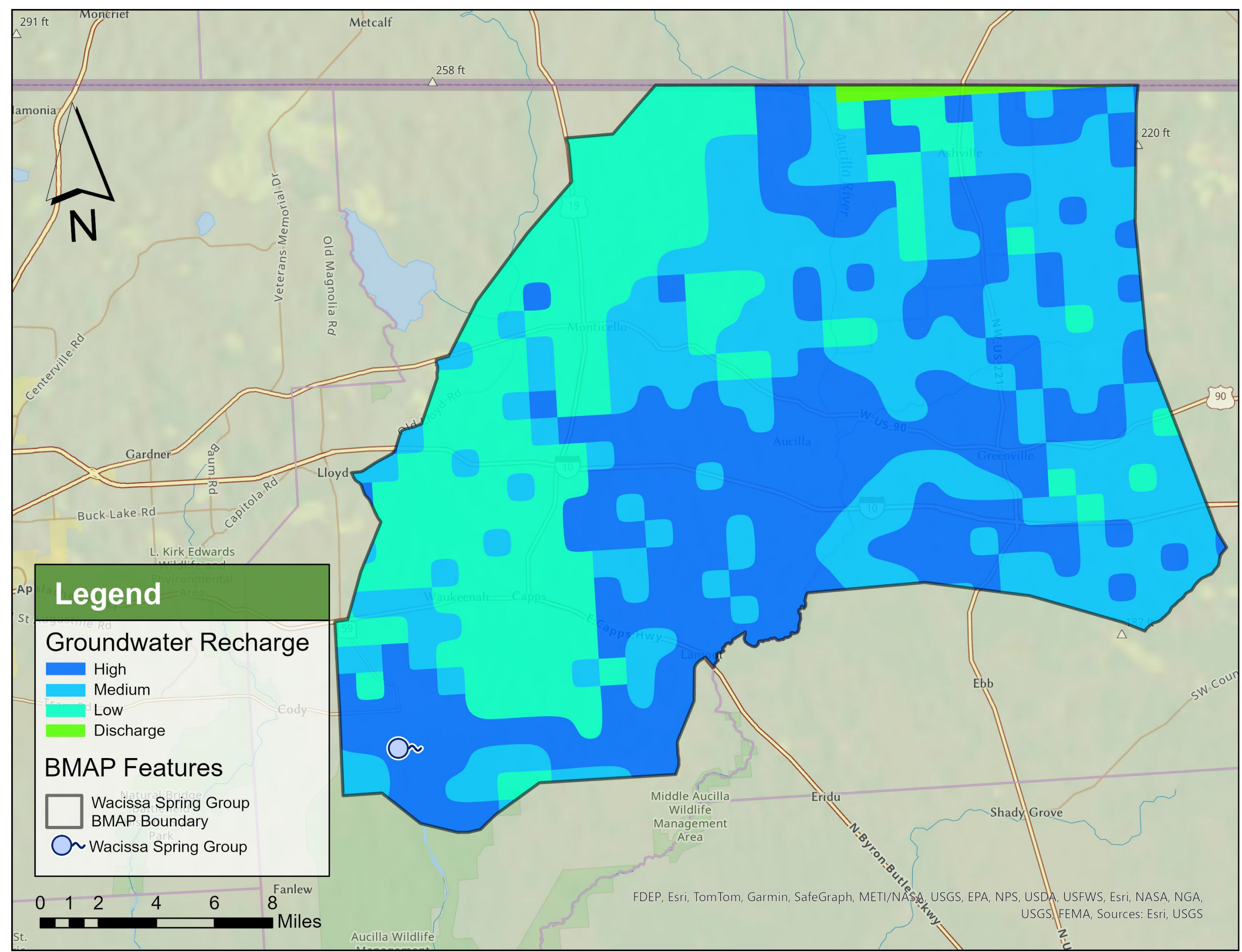
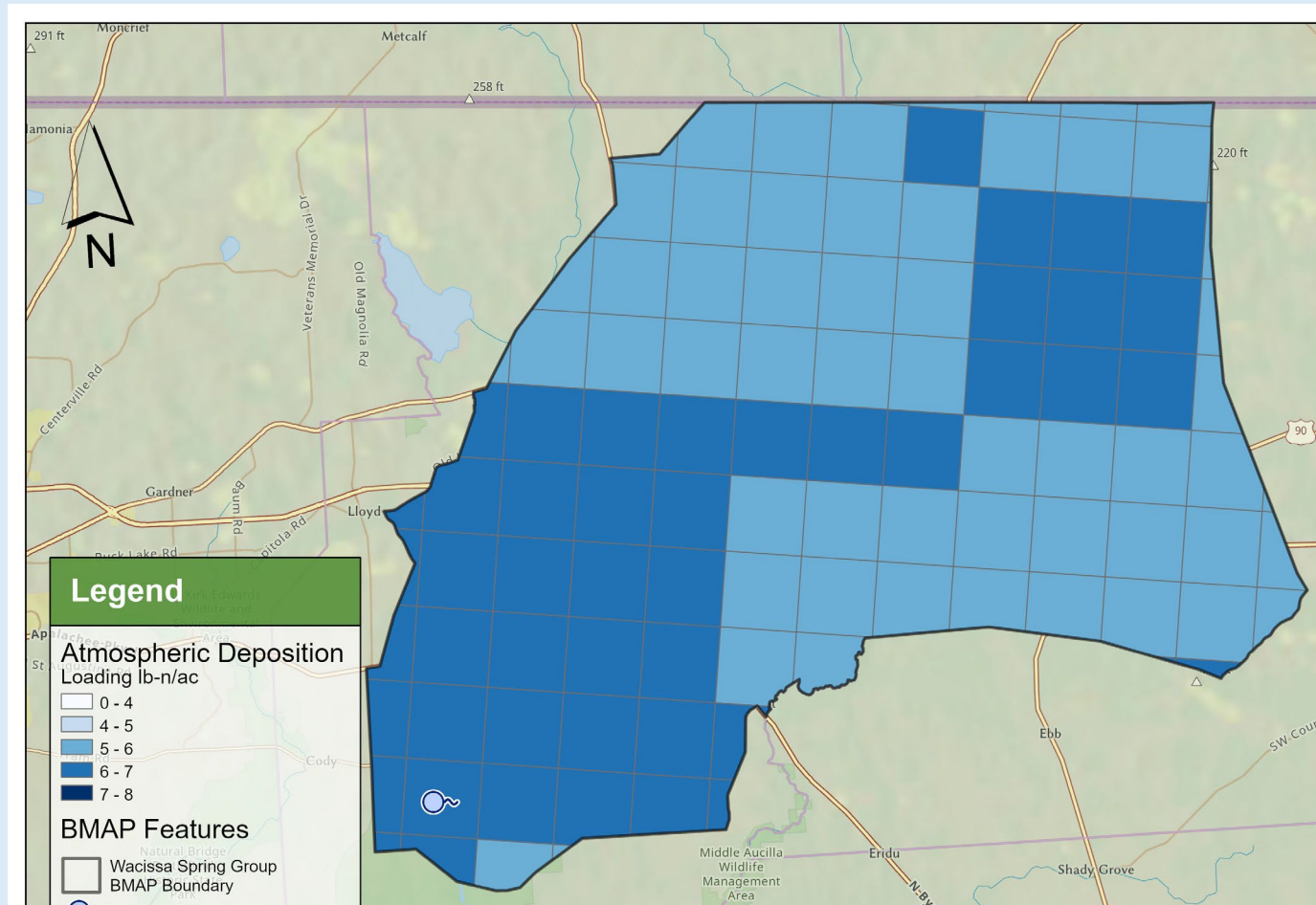


