768.00; Marion County - $42,768.00 |
| 4296 | Marion County | R013 | CR 484 Stormwater Retrofit, Phase 2 | Construction of a wet detention pond to treat runoff discharged into the Rainbow River from CR 484. | Wet Detention Pond | Completed | 2012 | 13 | 73,890 | SWFWMD; Marion County | SWFWMD - $35,469.00; Marion County - $42,469.00 |
| 4297 | Marion County | R014 | CR 484 Stormwater Retrofit, Phase 3 | Construction of wet detention ponds to | Wet Detention Pond | Completed | 2011 | 2 | 223,700 | SWFWMD; Marion County | SWFWMD - $21,789.00; Marion |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | address runoff discharged into Rainbow river from limerock parking area. | | | | | | | County - $203,076.00 |
| 4298 | Marion County | R015 | Rainbow Springs Country Club Estates Stormwater Retrofit | Expansion and conversion of an existing retention pond to a wetland/wet retention pond to enhance nitrate removal from runoff generated from county road, a golf course, and residential land uses. | Constructed Wetland Treatment | Completed | 2012 | 3 | 136,423 | SWFWMD; Marion County | SWFWMD - $68,211.00; Marion County - $68,211.00 |
| 4550 | Marion County | R112 | Rainbow Springs Innovative Stormwater Retrofits-CP 71 (N848) Agreement No. 18CF0000859 | Construction of stormwater BMPs to retrofit three dry retention systems that are within 1.5 miles of Rainbow Springs with a soil amendment. Marion County | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2018 | 125 | 221 | SWFWMD; Marion County | SWFWMD - $276,500.00; Marion County - $468,764.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rainbow Springs DRAs 2162, 2190, and 2193. | | | | | | | |
| 4551 | Marion County | R113 | Rainbow Springshed Stormwater Retrofits (WR04) Agreement No. 16CF0000154 | Construction of stormwater BMPs to retrofit three dry retention systems that are within 2 miles of Rainbow Springs with a soil amendment. Marion County DRAs 3166, 2167 and 2216. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2019 | 202 | 958,619 | SWFWMD; Marion County | SWFWMD - $319,926.00; Marion County - $358,745.00 |
| 5458 | Marion County | B052 | NW 115th Ct Flood Relief Project | Area needs to be studied before design, permit, and construction of new DRAs and road to mitigate flooding in the area. Rebuild NW 115th Ct which has been damaged due to past flooding and potentially raise road to | Regional Stormwater Treatment | Planned | 2026 | 0 | 1,168,000 | Marion County | Marion County - $100,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | increase level of service. | | | | | | | |
| 5493 | Marion County | B053 | SW 52nd Street Flood Relief Project | Construct new DRAs and associated drainage conveyance system to meet 100yr/24hr storm. Raise road above flood elevation. Improvements will mitigate flooding of the road and surrounding area. Design complete. FDEM recommends Ph. 2 funds for land & const. | Regional Stormwater Treatment | Underway | 2026 | 0 | 2,650,000 | Future Marion County; Future FEMA; Marion County; FEMA | Future Marion County - $0.00; Future FEMA - $0.00; Marion County - $50,408.25; FEMA - $151,224.75 |
| 5494 | Marion County | S210 | SW 27th Ave Flood Relief Project | Project area to be studied before design. Raise elevation of road and construct associated stormwater | Regional Stormwater Treatment | Planned | 2026 | 0 | 2,027,000 | Marion County | Marion County - $2,027,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | facilities to meet the 100yr/24hr storm. This project will mitigate flooding in the area and allow the County to maintain the road level of service. | | | | | | | |
| 5495 | Marion County | S211 | SE 34th Place Flood Relief Project | Design, permit, bid, & construct: Purchase 3 lots with homes that flooded during previous storm events. Demolish homes and expand 2 DRAs to mitigate flooding in Country Gardens. Rebuild and raise damaged road. FEMA funding not received for construction. | Regional Stormwater Treatment | Underway | 2026 | 0 | 1,684,226 | Marion County; FEMA | Marion County - $39,349.25; FEMA - $118,047.75 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5918 | Marion County | R119 | CP 74 Rainbow Springs 5th Replat Stormwater Retrofit | Construction of stormwater BMPs to retrofit three (3) dry retention systems, that are approximately 1.67 miles from the head springs at Rainbow Springs, with a soil amendment. Marion County DRAs 2160, 2169, and 2210. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2024 | 67 | 944,254 | Marion County; SWFWMD | Marion County - $677,103.98; SWFWMD - $267,150.00 |
| 5919 | Marion County | R120 | Rainbow River Watershed Management Plan Update | Marion County Rainbow Basin Watershed Management Plan (WMP) 2008/2014 model updates. Updates to the current model, watershed evaluation, floodplain analysis, Floodplain | Study | Underway | 2025 | 0 | 1,538,000 | SWFWMD; Marion County | SWFWMD - $769,000.00; Marion County - $769,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Level of Service, Surface Water Resource Assessment and BMPs Reports have begun. | | | | | | | |
| 5920 | Marion County | R121 | West Ocala Watershed Management Plan Update | MC West Ocala Basin Watershed Management Plan (WMP) was from 2014. The current model, watershed evaluation, floodplain analysis, Floodplain Level of Service, Surface Water Resource Assessment and Best Management Practices Reports will need to be updated. | Study | Underway | 2024 | 0 | 444,000 | SWFWMD; Marion County | SWFWMD - $222,000.00; Marion County - $222,000.00 |
| 5921 | Marion County | R122 | SR200 Watershed Management Plan Update | Marion County SR200 Basin Watershed Management | Study | Underway | 2024 | 0 | 425,000 | Marion County; SWFWMD | Marion County - $212,500.00; SWFWMD - $212,500.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Plan (WMP) 2009, with peer review completed in 2011. Due to a large amount of development along the corridor, the WMP needs to be updated. This is a high priority basin for Marion County and SWFWMD. | | | | | | | |
| 5922 | Marion County | R123 | Street Sweeping of Marion County Roads | Sweep Marion County-maintained roads in Rainbow Basin. Swept 8 times/yr, about 71.8 miles in Basin. 2021 load yield is roughly 87.43 tons. 2021 Rainbow Springs BMAP pro-rata share costs for street sweeping was approximately | Street Sweeping | Ongoing | NA | 84 | 0 | Marion County | Marion County - $24,437.07 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | $24,437.07. Average pro-rata nu | | | | | | | |
| 5940 | Marion County | S234 | CP 76 Silver Springs Shores Unit 19 Stormwater Retrofit | Retrofit of Drainage Retention Areas 7219, 7237, and 7366 with Bold & Gold™ biosorption activated media for nitrogen reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2019 | 59 | 1,450,550 | SJRWMD; Marion County | SJRWMD - $343,232.00; Marion County - $1,107,279.00 |
| 5941 | Marion County | S235 | CP 78 Silver Springs Shores Unit 7 Stormwater Retrofit | Retrofit of Drainage Retention Areas 7209 and 7220 with Bold & Gold™ biosorption activated media for nutrient reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2021 | 110 | 863,583 | Marion County | Marion County - $863,583.48 |
| 5942 | Marion County | S236 | CP 75 Silver Springs Shores Unit 23 Stormwater Retrofit | Retrofit of Drainage Retention Areas 7049 and 7256 with Bold & Gold™ biosorption | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2022 | 107 | 1,116,367 | Marion County; SJRWMD | SJRWMD - $251,214.29; Marion County - $865,152.36 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | activated media for nutrient reduction. The project installed treatment cells to treat a portion (70 ac) of the total contributing areas (123.99 ac) for the existing DRAs. | | | | | | | |
| 5943 | Marion County | S237 | CP 79 Silver Springs Shores Unit 68 Stormwater Retrofit | Retrofit of Drainage Retention Areas 7282 and 7402 with Bold & Gold™ biosorption activated media for nutrient reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2022 | 0 | 767,472 | Marion County; SJRWMD | Marion County - $599,447.78; SJRWMD - $168,024.16 |
| 5944 | Marion County | S240 | Street Sweeping of Marion County Roads | Sweep Marion County-maintained roads in Silver Basin. Swept 8 times/yr, about 126.1 miles in Basin. 2021 load yield is | Street Sweeping | Ongoing | NA | 90 | 0 | Marion County | Marion County - $42,914.13 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | roughly 153.53 tons. 2021 Silver Springs BMAP pro-rata share costs for street sweeping was approximately $42,914.13. Average pro-rate nu | | | | | | | |
| 6241 | Marion County | S248 | Silver Springs Shores Unit 29 & 30 Innovative Stormwater Retrofit CP 80 | Retrofit of Drainage Retention Areas 7322 and 7403 with Bold & Gold biosorption activated media treatment cells for nutrient reduction. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Completed | 2023 | 82 | 1,723,436 | DEP; Marion County | DEP - $789,572.86; Marion County - $933,863.24 |
| 6242 | Marion County | R129 | West Central Marion Watersheds - Watershed Management Plan Updates | MC West Central Marion Watersheds watershed management plan updates of Cotton Plant 1& 2, Martel, and Blitchton watersheds. Previous | Study | Underway | 2029 | 0 | 800,000 | SWFWMD; Marion County | SWFWMD - $400,000.00; Marion County - $400,000.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WMPs were completed in 2011. Due to development which has occurred since previous models. | | | | | | | |
| 6243 | Marion County | R128 | NW 44th Avenue Innovative Stormwater Retrofit | Retrofit of Drainage Retention Area 1138 with Bold & Gold biosorption activated media treatment cell for nutrient reduction within the Rainbow Springs BMAP. Project has been funded by DEP for 50% construction costs. Project is currently in design. | Retention/Detention BMP Retrofit with Nutrient Reducing Media | Underway | 2025 | 0 | 820,000 | Marion County; DEP | Marion County - $442,619.00; DEP - $377,381.00 |
| 6727 | Marion County | S262 | SE 64th Avenue Road DRA | Design, permit, and construct a new drainage retention area | Dry Detention Pond | Completed | 2023 | 3 | 1,059,700 | SJRWMD; Marion County | SJRWMD - $100,810.00; Marion County - $958,890.12 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | and associated conveyance system within Silver Acres 1st Add. subdivision to improve conveyance along SE 64th Ave Rd and Pine Road. | | | | | | | |
| 3756 | Marion County Utilities | S143 | US441 FM | Install about 17,000 LF of 12 forcemain along US 441 to connect Spruce Creek Golf and Country Club to Stonecrest. This will make service available and provide an opportunity for septic to sewer conversion/prevention in this corridor. | Wastewater Service Area Expansion | Completed | 2022 | 0 | 1,791,600 | Marion County; SJRWMD | Marion County - $996,326.00; SJRWMD - $795,274.00 |
| 3757 | Marion County Utilities | S142 | CR464 FM Phase 2 & 3 | Construct 5,800 LF of 12-inch forcemain, and 9,200 LF of 16-inch forcemain | WWTF Capacity Expansion | Completed | 2019 | 0 | 6,424,210 | Marion County | Marion County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | along CR 464. The project will provide infrastructure and capacity to connect future septic to sewer projects to the Silver Springs Shores (SSS) WWTF. | | | | | | | |
| 3759 | Marion County Utilities | S140 | Provide Central Sewer Service to Old Platted Subdivision Served by Septic (Silver Springs Shores Septic to Sewer Program) | The existing subdivision has approximately 3,000 platted lots without access to centralized sewer. The area has been divided into three phases of approximately 500 lots per phase, 859 existing homes. This area is within the PFA for Silver Springs. | OSTDS Phase Out | Underway | 2025 | 0 | 60,000,000 | DEP; DEP; Department of Treasury | DEP - $3,000,000.00 ; DEP - $3,000,000.00 ; Department of Treasury - $60,000,000.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3763 | Marion County Utilities | S132 | CR464 FM | Install new 12" forcemain to upsize existing forcemain. The upsizing of the forcemain in this project will allow the County to handle future flows at the Silver Springs Shores WWTF from OSTDS abatement in the PFA for Silver Springs. | WWTF Upgrade | Completed | 2015 | 0 | 654,416 | Marion County | Marion County - $0.00 |
| 3768 | Marion County Utilities | S131 | Sleepy Hollow Package Plant Abatement (LS and FM) | Remove existing wastewater package plant in subdivision and replace with new duplex lift station. Tie into the MCU forcemain on SE 58th Ave. Original credit of 365 lbs-TN/yr. Project was captured | Decommissio n/ Abandonment | Completed | 2017 | 0 | 456,025 | SJRWMD; Marion County | SJRWMD - $30,900.00; Marion County - $117,389.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | in the updated loading estimates. | | | | | | | |
| 3784 | Marion County Utilities | S144 | SSS WWTP Nutrient and Capacity Improvement | Enhance the nutrient removal capabilities to AWT standards and expand the capacity at the SSS WWTF by 500,000 GPD. | WWTF Upgrade | Completed | 2020 | 0 | 6,424,210 | SJRWMD | SJRWMD - $3,487,038 |
| 3964 | Marion County Utilities | S098 | Silver Springs Shores Reuse to Spruce Creek Golf and Country Club | Install reclaim pumps, control valves, metering stations and about 21,600 ft of 16" RCWM from the Silver Springs Shores WWTF to the Spruce Creek Golf and Country Club golf course located about 13 miles from the Silver Springs. | WWTF Diversion to Reuse | Completed | 2016 | 0 | 3,192,000 | DEP; SJRWMD | DEP - $1,275,620.00 ; SJRWMD - $1,596,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3993 | Marion County Utilities | S109 | Package Plant Abatement | Baseline Square, Truck stops at CR 326 and I75 package plants connected to central system. Removes 412 lbs TN/yr. | Wastewater Service Area Expansion | Completed | 2015 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4012 | Marion County Utilities | S038 | Silver Springs Shores WWTF Upgrade | Upgrading existing WWTP located in Silver Springs Shores, upgrading it to reclaimed quality effluent standards. Utility customers are already paying $5,031,738 for the treatment facility upgrades. | WWTF Upgrade | Completed | 2015 | 0 | 5,031,738 | Marion County | Marion County - $0.00 |
| 4013 | Marion County Utilities | S037 | Divert Wastewater Flows from Silver Springs Regional WWTF to Silver Springs Shores WWTF | Install 3-mile forcemain to reroute sewage from the Silver Springs Regional WWTP to the Silver Springs | Wastewater Service Area Expansion | Completed | 2015 | 0 | 1,023,114 | DEP TMDL; SJRWMD; Marion County | DEP TMDL - $463,057; SJRWMD - $100,000; Marion County - $563,057 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Shores WWTF. The route of the new force main will allow for other decentralized WWTPs in the vicinity of Silver Springs to connect in the future. | | | | | | | |
| 4032 | Marion County Utilities | S056 | Collection System Maintenance Program | Collection system maintenance program includes lift station maintenance and addition of SCADA. The Capital Improvement Plan calls for lift station renovation every 10 years and identifies pipe replacement needs. Pipes replaced as funding allows. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 813,435 | MCU | MCU - $813,435.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 4202 | Marion County Utilities | R104 | Northwest Regional WWTF Expansion | Expansion will improve treatment and capacity at existing WWTF. Existing facility treats to an average 46.95 mg/L TN. The new facility will treat to AWT. Project will allow County to remove package plants and OSTDS in the area in the future. | WWTF Upgrade | Completed | 2023 | 2,728 | 20,850,033 | MC; DEP | MC - $14,000,000.00; DEP - $6,850,000.00 |
| 4211 | Marion County Utilities | R105 | Package Wastewater Plant Removal Program | Remove 3 package plants and connect areas to County centralized wastewater system. The package plants will be connected to WWTFs that produce reclaimed water. The project includes | Decommission/ Abandonment | Completed | 2024 | 0 | 3,119,876 | DEP; Marion County | DEP - $2,836,251.00; Marion County - $2,039,256.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | constructing new lift stations and forcemains. | | | | | | | |
| 4212 | Marion County Utilities | R106 | State Road 200 Force Main Extension | Install about 10,750 LF of force main along SR200. Project will allow OSTDS to be abandoned, prevent OSTDS installation, and reduce groundwater withdrawals by increasing flow for reclaimed water at Oak Run WWTF. | Wastewater Service Area Expansion | Completed | 2020 | 0 | 4,014,096 | DEP; SWFWMD; Marion County | DEP - $0.00; SWFWMD - $0.00; Marion County - $0.00 |
| 4579 | Marion County Utilities | S185 | Silver Springs Shores Unit 16 - Water and Sewer Extensions | Install utility infrastructure within part of Block Group 3 (Tract 001204) in Silver Springs Shores. The project includes survey, design, and construction of a gravity | OSTDS Phase Out | Underway | 2024 | 0 | 4,613,739 | CDBG; US Treasury Dept. | CDBG - $584,844.00; US Treasury Dept. - $4,028,895.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | collection system, lift station, forcemain and a potable distribution system. | | | | | | | |
| 4580 | Marion County Utilities | S186 | Countywide OSTDS Feasibility Study | Study will analyze the feasibility of septic to sewer projects throughout the entire County of Marion. | Study | Completed | 2021 | 0 | 500,000 | DEP | DEP - $500,000.00 |
| 4582 | Marion County Utilities | S188 | Florida Horse Park and Anthony's Pizza Connection to Central Sewer | Coordinate with Florida Horse Park and Anthony's Pizza to abandon their septic systems and connect to Marion County central sewer. Includes installation of lift station, forcemain, and cap charges. | OSTDS Phase Out | Completed | 2021 | 0 | 1,296,553 | DEP | DEP - $1,296,553.00 |
| 4583 | Marion County Utilities | S189 | Oak Bend/I-75 Water Quality Improvement Project | Coordinate with FDOT Rest Area and Oak Bend mobile home | Decommissio n/ Abandonment | Underway | 2025 | 0 | 7,704,828 | Oak Bend (private); MC; FDOT; DEP | Oak Bend (private) - $3,168,252.00 ; MC - $909,000.00; |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | park to decommission their respective package plants and connect to Marion County central sewer. Includes installation of 2 lift stations and forcemain. | | | | | | | FDOT - $1,538,488.00 ; DEP - $2,089,088.00 |
| 4593 | Marion County Utilities | S199 | SSS RCWM Extension | Install about 8,000 ft of 12" RCWM from the Silver Springs Shores WWTF to the Silver Springs Shores golf course approximately 7 to 10 miles from Silver Springs. | WWTF Diversion to Reuse | Completed | 2016 | 0 | 0 | DEP; SJRWMD; MCU CIP | DEP - $0; SJRWMD - $0; MCU CIP - $0 |
| 5459 | Marion County Utilities | R115 | Rainbow River Master Plan | Perform a master plan study for septic to sewer in the Rainbow Springs / Rainbow River area. | Study | Completed | 2022 | 0 | 200,000 | MCU; SWFWMD | MCU - $100,000.00; SWFWMD - $100,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | The study will identify the best option and financial feasibility for converting parcels and package plants to a central sewer system. Project replaces R086. | | | | | | | |
| 5496 | Marion County Utilities | S212 | Package Wastewater Plant Removal Program | Remove WWTFs and connect to County Sewer. Tradewinds, Cedar Hill & Ocala Springs Plaza (aka WinnDixie Plaza). | Decommissio n/ Abandonment | Underway | 2024 | 0 | 4,875,507 | DEP; MCU | DEP - $2,836,251.00 ; MCU - $2,039,255.94 |
| 6432 | Marion County Utilities | R126 | State Road 200 Septic to Sewer | Connect 3 properties to the recently completed 12in force main on SR 200. | OSTDS Phase Out | Underway | 2025 | 24 | 0 | DEP | DEP - $534,697.25 |
| 6449 | Marion County Utilities | S243 | Don Garlits Museum Septic to Sewer | Removed two existing septic tanks and connected to County sewer. | OSTDS Phase Out | Completed | 2022 | 496 | 150,000 | MCU; Don Garlits Museum; SJRWMD | MCU - $12,848.00; Don Garlits Museum - $93,750.00; |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | SJRWMD - $56,250.00 |
| 6450 | Marion County Utilities | S244 | 4-H Farm Septic to Sewer | Removed two existing septic tanks and connected to County sewer. | OSTDS Phase Out | Completed | 2023 | 44 | 130,000 | SJRWMD; MCU | SJRWMD - $65,000.00; MCU - $76,215.00 |
| 6451 | Marion County Utilities | S140a | Silver Springs Shores Septic to Sewer Additional Phase | Remove approximately 385 septic tanks and connect to County sewer. Progressive design-build. | OSTDS Phase Out | Underway | 2025 | 5,530 | 40,000,000 | MCU; DEP | MCU - $20,000,000.00; DEP - $20,000,000.00 |
| 6452 | Marion County Utilities | S246 | Septic to Sewer Initiative | Decommissioned 3 residential and 1 commercial septic tanks and connected to county sewer. | OSTDS Phase Out | Completed | 2023 | 46 | 278,740 | DEP; Marion County CRA | DEP - $200,000.00; Marion County CRA - $45,138.00 |
| 6566 | Marion County Utilities | R139 | US27/NW 70th Ave Septic to Sewer | Connect existing shopping plaza on the southeast side of the intersection to MCU centralized sewer system. Flows will go to NWR | OSTDS Phase Out | Completed | 2022 | 0 | 814,327 | DEP; MC | DEP - $419,229.00; MC - $395,098.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WWTF which will treat to AWT. Original credit of 1,875 lbs-TN/yr. Project was captured in the updated loading estimates. | | | | | | | |
| 6569 | Marion County Utilities | R138 | Collection System Maintenance Program | Collection system maintenance program includes lift station maintenance and addition of SCADA. The Capital Improvement Plan calls for lift station renovation every 10 years and identifies pipe replacement needs. Pipes replaced as funding allows. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 813,435 | MCU; Not provided | MCU - $813,435.00; Not provided - $0.00 |
| 6685 | Marion County Utilities | S263 | SE Regional Water Treatment Facility - Lower | Construct Lower Floridian Aquifer test well to | Monitoring/Data Collection | Underway | 2025 | 0 | 2,136,937 | DEP; MCU | DEP - $1,000,000.00; MCU - $1,136,937.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Floridian Test Well | evaluate aquifer performance and water quality. This LFA well is intended to supply from a non-traditional water source, allowing MCU to reduce current and future Upper Floridian Aquifer withdrawals. | | | | | | | |
| 6695 | Marion County Utilities | S266 | Irish Acres to Silver Springs Regional Interconnect | This project is a continued effort in a multi-year program to interconnect potable water systems. This project will relocate withdrawals further to the northwest away from Silver Springs. | Monitoring/Data Collection | Ongoing | NA | 0 | 7,520,000 | DEP; MCU | DEP - $3,760,000.00 ; MCU - $3,760,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7031 | Marion County Utilities | R142 | Southwest Service Area Oak Run WWTP Improvements | Add additional treatment capacity to MCUD Oak Run to achieve 3.5 MGD. Capacity expansion will include upgrades to reduce nutrients in effluent per BMAP requirements. | WWTF Upgrade | Planned | 2027 | 5,427 | 0 | MCU CIP | MCU CIP - $30,000,000.00 |
| 4206 | On Top of the World | R100 | Public Education and Outreach Activities | Outreach program (3.0 % credit) to residents of On Top of the World that enhances knowledge and awareness of stormwater management. Includes FYN program. | Education Efforts | Ongoing | NA | 693 | 0 | Bay Laurel Center CDD | Bay Laurel Center CDD - $0.00 |
| 3980 | Putnam County | S122 | Education and Outreach | Provide educational materials about the importance of protecting Silver Springs | Education Efforts | Ongoing | NA | 378 | 0 | Putnam County | Putnam County - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | and implementing small farm equine BMPs at Fort Gates Ferry kiosks and at agricultural center. FYN outreach, landscaping ordinance, website, PSA for 4.25% credit. | | | | | | | |
| 3885 | Rainbow River Conservation | B039 | Springs Awareness for Educators | A workshop for Marion County teachers and educators to provide resources on springs, water issues and wildlife which can be used in the classroom to enhance teaching the common core standards. | Education Efforts | Completed | 2014 | 0 | 0 | SWFWMD; Florida Springs Institute | SWFWMD - $0.00; Florida Springs Institute - $0.00 |
| 4285 | Rainbow River Conservation | B039 | Springs Awareness for Educators | A workshop for Marion County teachers and educators to provide | Education Efforts | Completed | 2014 | 0 | 0 | SWFWMD; FSI | SWFWMD - $0.00; FSI - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | resources on springs, water issues and wildlife which can be used in the classroom to enhance teaching the common core standards. | | | | | | | |
| 5917 | Rainbow River Conservation | R118 | Fourth Grade Springs Education Program | Annual Rainbow River and Springs education program. | Education Efforts | Ongoing | NA | 0 | 0 | Not provided | Not provided - $0.00 |
| 3951 | Silver Springs State Park | S093 | Silver Springs State Park Management Plan Amendment - Sewer Upgrades | Management plan for Silver Springs State Park amended in May 2014 to include merger of Silver Springs attraction into Silver River State Park. Management goals were developed to provide maintenance of the former attraction's sewer system. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Completed | 2014 | 0 | 1,976,335 | DEP | DEP - $1,976,335.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3954 | Silver Springs State Park | S090 | Silver Springs State Park Management Plan Amendment - State Park Sewer Connection | Management plan for Silver Springs State Park amended in 2014 to include merger of Silver Springs attraction into Silver River State Park. Goals were developed to connect park services in the former Silver River State Park to central sewer. | OSTDS Phase Out | Completed | 2016 | 0 | 1,737,963 | DEP | DEP - $1,737,963.00 |
| 3955 | Silver Springs State Park | S089 | Silver Springs State Park Management Plan Amendment - Runoff | Management plan for Silver Springs State Park amended in 2014 to include merger of Silver Springs attraction into Silver River State Park. Animals removed from Ross Island before 2013. Swales added where moats removed. 20 | Land Use Change | Completed | 2013 | 0 | 0 | DEP | DEP - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | buildings removed. | | | | | | | |
| 5492 | Silver Springs State Park | S224 | Silver Springs State Park Management Plan Amendment - Improved Stormwater Management | Management plan for Silver Springs State Park amended in May 2014 to include merger of Silver Springs Attraction (demolished 2019) into Silver River State Park. Plans to better manage stormwater runoff with decreased runoff from parking lot. | Stormwater System Upgrade | Planned | TBD | 0 | 0 | DEP | DEP - $0.00 |
| 3755 | SJRWMD | S134 | Silver Springs Forest | The project will address water resources at the site and in the receiving system with hydrology, attenuation, and sediment transport improvements. Evaluation of | Hydrologic Restoration | Completed | 2018 | 0 | 2,370,000 | DEP; SJRWMD | DEP - $475,000.00; SJRWMD - $1,895,000.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | the final project elements is still underway. | | | | | | | |
| 3762 | SJRWMD | S137 | SJRWMD Submerged Aquatic Vegetation (SAV) and Algae Monitoring | SJRWMD monitors SAV and algae annually on the Silver River between April and June. SJRWMD staff estimate SAV cover by species and algal cover collectively, using 0.25 square-meter quadrats and the Braun-Blanquet cover scale. | Monitoring/Data Collection | Underway | TBD | 0 | 0 | SJRWMD | SJRWMD - $0.00 |
| 3775 | SJRWMD | S154 | Colvin Farms Soil Grid Mapping and Variable Rater Fertilizer Applicator | Soil grid mapping and variable rate fertilizer applicator. | Agricultural BMPs | Completed | 2015 | 5,432 | 80,111 | SJRWMD; Colvin Farms | SJRWMD - $72,100.00; Colvin Farms - $8,296.00 |
| 3776 | SJRWMD | S164 | Yancey's Blueberry Farm Zone Irrigation and Soil Moisture Sensors and | Zone irrigation, soil moisture sensors, and weather stations. | Agricultural BMPs | Completed | 2019 | 43 | 25,687 | DEP; SJRWMD; Yancey's Blueberry Farm | DEP - $9,632; SJRWMD - $9,632; Yancey's Blueberry Farm - $6,422 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weather Stations | | | | | | | | |
| 3777 | SJRWMD | S163 | North Caledonia Tailwater Storage and Recovery, Soil Moisture Sensors, and Telemetry | Tailwater storage and recovery, soil moisture sensors, and telemetry. | Agricultural BMPs | Completed | 2019 | 118 | 600,047 | DEP; SJRWMD; North Caledonia | DEP - $225,018; SJRWMD - $225,018; North Calendonia - $150,011 |
| 3778 | SJRWMD | S162 | MacKay Farm Precision Irrigation and Fertigation | Precision irrigation and fertigation. | Agricultural BMPs | Completed | 2019 | 15 | 49,662 | DEP; SJRWMD; Kenneth MacKay | DEP - $15,215; SRJWMD - $15,215; Kenneth MacKay - $10,144 |
| 3779 | SJRWMD | S161 | Lochloosa Creek Farms | Soil moisture probes and weather stations. | Agricultural BMPs | Completed | 2019 | 43 | 19,840 | DEP; SJRWMD; Lochloosa Farm | DEP - $7,440; SJRWMD - $7,440; Lochloosa Farm - $4,960 |
| 3780 | SJRWMD | S160 | Brown's Farm Sprayer with GPS Guidance | Sprayer with GPS guidance. | Agricultural BMPs | Completed | 2018 | 191 | 13,450 | SJRWMD; Island Grove | SJRWMD - $152,210.00; Island Grove - $56,071.00 |
| 3781 | SJRWMD | S159 | Island Grove Irrigation System Automation | Irrigation system automation. | Agricultural BMPs | Completed | 2018 | 216 | 208,280 | SJRWMD; Island Grove | SJRWMD - $152,210.00; Island Grove - $56,071.00 |
| 3782 | SJRWMD | S158 | Brown's Farm Irrigation Conversion | Irrigation conversion. | Agricultural BMPs | Completed | 2018 | 52 | 137,000 | SJRWMD; Brown's Farm | SJRWMD - $102,750.00; Brown's Farm - $34,250.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3783 | SJRWMD | S157 | North Caledonia Tailwater Storage and Recovery, Variable Rate Fertilizer Equipment | Tailwater storage and recovery, and variable rate fertilizer equipment. | Agricultural BMPs | Completed | 2017 | 1,549 | 388,350 | SJRWMD; North Caledonia | SJRWMD - $291,263.00; North Caledonia - $97,087.00 |
| 3785 | SJRWMD | S155 | Mid-State Research Irrigation Conversion | Irrigation conversion. | Agricultural BMPs | Completed | 2015 | 75 | 48,682 | SJRWMD; Mid-State Research | SJRWMD - $43,813.00; Mid-State Research - $4,869.00 |
| 3787 | SJRWMD | S153 | Colvin Farms Soil Moisture and Climate Sensor Telemetry | Soil moisture and climate sensor telemetry. | Agricultural BMPs | Completed | 2015 | 11,039 | 84,312 | SJRWMD; Colvin Farms | SJRWMD - $75,881.00; Colvin Farms - $8,431.00 |
| 3788 | SJRWMD | S152 | Brown's Farm Irrigation Conversion | Irrigation conversion. | Agricultural BMPs | Completed | 2016 | 346 | 122,569 | SJRWMD; Brown's Farm | SJRWMD - $110,312.00; Brown's Farm - $12,257.00 |
| 3789 | SJRWMD | S151 | Colvin Farms Center Pivot Nozzle Retrofit | Center pivot nozzle retrofit. | Agricultural BMPs | Completed | 2015 | 5,549 | 102,210 | SJRWMD; Colvin Farms | SJRWMD - $91,989.00; Colvin Farms - $10,221.00 |
| 3795 | SJRWMD | S156 | Mid- State Research Soil Grid Mapping and Variable Rater Fertilizer Applicator | Soil grid mapping and variable rater fertilizer applicator. | Agricultural BMPs | Completed | 2015 | 1,035 | 44,864 | SJRWMD; Mid-State Research | SJRWMD - $40,377.00; Mid-State Research - $4,487.00 |
| 3898 | SJRWMD | S013 | LochLoosa Wildlife Conservation Area | Acquisition of land around Lochloosa Lake and | Land Acquisition | Completed | 2003 | 0 | 16,058,211 | SJRWMD; Preservation 2000; Alachua County | SJRWMD - $0; Preservation 2000 - $0; |

