Annual Assessment of Florida's Water Resources and Conservation Lands

2025 Edition
Chapter 4

Water Quality

Acknowledgements

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Florida Department of Agriculture and Consumer Services

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Florida Natural Areas Inventory

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Food and Resource Economics Department, Institute of Food and Agricultural Sciences, University of Florida

Northwest Florida Water Management District

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Southwest Florida Water Management District

St. Johns River Water Management District

Suwannee River Water Management District

U.S. Department of Agriculture, Office of Rural Development

U.S. Environmental Protection Agency

U.S. Geological Survey

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Executive Summary

As of December 2024, 463 Total Maximum Daily Loads (TMDLs) had been established on impaired waterbody segments by the State of Florida, four more than the previous report. There are another 1,679 TMDLs that could be developed if Alternative Restoration Plans (ARPs) are not undertaken. The Office of Economic and Demographic Research (EDR) estimates that this would cost $55.88 million each year for the next 5 years and $31.97 million in each of the following 5 years to comply with state law. Over the next 10 years, this is a state investment of $439.25 million.

The Statewide Annual Report (STAR report), released by Florida's Department of Environmental Protection (DEP) in June 2024, provides progress reports on the 33 adopted Basin Management Action Plans (BMAPs). Those BMAPs include four types: Fecal Indicator Bacteria, Northern Everglades and Estuaries Protection Programs, Outstanding Florida Springs, and Surface Water Nutrients. EDR forecasts that it will cost $13.52 billion to comply with laws governing BMAP programs between Fiscal Year 2024-25 and Fiscal Year 2041-42, 30% higher than the total estimate last year. This is likely due to the addition of 17 new BMAP projects that are either ongoing or planned. Of this total, 53% or $7.2 billion will be a state responsibility. According to the DEP, the early implementation of ARPs is a more cost-effective and a more efficient alternative to BMAPs; however, only limited expenditure data for these alternative approaches is available. More importantly, concrete guidance from the department on how the ARPs relate to the potential universe of 1,679 TMDLs is still lacking as is detailed forward-looking operational planning. All of these reasons prevent estimates of the actual costs of ARPs—including the cost differential—from being provided.

Key pieces of legislation are still in the rule development stage. When this process is completed, there may be a significant impact on projected costs. Future editions will expand the water quality analysis to include expenditure forecasts for other activities required by or implemented pursuant to federal or state law, including ARPs for impaired waters and water quality monitoring. The degree to which the assumed timeframes and cost-shares underlying those expenditure forecasts are legally required is still being evaluated.

Sections 4.2 through 4.4 discuss expenditures and revenues pertaining to water quality based on historical patterns. They provide data for completed fiscal years as well as forecasts assuming no significant changes are made. This means that future state costs associated with TMDL development and BMAPs (described above) that are beyond the level and pace of investment undertaken in the past are not included. The state information is summarized in the graphs and tables in Section 4.2. As used in these sections, expenditures are not equivalent to appropriations, but rather reflect disbursements, which may lag appropriations by one or more years. Figure 4.2.1 illustrates the projected funding gap for water quality, assuming the Legislature continues its current path of expenditures. To maintain the status quo, additional state funds are needed. Further, projections show that state investments above and beyond this level will be needed to maintain and improve the quality of water in the state.

4. Estimating Future Expenditures Necessary to Comply with Laws and Regulations Governing Water Quality Protection and Restoration

The Office of Economic and Demographic Research (EDR) is required to forecast the necessary expenditures to comply with laws and regulations associated with water quality protection and restoration. This edition further estimates future expenditures relating to state programmatic costs to implement the TMDL program and BMAPs. Future editions will continue to refine the existing analyses as better data becomes available, as well as begin to analyze relevant compliance costs of local governments and public and private utilities to meet requirements related to water quality protection and restoration. While this chapter largely focuses on the primary water quality improvement initiatives required by the federal Clean Water Act and the Florida Watershed Restoration Act, future editions will incorporate other important state and regional water quality protection and restoration initiatives.

4.1 State and Federal Laws and Regulations Governing Surface Water Quality

Florida has an abundance of surface water resources. The protection of these resources is vitally important. Water pollution affects Florida's inland and coastal waters, but it can also impact the public health of residents and visitors who use and enjoy Florida's waters. According to the United States Environmental Protection Agency (EPA), nonpoint sources of pollution are reported as the leading cause of surface waterbody impairment nationwide[1] and are the largest contributor of pollutants to surface and groundwater in Florida.[2] Unlike point sources of pollution that are conveyed to waterbodies by discrete means, nonpoint pollution comes from many diffuse sources that are generally transported to waterbodies through stormwater runoff.[3] Potential sources of nonpoint source pollution include runoff from agricultural and urban landscapes, septic tanks, and atmospheric deposition. The most significant surface water quality issue identified statewide is excessive nutrients (nitrogen and phosphorus) from both point and nonpoint sources. The Florida Department of Environmental Protection (DEP) is responsible for implementing various surface water quality-related directives under federal and state law. Much of this effort is undertaken in coordination with other state agencies, the water management districts (WMDs), local governments, universities, and other public and private stakeholders.

In 1972, Congress passed the Clean Water Act (CWA) with a purpose to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[4] Two national goals were also declared: (1) the elimination of pollutant discharges into navigable waters by 1985; and (2) fishable and swimmable waters by 1983.[5] Although water pollution remains an issue nationwide, the intent behind these ambitious goals is still relevant to the implementation of the CWA.