Wacissa River and Wacissa Spring Group Basin Summary

Wacissa Springs Basin Management Action Plan (BMAP)

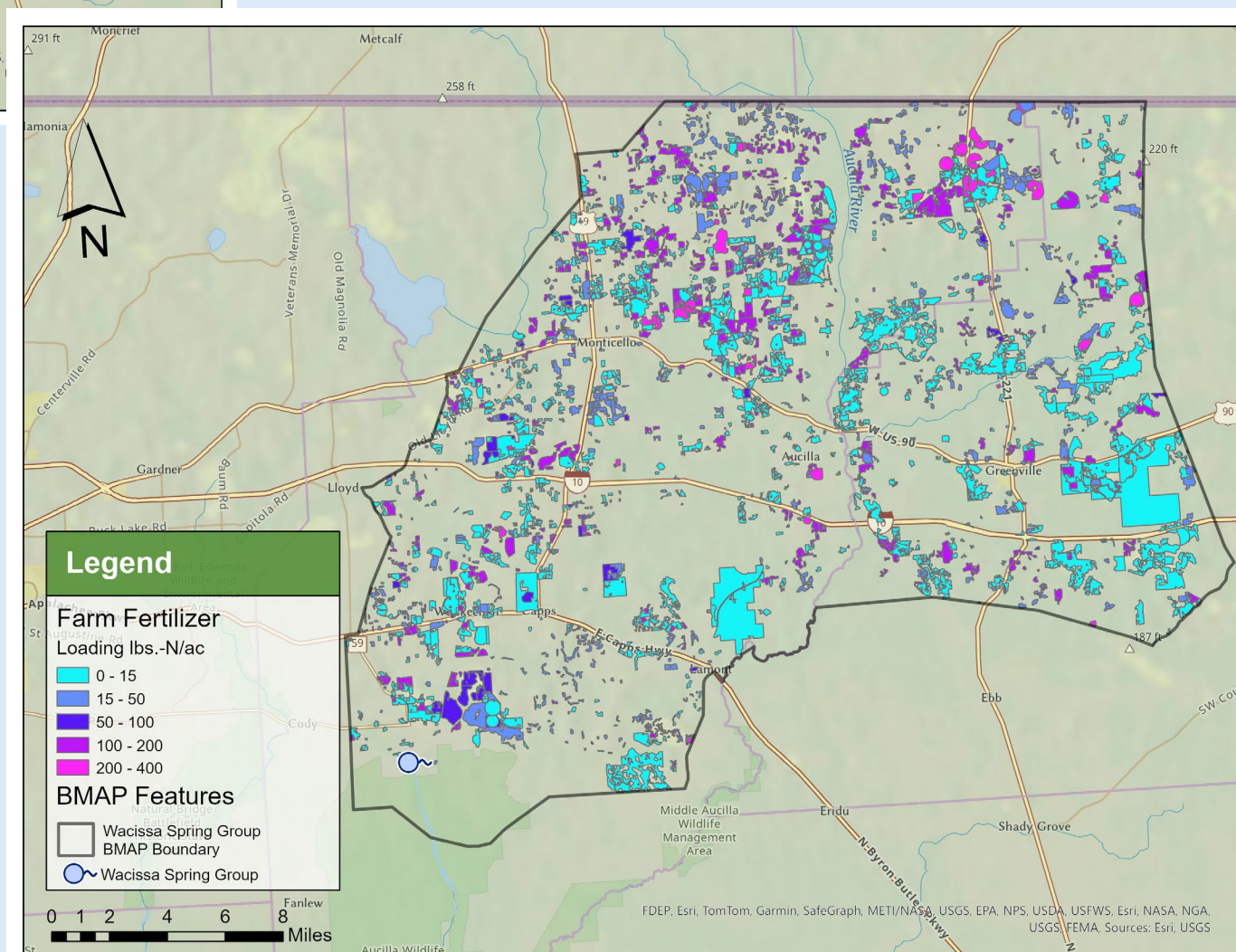
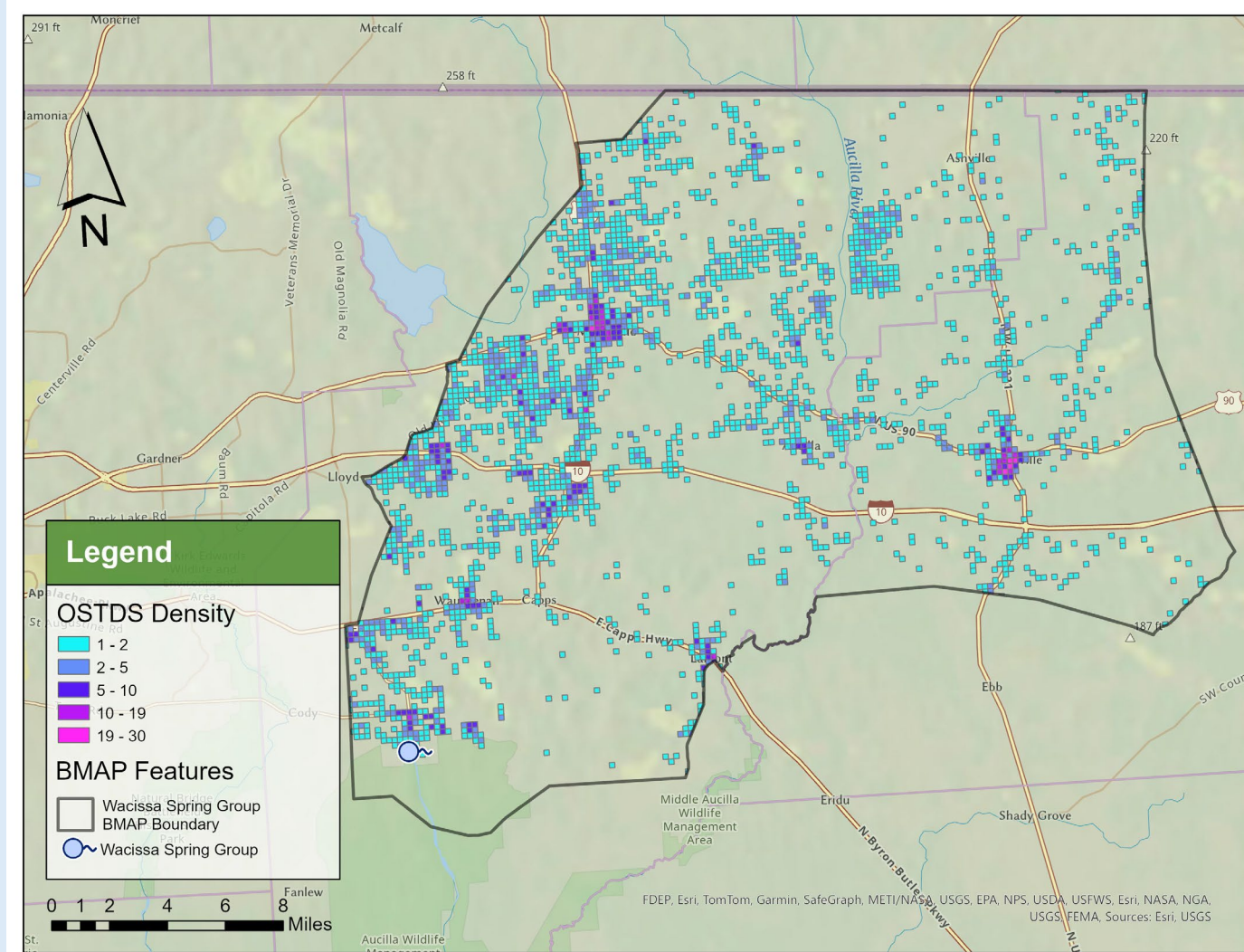