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| | | | | around north side of Orange Lake for Lochloosa Wildlife Conservation Area. Benefits: No increase in surface runoff of pollutants due to land use change. | | | | | | | Alachua County - $0 |
| 3985 | SJRWMD | S117 | Heather Island /Ocklawaha River Project | Land acquired to date 6,262 acres. SJRWMD (4,879.64 acres) with surface water improvements underway. Identified as Phase 2 of the Silver Springs Watershed Forest Legacy project. Exchanged for additional 719.22 acres. | Land Acquisition | Completed | 2016 | 0 | 0 | Not provided | Not provided - $0.00 |
| 4016 | SJRWMD | S114 | Silver Springs Forest | Project acquired 4,900 acres of managed forest land east of Indian | Land Acquisition | Completed | 2016 | 0 | 11,617,000 | DEP; SJRWMD; Marion County | DEP - $2,000,000; SJRWMD - $8,700,000; Marion |

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| | | | | Lake State Forest and west of CR 315. The tract is part of the Heather Island Florida Forever Project and US Forest Service Forest Legacy Project: Silver Springs Watershed (Phase 1). | | | | | | | County - $917,000 |
| 4018 | SJRWMD | S068 | SJRWMD Water Resource Information and Data Collection | SJRWMD has core monitoring consist of discharge monitoring, surface and ground water levels, surface and ground water quality, and biological monitoring. | Monitoring/Data Collection | Ongoing | NA | 0 | 0 | SJRWMD | SJRWMD - $0.00 |
| 4026 | SJRWMD | S067 | SJRWMD Springs Protection Initiative Science (SPIS) | The SJRWMD SPIS was a strategic agency priority comprised of projects, | Study | Completed | 2018 | 0 | 0 | SJRWMD | SJRWMD - $0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | science and management. SJRWMD partnered with the UF on the Collaborative Research Initiative on Sustainability and Protection of Springs (CRISPS), completed in 2018. | | | | | | | |
| 4575 | SJRWMD | S181 | Precision Fertilizer Application | GPS-guided fertilizer application. | Agricultural BMPs | Completed | 2019 | 568 | 35,000 | DEP; SJRWMD; Seiler and Sons LLC | DEP - $13,125; SJRWMD - $13,125; Seiler and Sons LLC - $8,750 |
| 4584 | SJRWMD | S190 | Irrigation Conversion | Convert from overhead to micro-jet irrigation system. | Agricultural BMPs | Completed | 2016 | 204 | 229,590 | SJRWMD; Black Bear Ranch | SJRWMD - $206,631.00; Black Bear Ranch - $22,959.00 |
| 4585 | SJRWMD | S191 | Pump Automation | Pump automation and soil moisture sensors with telemetry. | Agricultural BMPs | Completed | 2019 | 96 | 39,981 | DEP; SJRWMD; Kenneth MacKay | DEP - $13,214; SJRWMD - $13,214; Kenneth MacKay - $13,554 |
| 5497 | SJRWMD | S220 | Precision Fertilizer Application | Purchase of GPS Variable Rate Fertilizer | Agricultural BMPs | Completed | 2019 | 3,205 | 25,550 | DEP; SJRWMD; James C LeFils | DEP - $9,582; SJRWMD - $9,582; James |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Application System. | | | | | | | C LeFils - $6,386 |
| 5498 | SJRWMD | S221 | Biochar Application | Application of Biochar on hay/pasture. | Agricultural BMPs | Completed | 2020 | 3,124 | 59,268 | SJRWMD; London Farm and Cattle | SJRWMD - $44,451.00; London Farm and Cattle - $14,817.00 |
| 5499 | SJRWMD | S222 | Soil Moisture Sensors and Telemetry, GPS Variable Rate Fertilizer Application | Soil moisture sensors with telemetry and variable rate fertilizer application equipment. | Agricultural BMPs | Completed | 2020 | 1,057 | 45,100 | DEP; SJRWMD; Brown's Farm | DEP - $16,913; SJRWMD - $16,913; Brown's Farm - $11,275 |
| 6444 | SJRWMD | S251 | Compost Spreader-London Farm | Purchase and implementation of a compost spreader. | Agricultural BMPs | Completed | 2021 | 1,800 | 30,521 | SJRWMD; DEP; London Farm and Cattle | SJRWMD - $11,445.00; DEP - $11,445.00; London Farm and Cattle - $7,630.00 |
| 6445 | SJRWMD | S252 | Irrigation Conversion and Fertigation-North Caledonia | Convert from micro-spray to drip and add fertigation. | Agricultural BMPs | Completed | 2022 | 156 | 64,227 | DEP; SJRWMD; North Caledonia | DEP - $24,085.00; SJRWMD - $24,085.00; North Caledonia - $16,057.00 |
| 6446 | SJRWMD | S253 | Precision Fertilizer Application Equipment-North Caledonia | Purchase and implementation of precision fertilizer application equipment. | Agricultural BMPs | Completed | 2021 | 1,224 | 41,716 | DEP; SJRWMD; North Caledonia | DEP - $15,644.00; SJRWMD - $15,644.00; North Caledonia - $10,429.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 6447 | SJRWMD | S254 | Precision Fertilizer Application Equipment-Roy Brown | Purchase and implementation of precision fertilizer application equipment. | Agricultural BMPs | Completed | 2021 | 1,350 | 21,436 | DEP; SJRWMD; Roy Brown | DEP - $8,039.00; SJRWMD - $8,039.00; Roy Brown - $5,359.00 |
| 6448 | SJRWMD | S255 | Precision Fertilizer Application Equipment-Yancey's Blueberry Farm | Purchase and implementation of precision fertilizer application equipment. | Agricultural BMPs | Completed | 2021 | 29 | 13,775 | DEP; SJRWMD; Yancey's Blueberries | DEP - $5,166.00; SJRWMD - $5,166.00; Yancey's Blueberries - $3,443.00 |
| 6547 | SJRWMD | S265 | Irrigation Retrofit - Island Grove | Retrofit of drip system on blueberries. | Agricultural BMPs | Completed | 2023 | 2 | 149,403 | Island Grove; DEP; SJRWMD Cost Share | Island Grove - $37,350.70; DEP - $56,026.05; SJRWMD Cost Share - $56,026.05 |
| 6549 | SJRWMD | S264 | Irrigation Retrofit with Pump Automation - Browns Farms | Retrofit of five existing center pivots and adding pump automation on mixed vegetables. | Agricultural BMPs | Completed | 2023 | 11 | 83,500 | DEP; Browns Farm; SJRWMD Cost Share | DEP - $31,312.50; Browns Farm - $20,875.00; SJRWMD Cost Share - $31,312.50 |
| 6953 | SJRWMD | S273 | Cover Crop for Citrus Row Middles - MacKay Farm | This project involves the purchase and implementation of a no till drill and side discharge mower for establishment | Agricultural BMPs | Completed | 2023 | 42 | 48,199 | MacKay Farm; SJRWMD Cost Share; DEP Springs | MacKay Farm - $12,049.01; SJRWMD Cost Share - $18,074.99; DEP Springs - $18,075.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | of cover crop on approximately 65 acres of citrus. | | | | | | | |
| 6955 | SJRWMD | S274 | Precision Fertilizer Equipment - GP Farms LLC | This project involves the purchase and implementation of a liquid fertilizer injection system and dry fertilizer banding equipment on approximately 13 acres of mixed vegetables and fruit trees. | Agricultural BMPs | Completed | 2023 | 30 | 22,626 | GP Farms LLC; SJRWMD Cost Share | GP Farms LLC - $5,656.53; SJRWMD Cost Share - $16,969.60 |
| 7209 | SJRWMD | S277 | Island Grove Irrigation Retrofit 2 | This project involves the installation of an irrigation retrofit on approximately 54 acres of blueberries. | Agricultural BMPs | Underway | 2024 | 39 | 74,900 | SJRWMD Cost Share; Island Grove LLC | SJRWMD Cost Share - $56,175.00; Island Grove LLC - $18,725.00 |
| 5500 | Sumter County | S216 | Aquatic Vegetation Removal at Lake Miona | Maintenance spraying of vegetation around the boat dock. | Aquatic Vegetation Harvesting | Completed | 2020 | 1 | 0 | Sumter County | Sumter County - $0.00 |