Nitrogen Source Loading

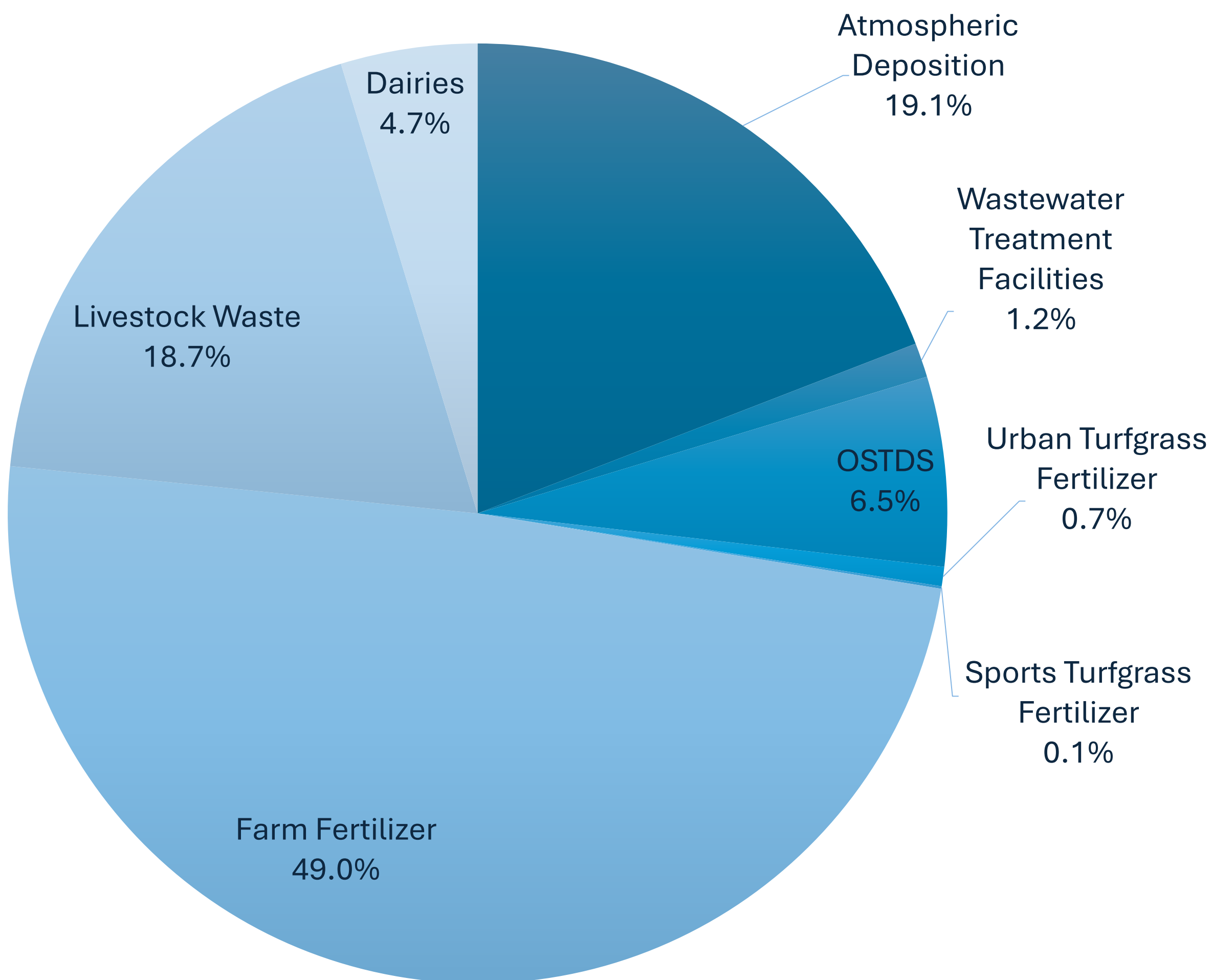


Nitrogen Loading: Nitrogen loading was estimated using the Nitrogen Source Inventory Loading Tool (NSILT). This is an evaluation tool that uses the best available data to estimate loading in pounds of nitrogen per year (lb-N/yr) to the land surface from a variety of nitrogen sources. The calculations apply biochemical attenuation and hydrogeological attenuation factors to estimate the loading effects on groundwater (GW) quality. Sources reviewed include:

- Atmospheric Deposition
- Wastewater Treatment Facilities
- Onsite Sewage Treatment and Disposal Systems (OSTDS)
- Urban Turfgrass Fertilizer
- Sports Turfgrass Fertilizer
- Farm Fertilizer
- Livestock Waste
- Dairies
- Biosolids (not in the Wacissa BMAP)



Wacissa Spring Group Nitrogen Loading



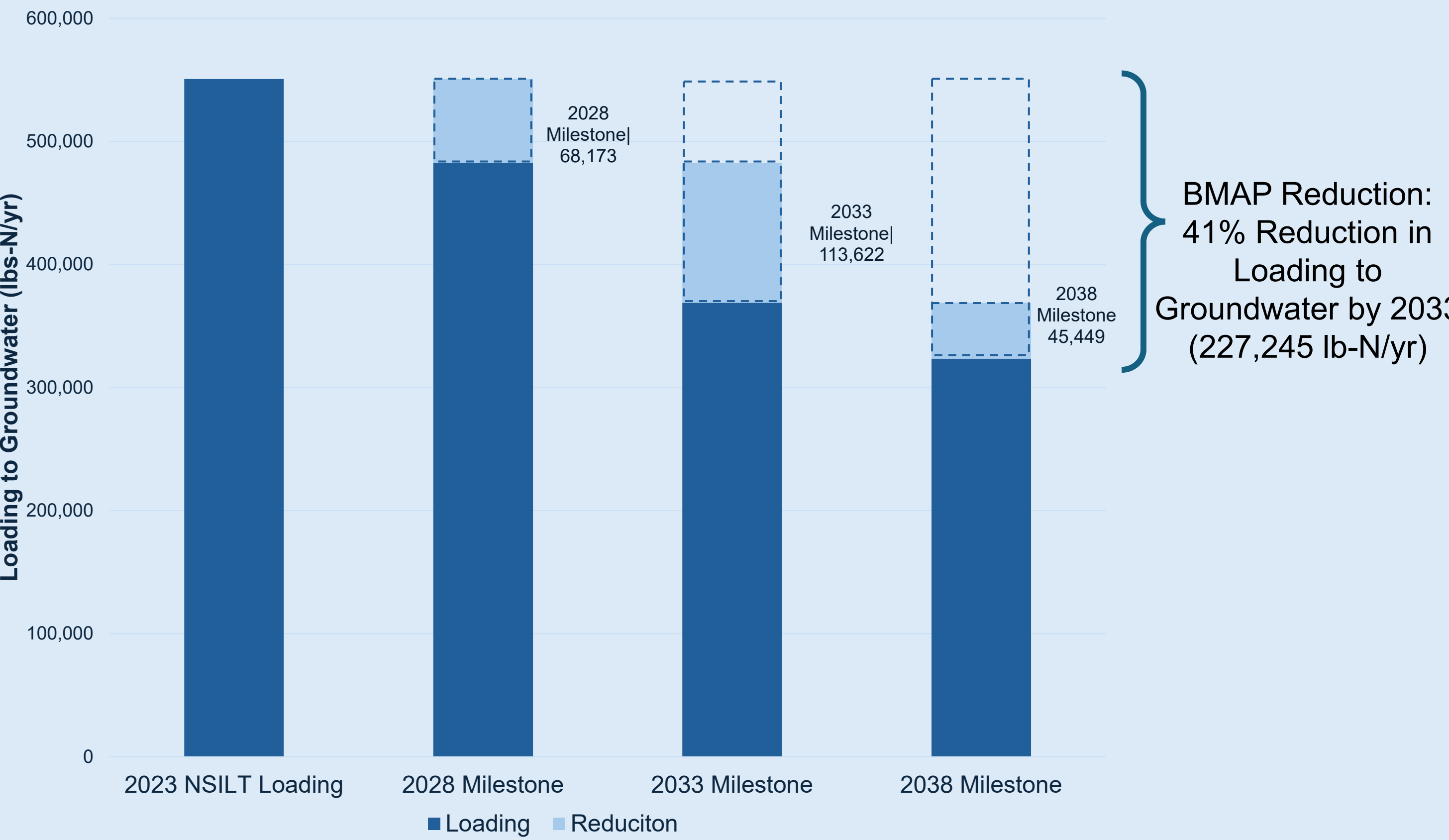
Nitrogen Source	Total Load to Groundwater (lbs-N/yr)
Atmospheric Deposition	105,275
Wastewater Treatment Facilities	6,524
OSTDS	35,872
Urban Turfgrass Fertilizer	3,659
Sports Turfgrass Fertilizer	468
Farm Fertilizer	270,052
Livestock Waste	102,964
Dairies	25,864
Total	550,679

Nitrogen Reduction Approach

	Nitrogen Loads (lb-N/yr)	Source
Total Load at Spring Vents (September 2023)	184,802	Upper 95% confidence interval - nitrate data and flow data from years 2013 to 2022
TMDL Load	108,541	TMDL target is 0.24 mg/L and using the same flow data from years 2013 to 2022
Percent Required Reduction	41%	
Total NSILT Load	550,679	2023 NSILT
Required Reduction	227,245	Proportional decrease in TMDL load

Spring flow and nitrate concentration data were reviewed to evaluate the nitrate load flowing from the spring. It was determined that approximately 41% more nitrate load is discharged than the waterbody can assimilate without impairment. A proportional decrease in loading from sources is needed to resolve this impairment.