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| 5501 | Sumter County | S217 | Sumter County Landscape and Irrigation Ordinance | Ordinance establishing Florida-Friendly Landscaping use in landscape and irrigation design. Pet waste ordinance and landscaping ordinance. 2.5% education credit. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 598 | 0 | Sumter County | Sumter County - $0.00 |
| 5502 | Sumter County | S218 | Street Sweeping of Sumter County Roads | Sweeping of Sumter County maintained roads within the Districts of the Villages. Sweeping of roads with curb and gutter is completed six times per year. | Street Sweeping | Ongoing | NA | 77 | 122,049 | Sumter County | Sumter County - $122,048.64 |
| 5503 | Sumter County | S219 | Sumter County Little Jones Creek Watershed Management Plan | WMP study that include creation and maintenance of a comprehensive geodatabase | Study | Completed | 2021 | 0 | 960,000 | SWFWMD; Sumter County | SWFWMD - $480,000; Sumter County - $480,000 |

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| | | | | for Marion County storm sewer system data, watershed boundaries and hydrologic features. | | | | | | | |
| 7351 | Sumter County | S280 | Onsite Sewage Treatment and Disposal Systems Enhancement Public Outreach | This project will consist of public outreach to inform and educate residents on the importance of upgrading their Onsite Sewage Treatment and Disposal Systems (OSTDS)/Septic Tanks to meet DEP requirements. | Enhanced Public Education | Planned | 2026 | 0 | 0 | Sumter County | Sumter County - $0.00 |
| 7370 | Sumter County | S281 | Sumter County Ordinance for Higher Nitrogen Removal Septic Systems | Sumter County will adopt an ordinance requiring property owners to meet the requirements | Regulations, Ordinances, and Guidelines | Planned | 2026 | 0 | 0 | Sumter County | Sumter County - $0.00 |