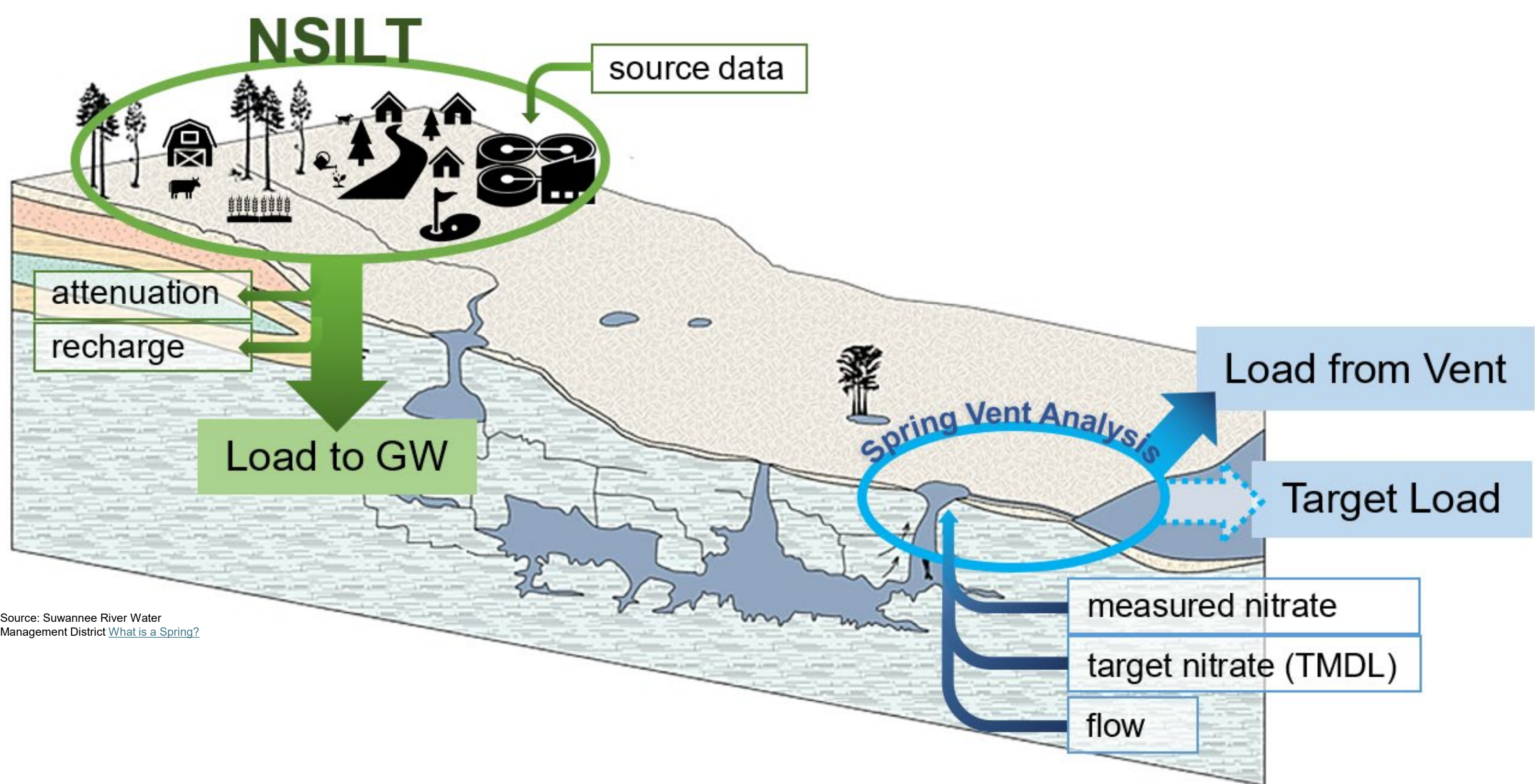
Wacissa Springs Reduction Strategy



Spring Vent Analysis

Load from Vent – Target Load = Reduction at vent

Percent Reduction at vent x **Load to Groundwater** = Required Reductions (from sources)



Spring	NO2+NO3 (mg-N/L)	TMDL (mg-N/L)	Discharge (cfs)	Loading (lb-N/yr)
Wacissa Head Spring #2	0.44	0.24	124.69	108,549
Big Blue	0.24*	0.24	27.80	13,121
Cassida/Cassidy	0.39	0.24	27.66	21,376
Log	0.44	0.24	31.17	26,851
Thomas	0.41	0.24	18.70	14,906

*Actual concentration below the TMDL.
NO2+NO3: Nitrite + nitrate.
mg-N/L: milligrams of nitrogen per liter.
cfs: cubic feet per second.



Wacissa River and Wacissa Spring Group BMAP Allocated Reductions, Milestones and Progress

Nitrogen Sources

Nitrogen Source	Allocations by Source (lb-N/yr)	Percentage of Total Reduction
Atmospheric Deposition*	43,443	18.88%
Onsite Sewage Treatment and Disposal Systems	14,803	6.43%
Wastewater Treatment Facilities	5,567	2.42%
Farm Fertilizer (BMP Enrollment)	40,508	17.60%
Livestock Waste (BMP Enrollment)	10,296	4.47%
Dairies - Confined Animal Feeding Operations (CAFO)	2,586	1.12%
Other Agriculture	111,213	48.33%
Urban Turfgrass Fertilizer	1,510	0.66%
Sports Turfgrass Fertilizer - Golf	147	0.06%
Sports Turfgrass Fertilizer - Other	46	0.02%
Total	230,120	100.00%

*Not allocated to entities.

BMAP Management Strategies

General Approach for Entity Allocations and Reductions

While the loading evaluation and entity allocations were determined by source, nutrient reduction credits can be earned through implementing projects addressing any source. Achieving milestone reductions is needed to ensure sufficient progress towards meeting the total maximum daily load (TMDL) target.

Source-Specific Management Strategies:

- Atmospheric Deposition:** Due to continuing air regulations and fuel switching, emissions of atmospheric nitrogen have been trending downwards in Florida since at least 2005 (Himes & Dawson, 2017).
- Onsite Sewage Treatment and Disposal Systems (OSTDS):** New installation or repair permits for conventional OSTDS are not permitted on lots one acre or less.
- Wastewater Treatment Facilities:** Surface water discharges from facilities must meet advanced waste treatment (AWT). Other discharge methods must meet AWT standards, if the Florida Department of Environmental Protection (DEP) determines the treatment is needed.
- Farm Fertilizer Best Management Practice (BMP) Implementation:** An assumed 15% reduction in nitrogen when a producer enrolls in the Florida Department of Agriculture and Consumer Services (DACS) BMP program and implements BMPs.
- Livestock Waste BMP Implementation:** An assumed 10% reduction in nitrogen when a livestock producer enrolls in the DACS BMP program and implements BMPs.
- Other Agricultural Activities:** The remainder of reductions allocated to agricultural sources will need to be addressed through a combination of regional agricultural projects, agricultural cooperative regional elements, innovative technologies and cost-share projects.
- Urban Turfgrass Fertilizer:** Ordinances, education, street sweeping and structural stormwater improvements to reduce impact from urban turfgrass fertilization.
- Sports Turfgrass Fertilizer – Golf:** Operators will be required to develop a nutrient management plan to ensure responsible management of nutrients.
- Sports Turfgrass Fertilizer – Other:** Owners/operators should follow the Sports Turfgrass BMP manual to ensure fertilizers are managed responsibly.

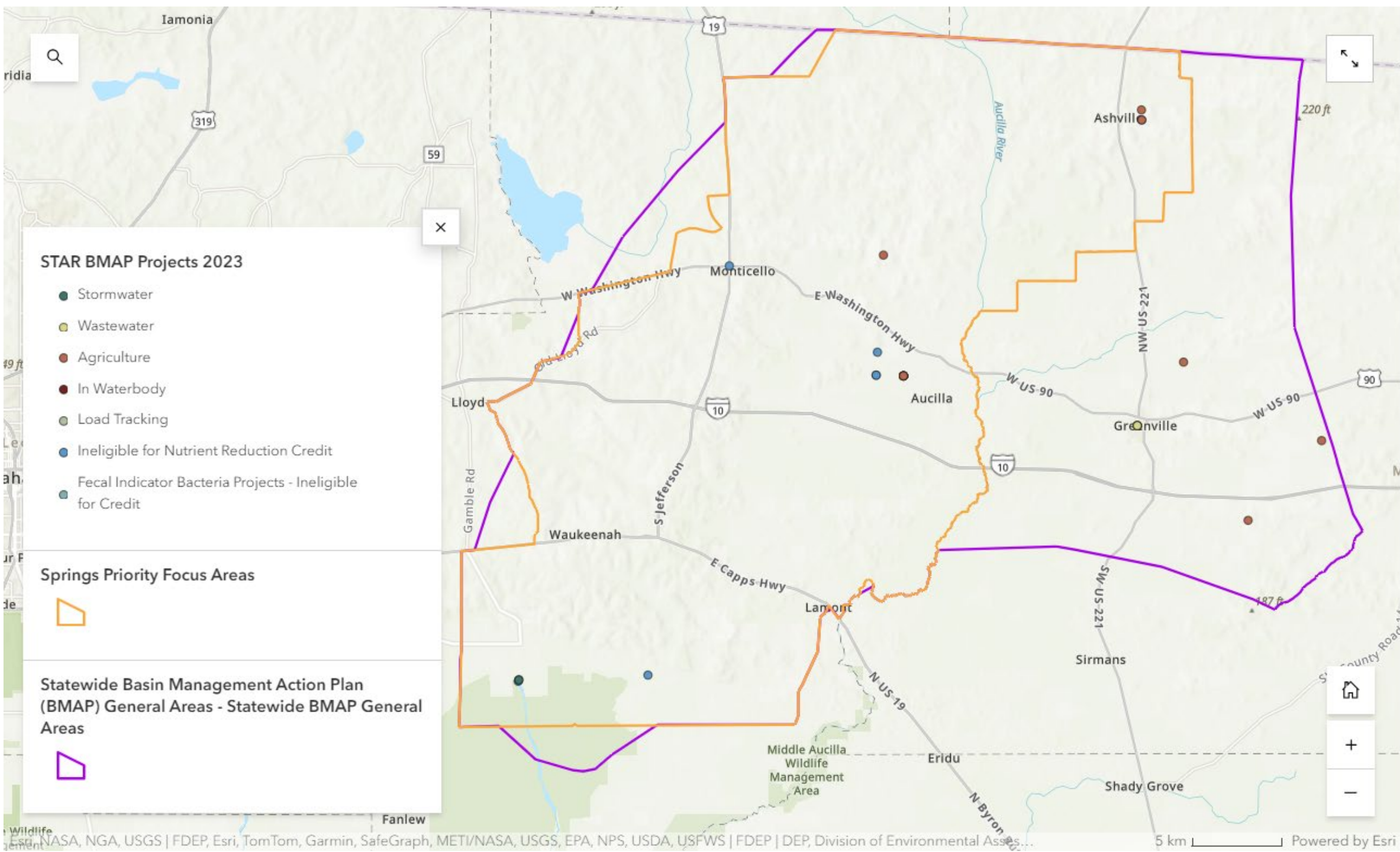
Projects



Project collection and reporting are crucial to the successful implementation and management of basin management action plans (BMAPs). Projects are reported to DEP annually through the Statewide Annual Report (STAR) process.