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| | | | | set by DEP for higher nitrogen removal septic systems/onsite sewage treatment and disposal systems (OSTDS). | | | | | | | |
| 4177 | SWFWMD | R070 | 2015-2019 Springs Management Plan | District management plan which provides an overview of springs issues and potential actions to improve spring conditions. | Study | Completed | 2014 | 0 | 0 | SWFWMD | SWFWMD - $0.00 |
| 4181 | SWFWMD | R074 | Dunnellon High School Legacy Program | Springs protection educational effort targeting Marion County students. | Education Efforts | Completed | 2007 | 0 | 11,853 | SWFWMD | SWFWMD - $0.00 |
| 4182 | SWFWMD | R075 | Dunnellon Elementary School Rain Barrels | Students and families were educated on the use of rain barrels for irrigation as a way of | Education Efforts | Completed | 2014 | 0 | 2,975 | SWFWMD | SWFWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | conserving water. | | | | | | | |
| 4186 | SWFWMD | R042 | Community Landscape/Irrigation Evaluation Specialist | Consultant evaluated ten locations in five counties, including Marion, and made recommendations for water conservation in community landscapes and irrigation. | Education Efforts | Completed | 2014 | 0 | 6,000 | SWFWMD | SWFWMD - $6,000.00 |
| 4187 | SWFWMD | R035 | Rainbow River Vegetation Education | Funding helped develop DVDs, brochures and posters describing the value of aquatic vegetation to the sustainability of the aquatic community and recommending proper etiquette of river use. | Education Efforts | Completed | 2011 | 0 | 4,800 | SWFWMD | SWFWMD - $4,800.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4188 | SWFWMD | R109 | Micro-irrigation Workshops | Through three educational workshops and distribution of micro-irrigation kits, this project educated homeowners living in 55+ communities about Florida-Friendly Landscaping principles and the benefits of using micro-irrigation. | Education Efforts | Completed | 2011 | 0 | 2,690 | SWFWMD | SWFWMD - $2,690.00 |
| 4189 | SWFWMD | R037 | Soil Analysis by UF | Up to 200 soil analysis tests were conducted as part of the Crystal River/King's Bay/Rainbow River Watershed Education project. | Education Efforts | Completed | 2010 | 0 | 1,400 | SWFWMD | SWFWMD - $1,400.00 |
| 4190 | SWFWMD | R038 | Best Management Practices Awareness Campaign | This project educated equine enthusiasts on the importance of | Education Efforts | Completed | 2010 | 0 | 4,988 | SWFWMD | SWFWMD - $4,988.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | protecting water resources to ensure water quality by utilizing proper manure management, fertilization techniques and water conservation practices. | | | | | | | |
| 4191 | SWFWMD | R039 | FFL Expo | This project encouraged Marion County homeowners to reduce water use by incorporating Florida-Friendly landscaping principles. | Education Efforts | Completed | 2010 | 0 | 4,999 | SWFWMD | SWFWMD - $4,999.00 |
| 4193 | SWFWMD | R041 | Storm Drain Markers | Storm drain markers purchased to conduct storm drain marking events in Marion County. | Education Efforts | Completed | 2014 | 0 | 2,695 | SWFWMD | SWFWMD - $2,695.00 |
| 4195 | SWFWMD | R043 | Rainbow River Springshed Tour | An educational program to inform local | Education Efforts | Completed | 2014 | 0 | 1,500 | SWFWMD | SWFWMD - $1,500.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | officials, homeowners, retail store managers and lawn care providers of how fertilizer impacts the local springshed. | | | | | | | |
| 4196 | SWFWMD | R044 | Aquatic Vegetation Video | A ten-minute video showing the value of submerged and emergent aquatic vegetation in the Rainbow Springs Aquatic Preserve and the impact of recreational use on vegetation. | Education Efforts | Completed | 2014 | 0 | 4,289 | SWFWMD | SWFWMD - $4,289.00 |
| 4197 | SWFWMD | R045 | Florida Friendly Demonstration Garden at Dunnellon Library | Florida-Friendly demonstration garden was installed to educate visitors to the Dunnellon Library about the benefits of Florida-Friendly | Education Efforts | Completed | 2014 | 0 | 4,550 | SWFWMD | SWFWMD - $4,550.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | landscaping principles. | | | | | | | |
| 4198 | SWFWMD | R047 | TDR Program for Watershed Protection | Through a series of five workshops, landowners, developers and citizens were educated about the TDR Program and the Farmland Preservation Area in Northwest Marion County. | Education Efforts | Completed | 2014 | 0 | 3,000 | SWFWMD | SWFWMD - $3,000.00 |
| 4199 | SWFWMD | R048 | FYN Program Color in the Landscape Spring Festival | This Florida-Friendly landscaping festival provided information workshops on practices. | Education Efforts | Completed | 2014 | 0 | 5,000 | SWFWMD | SWFWMD - $5,000.00 |
| 4200 | SWFWMD | R049 | Splash! Grants to Teachers in Marion County | Various water resources grants most projects were directly related to education about | Education Efforts | Completed | 2013 | 0 | 35,240 | SWFWMD | SWFWMD - $35,240.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rainbow Springs. | | | | | | | |
| 4201 | SWFWMD | R040 | Blue Run Aquatic Planting | Approx. 30 volunteers learned how aquatic plants help filter stormwater and participated in planting at Blue Run. | Education Efforts | Completed | 2014 | 0 | 2,000 | SWFWMD | SWFWMD - $2,000.00 |
| 4208 | SWFWMD | R078 | Save Our Springs, Manage the Manure | The project educated the equine community within the Rainbow Springs springshed about the need for BMPs to protect the springs. An informational brochure was created to accompany a promotional item that was passed out at local tack stores. An reduction of | Education Efforts | Completed | 2016 | 0 | 1,600 | SWFWMD | SWFWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4219 | SWFWMD | R032 | Springs Awareness Week Springs Neighborhood Challenge | One-day workshop taught participants about water quality issues specific to Rainbow Springs and Crystal River/Kings Bay. Main focus was proper fertilizer application. | Education Efforts | Completed | 2011 | 0 | 3,000 | SWFWMD | SWFWMD - $3,000.00 |
| 4221 | SWFWMD | R082 | Composting at Animal Stock Facilities | This research project will evaluate the nutrient removal efficiency from composting equine waste stream and will investigate leaching efficiency for manure stockpiling and composting facilities. | Study | Completed | 2019 | 0 | 0 | SWFWMD | SWFWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4249 | SWFWMD | R034 | Marion County Earth Day | One-day event educated Marion County residents about springs and water quality protection. | Education Efforts | Completed | 2011 | 0 | 1,500 | SWFWMD | SWFWMD - $1,500.00 |
| 4268 | SWFWMD | R026 | Restoring Our Springs! Media Campaign | PSA to promote SWFWMD "Restoring Our Springs!" media campaign. Advertising will be in Citrus, Hernando and Marion counties and will direct people to "Join us in the community effort to restore our springs." | Education Efforts | Completed | 2016 | 0 | 35,698 | SWFWMD | SWFWMD - $35,698.00 |
| 4270 | SWFWMD | R020 | P301 Feasibility Phase Wastewater Disposal Treatment Wetlands | Siting and feasibility assessment for treatment wetlands to polish wastewater treatment | Study | Completed | 2016 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | plant (WWTP) effluent. | | | | | | | |
| 4277 | SWFWMD | R027 | Newspaper in Education: Springs in West Central Florida | In-depth look at springs in west-central Florida through Newspaper in Education (Tampa Bay Times). Distributed to middle school students in Citrus, Hernando, and Marion counties as well as Tampa Bay Times and Citrus County Chronicle readers. | Education Efforts | Completed | 2014 | 0 | 16,600 | SWFWMD | SWFWMD - $16,600.00 |
| 4278 | SWFWMD | R028 | Crystal River/King's Bay/Rainbow River PSAs | Messaging on how residents can help protect the quality of local springs through proper application of fertilizer. Social | Education Efforts | Completed | 2011 | 0 | 83,641 | SWFWMD | SWFWMD - $83,641.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | research was used to help develop messages. | | | | | | | |
| 4279 | SWFWMD | R029 | Crystal River/King's Bay/Rainbow River Outreach Coordinator | Educational effort to reduce nutrient loads from landscaping practices and OSTDS systems. | Education Efforts | Completed | 2011 | 0 | 82,600 | SWFWMD | SWFWMD - $82,600.00 |
| 4280 | SWFWMD | R030 | Marion County Springs Festival Sponsorship | Event to educate the public on the protection of Marion County's springs and other water resources. Event alternates between Rainbow Springs State Park and Silver Springs State Park. | Education Efforts | Completed | 2016 | 0 | 25,598 | SWFWMD | SWFWMD - $25,598.00 |
| 4281 | SWFWMD | R031 | Marion County Master Gardeners Spring Festival Sponsorship | Festival supporting Florida-Friendly Landscaping outreach and education | Education Efforts | Completed | 2011 | 0 | 30,750 | SWFWMD | SWFWMD - $30,750.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | including a focus on water conservation, watersheds and water quality. | | | | | | | |
| 4283 | SWFWMD | R024 | Efficient Irrigation Workshops | Community presentations on efficient-irrigation practices. | Education Efforts | Completed | 2005 | 0 | 2,500 | SWFWMD | SWFWMD - $2,500.00 |
| 4299 | SWFWMD | R033 | Get Out and Explore Marion County Springs | Guided canoe trip, hiking trip and water quality demonstration to educate residents about aquatic ecology, karst geology, native and invasive plants, water sampling and human impacts to springs. | Education Efforts | Completed | 2012 | 0 | 1,945 | SWFWMD | SWFWMD - $1,945.00 |
| 6255 | SWFWMD | R133 | Investigation of Iron Stimulation of Filamentous Algal Growth in Rainbow River | The objective of this study is to investigate whether there is a correlation between iron concentrations and | Study | Completed | 2022 | 0 | 48,941 | SWFWMD | SWFWMD - $48,941.40 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | filamentous algae growth in Rainbow River. | | | | | | | |
| 6262 | SWFWMD | R132 | Submerged Aquatic Vegetation Mapping | Submerged aquatic vegetation mapping at designated locations within the river. | Monitoring/Data Collection | Ongoing | NA | 0 | 0 | SWFWMD | SWFWMD - $0.00 |
| 6950 | SWFWMD | R140 | Investigation of Iron Stimulation of Macroalgal Blooms in Rainbow River | The objective of this study is to investigate whether there is a correlation between iron concentrations and filamentous algae blooms in Rainbow River. | Study | Underway | 2025 | 0 | 49,057 | SWFWMD | SWFWMD - $49,056.93 |
| 6951 | SWFWMD | R141 | Marshall Tree Farm | The proposed project will involve the automation of irrigation pumps to offset Upper Floridan aquifer groundwater used for supplemental | Agricultural BMPs | Completed | 2024 | 0 | 0 | SWFWMD; Marshall Tree Farm | SWFWMD - $31,707.00; Marshall Tree Farm - $31,707.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | daily irrigation for 181 acres of field nursery. FARMS project components consist of remotely operated pump automation. | | | | | | | |
| 4552 | Town of Bronson | R114 | Residential Connection to Central Sewer | The project will expand the town's existing wastewater collection and transmission system and eliminate the use of approximately 19 OSTDS at no cost to the homeowners. Original credit of 98 lbs-TN/yr. Project was captured in the updated loading estimates. | OSTDS Phase Out | Completed | 2020 | 0 | 750,000 | CDBG; SRWMD | CDBG - $650,000.00; SRWMD - $100,000 |
| 6633 | Town of Bronson | R136 | Septic Tank Phase Out, Phase 3 | The completed project would remove | OSTDS Phase Out | Planned | 2028 | 2,861 | 18,862,300 | DEP Springs; DEP Water Quality Improvement | DEP Springs - $0.00; DEP Water Quality Improvement |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | approx. 270 septic tanks from service by constructing approx. 26,000 LF of gravity sewer and approx. 34,000 LF of force main to provide wastewater collection system access to the large remaining portion of the Town. | | | | | | Grants Program; SRWMD | Grants Program - $18,862,300.00; SRWMD - $0.00 |
| 6634 | Town of Bronson | R137 | Wastewater Treatment Facility AWT Expansion & Upgrade | Project completion would upgrade and expand various components of the Town of Bronson's (a designated RAO) aged and deteriorating WWTF to higher flow capacity, to meet AWT standards, to | WWTF Upgrade | Planned | 2026 | 0 | 12,408,000 | DEP Springs; DEP Water Quality Improvement Grants Program; SRWMD | DEP Springs - $0.00; DEP Water Quality Improvement Grants Program - $12,408,000.00; SRWMD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | operate more reliably and efficiently, and provide aquifer recharge. | | | | | | | |
| 7035 | Town of Bronson | R143 | Vulnerability Assessment | This vulnerability assessment project will provide a plan forward to identify critical assets that are vulnerable to flooding. The assessment will provide detailed information to mitigate flooding and flood related damages to municipal infrastructure. | Study | Underway | 2025 | 0 | 100,000 | Resilient Florida | Resilient Florida - $100,000.00 |
| 3726 | Town of Lady Lake | S171 | Public Education and Outreach Activities to Protect Groundwater | Outreach program (6 % credit) for residents enhances knowledge and awareness of stormwater management. Includes FYN | Education Efforts | Ongoing | NA | 370 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | program; pet waste ordinances, landscaping, irrigation, and fertilizer; PSAs; pamphlets; website; and inspection program. | | | | | | | |
| 3960 | Town of Lady Lake | S102 | Lady Lake Landscape Requirements | County codes and ordinances require FFL principles to be applied in the design and of landscapes and irrigation systems. Fertilizer application restrictions require 30 % or more slow release nitrogen and restrict frequency to "as needed." | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |
| 3966 | Town of Lady Lake | S104 | Lady Lake Pet Waste Management | County code related to illicit discharges includes provisions | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | requiring removal of per waste. | | | | | | | |
| 3971 | Town of Lady Lake | S082 | Lady Lake NPDES Permit Education and Outreach | Lady Lake contracts services for public education and participation program serving residents Lady Lake. This is a requirement of Phase II MS4 permit. Potential for increasing community participation in BMPs that protect water resources. | Education Efforts | Ongoing | NA | 0 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |
| 3986 | Town of Lady Lake | S103 | Lady Lake Irrigation Schedules | SJRWMD irrigation schedule adopted, specific water conservation measures encouraged, and the seven basic principles of water efficient landscaping | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | are incorporated. Establish minimum standards for landscaped areas with goal of water use efficiency. | | | | | | | |
| 4000 | Town of Lady Lake | S052 | Lady Lake Stormwater System Maintenance | Townwide curb and gutter cleaning and catch basin vacuuming. Removes pollutants and debris before entering storm sewer system. Benchmark frequency for this routine maintenance shall be quarterly or as needed. | BMP Cleanout | Ongoing | NA | 0 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |
| 4001 | Town of Lady Lake | S051 | Skyline Drive Drainage Improvement | Improved stormwater conveyance system. Area covers Skyline Dr. north to Ray St., west to Summit St., and east to High St. | Stormwater System Upgrade | Completed | 2014 | 0 | 1,300,000 | DEO; Town of Lady Lake | DEO - $0.00; Town of Lady Lake - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4028 | Town of Lady Lake | S065 | Lady Lake Street Sweeping | Townwide street sweeping to remove debris. The benchmark frequency is quarterly or as needed. Removal of debris and potential pollutants prevents entry into lakes. The performance benchmark shall be 250 cubic yards of material removed annually. | Street Sweeping | Ongoing | NA | 2 | 0 | Town of Lady Lake | Town of Lady Lake - $0.00 |
| 5939 | Town of Lady Lake | S230 | Stormwater Master Plan | Town-wide determination and prioritization of stormwater improvements. | Study | Completed | 2021 | 0 | 65,000 | LCWA | LCWA - $65,000.00 |
| 6637 | Town of Lady Lake | S267 | Skyline Drive Drainage Improvement, Ph. II | This project is Phase II of constructing an improved stormwater conveyance system for the Town of Lady | Stormwater System Upgrade | Planned | 2025 | 0 | 750,000 | Community Development Block Grant (CDBG); Town of Lady Lake | Community Development Block Grant (CDBG) - $750,000.00; Town of Lady Lake - $50,000.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lake. The areas covered are Morningside Avenue and Longview Avenue, between Skyline Drive and Summit Street. | | | | | | | |
| 7147 | Town of Lady Lake | S271 | WRF Expansion, Ph. 2 | Expansion of the Town of Lady Lake's WWTF to a capacity of 1.2 MGD. | WWTF Capacity Expansion | Underway | 2024 | 0 | 16,442,600 | Town of Lady Lake | Town of Lady Lake - $16,442,600.00 |
| 7151 | Town of Lady Lake | S272 | Hammock Oaks Reserve Reclaimed Water System Imp. | Expand storage to 3.6 million gallons, install a booster pump station, and increase wet-weather disposal capacity. | WWTF Diversion to Reuse | Underway | 2026 | 0 | 6,500,000 | Developer | Developer - $6,500,000.00 |
| 7660 | Town of Lady Lake | S282 | WRF AWT Improvements & Expansion | This project will expand the Town's wastewater treatment capacity from 1.2 MGD to 2.5 MGD and will provide improvements | WWTF Upgrade | Planned | 2030 | 2,053 | 110,000,000 | DEP; Town of Lady Lake | Town of Lady Lake - $0.00; DEP - $0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | that will allow the Town to treat wastewater to Advanced Wastewater Treatment (AWT) standards. | | | | | | | |
| 3773 | Town of McIntosh | S126 | Town of McIntosh Education and Outreach | Town provides information at city hall about Florida Friendly Landscaping, OSTDS maintenance, and agriculture BMPs. 3% FYN credit from Marion County applied. | Education Efforts | Ongoing | NA | 50 | 0 | Town of McIntosh | Town of McIntosh - $0.00 |
| 4591 | Town of Micanopy | S197 | Public Education and Outreach Activities | Outreach program to residents of the City of Micanopy. 3.5% credit based on Alachua County FYN Program and fertilizer ordinance. | Education Efforts | Ongoing | NA | 26 | 0 | Town of Micanopy | Town of Micanopy - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4592 | Town of Reddick | S198 | Public Education and Outreach Activities | Outreach program to residents of the Town of Reddick. 3.0% credit based on Marion County FYN Program. | Education Efforts | Ongoing | NA | 35 | 0 | Town of Reddick | Town of Reddick - $0.00 |
| 3939 | UF-IFAS Extension Marion County | B012 | Implementation of Outreach Program for Small Equine BMP Manual | An outreach program will be developed to implement the Small Equine BMP Manual on non-commercial horse farms in the Silver and Rainbow Springs BMAP areas. | Agricultural BMPs | Planned | TBD | 0 | 0 | Not provided | Not provided - $0.00 |
| 3940 | UF-IFAS Extension Marion County | B011 | Water Quality Education and Equine Farm BMPs | Equine BMPs and Manure Management Education and Outreach Program sponsored by UF-IFAS Extension and Marion County. From 2010 to 2013, program developed | Agricultural BMPs | Ongoing | NA | 0 | 0 | UF-IFAS | UF-IFAS - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | educational materials, held client consultations and held group education events. | | | | | | | |
| 4235 | UF-IFAS Extension Marion County | B011 | Water Quality Education and Equine Farm BMPs | Equine BMPs and Manure Management Education and Outreach Program sponsored by UF-IFAS Extension and Marion County. From 2010 to 2013, program developed educational materials, held client consultations and held group education events. | Agricultural BMPs | Ongoing | NA | 0 | 0 | UF-IFAS | UF-IFAS - $0.00 |
| 5911 | UF-IFAS Extension Marion County | B057 | Exploring Manure Management BMPs Through Composting | Educational outreach project designed to be a demonstration site for | Enhanced Public Education | Completed | 2021 | 0 | 4,000 | FDACS | FDACS - $4,000.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | continued use to encourage equine owners to adopt manure management BMPS. | | | | | | | |
| 5925 | UF-IFAS Extension Marion County | B057 | Exploring Manure Management BMPs Through Composting | Educational outreach project designed to be a demonstration site for continued use to encourage equine owners to adopt manure management BMPS. | Enhanced Public Education | Completed | 2021 | 0 | 4,000 | FDACS | FDACS - $4,000.00 |
| 6430 | UF-IFAS Extension Marion County | R124 | Establishment of Rhizoma Perennial Peanut into Bahiagrass Pasture | A research project to determine effects of establishing perennial peanut into existing Bahiagrass. This project aims to identify environmental improvements based on the introduced | Study | Completed | 2023 | 0 | 11,000 | FDACS | FDACS - $9,317.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | legume and animal benefits from the peanut. | | | | | | | |
| 6431 | UF-IFAS Extension Marion County | R125 | Private Well and Septic System Webinar Series | A webinar series that taught residents proper well and septic management practices. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |
| 6433 | UF-IFAS Extension Marion County | R130 | Irrigation Orientation | A webinar series that taught urban residents proper irrigation practices. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |
| 6434 | UF-IFAS Extension Marion County | R131 | Central Florida Ag BMP Working Group | A working group that shares and discusses the research and outreach of Ag BMP implementation. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |
| 6453 | UF-IFAS Extension Marion County | S241 | Establishment of Rhizoma Perennial Peanut into Bahiagrass Pasture | A research project to determine effects of establishing perennial peanut into existing Bahiagrass. | Study | Completed | 2023 | 0 | 11,000 | FDACS | FDACS - $9,317.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | This project aims to identify environmental improvements based on the introduced legume and animal benefits from the peanut. | | | | | | | |
| 6454 | UF-IFAS Extension Marion County | S242 | Private Well and Septic System Webinar Series | A webinar series that taught residents proper well and septic management practices. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |
| 6455 | UF-IFAS Extension Marion County | S249 | Irrigation Orientation | A webinar series that taught urban residents proper irrigation practices. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |
| 6456 | UF-IFAS Extension Marion County | S250 | Central Florida Ag BMP Working Group | A working group that shares and discuses the research and outreach of Ag BMP implementation. | Enhanced Public Education | Completed | 2021 | 0 | 0 | Not provided | Not provided - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6734 | UF-IFAS Extension Marion County | R134 | Private Well and Septic System Webinar Series | A webinar series that taught residents proper well and septic management practices. This is a statewide project that covers more than one BMAP. (The lead entity is UF-IFAS) | Enhanced Public Education | Completed | 2022 | 0 | 0 | Not provided | Not provided - $0.00 |
| 3724 | Villages Center CDD | S173 | Public Education and Outreach Activities | Outreach program (1 % credit) to residents of The Villages that enhances knowledge and awareness of stormwater management. Includes PSAs; pamphlets; website; and inspection program. | Education Efforts | Ongoing | NA | 2,878 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 3760 | Villages Center CDD | S139 | CSU Waste Water Treatment Plant - Anaerobic Denitrification | WWTP includes an Anoxic Basin for denitrification of nitrate | WWTF Nutrient Reduction | Completed | 2017 | 0 | 0 | CSU | CSU - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (NO3) which reduces NO3 discharge in the WWTP effluent. | | | | | | | |
| 3906 | Villages Center CDD | S002 | Stormwater Management Policy Adoption | Adopted policy that prohibits illicit discharges for VCDD numbers 1-10. | Regulations, Ordinances, and Guidelines | Ongoing | NA | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 3959 | Villages Center CDD | S076 | Stormwater Management - Amenity Bill Inserts | Amenity bill inserts to address what residents can do to reduce impacts to stormwater. | Education Efforts | Ongoing | NA | 0 | 0 | Village Center CDD; North Sumter County Utility Dependent District | Village Center CDD - $0.00; North Sumter County Utility Dependent District - $0.00 |
| 3968 | Villages Center CDD | S105 | VCSA WWTP - SCADA | Supervisory control and data acquisition (SCADA) installation and operation at the VCSA plant and collection system lift stations. | WWTF Upgrade | Completed | 2015 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 3972 | Villages Center CDD | S081 | Stormwater Pollution on Website | Section of district website for residents dedicated to providing education and | Education Efforts | Ongoing | NA | 0 | 0 | Sumter Landing CDD; Village Center CDD | Sumter Landing CDD - $0.00; Village Center CDD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | links on stormwater pollution. | | | | | | | |
| 3973 | Villages Center CDD | S080 | Illicit Discharge Awareness Notifications | Provide illicit discharge awareness notifications and educational material to area businesses to make them aware of hazards associated with illicit discharges and improper disposal of waste. | Education Efforts | Ongoing | NA | 0 | 0 | Village Center CDD; North Sumter County Utility Dependent District | Village Center CDD - $0.00; North Sumter County Utility Dependent District - $0.00 |
| 3974 | Villages Center CDD | S079 | Stormwater Management - CDD School/Hometown Social | Monthly public educational meeting with residents. | Education Efforts | Ongoing | NA | 0 | 0 | North Sumter County Utility Dependent District; CSU; Sumter Water Conservation Authority; Village Center CDD | North Sumter County Utility Dependent District - $0.00; CSU - $0.00; Sumter Water Conservation Authority - $0.00; Village Center CDD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3975 | Villages Center CDD | S078 | Stormwater Management - Public Service Newspaper Column | Created a public service newspaper column that is placed in the Villages newspaper to create awareness of the effects of illicit discharges and illegal disposal. | Education Efforts | Ongoing | NA | 0 | 0 | The Villages | The Villages - $0.00 |
| 3976 | Villages Center CDD | S077 | Stormwater Management - Telephone Book Aid | Villages public service telephone book aid explaining the purpose of a stormwater program and how to participate in stormwater activities. | Education Efforts | Ongoing | NA | 0 | 0 | North Sumter County Utility Dependent District; Village Center CDD | North Sumter County Utility Dependent District - $0.00; Village Center CDD - $0.00 |
| 3994 | Villages Center CDD | S108 | CSU WWTP - SCADA | SCADA Installation and operation at the CSU plant and collection system lift stations. | WWTF Upgrade | Completed | 2015 | 0 | 0 | CSU | CSU - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3995 | Villages Center CDD | S107 | NSU WWTP - SCADA | SCADA Installation and operation at the NSU plant and collection system lift stations. | WWTF Upgrade | Completed | 2015 | 0 | 0 | North Sumter County Utility Dependent District | North Sumter County Utility Dependent District - $0.00 |
| 3996 | Villages Center CDD | S106 | LSSA Waste WWTP - SCADA | SCADA Installation and operation at the LSSA plant and collection system lift stations. | WWTF Upgrade | Completed | 2015 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 3998 | Villages Center CDD | S044 | LSSA WWTP Reuse | Public access reuse system provides reclaimed water for irrigation of golf courses. | WWTF Diversion to Reuse | Completed | 2012 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 4002 | Villages Center CDD | S050 | Stormwater System Inspections | Routine stormwater system inspections, cleaning, and maintenance performed as needed. | Stormwater System Rehabilitation | Completed | 2000 | 0 | 0 | Sumter Landing CDD; Village Center CDD | Sumter Landing CDD - $0.00; Village Center CDD - $0.00 |
| 4003 | Villages Center CDD | S049 | Pond Maintenance | Pond maintenance to ensure optimal pollutant removal and | Stormwater System Rehabilitation | Completed | 2000 | 0 | 0 | Sumter Landing CDD; Village Center CCD | Sumter Landing CDD - $0.00; Village Center CCD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | verify performance is at design criteria by monthly checks and treating nuisance species such as algae, grasses, hydrilla, spike rush, duckweed, cattails, etc. as necessary. | | | | | | | |
| 4004 | Villages Center CDD | S048 | Staff Training | Train staff and certain subcontractors to aid in identification of illicit discharges as well as to reduce/eliminate illicit discharges and improper disposal of waste internally. | Education Efforts | Ongoing | NA | 0 | 0 | Village Center CDD; Sumter Landing CDD; North Sumter County Utility Dependent District | Village Center CDD - $0.00; Sumter Landing CDD - $0.00; North Sumter County Utility Dependent District - $0.00 |
| 4007 | Villages Center CDD | S045 | NSU WWTP Reuse | Public access reuse system provides reclaimed water for | WWTF Diversion to Reuse | Completed | 2012 | 0 | 0 | North Sumter County Utility Dependent District | North Sumter County Utility Dependent District - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | irrigation of golf courses. | | | | | | | |
| 4009 | Villages Center CDD | S043 | VCSA WWTP Reuse | Public access reuse system provides reclaimed water for irrigation of golf courses and roadways. | WWTF Diversion to Reuse | Completed | 2012 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 4010 | Villages Center CDD | S041 | North Sumter Utilities (NSU) WWTP Anaerobic Denitrification | WWTP includes an Anoxic Basin for denitrification of NO3 which reduces NO3 discharge in the WWTP effluent. | WWTF Nutrient Reduction | Completed | 2012 | 0 | 0 | North Sumter County Utility Dependent District | North Sumter County Utility Dependent District - $0.00 |
| 4011 | Villages Center CDD | S039 | Village Center Service Area (VCSA) WWTP Anaerobic Denitrification | WWTP includes an Anoxic Basin for denitrification of NO3 which reduces NO3 discharge in the WWTP effluent. | WWTF Nutrient Reduction | Completed | 2012 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 4017 | Villages Center CDD | S046 | CSU WWTP Reuse | Public access reuse system provides reclaimed water for | WWTF Diversion to Reuse | Completed | 2013 | 0 | 0 | CSU | CSU - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | irrigation of golf courses. | | | | | | | |
| 4021 | Villages Center CDD | S040 | Little Sumter Service (LSSA) WWTP Anaerobic Denitrification | WWTP includes an Anoxic Basin for denitrification of NO3 which reduces NO3 discharge in the WWTP effluent. | WWTF Nutrient Reduction | Completed | 2012 | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 4029 | Villages Center CDD | S058 | Sanitary Sewer Cleaning | Cleaning of 10 % of collection system per year. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 0 | Village Center CDD; North Sumter County Utility Dependent District; CSU | Village Center CDD - $0.00; North Sumter County Utility Dependent District - $0.00; CSU - $0.00 |
| 4030 | Villages Center CDD | S063 | Street Sweeping | All shopping centers and all 3 downtown areas anywhere from 3 times per week to quarterly, depending on the location. | Street Sweeping | Ongoing | NA | 0 | 0 | Village Center CDD | Village Center CDD - $0.00 |
| 4031 | Villages Center CDD | S062 | Sanitary Sewer Replacement | VCSA sanitary sewer replacement. | Sanitary Sewer and Wastewater Treatment Facility | Completed | 2016 | 0 | 250,000 | Village Center CDD | Village Center CDD - $0.00 |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (WWTF) Maintenance | | | | | | |
| 4033 | Villages Center CDD | S061 | Lift Station Rehab | VCSA List Station Nos. 16 and 33 replace risers and recoat wet well. LSSA List Station No. 16 replace risers and recoat wet well. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Completed | 2016 | 0 | 118,000 | Village Center CDD | Village Center CDD - $0.00 |
| 4035 | Villages Center CDD | S059 | Lift Station Rehab | Village Center Service Area (VCSA) and Little Sumter Service Area (LSSA) Lift Station rehabilitation. | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 2,500,000 | North Sumter County Utility Dependent District; Village Center CDD; Little Sumter Service Area; CSU; Sumter Water Conservation Authority | North Sumter County Utility Dependent District - $0.00; Village Center CDD - $0.00; Little Sumter Service Area - $0.00; CSU - $0.00; Sumter Water Conservation Authority - $0.00 |
| 4037 | Villages Center CDD | S057 | Sanitary Sewer Repairs | Inspection of main pipelines and manholes and timely repair of sewer and | Sanitary Sewer and Wastewater Treatment Facility (WWTF) Maintenance | Ongoing | NA | 0 | 0 | North Sumter County Utility Dependent District; Village Center CDD; CSU | North Sumter County Utility Dependent District - $0.00; Village Center CDD - |

| ProjID | Lead Entity | Project Number | Project Name | Project Description | Project Type | Project Status | Estimated Completion Date | Estimated Nitrogen Load Reduction (lbs/yr) | Cost Estimate | Funding Source | Funding Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | service line breaks. | | | | | | | $0.00; CSU - $0.00 |
| 7801 | Villages Center CDD | S284 | OSTDS Adjustment | Removal of the OSTDS allocations assigned during the 2025 BMAP update. All parcels are connected to sewer service. | BMP Missing from Model | Completed | 2025 | 478 | 0 | NA | NA - $0.00 |

# Appendix C. Planning for Additional Management Strategies

Responsible entities must submit a sufficient list of additional projects and management strategies to DEP no later than January 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 list of eligible management strategies to meet their next 5-year milestone reductions, specific project identification efforts are required to be submitted by January 14, 2026. Any such project identification efforts must define the purpose of and a timeline to identify sufficient projects to meet the upcoming milestone. The project description and estimated completion date for any such project identification effort must be provided and reflect the urgency of defining, funding, and implementing projects to meet the upcoming and future BMAP 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. Only those entities that provide sufficient project identification efforts will be deemed as possessing a defined compliance schedule. Those entities without an adequate project list nor a defined compliance schedule to meet their upcoming 5-year milestone may be subject to enforcement actions. Examples of project identification efforts include the following:

- Planning and identifying water quality projects and related costs and schedules in specific plans.
  - Feasibility studies (e.g., stormwater feasibility studies or wastewater feasibility studies).
  - Flood mitigation plans with nutrient management components.
  - Basinwide water quality management plans.
  - Nutrient management plans.
- Applying for external project funding.
- Developing interagency/interdepartmental agreements or MOUs for collaboration on nutrient reduction projects that cross jurisdictional or administrative boundaries.
- Updating future growth considerations in local comprehensive plans, land development reviews, and audits of relevant codes and ordinances
- Updating existing remediation plans.
- Monitoring water quality in support of project planning and implementation.
- Researching innovative technologies.

# Appendix D. Silver and Rainbow PFA Reports

During the development of the 2018 Silver and Rainbow BMAPs, the PFAs were defined as the area of the basin where the Floridan aquifer is generally most vulnerable to pollutant inputs and where there is a known connectivity between groundwater pathways and an OFS. As required by the Florida Springs and Aquifer Protection Act, DEP defined PFA which is incorporated by reference into this BMAP. Information on this and other springshed PFAs are available at the following link: https://floridadep.gov/dear/water-quality-restoration/content/bmap-public-meetings.

# Appendix E. OSTDS Remediation Plan

Section 373.807, F.S., requires that if, during the development of a BMAP for an OFS, DEP identifies OSTDS as contributors of at least 20% of nonpoint source nitrogen pollution in a PFA or if DEP determines remediation is necessary to achieve the TMDL, the BMAP must include an OSTDS remediation plan. Based on the Silver and Rainbow NSILT estimates and GIS coverages, OSTDS contribute approximately 32% of the pollutant loading in the BMAP. Irrespective of the percent contribution from OSTDS, DEP has determined that an OSTDS remediation plan is necessary to achieve the TMDLs and to limit the increase in nitrogen loads from future growth.

Permitting for OSTDS is implemented either by DEP, delegated counties, or by County Health Departments under an interagency agreement. To aid in implementation, the DEP Map Direct webpage includes a detailed downloadable springs PFA boundary shapefile for planning purposes. DEP also maintains on its website an interactive map of the PFA and BMAP boundaries; the map can be easily searched for specific street address locations (currently available at https://floridadep.gov/BMAPs-ARP-OSTDS).

## E.1 Plan Elements

### *E.1.1 Installation of New OSTDS*

Beginning July 1, 2023, sections 373.811 and 403.067, F.S., prohibit new OSTDS serving lots of one acre or less where central sewer is available. Within the BMAP area, if central sewer is unavailable on any lot size, then the owner must install a DEP-approved enhanced nutrient-reducing OSTDS that achieves 65% nitrogen reduction, or other wastewater system that achieves 65% reduction. The OSTDS remediation plan pursuant to section 373.807, F.S., was updated in this BMAP iteration to include this additional requirement for new systems.

Installation of new OSTDS is permitted pursuant to Chapter 62-6, F.A.C.., and includes not only systems installed on a property where one has not previously been installed, but also systems installed to replace illegal systems, systems installed in addition to existing systems, and other new systems. Permitting requirements with respect to the definition of "new" or " one acre or less" will be followed for this remediation plan. To meet the enhanced nitrogen treatment requirement, the system must be a DEP-approved enhanced nutrient reducing system meeting 65% nitrogen reduction.

### *E.1.2 Modification or Repair of Existing OSTDS*

The OSTDS remediation plan must provide loading reductions consistent with achieving the TMDL within 20 years of plan adoption (see subparagraph 373.807(1)(b)8., F.S.). This plan therefore establishes the following remediation policy for existing systems, based on (a) the potential for reducing nitrogen loads by converting existing OSTDS to enhanced nitrogen removing systems or by connecting homes to central sewer, (b) the total amount of nitrogen load that must be reduced to achieve the TMDL, and (c) the

relative contribution of nitrogen load from existing OSTDS.

The remediation policy for existing systems in the Silver and Rainbow BMAP applies to all existing OSTDS within the BMAP. The remediation policy for existing systems is effective upon BMAP adoption. Upon the need for any construction permit under chapter 62-6, F.A.C. to repair, modify, or replace an existing OSTDS affected by the remediation policy, a DEP-approved enhanced nutrient reducing system meeting 65 percent nitrogen reduction must be installed unless the OSTDS permit applicant provides documentation that sewer connection to the property is planned and funded, and structures on the lot will be connected.

For existing OSTDS, the owner must connect to sewer within 365 days of written notification by the utility that connection to its sewer line is available. A utility is statutorily required (section 381.00655, F.S.) to provide written notice to existing OSTDS owners regarding the availability of sewer lines for connection. Additionally, existing OSTDS needing repair or modification must connect to available sewer lines within 90 days of notification by DEP.

To facilitate an inventory of noncompliant properties, by February 2, 2026, and every two years thereafter, each utility with sewer lines in the BMAP shall provide DEP a list of properties with existing OSTDS where sewer is available but has not connected. For each identified property, include the date(s) which the utility provided written notice to the owners of the availability of sewer.

### *E.1.3 Achieving Necessary Load Reductions*

All conventional OSTDS in areas subject to the remediation policy for existing systems are required to meet enhanced nutrient reducing OSTDS requirements, install other wastewater systems that can achieve at least 65% reduction, or connect to central sewer no later than 20 years after BMAP adoption.

### *E.1.4 Other Plan Elements*

Section 373.807, F.S., also requires that the OSTDS remediation plan contain the following elements.

- An evaluation of credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and spring systems. (See **Section E.2**.)
- Options for repair, upgrade, replacement, drain field modification, the addition of effective nitrogen-reducing features, connection to a central sewer system, or other action. (See **Section E.3**.)
- A public education plan to provide area residents with reliable, understandable information about OSTDS and springs. (See **Section E.4**.)
- Cost-effective and financially feasible projects necessary to reduce the nutrient

impacts from OSTDS. (See **Section 2** and **Appendix B**.)

- A priority ranking for each project for funding contingent on appropriations in the General Appropriations Act. (See **Section 2** and **Appendix B**.)

Section 373.807, F.S., defines an OSTDS as a system that contains a standard subsurface, filled, or mound drain field system; an aerobic treatment unit; a graywater system tank; a laundry wastewater system tank; a septic tank; a grease interceptor; a pump tank; a solids or effluent pump; a waterless, incinerating, or organic waste–composting toilet; or a sanitary pit privy that is installed or proposed to be installed beyond the building sewer on land of the owner or on other land on which the owner has the legal right to install such a system. The term includes any item placed within, or intended to be used as a part of or in conjunction with, the system. The term does not include package sewage treatment facilities and other treatment works regulated under Chapter 403, F.S.

## E.2 Collection and Evaluation of Credible Scientific Information

As discussed in **Section 2,** DEP developed the Silver and Rainbow NSILT, a planning tool that provides estimates of nitrogen loading to groundwater based on best available scientific data for a particular geographic area. The NSILT results were peer reviewed by SJRWMD and FDACS. Additional technical support information concerning the NSILT can be found in **Appendix F**.

DEP developed calculation methods to estimate nitrogen reductions associated with OSTDS enhancement and replacement projects, WWTF projects, and stormwater projects.

Monitoring and research:

- OFS source marker evaluation includes wells in Silver Springs and Upper Silver River BMAP area.
- Research and develop advanced septic systems.
- Wekiva septic tank research activities.

Completed projects:

- Florida Onsite Sewage Nitrogen Reduction Strategies Study.
- Springs Protection Initiative Collaborative Research Initiative on Sustainability and Protection of Springs (CRISPS) for Silver Springs.
- 2015–2019 springs management plan includes Rainbow Springs Group and Rainbow River BMAP area.

- Groundwater nitrate concentration modeling in Silver Springs and Upper Silver River BMAP area as part of Springs Protection Initiative.

- Long Term Performance and Operational Experience for Non-Proprietary Passive Nitrogen Reducing Onsite Sewage Treatment And Disposal Systems (https://floridadep.gov/water/onsite-sewage/content/onsite-sewage-research-reports)

Ongoing projects:

- Periodic review and evaluation of groundwater quality data from public water supply systems for nitrate levels and spatial distribution of nitrate.

- Groundwater quality monitoring for BMAP assessment.

- Septic tank and well elimination program.

- Monitoring of in-ground nitrogen reducing biofilters.

Proposed projects:

- Performance monitoring on advanced OSTDS in Florida.

- Nutrient source loading identification.

## E.3 Remediation Options

As required by Florida law, this OSTDS remediation plan identifies remediation options for existing OSTDS, including repair, upgrade, replacement, drain field modification, the addition of effective nitrogen-reducing features, connection to a central sewer system, or other action. More simply, remediation options can be classified as enhancement or replacement. DEP's Onsite Sewage Program maintains a list of approved nitrogen-reducing systems on its website https://floridadep.gov/water/onsite-sewage/content/permitting-enhanced-nutrient-reducing-onsite-sewage-treatment-and.

The NSILT estimates that OSTDS contribute approximately 32% of the pollutant loading to groundwater in the Silver and Rainbow BMAP. **Table E-1** lists the number of existing OSTDS in the BMAP and the estimated nitrogen reductions associated with enhancement or connection to sewer. **Figure E-1** shows the areas where OSTDS are located.

**Table E-1. Estimated reduction credits for OSTDS enhancement or sewer**

| Recharge Area | OSTDS Parcels | Credit for Enhancement (lbs/yr) | Credit for Sewer (lbs/yr) |
|---|---|---|---|
| **High** | 64,664 | 489,602 | 930,245 |
| **Medium** | 32,621 | 136,876 | 260,315 |

| Recharge Area | OSTDS Parcels | Credit for Enhancement (lbs/yr) | Credit for Sewer (lbs/yr) |
|---|---|---|---|
| **Low** | 6,675 | 6,654 | 10,726 |
| **Total** | **103,960** | **633,132** | **1,201,286** |

Local governments can develop programs to help fund the additional costs required to upgrade existing OSTDS to include nutrient reducing features. The funding program will be designed to prioritize OSTDS where it is most economical and efficient to add nutrient reducing features (i.e., systems needing a permit for a repair or modification, within the PFA, and on lots of one acre or less). Local governments can apply for competitive grant funding from DEP programs, which are available at ProtectingFloridaTogether.com.

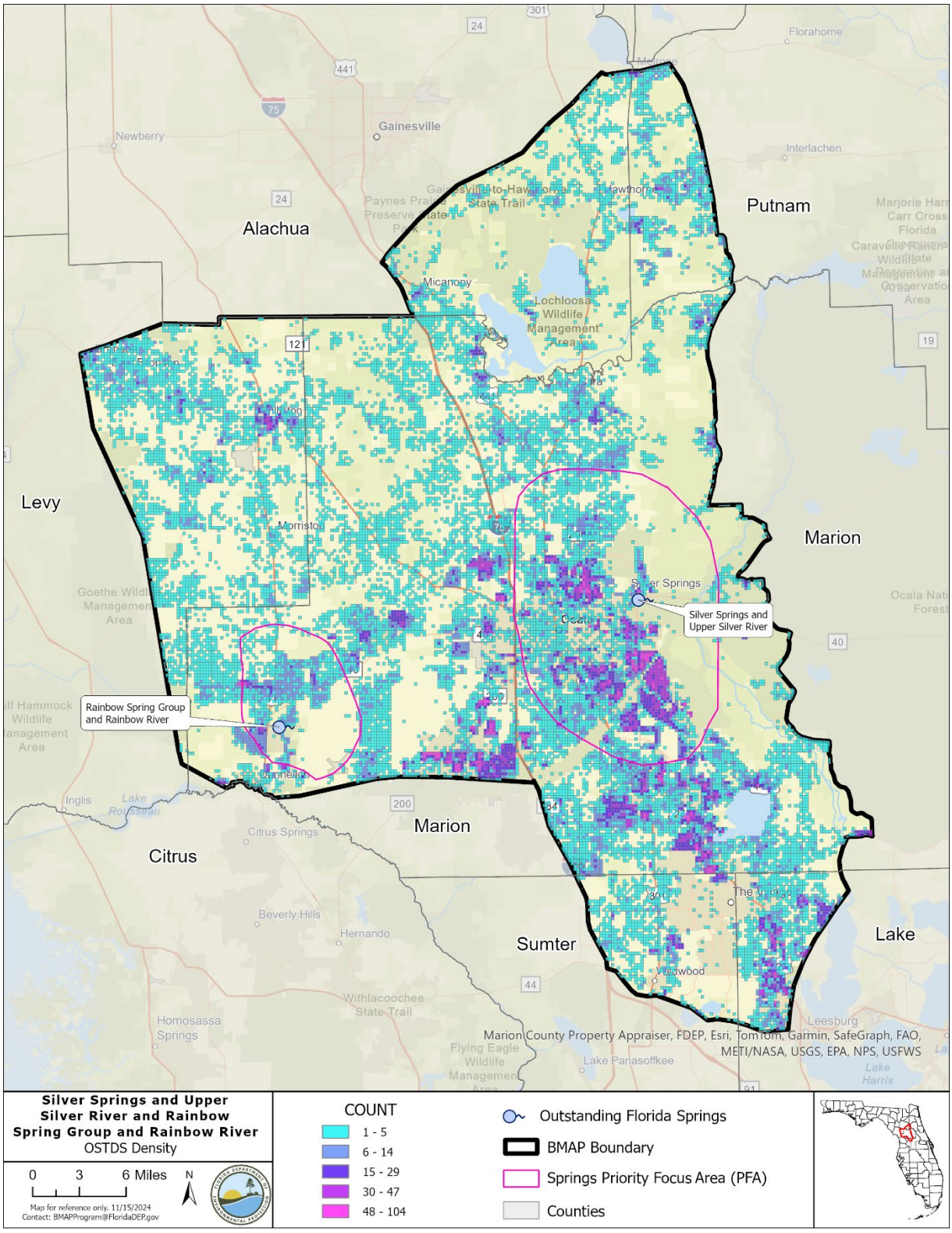


**Figure E-1. Locations of OSTDS in the Silver and Rainbow BMAP**

## E.4 Public Education Plan

DEP will develop and disseminate educational material focused on homeowners and guidance for builders and septic system contractors. The materials will identify the need for enhanced nitrogen reducing OSTDS along with the requirements for installing nitrogen reducing technologies under this OSTDS remediation plan. DEP will coordinate with industry groups such as Florida Home Builders Association and Florida Onsite Wastewater Association (FOWA).

DEP's Onsite Sewage Program's website provides information on the following:

- The requirements for nitrogen-reducing systems for springs protection and BMAPs (https://floridadep.gov/water/onsite-sewage/content/springs-protection-and-basin-management-action-plans-bmaps).

- Information for septic system owners and buyers (https://floridadep.gov/water/onsite-sewage/content/information-septic-system-owners-and-buyers).

- Information for septic tank contractor (https://floridadep.gov/water/onsite-sewage/content/septic-tank-contractor-registration).

UF-IFAS has developed a website that includes frequently asked questions, and extensive information for septic system owners and local governments (https://water.ifas.ufl.edu/septic-systems/your-septic-system/).

# Appendix F. Technical Support Information

This appendix is being shared as a separate file until the BMAP documents are finalized.

# Appendix G: Wastewater Facilities

DEP has determined that certain WWTFs providing reclaimed water for the purpose of commercial or residential irrigation or that is otherwise being land applied within this BMAP area are causing or contributing to the nutrient impairments being addressed in this BMAP. Based on DEP's determination, the facilities listed below are subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S.

The facilities listed in **Table G-1**. have 10 years from BMAP adoption to meet the applicable AWT standards. This requirement does not prevent the department from requiring an alternative treatment standard, if the department determines the alternative standard is necessary to achieve the TMDLs or applicable water quality criteria.

Within a year of BMAP adoption, the facilities listed in **Table G-2.** must provide DEP with a plan for achieving a higher level of treatment through either connection to sewer where available, or installation of a DEP-approved enhanced nutrient-reducing OSTDS that achieves 65% nitrogen reduction, or other wastewater system that achieves 65% reduction.

For facilities that did not have adequate information to complete an evaluation or where a change occurs to the facility's application of reclaimed water after the initial evaluation (e.g., an increase in facility capacity or change in location of reclaimed water application), the department will evaluate the land application of reclaimed water as more information becomes available pursuant to section 403.086, F.S.