Stakeholders are required to report projects that are being implemented or planned that will be required to achieve reduction targets, along with an estimate of expected nutrient reduction benefits and financial costs.

It is important that all projects needed to achieve milestones are included in the STAR, even if a funding mechanism is not currently identified because this provides the state information on funding needs to achieve BMAP goals and assists with the prioritization of projects.

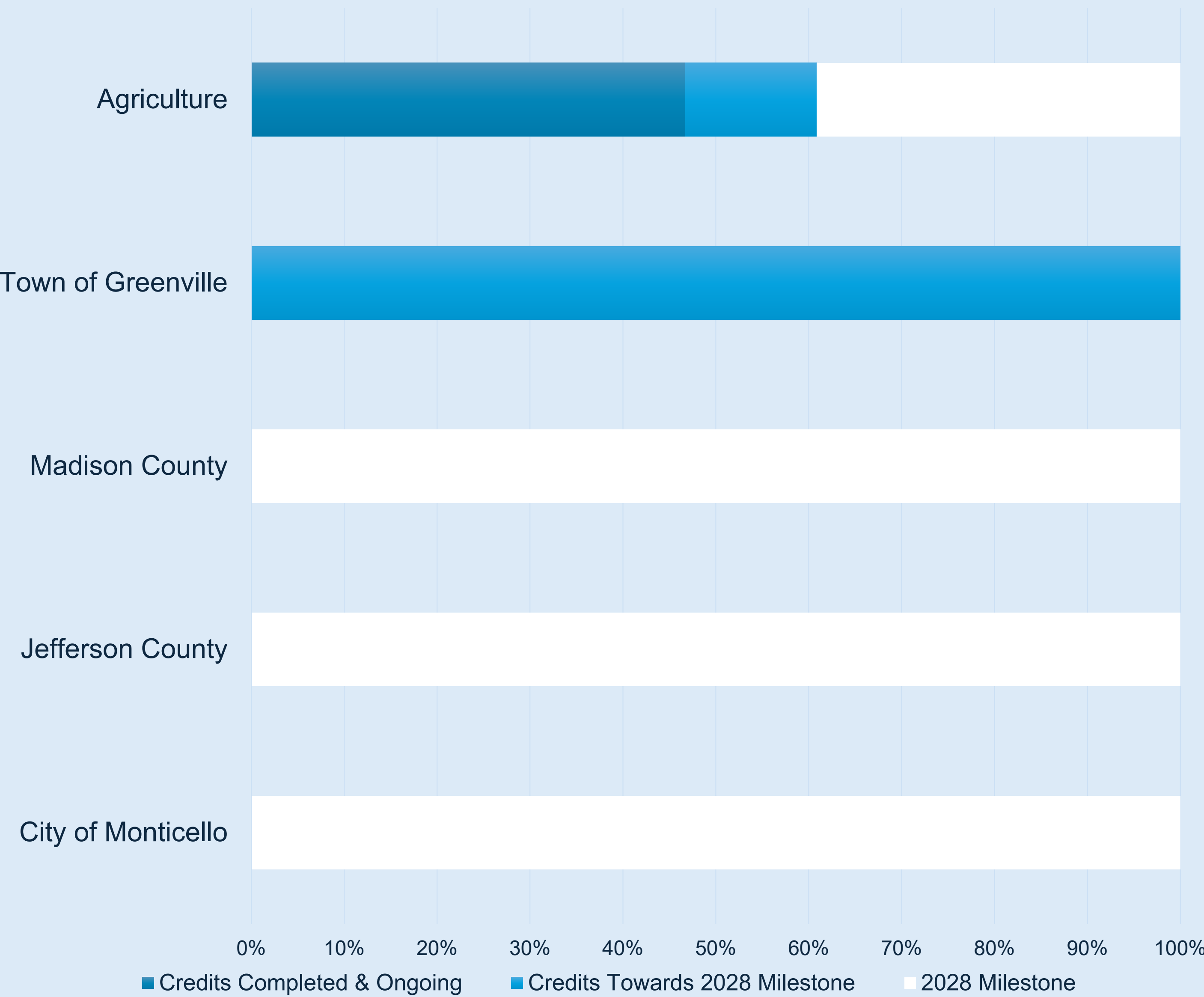


Entity Reduction Milestones and Progress

Entity	Milestone 2028 Required Reductions lbs-N/yr (30%)	Milestone 2033 Required Reductions lbs-N/yr (80%)	Milestone 2038 Required Reductions lbs-N/yr (100%)
Jefferson County	3,291	8,776	10,970
Madison County	872	2,324	2,905
City of Monticello	151	404	505
Town of Greenville	2,041	5,442	6,802
Jefferson Correctional Institution WWTF	195	521	652
DOT Rest Area, I-10 & Aucilla River WWTF	28	74	92
Agriculture	49,381	131,683	164,604
Private Golf Courses*	44	118	147

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

Progress Towards 2028 Milestone



*Estimates through December 2023.