**Table G-1. Wastewater facilities subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S.**

| Facility Name | Permit Number |
|---|---|
| City of Ocala -WRF #2 Site | FLA010680 |
| City of Ocala WRF #3 | FLA190268 |
| North Sumter Utility WRF | FLA281581 |
| Little Sumter Utility Co WWTF | FLA017133 |
| Central Sumter Utility WRF | FLA499951 |
| Wildwood WRF | FLA013497 |
| Silver Springs Shores | FLA296651 |
| Villages WWTF | FLA010555 |
| Oak Run | FLA012697 |
| On Top of the World | FLA012683 |
| Marion Correctional Institute | FLA010789 |
| Town of Lady Lake | FLA399761 |
| City of Belleview | FLA010678 |
| City of Williston | FLA012612 |
| Stonecrest WWTF | FLA010741 |
| City of Dunnellon | FLA126594 |
| Rainbow Springs Fifth Replat | FLA012693 |
| Marion County- Northwest Regional | FLA272060 |
| Rolling Greens MHP | FLA010757 |
| City of Hawthorne | FLA011291 |
| Camp McConnell YMCA | FLA011293 |
| Marion Landing | FLA012699 |
| Water Oak Country Club Estates | FLA010529 |
| Tradewinds WWTF | FLA010699 |
| Spanish Oaks WWTF | FLA010744 |
| Landfair | FLA010722 |
| Valencia Terrace | FLA010599 |
| Golden Hills MHP | FLA012696 |
| Oak Tree Village and Campground | FLA012676 |
| Ocala East Villas WWTF | FLA010725 |

| Facility Name | Permit Number |
|---|---|
| Petro PSC Truck Stop | FLA016154 |
| Recreation Plantation RV Park | FLA010593 |
| Crownwood | FLA012680 |
| Saddle Oak Club MHC WWTF | FLA012694 |
| Fairfield Village of Ocala | FLA012706 |
| Oak Bend Community | FLA010693 |
| Dogwood Acres MHP | FLA012663 |
| Grand Lake RV Resort WWTF | FLA010770 |
| Cedar Hills WWTF | FLA010771 |
| Phoenix Houses of Florida | FLA010698 |
| Plantation Landing WWTF | FLA017026 |
| Howard Johnson Inn | FLA012670 |
| Westwood MHP | FLA012685 |
| Classic Oaks Village | FLA012665 |

**Table G-2. Wastewater facilities subject to the nitrogen and phosphorus limits set forth in section 403.086, F.S.**

| Facility Name | Permit Number |
|---|---|
| Sweetwater Oaks MHP | FLA012705 |
| Victory MHP LLC | FLA010692 |
| Reddick RV | FLA012660 |

# Appendix H: Golf Course NMPs

The fertilizers used to maintain golf courses can be significant sources of nutrients in watersheds that are impaired for nitrogen and/or phosphorous. To achieve the TMDL target(s), all nutrient sources need to reduce their nutrient loading. Similar to other sources, golf courses are required to implement management strategies to mitigate their nutrient loading and be in compliance with the BMAP. Florida BMAPs are adopted by Secretarial Order and therefore legally enforceable by the DEP. Requirements for golf courses located in BMAPs are below.

1. **Golf Course BMP Certification, Implementation, and Reporting.**
   a. In areas with an adopted BMAP, all golf courses must implement the BMPs described in DEP's golf course BMP manual, *Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses* (DEP, 2021).
   b. At minimum, the superintendent for each golf course must obtain and maintain certification through the UF-IFAS Florida Golf Courses Best Management Practices Program. It is highly recommended that course managers and landscape maintenance staff also participate in the certification program to ensure proper BMP implementation and understanding of nutrient-related water quality issues and the role of golf courses in water quality restoration and protection. By no later than January 14, 2026, the golf course superintendents must confirm to DEP whether they have completed the certification. Certification must be completed by December 31, 2026. This certification must be renewed every four years.
   c. Beginning in 2026 a nutrient application record (fertilizer, reuse, etc.) must be submitted each year during the BMAP statewide annual reporting process.
   d. Fertilizer rates should be no greater than the UF/IFAS recommendations to help prevent leaching. This includes nutrients from reuse or any other source applied. If a facility uses fertilizer rates greater than those in the BMP manual they are required to conduct water quality monitoring prescribed by DEP or WMD that demonstrates compliance with water quality standards (**Table H-1**).
   e. Example golf course BMPs applicable to protecting water quality are listed below.
      - Use slow release fertilizer to prevent volatilization.
      - Use of lined media in stormwater features.
      - Use of denitrification walls.
      - Use of rain gardens.
      - Use of tree boxes.
      - Use of bioswales.

**Table H-1. Nutrient ranges for warm-season turfgrass species**

Note: For more information refer to the *Best Management Practices for the Enhancement of Environmental Quality on Florida Golf Courses* (DEP, 2021).

| Nutrient | Bermudagrass (%) | St. Augustinegrass (%) | Seashore Paspalum (%) | Centipedegrass (%) | Zoysia (%) |
|---|---|---|---|---|---|
| **N** | 1.95 - 4.63 | 1.53 - 2.41 | 2.80 -3.50 | 1.5 - 2.9 | 2.04 - 2.36 |
| **P** | 0.15 - 0.43 | 0.30 - 0.55 | 0.30 - 60 | 0.18 - 0.26 | 0.19 - 0.22 |
| **Potassium (K)** | 0.43 - 1.28 | 1.1 - 2.25 | 2.00 - 4.00 | 1.12 - 2.50 | 1.05 - 1.27 |
| **Calcium (Ca)** | 0.15 - 0.63 | 0.24 - 0.54 | 0.25 - 1.50 | 0.50 - 1.15 | 0.44 - 0.56 |
| **Magnesium (Mg)** | 0.04 - 0.10 | 0.20 - 0.46 | 0.25 - 0.60 | 0.12 - 0.21 | 0.13 - 0.15 |
| **Sulfur (S)** | 0.07 - 0.02 | 0.15 - 0.48 | 0.20 - 0.60 | 0.20 - 0.38 | 0.32 - 0.37 |
| **Sodium (Na)** | 0.05 - 0.17 | 0.00 - 0.17 | - | - | - |

2. **All golf courses located within a BMAP are required to submit a nutrient management plan (NMP) that is designed to, while maintaining even plant growth, prevent nutrient losses to the Floridan aquifer and surrounding surface**

**waters. A draft NMP must be submitted to DEP within one year of BMAP adoption and a final document is due two years after adoption. The NMP must include the following:**

***a. A brief description of the goals of the nutrient management plan.***

This should be a paragraph that describes the goals of your NMP. Talk about how you are managing for high quality turf and water quality. Remember your goal is to protect water quality while maintaining the golf course in premium condition.

***b. Identification of areas where nutrient applications will be made including greens, tees, fairways and roughs.***

Discuss the areas of the course where you plan to use fertilizer, and why. Also discuss the areas that do not need or get any fertilizer applications.

Include a GIS shapefile identifying all of these areas.

Complete the table(s) detailing your nutrient application practices.

**Turf Details**

| Turf Type | Turf Species | Acreage |
|---|---|---|
| **Tees** | | |
| **Greens** | | |
| **Fairways** | | |
| **Roughs** | | |
| **Totals** | | |

**Fertilizer Applications**

**Table H-2. Sample fertilizer application table**

| Month | Turf Type | TN Application Rate (lbs/acre) | TP Application Rate (lbs/acre) | Number of Applications | Total TN Applied (lbs/acre) | Total TP Applied (lbs/acre) |
|---|---|---|---|---|---|---|
| **January** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **February** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **March** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **April** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **May** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **June** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |

| Month | Turf Type | TN Application Rate (lbs/acre) | TP Application Rate (lbs/acre) | Number of Applications | Total TN Applied (lbs/acre) | Total TP Applied (lbs/acre) |
|---|---|---|---|---|---|---|
| **July** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **August** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **September** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **October** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **November** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **December** | Tees | | | | | |
| | Greens | | | | | |
| | Fairways | | | | | |
| | Roughs | | | | | |
| **Totals** | | | | | | |

**Amount of Reuse/Reclaimed Water Applied**

**Table H-3. Sample reclaimed water and fertilizer use table**

**Supply reuse/reclaimed water volumes applied, if applicable.*

| Month | Reuse/Reclaimed Water Quantity (Gallons) | Monthly Average TN (mg/L) | Monthly Average TP (mg/L) | Quantity of TN Applied (lbs) | Running Total of TN Applied per Acre (lbs/acre) | Quantity of TP Applied (lbs) | Running Total of TP Applied per Acre (lbs/acre) |
|---|---|---|---|---|---|---|---|
| **January** | | | | | | | |
| **February** | | | | | | | |
| **March** | | | | | | | |
| **April** | | | | | | | |
| **May** | | | | | | | |
| **June** | | | | | | | |
| **July** | | | | | | | |
| **August** | | | | | | | |
| **September** | | | | | | | |
| **October** | | | | | | | |
| **November** | | | | | | | |
| **December** | | | | | | | |
| **Totals** | | | | | | | |

Are any other sources of nutrients (i.e. manure, etc.) applied to the grounds? If so, please detail in a table similar to the reuse and fertilizer tables.

***c. Soil sampling methods and results for each area receiving fertilizer applications. Areas receiving fertilizer applications shall be sampled once every three years.***

***Soil samples shall be collected and analyzed according to UF-IFAS/DEP recommendations or standard industry practice. Soil samples shall be analyzed, at minimum, for:***

1. Nitrogen
2. Phosphorus

Describe existing soil sampling here. Describe what your planned soil sampling schedule looks like. Have you been soil testing for years already? Please describe. If you are just getting started with soil testing the course, you can discuss that. What parts of the course are priority?

If soil samples from areas of similar soil, fertilizer use and management are combined, then describe that process and justify why you feel they are similar enough to combine into a "representative" sample. That's fine, just describe why.

Keep all soil test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you've been soil testing for years, remember to add copies of all those past results to your NMP file.

***d. Water quality sampling methods and results. Water quality sampling and analysis should be conducted in accordance with DEP's Standard Operating Procedures. Water quality samples shall be analyzed, at minimum, for:***

1. Nitrogen
2. Phosphorus.

Describe your existing water quality sampling here. Describe what your planned water quality sampling schedule looks like. Have you been sampling for years already? If you are just getting started with water quality testing, you can discuss that. What parts of the course are priority?

Keep all water quality test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you've been testing for years, remember to add copies of all those past results to your NMP file.

***e. Tissue sampling methods and results. Tissue samples shall be collected and analyzed according to UF-IFAS/DEP recommendations or standard industry practice.***

Describe existing tissue sampling plan here. Keep all test results (or copies of them) in this file as part of your nutrient management plan. Please do not send them in to DEP individually. If you've been testing for years, remember to add copies of all those past results to your NMP file.

***f. Soil, tissue and water quality sample results shall be maintained for a minimum of 5 years. Please provide records.***

***g. When developing new (or expanding) golf courses, pre- and post- monitoring should be implemented in accordance with UF-IFAS/DEP recommendations.***

# Appendix I. Agricultural Enrollment and Reductions

FDACS provided the information for this appendix for each BMAP. The information in this appendix does not represent DEP's position.

**Agricultural Landowner Requirements**

Section 403.067, F.S., requires agricultural producers and landowners located within BMAP areas to either enroll in the FDACS Best Management Practices (BMP) Program and properly implement BMPs applicable to their property and operation or to conduct water quality monitoring activities as required by Rule Chapter 62-307, F.A.C. Producers or agricultural landowners who are enrolled in the FDACS BMP Program and are properly implementing the applicable BMPs identified on the BMP Checklist, or who are in compliance with the Equivalent Program requirements of Rule Chapter 5M-1, F.A.C., are entitled to a presumption of compliance with state water quality standards per section 403.067(7)(c)3., F.S.

**FDACS Office of Agricultural Water Policy (OAWP) BMP Program**

*Best Management Practices (BMPs) Definition*

For the purposes of the OAWP BMP Program, the term "best management practice" means a practice or combination of practices determined based on research, field-testing, and expert review, to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality in agricultural discharges. Section 403.067, F.S., requires that BMPs reflect a balance between water quality improvements and agricultural productivity. FDACS works closely with the FDEP, water management districts (WMDs), industry experts, and academic institutions to understand the environmental and agronomic effects addressed by BMPs.

Section 403.067, F.S., authorizes and directs FDACS to develop and adopt by rule BMPs that will help Florida's agricultural industry achieve the pollution reductions allocated in BMAPs. To date, FDACS OAWP has adopted 11 commodity specific BMP manuals by rule, covering cattle, citrus, equine, dairy, nurseries, poultry, sod, small farms and specialty livestock, specialty fruit and nut, vegetable and agronomic crops, and wildlife operations. All OAWP BMP manuals are periodically revised, updated, and subsequently reviewed and preliminarily verified by DEP before re-adoption. BMPs serve as part of a multidisciplinary approach to water resource restoration and protection that includes public/private partnerships, landowner agreements and regional treatment technologies, which together form the comprehensive strategy needed to meet the goals established in BMAPs.
*Enrolling in a FDACS BMP Program*

To initially enroll in the FDACS BMP Program, agricultural landowners and producers must meet with an FDACS representative on site to determine the appropriate practices that are applicable to their operation(s) and to document the BMPs on the Notice of Intent (NOI) and BMP Checklist. FDACS representatives consider site-specific factors when determining the applicability of BMPs including commodity type, topography, geology, location of production, soil type, field size, and type and sensitivity of the ecological resources in the surrounding areas. Producers collaborate with the FDACS representative to complete an NOI to implement the BMPs and the BMP Checklist from the applicable BMP manual.

Once the NOI and Checklist are completed, signed, and submitted to OAWP, the producer is formally enrolled in the BMP Program. Because many agricultural operations are diverse and are engaged in the production of multiple commodities, a landowner may sign multiple NOIs for a single parcel. Producers must properly implement all applicable BMPs as soon as practicable, but no later than 18 months after completion and execution of the NOI and associated BMP Checklist.

*Enrollment Prioritization*

To address the greatest resource concerns, OAWP utilizes a phased approach based on commodity type, irrigation, and agricultural acreages, while ensuring that all entities identified as agriculture

will be notified. Enrollment efforts have previously focused on enrolling parcels that are most impactful to water quality including parcels containing many agricultural acres, irrigated acres, or more intense agricultural land uses.

*Implementation Verification*

Section 403.067, F.S., requires FDACS to conduct an Implementation Verification (IV) site visit at least every two years to ensure that agricultural landowners and producers are properly implementing the applicable BMPs identified in the BMP Checklist. An IV site visit includes: review and collection of nutrient application records that producers must maintain to demonstrate compliance with the BMP Program; verification that all other applicable BMPs are being properly implemented; verification that any cost shared practices are being properly implemented; and identification of potential cost share practices, projects or other applicable BMPs not identified during enrollment. During the IV site visit, FDACS representatives also identify opportunities for achieving greater nutrient, irrigation, or water resource management efficiencies, including opportunities for water conservation. Procedures used to verify the implementation of agricultural BMPs are outlined in Rule 5M-1.008, F.A.C.

*Nutrient Application Records*

Enrolled landowners and producers are required to keep records on the total pounds of nitrogen (N) and phosphorus (P) fertilizer from all sources that are applied to their operations to comply with BMP program requirements, including AA bio-solids. Nutrient records from Class A or B biosolids applied in accordance with Chapter 62-640, F.A.C. are collected through the DEP permitting process as described in 5M-1.008(5). FDACS will collect information pertaining to these records for a two-year period identified when an IV site visit is scheduled. OAWP adopted a Nutrient Application Record Form (NARF) (FDACS-04005, rev. 06/24, incorporated in 5M-1.008(4), F.A.C.), to help simplify the record keeping requirement. The form is available under Program Resources at https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices. As these records relate to processes or methods of production, costs of production, profits, other financial information, fertilizer application information collected during an IV site visit is considered confidential and may be exempt from public records under chapters 812 and 815, Florida Statutes (F.S.), and Section 403.067, F.S. In accordance with subsection 403.067(7)(c)5., F.S., FDACS is required to provide DEP the nutrient application records.

*Compliance Enforcement*

If multiple efforts to contact agricultural landowners and producers within BMAPs about enrollment in the BMP Program are unsuccessful or if the landowner or producer chooses not to enroll in the BMP Program FDACS refers them to DEP for enforcement action per Section 403.067(7)(b), F.S.

If a producer is enrolled in the FDACS BMP program and the producer chooses not to properly implement the applicable BMPs, FDACS representatives provide the landowner or producer with a list of corrective measures and the timeframes within which they must be implemented. If a landowner or producer does not cooperate with FDACS to identify or implement corrective or remedial measures, or refuses an IV site visit, FDACS refers them to DEP for enforcement action after attempts at corrective and remedial action are exhausted. Chapter 5M-1, F.A.C. outlines the process to ensure compliance with the BMP Program requirements.

*Equivalent Programs*

Enrollees operating under one of the Equivalent Programs listed in Rule 5M-1.001(7), F.A.C., are required to complete an NOI and meet the other requirements for Equivalent Programs specified in Rule Chapter 5M-1, F.A.C. Compliance with BMPs on the area(s) of the NOI property subject to the Equivalent Program instrument is demonstrated by fulfilling the requirements of Rule 5M-1.008(8), F.A.C. An Enrollee under an Equivalent Program listed in Rule 5M-1.001(7)(a)-(b), F.A.C., that is not required to complete a BMP Checklist is not subject to IV site visits. For Enrollees under an Equivalent Program listed in Rule 5M-1.001(7)(a)-(b), F.A.C., implementation verification shall be undertaken by the agency that issued the permit pursuant to its statutory and/or rule authority.

**Other FDACS BMP Programs**

FDACS implements other regulatory programs that help minimize nonpoint source pollution from agricultural activities.

*Aquaculture*

The FDACS Division of Aquaculture develops and enforces regulations governing the commercial aquaculture industry in Florida. Chapter 597, F.S., Florida Aquaculture Policy Act, requires Floridians who engage in commercial aquaculture to annually acquire an Aquaculture Certificate of Registration and implement all applicable Aquaculture Best Management Practices listed in Rule Chapter 5L-3.004, F.A.C. Facilities with certain production and discharge rates also require an NPDES permit from DEP. The Aquaculture BMPs were last updated by rule in November 2023.

FDACS Division of Aquaculture conducts annual site visits at certified facilities to confirm compliance with BMPs. These include management practices in areas of construction, containment, shrimp culture, sturgeon culture, shellfish culture, live rock culture, aquatic plants, including fertilizer application, and health management. For more information about FDACSs Division of Aquaculture and Aquaculture BMPs go to https://www.fdacs.gov/Divisions-Offices/Aquaculture.

Within the Silver and Rainbow BMAP, there are 7 aquaculture facilities under certification with the FDACS Division of Aquaculture as of November 2024. As with agricultural land use in Florida, aquaculture facilities are frequently in and out of production. The facilities being provided may no longer be in operation and/or there may be new companies in different parts of the basin by the next BMAP iteration.

*Forestry*

The FDACS Florida Forest Service (FFS) develops, implements (through education and training), and monitors Silviculture BMPs in Florida. Silviculture BMPs are applicable to *bona-fide* ongoing silviculture operations and are not intended for use during tree removal or land clearing operations that are associated with a land-use change to a non-forestry objective. The FFS Silviculture BMP Manual is adopted under Chapter 5I-6.002 F.A.C. and was last updated in 2008. FFS is currently in the process of updating the manual with guidance from the FDACS Silviculture BMP Technical Advisory Council. The current manual is composed of fourteen BMP categories covering many aspects of silviculture operations including timber harvesting, site preparation, forest roads, stream and wetland crossings, and forest fertilization. The primary objectives of Silviculture BMPs are to minimize the risks to Florida's water resources from silviculture-related sources of nonpoint source pollution and maintain overall ecosystem integrity. Section 403.067, F.S., provides silviculture practitioners implementing Silviculture BMPs a presumption of compliance with state water quality standards for the pollutants addressed by the BMPs.

The FFS Silviculture BMP implementation monitoring program was initiated in 1981 and follows the criteria which have been established for state forest agencies in the southeastern United States by the Southern Group of State Foresters. Monitoring surveys are conducted biennially on a random sample of recently conducted silviculture operations throughout Florida with the goal of determining the level of implementation and compliance with Silviculture BMPs. For the period of record (1981 to 2023), Florida's statewide Silviculture BMP compliance rates range from 84% (1985) to 99.7% (2019) and have shown an overall average compliance rate above 98% since 2005. For more information about Silviculture BMPs and to download a copy of the latest FFS Silviculture BMP Implementation Survey Report go to https://www.fdacs.gov/bmps.

**Agricultural Land Use**

*Agricultural Land Use in BMAPs*

Land use data are helpful as a starting point for estimating agricultural acreage, determining agricultural nonpoint source loads, and developing strategies to reduce those loads in a BMAP area, but there are inherent limitations in the available data. Agriculture acreages fluctuate when volatile

economic markets for certain agricultural commodities provide incentive for crops to change at a fast pace, properties are sold, leases are terminated, production areas decrease, or production ceases, among other reasons. Florida's recent population growth has also resulted in accelerated land use changes statewide, some of which include transitioning agricultural or fallow agricultural lands to developed land uses. The dynamic nature of Florida's agricultural industry creates challenges with comparing agricultural acres from year to year.

When developing a BMAP, agricultural nonpoint source loading is estimated using a broad methodology based on statewide land use data. Oftentimes, this results in properties being designated as agricultural nonpoint pollution sources and creates an obligation for these properties to enroll in the FDACS BMP Program when they may be better addressed under other programs more applicable to the practices occurring on those properties. Examples of these properties include: rural residential/homesteads, ranchettes, or single-family homes with accessory structures for livestock or groves that serve the needs of those living on the property. Continued identification of these properties as agricultural nonpoint sources limits the ability to reliably direct programmatic resources to meet water quality restoration goals.

FDACS uses the parcel-level polygon agricultural lands (ALG) data that is part of the Florida Statewide Agricultural Irrigation Demand (FSAID) Geodatabase to estimate agricultural acreages statewide. FSAID provides acreages and specific crop types of irrigated and non-irrigated agricultural lands statewide. FSAID is updated annually based on water management district land use data, county property appraiser data, OAWP BMP enrollment data, U.S. Department of Agriculture data for agriculture, such as the Cropland Data Layer and Census of Agriculture, FDACS Division of Plant Industry citrus data, as well as field verification performed by the U.S. Geological Survey, water management districts, and OAWP. As the FSAID is detailed and updated on an annual basis, it provides a reliable characterization of agricultural land uses that accounts for the fast-growing population and resultant land use changes taking place statewide. The FSAID also provides FDACS a clearer picture of agriculture's impact on the landscape and consistent method to better track, direct, and assess BMP implementation, cost share projects, and regional projects.

**Table I-1** and **Figure I-1** show the percentage of agricultural land use within the Silver and Rainbow BMAP, determined by comparing the FSAID 11 ALG and total acreage of the BMAP boundary. Understanding what proportion of a BMAP is comprised of agriculture provides insight as to the potential contribution of agricultural nonpoint sources.

**Table I-1. Agricultural Land Use in Silver and Rainbow BMAP**

| | |
|---|---|
| **Non-agricultural acres** | 731,674 |
| **Agricultural acres** | 275,544 |

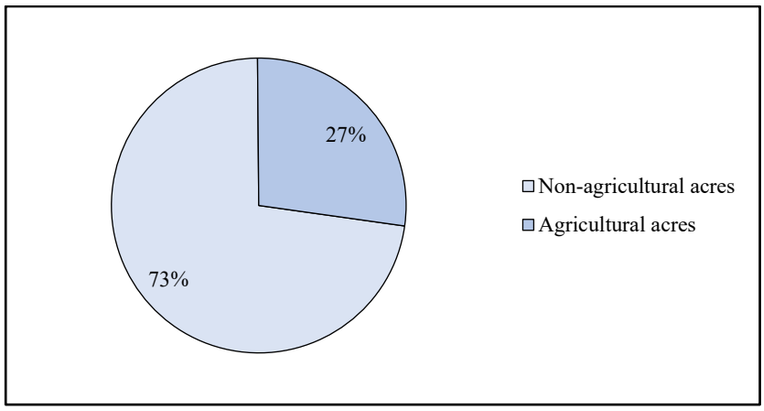


**Figure I-1. Agricultural acres compared to non-agricultural acres in the BMAP area**

## FDACS BMP Program Metrics

*Enrollment Delineation and BMAP Metrics*

BMP enrollments are delineated in GIS using county property appraiser parcels. In terms of NOIs, enrolled acreage fluctuates when parcels are sold, when leases end or change hands, or when production areas downsize or production ceases, among other reasons. Nonproduction areas such as forest, roads, urban structures, and water features are often included within the parcel boundaries. Conversely, agricultural lands in the FSAID ALG only include areas identified as agriculture. To estimate the agricultural acres enrolled in the BMP program, OAWP overlays the FSAID ALG and BMP enrollment data within GIS to calculate the acres of agricultural land in an enrolled parcel.

*Summary Tables*

**Table I-2. Agricultural lands enrolled in the Silver and Rainbow BMAP by BMP Program commodity**

| Commodity | Agricultural Acres Enrolled |
|---|---|
| Citrus | 454 |
| Cow/Calf | 42,865 |
| Dairy | 225 |
| Equine | 15,926 |
| Fruit/Nut | 657 |
| Multiple Commodities | 52,964 |
| Nursery | 1,028 |
| Row/Field Crop | 9,262 |
| Sod | 39 |
| **Total** | **123,420 (45%)** |

**Table I-3. Agricultural acres enrolled by commodity and springshed**

| Commodity | Rainbow | Silver |
|---|---|---|
| Citrus | 0 | 454 |
| Cow/Calf | 22,231 | 20,633 |
| Dairy | 0 | 225 |
| Equine | 12,168 | 3,759 |
| Fruit/Nut | 0 | 657 |
| LOPP | 43,979 | 8,985 |
| Nursery | 756 | 272 |
| Row/Field Crop | 5,382 | 3,880 |
| Sod | 0 | 39 |
| **Total** | 84,516 | 38,904 |
| **Percent of Agricultural Lands Enrolled in BMPs** | 53% | 34% |

As of July 2024, 43% of the agricultural acres in the Silver and Rainbow BMAP area are enrolled in FDACS' BMP program. **Table I-2** shows the acreages enrolled in the BMP Program by commodity. **Table I-3** shows the acreages enrolled in the BMP Program by commodity and springshed. It is important to note that producers often undertake the production of multiple commodities on their operations, resulting in the requirement to implement the applicable BMPs from more than one BMP manual. When this occurs, the acres enrolled under more than one BMP manual are classified as “multiple commodity” and not included in the individual commodity totals to prevent duplication.

*Enrollment Map*

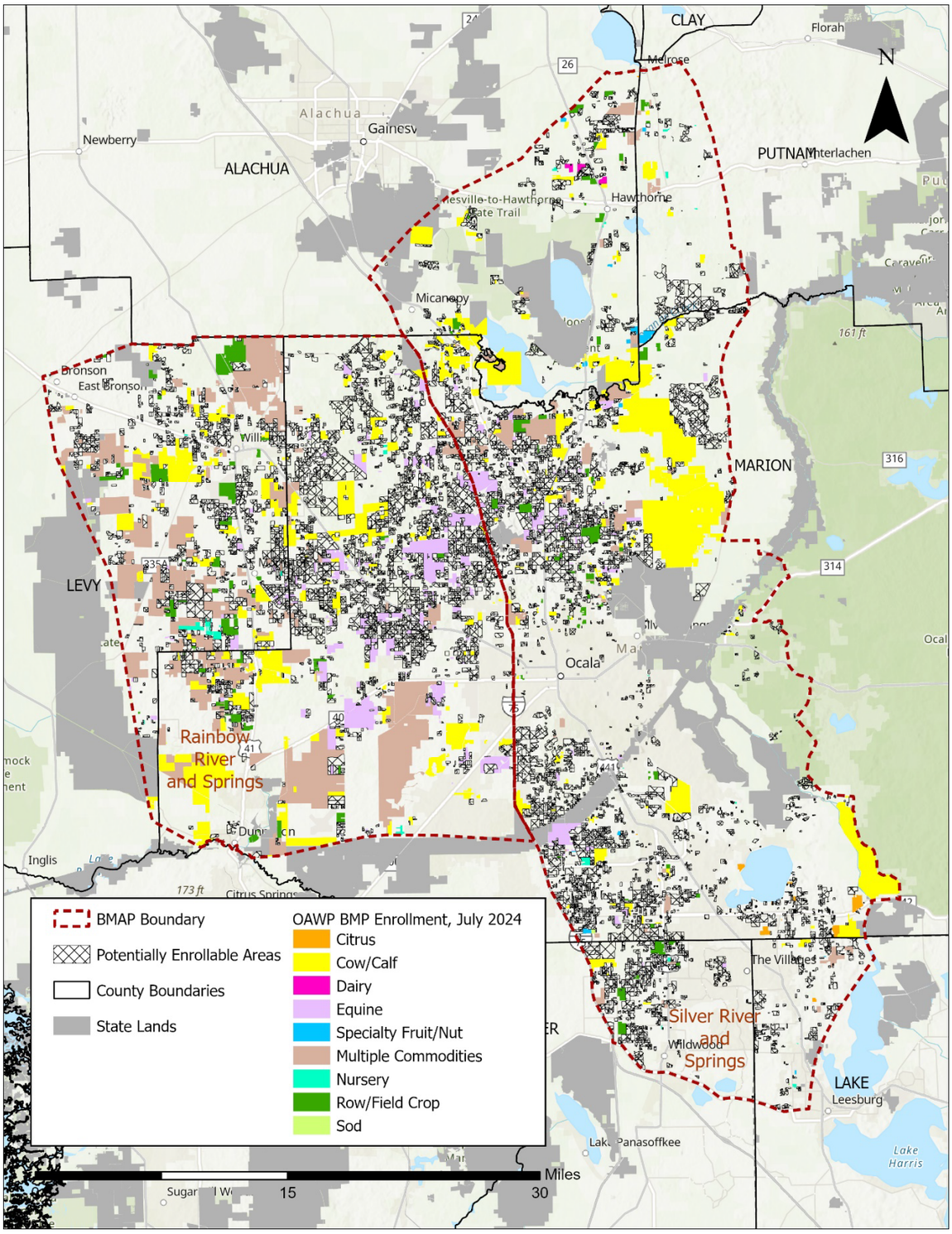


**Figure I-2. Agricultural enrollment in the Silver and Rainbow BMAP**

*Unenrolled Agricultural Lands*

Oftentimes, there are lands initially identified as agriculture which, upon closer evaluation, raise questions as to whether there is agricultural activity and whether it is enrollable within the purview of OAWP. FDACS characterizes lands classified as agriculture in the FSAID ALG, but not currently enrolled in the FDACS BMP Program using property appraiser data such as parcel owner information, agricultural tax valuation for exemption purposes, other parcel land use details to determine whether the remaining lands are potentially enrollable. More information about the "Unenrolled agricultural lands" characterization analyses is available in ***FDACS Annual Status of Implementation of BMPs Report***.

The assessment of unenrolled agricultural lands at a more granular scale provides an indication of which areas are more likely (or unlikely) to have enrollable agricultural activities occurring on them. It also provides an estimate of the number of parcels and the associated agricultural acres deemed to be enrollable. The number of parcels is a useful proxy for the level of resource dedication needed to enroll the associated agricultural acres and where best to focus finite resources and staffing needs. It is often the case that much of the potentially enrollable acreage is encompassed within many smaller parcels which may require additional resources to enroll and require further evaluation, such as those that have agricultural activity intended solely for personal use ancillary to a residence, those that do not have an agricultural land use per the property appraiser, as well as parcels where there is no current activity to enroll.

**Table I-4** shows the breakdown of agricultural lands within the Silver and Rainbow BMAP based on the FSAID 11 and the results of the FDACS unenrolled agricultural lands characterization.

**Table I-4. Agricultural lands in Silver and Rainbow BMAP by springshed**

** Enrollment information current as of July 2024.*

| Springshed | Agricultural Acres | Unenrolled - Unlikely Enrollable Acres | Agricultural Acres - Adjusted | Agricultural Acres Enrolled* |
|---|---|---|---|---|
| Rainbow | 179,183 | 19,521 | 159,662 | 84,515 |
| Silver | 155,429 | 39,547 | 115,882 | 38,905 |

*Potentially Enrollable Lands*

There are 152,212 acres of potentially enrollable lands within the Silver and Rainbow BMAP based on the assessment of unenrolled agricultural lands performed by FDACS. **Table I-5** shows the potentially enrollable acreages by crop type. **Figure I-3** shows the count of potentially enrollable parcels based on size classifications used by FDACS.

**Table I-5. Potentially enrollable acres by crop type**

| Crop Type | Acres |
|---|---|
| Citrus | 178 |
| Cropland and/or Pastureland | 717 |
| Crops | 8,005 |
| Fallow | 6,192 |
| Fruit (Non-citrus) | 391 |
| Grazing Land | 87,030 |
| Hay | 3,747 |
| Livestock | 41,637 |
| Sod | 389 |
| Nursery | 385 |
| Open Lands | 3,539 |
| **Total** | **152,211** |

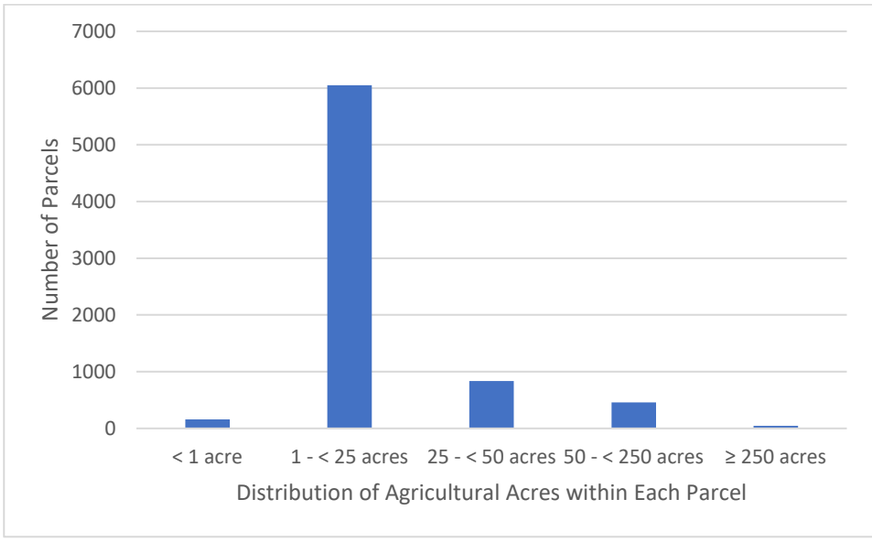


**Figure I-3. Count of potentially enrollable parcels by size class**

### FDACS Cost Share

Enrollment in and proper implementation of BMPs makes a producer eligible for cost share for certain BMPs, other practices, and projects. The availability of cost share funds depends on annual appropriations by the Florida Legislature, and therefore, the amount available can vary each year. Cost share applications may be submitted once a producer has enrolled in the BMP Program and has been assigned an NOI number. Cost share practices are categorized as nutrient management, irrigation management, or water resource protection. BMPs, other practices, and projects eligible for cost share funding may include precision agriculture technologies, variable rate irrigation methods, water control structures, and tailwater recovery systems. OAWP seeks to leverage its cost share funding with other cost share programs offered by FDACS and other state and federal agencies. The United States Department of Agriculture NRCS offers funding through its Environmental Quality Incentives Program, and certain WMDs have agricultural cost share programs. Applicants are encouraged to use OAWP cost share in conjunction with other available conservation programs although funding cannot be duplicative.

*Cost share project types and estimated nutrient reduction efficiencies*

**Table I-6** identifies agricultural technologies eligible for funding through cost-share assistance and the associated nutrient reductions[1]. The nutrient reductions were used to develop a methodology to estimate nutrient reductions for NOIs that have received cost-share funding[2]. The NOI boundary, based on property appraiser parcel data, was considered the area treated by the cost-shared agricultural technology or project. For parcels with more than one cost-share project, OAWP identified the order of treatment to determine the reductions for the multiple projects based on each cost-shared agricultural technology. Estimated nutrient reductions from FDACS cost share in the Silver and Rainbow BMAP are shown in **Table I-7**.

**Table I-6. Cost share project types and estimated nutrient reduction efficiencies**

| Project Types | BMP Category | Mechanism | N Impact |
|---|---|---|---|
| Nutrient Management Plan | Precision Nitrogen Management | N application reduction | 15% |
| Plastic Mulch Layer - Drip Tape | Precision Nitrogen Management | N leaching reduction | 18% |
| Controlled Release Fertilizer | Precision Nitrogen Management | N leaching reduction | 20% |

[1] FDACS, 2024. Nitrogen Benefits of Agricultural Best Management Practices for Florida: Summary of Findings. Florida Department of Agriculture and Consumer Services (FDACS) Office of Agricultural Water Policy. In collaboration with The Balmoral Group.

[2] FDACS, 2024. Nitrogen Reductions BMP Analysis: Results and Process Description. Florida Department of Agriculture and Consumer Services (FDACS) Office of Agricultural Water Policy. In collaboration with The Balmoral Group.

| Project Types | BMP Category | Mechanism | N Impact |
|---|---|---|---|
| Applicator (Hoop Sprayer) | Precision Nitrogen Management | N application reduction | 20% |
| Applicator (Liquid) | Precision Nitrogen Management | N application reduction | 15% |
| Spreader (Dry Variable) | Precision Nitrogen Management | N application reduction | 15% |
| Applicator (Dry Banding) | Precision Nitrogen Management | N application reduction | 25% |
| Cover Crops | Tillage, Cover Crops and Soil Health BMPs | N leaching reduction | 30% |
| Vertical Till | Tillage, Cover Crops and Soil Health BMPs | N leaching reduction | 6% |
| Flail Mower | Tillage, Cover Crops and Soil Health BMPs | N application reduction | 8% |
| Integrated Crop-Livestock Rotations | Livestock BMPS | N leaching reduction | 50% |
| Rhizoma Peanut Mix Pasture System | Livestock BMPS | N application reduction | 31% |
| Fencing | Livestock BMPS | N leaching reduction | 20% |
| Livestock Water Exclusion | Livestock BMPS | N runoff reduction | 33% |
| Alternative Water Supply - Livestock | Livestock BMPS | N runoff reduction | 33% |
| Free Stall Barn | Livestock BMPS | N leaching reduction | 30% |
| Culvert/Riser | Drainage and Erosion Reduction BMPs | N runoff reduction | 16% |
| Water Control Structures or Stormwater Improvement | Drainage and Erosion Reduction BMPs | N runoff reduction | 17% |
| Tailwater Recovery Ponds | Drainage and Erosion Reduction BMPs | N runoff reduction | 42% |
| Storage – Compost | Storage | N leaching reduction | 26% |
| Storage – Potting Soil | Storage | N leaching reduction | 23% |
| Rotation – mobile corral | Livestock BMPS | N leaching reduction | 20% |
| Rotation – portable feeder/wagon | Livestock BMPS | N leaching reduction | 20% |

**Table I-7. Nutrient reductions from FDACS cost share**

| Rainbow BMP Category | Rainbow - TN Reductions to Groundwater |
|---|---|
| Drainage and Erosion Reduction BMPs | 603 |
| Irrigation | 12,845 |
| Livestock BMPs | 6,322 |
| Precision Nitrogen Management | 4,712 |
| Storage | 1,148 |
| Tillage, Cover Crops, and Soil Health BMPs | 1,350 |
| **Silver BMP Category** | **Silver - TN Reductions to Groundwater** |
| Drainage and Erosion Reduction BMPs | 54 |
| Irrigation | 928 |
| Livestock BMPs | 5,957 |
| Precision Nitrogen Management | 3,196 |
| Tillage, Cover Crops, and Soil Health BMPs | 4,705 |
| **Total** | **41,821** |

## Future Efforts

*Outreach*

To address resource concerns, FDACS continues enhancing coordination with producers, agencies, and stakeholders to increase enrollment in the BMP program. OAWP is sending correspondence to agricultural landowners within BMAPs that are not currently enrolled in the BMP program to increase enrollment rates and verify land uses where additional focus may be required to achieve resource protection. This effort is utilizing a phased approach and targeting priority land uses, and then evaluating the amount of agricultural acreage for the remaining unenrolled lands, while ensuring that all entities identified as agriculture will be notified. Additionally, OAWP continues to coordinate with industry groups and outreach partners to educate and inform agricultural producers about the BMP program.

*Dairy Loading Estimations*

Dairy operations represent a diverse agricultural industry within Florida, varying widely from pasture-based operations to confinement facilities where the cows spend the entire day under roof. Dairies must balance nutrient use and management based on the amounts of manure and wastewater generated onsite. Nutrient management requirements vary based on herd sizes and are implemented either through the permitting process under Chapter 62-670, F.A.C. or through enrollment in the FDACS BMP program.

Manure is typically stored onsite as solids or in the operation's waste storage pond (WSP). Manure solids can be land-applied, composted, or hauled off-site. Waste stored in the waste storage pond can be land-applied as liquid organic fertilizer, such as through a center pivot irrigation system. Use

of nutrients from solids or the WSP allows dairy operations to produce forage or silage crops for their herds and maintain a nutrient balance.

Manure is an organic source of Nitrogen (N) subject to volatilization based on many factors including temperature, rainfall, soil type, and storage method. Volatilization provides for less available N to be lost through leaching, but also less available N for crop uptake.

**Concentrated Animal Feeding Operation (CAFO) Dairies**

Dairies with a herd size over 700 are Concentrated Animal Feeding Operations (CAFOs) and are permitted by FDEP under Chapter 62-670, F.A.C. CAFO dairies are required to implement a Nutrient Management Plan (NMP) as part of their permit. The NMP outlines the nutrient inputs and outputs of a particular dairy operation, including any reuse and off-site disposal of manure and any commercial fertilizers used to grow forage or silage crops. CAFO dairies must perform water quality monitoring onsite and submit quarterly and annual reports demonstrating compliance with water quality standards and their NMP.

While CAFO dairies can meet most of their crop nutrient requirements using waste generated onsite, in some instances the amount of N lost due to volatilization may require the use of supplemental commercial fertilizers. However, when commercial fertilizers are utilized, they are typically applied at rates below the standard application rates for agronomic crops based on the NMPs and annual reports submitted by permitted dairies.

**Non-CAFO Dairies**

Dairies with herd sizes smaller than 700 are non-CAFO and are subject to the same requirements as other agricultural operations within BMAPs. They must enroll in and implement BMPs applicable to their operation or perform water quality monitoring per Chapter 62-307, F.A.C. While not duplicative of permit requirements, the FDACS Dairy BMP Program has some similarities including lining of WSPs and maintenance of a nutrient balance through record review and collection. Further, enrolled dairy operations are subject to the Implementation Verification (IV) site visit requirement every 2 years as required by s. 403.067(7)(d)3., F.S.

**NSILT Estimation of Dairy Loading**

The NSILT provides estimates of loading to groundwater based on land use and other factors in a springshed, where it may be harder to capture nuances happening on the ground such as methods of agricultural production.

***Attenuation Factors***

All dairies must demonstrate a balance between their nutrient inputs and outputs based on the nutrient of concern in a basin, e.g., nitrogen. Nutrient balance considers a variety of factors including waste treatment systems, volatilization losses, and crop uptake. **Table I-8** shows the overall nitrogen (N) remaining for crop uptake for typical dairy waste treatment systems.

**Table I-8. Overall nitrogen remaining for crop uptake with the described systems**

| Type of System | N Remaining |
|---|---|
| Cows on pasture | 40% |
| Cows on concrete floor to storage pond with less than 7 days hold time then sprayed through sprinkler or thinly surface applied | 35% |
| Cows on concrete floor to storage pond with less than 7 days hold time then incorporated or seepage ditch | 40% |
| Cows on concrete floor to storage pond with 7 to 30 days hold time then sprayed through sprinkler or thinly surface applied | 30% |
| Cows on concrete floor to storage pond with 7 to 30 days hold time then incorporated or seepage ditch | 35% |
| Cows on concrete floor to storage pond with greater than 30 days hold time then sprayed through sprinkler or thinly surface applied | 10% |
| Cows on concrete floor to storage pond with greater than 30 days hold time then incorporated or seepage ditch | 15% |
| From WSP samples to crop uptake if applied via sprinkler or thinly surface applied | 50% |
| From WSP sample to incorporated or seepage ditch | 80% |
| Solids thinly applied | 75% |
| Solids incorporated | 95% |

Dairies produce waste daily, and many produce crops year-round, therefore the nutrients in manure that is land applied through spreading or through an irrigation system are either lost to the atmosphere or taken up by a crop. Manure is stored prior to land application and may be treated in some way, e.g., separating solids from process wastewater or held in a WSP, allowing additional time for volatilization to occur. It is reasonable to expect dairy waste to have the same of attenuation at both CAFO and non-CAFO dairies. The NSILT assumes non-CAFO dairy waste has an attenuation rate of 50%, whereas CAFO dairy waste is assumed to attenuate at 85%. A comparison of the loading estimates using the different attenuation rates based on the NSILT is shown in **Table I-9**.

**Table I-9. Estimated dairy loading at different attenuation rates**

| BMAP | Springshed | Recharge | Dairy Load to Groundwater - 50% Attenuation | Dairy Load to Groundwater - 85% Attenuation |
|---|---|---|---|---|
| Suwannee | Middle | High | 93,051 | 27,915 |
| | Middle | Medium | 20,310 | 6,093 |
| Santa Fe | Hornsby | Low | 2,313 | 694 |
| Silver | Silver | High | 26,535 | 7,960 |
| Chassahowitzka/Homosassa | Homosassa | High | 34,209 | 10,263 |

### Future Steps to Refine and Address Dairy Loading

While variability in production systems is not unique to dairy operations, it is important to assess the various management systems at both CAFO and non-CAFO dairies to estimate an operation's impact in a springshed. Loading from dairy operations is expected to be reevaluated regularly as part of the adaptive management inherent in BMAP implementation.

The dairy industry is actively working on sustainability projects focused on nutrient mitigation and water conservation. Additionally, CAFO and non-CAFO dairy operations enrolled in FDACS BMPs are eligible for regular cost share funding from FDACS and SRWMD.

*Legacy Loads*

Legacy loading can present an additional challenge to measuring progress in many areas of Florida with adopted BMAPs. Based on research, initial verification by DEP, and long-term trends in water quality in the BMAP area, it is expected that current efforts, such as BMP implementation, will continue to provide improvements in overall water quality despite the impacts from legacy loads.

While the implementation of BMPs will improve the water quality in the basin, it is not reasonable to assume that BMP implementation alone can overcome the issues of legacy loads, conversion to more urban environments, and the effects of intense weather events. BMP implementation is one of several complex and integrated components in managing the water resources of a watershed.

Collaboration between DEP, FDACS, the water management districts, and other state agencies, as well as local governments, federal partners, and agricultural producers, is critical in identifying projects and programs, as well as locating funding opportunities to achieve allocations provided for under this BMAP. To improve water quality while retaining the benefits that agricultural production provides to local communities, wildlife enhancement, and the preservation of natural areas requires a commitment from all stakeholders to implementing protective measures in a way that maintains the viability of agricultural operations.

# Appendix J. Private Facilities with BMAP Responsibilities

The tables below list privately owned and operated facilities that have been identified as contributing sources of nitrogen loading to the groundwater in the Silver and Rainbow BMAP. Publicly-owned facilities have been assigned as a part of the responsible entities allocation. The golf courses in **Table J-1** are subject to nutrient management strategies identified in section 2.8.3 and **Appendix H** of this document. The WWTFs in **Table J-2** are subject to relevant nutrient management strategies identified in section 2.6 and **Appendix G** of this document. All facilities or entities listed below have been assigned required TN reductions to meet the TMDLs. DEP encourages coordination between public and private entities as necessary to address loading in the basin.

**Table J-1. Privately owned or operated golf courses within the Silver and Rainbow BMAP**

| County | Facility Name |
|---|---|
| Marion | Baseline Golf Course |
| Marion | Country Club Silver Springs Shores |
| Marion | Creek/Links/Spruce Courses at The Links Spruce Creek |
| Marion | Del Webb`s Spruce Creek |
| Marion | Heritage/Master/Memorial/Champion at Spruce Creek Country Club |
| Marion | Lake Diamond Golf Course |
| Marion | Rolling Greens Executive Golf Community |
| Marion | Stonecrest Golf Course |
| Marion | Grand Lake RV and Golf |
| Marion | Country Club Ocala |
| Lake | Harbor Hills Country Club |
| Lake | Lakes Lady Lake Golf Course |
| Lake | Meadow/Oaks/Sanctuary Courses and Club at Pennbrooke Fairways |
| N/A | Sumter Landing CDD (The Villages) |
| Sumter | Bacall |
| Sumter | Belmont |
| Sumter | Bogart |
| Sumter | Heron |
| Sumter | Pelican |
| Sumter | Pimlico |
| Sumter | Roosevelt |
| Sumter | Sandhill |
| Sumter | Truman |
| Sumter | Turtle Mound |

| County | Facility Name |
|---|---|
| N/A | The Villages Operating Company (The Villages)- |
| Marion | Nancy Lopez Legacy |
| Lake | Orange Blossom Hills |
| Sumter | Cane Garden |
| Sumter | Hacienda Hills |
| Sumter | Mallory Hill |
| Sumter | Palmer Legends |
| Sumter | Tierra Del Sol |
| Sumter | Glenview |
| Sumter | Havana |
| N/A | Village Center CDD (The Villages)- |
| Marion | Amberwood |
| Marion | Briarwood |
| Lake | Chula Vista |
| Lake | Hill Top |
| Lake | Mira Mesa |
| Lake | Silver Lake |
| Sumter | De La Vista |
| Sumter | El Santiago |
| Sumter | Hawkes Bay |
| Sumter | Saddlebrook |
| Lake | Water Oak Country Club Estates |
| Sumter | Continental Country Club |
| Marion | Golden Hills Country Club |
| Marion | Oak Run Golf & Country Club |
| Marion | Ocala Palms Golf Course |
| Marion | Royal Oaks Golf Club |
| Marion | Stone Creek Golf Club |
| Marion | Golden Ocala Golf and Equestrian Club |
| Marion | Julliette Falls Golf Course |
| N/A | On Top of the World |
| Marion | Links/Tortoise/Hare Courses |
| Marion | Candler Hills Golf Course |
| Marion | Rainbow's End Golf Course |

**Table J-2. Privately owned or operated WWTFs in or disposing within the Silver and Rainbow BMAP**

| Facility ID | Facility Name |
|---|---|
| FLA010595 | ACA Camp Geneva WWTF |
| FLA010735 | Associated Grocers Of Florida |
| FLA010750 | Big Lake Village WWTF |
| FLA010623 | Blue Parrot Camping Park |
| FLA010689 | Camp Sonlight |
| FLA010771 | Cedar Hills WWTF |
| FLA499951 | Central Sumter Utility Company WWTF |
| FLA010745 | Cliftwood MHP WWTF |
| FLA010763 | Days Inn - Ocala West WWTF |
| FLA010643 | Fruitland Acres WWTF |
| FLA010770 | Grand Lake RV Resort WWTF |
| FLA010608 | Harbor Hills |
| FLA010703 | Hilltop Estates |
| FLA012716 | I-75 FDOT Rest Area WWTF |
| FLA010575 | Lady Lake Village  MHP WWTF |
| FLA013517 | Lake Deaton RV Park WWTF |
| FLA010530 | Lake Griffin Isles Mobile Home Park WWTF |
| FLA010549 | Lake North Apartments |
| FLA010709 | Lake View Woods WWTF |
| FLA010688 | Lake Waldena Resort WWTF |
| FLA010722 | Landfair WWTF |
| FLA010592 | Leisure Meadows Mobile Home Park WWTF |
| FLA017133 | Little Sumter Utility Company WWTF |
| FLA010764 | Marie's Mobile Home Park WWTF |
| FLA010789 | Marion Correctional Institute WWTF |
| FLA010741 | MCUD Stonecrest WWTF |
| FLA011697 | Melrose Community School WWTF |
| FLA010571 | Mirror Lake Manor Apartments WWTF |
| FLA010708 | Nautilus Mobile Home & RV Park WWTF |
| FLA281581 | North Sumter Utilities WWTF |
| FLA516708 | North Sumter Utility Company Master Reuse System (NSUMRS) |
| FLA010693 | Oak Bend Manufactured Home Community |
| FLA010725 | Ocala East Villas WWTF |

| Facility ID | Facility Name |
|---|---|
| FLA010737 | Ocala Jai Alai - WWTF |
| FLA010773 | Ocala Springs Shopping Center (Winn-Dixie Store #2437) |
| FLA010685 | On Golden Pond Mobile Home Park WWTF |
| FLA358134 | Orange Blossom Utilities |
| FLA010705 | Paddock Park South WWTF |
| FLA010570 | Pennbrooke WWTP |
| FLA016154 | Petro PSC Truck Stop WWTF |
| FLA010698 | Phoenix Houses Of Florida |
| FLA017026 | Plantation Landing WWTF |
| FLA010731 | Queen's Garden Resort WWTF |
| FLA013519 | Rails End RV & MHP WWTF |
| FLA010593 | Recreation Plantation RV Park |
| FLA010696 | Robins Nest RV Park WWTF |
| FLA010757 | Rolling Greens MHP WWTF |
| FLA011739 | Sandhill Forest Two WWTF |
| FLA010704 | Shady Rd Villas WWTF |
| FLA010729 | Sharpes Ferry MHC WWTF |
| FLA010701 | Smith Lake Shores WWTF |
| FLA010744 | Spanish Oaks MHP WWTF |
| FLA010740 | Spanish Palm Estates WWTF |
| FLA010690 | Sportsman Cove WWTF |
| FLA010700 | Springs RV Resort WWTF |
| FLA010784 | Sunny Oaks MHP WWTF |
| FLA010611 | Sunshine Mobile Home Park WWTF |
| FLA010699 | Tradewinds WWTF |
| FLA010599 | Valencia Terrace |
| FLA010692 | Victory MHP LLC |
| FLA010555 | Villages WWTF |
| FLA010756 | Wandering Oaks RV Resort WWTF |
| FLA010706 | Whispering Oaks MHP WWTF |
| FLA107077 | Wilderness RV Park Estates, Inc. |
| FLA012660 | Reddick RV WWTF |
| FLA012662 | Crystal Springs MHP WWTF |
| FLA012663 | Dogwood Acres MHP |
| FLA012664 | Foxwood Farms MHP WWTF |

| Facility ID | Facility Name |
|---|---|
| FLA012665 | Classic Oaks Village MHP LLC |
| FLA012667 | Ocala RV Camp Resort WWTF |
| FLA012670 | Howard Johnson Inn WWTF |
| FLA012676 | Oak Tree Village and Campground WWTF |
| FLA012680 | Crownwood WWTF |
| FLA012682 | Sateke Village WWTF |
| FLA012683 | On Top of the World communities, LLC WWTF |
| FLA012685 | Westwood MHP WWTF |
| FLA012686 | Ocala Jockey Club WWTF |
| FLA012687 | 103rd Street Square Center WWTF |
| FLA012693 | Rainbow Springs Fifth Replat WWTF |
| FLA012694 | Saddle Oak Club MHC WWTF |
| FLA012696 | Golden Hills MHP WWTF |
| FLA012698 | Falls Of Ocala MHP WWTF |
| FLA012699 | Marion Landing |
| FLA012705 | Sweetwater Oaks MHP WWTF |
| FLA012706 | Fairfield Village of Ocala WWTF |
| FLA012707 | Circle Square Shopping Center WWTF |
| FLA012708 | Centers, Inc. the |