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[1] U.S. Environmental Protection Agency, Basic Information about Nonpoint Source (NPS) Pollution. https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution (Accessed Oct 2024.)
[2] Florida Department of Environmental Protection, Nonpoint Source Program Update, Apr 2015. https://floridadep.gov/sites/default/files/NPS-ManagementPlan2015.pdf (Accessed Oct 2024.)
[3] Hydromodification activities can also cause nonpoint source pollution.
[4] 33 U.S.C. § 1251(a).
[5] 33 U.S.C. § 1251(a).

While the CWA establishes the federal framework governing water quality protection and restoration, it is structured in a manner that recognizes the primary responsibilities and rights of states to control water pollution.[6] To this end, the CWA imposes various wide-scale requirements on states regarding water quality management. These initiatives include establishing and periodically reviewing surface water quality standards, assessing the condition of waterbodies, and establishing water quality goals through the adoption of TMDLs for waterbody segments which do not meet water quality standards, and implementing controls for permitted sources of pollution. This federal and state partnership is further demonstrated by the availability of federal grants to assist states with the implementation of various water quality programs and initiatives.

In even numbered years, states are required to meet reporting requirements under CWA sections 303(d), 305(b), and 314, which identify impaired waters, provide a description of the water quality of all waters in the state, and provide an assessment of the status and trends of significant publicly owned lakes, respectively.[7] DEP prepares the Integrated Water Quality Assessments for Florida, which are available on its website.[8] The most recent report was released in April 2024.

The main regulatory components of the CWA prohibit discharges of pollutants into waters of the United States except in compliance with the CWA provisions. This includes the regulation of pollutants discharged from point sources under the National Pollutant Discharge Elimination System (NPDES) permit program[9] and discharges of dredged or fill material.[10] The CWA also regulates the use and disposal of biosolids from wastewater treatment processes.[11] Although most nonpoint sources of pollution are not controlled through regulatory measures, the CWA incentivizes nonpoint source management through federal grants to address nonpoint source pollution.[12]

Recent Legislation

In 2020, the Florida Legislature passed the Clean Waterways Act, which addressed many of the environmental issues related to water quality improvement in the state.[13] The act requires the Department of Agriculture and Consumer Services (DACS) to inspect agricultural producers enrolled in best management practices (BMPs) at least once every two years, prioritizing operations in certain BMAP areas. The act additionally addresses water quality improvements related to stormwater, biosolids, and golf courses, including setting new expectations for water quality monitoring.[14] Several of the act's provisions are forward looking, the full impact of which

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[6] 33 U.S.C. § 1251(b).
[7] 33 U.S.C. §§ 1313, 1315, and 1324.
[8] Florida Department of Environmental Protection. *2024 Integrated Water Quality Assessment for Florida: Sections 303(d), 305(b), and 314 Report and Listing Update*. Division of Environmental Assessment and Restoration. https://publicfiles.dep.state.fl.us/DEAR/DEARweb/WAS/Integrated_Report/DEP_2024_Final.pdf (Accessed Oct 2024.)
[9] 33 U.S.C. § 1342
[10] 33 U.S.C. § 1344.
[11] 33 U.S.C. § 1345.
[12] 33 U.S.C. § 1329.
[13] *See* Ch. 2020-150, Laws of Florida, available at: http://laws.flrules.org/2020/150.
[14] For a concise summary of the bill see: https://www.flsenate.gov/PublishedContent/Session/2020/BillSummary/Community_CA0712ca_00712.pdf. (Accessed Dec 2023.) For a more thorough analysis, see: https://www.myfloridahouse.gov/Sections/Documents/loaddoc.aspx?FileName=h1343z1.ANRS.DOCX&DocumentType=Analysis&BillNumber=1343&Session=2020 . (Accessed Dec 2023)

will follow rule development, appropriations, and study results. Much of the rulemaking process is still underway.[15] A Final Order with an effective date of June 12, 2023 specifies that local governments within certain BMAP areas must develop a wastewater treatment plan and/or an onsite sewage treatment and disposal system (OSTDS) remediation plan if either or both of those are identified as contributors of at least twenty percent of point source or nonpoint source nutrient pollution, or if DEP determines remediation is necessary to achieve the TMDL. Twenty-four of the thirty-two BMAPs then available were included in the list of applicable BMAPs.[16] The affected local governments were required to submit these remediation plans by August 1, 2024. The department contacted 247 local governments prior to this date, with 203 ultimately submitting plans.

In 2021, the Legislature passed CS/SB 64, relating to reclaimed water.[17] It requires each local wastewater utility to submit a plan to the DEP to eliminate harmful surface water discharge. The plans must include timeframes to meet requirements outlined in this and other related legislation. According to DEP's 2023 reuse inventory, owners of wastewater facilities having permitted capacities of 0.1mgd and greater submitted 75% of the 2023 forms (annual reports) that were required to be submitted.[18] This is down from the 86% reported last year.

Several bills also passed during the 2022 Session that directly or indirectly addressed water quality. Most importantly, CS/CS/CS/HB 965 created the concept of water quality enhancement areas (WQEAs) that address contributions of one or more pollutants or other constituents in the watershed, basin, sub-basin, targeted restoration area, waterbody, or section of waterbody that do not meet applicable state water quality criteria. According to the 2022 Senate Summary of Legislation Passed: "A WQEA is a natural system that is constructed, operated, managed, and maintained pursuant to a permit to provide offsite, compensatory, regional treatment within an identified enhancement service area and enhancement credits."[19] Further, "construction, operation, management, and maintenance of a WQEA must be approved through the environmental resource permitting (ERP) process." Implementation is dependent on rulemaking, which was to be completed by June 30, 2023. As of November 2024, the rule was still in draft form.[20]

In 2023, the Legislature passed CS/CS/HB 1379, which contained numerous changes to current environmental protection laws. According to the Senate's 2023 Bill Summaries of passed legislation, this bill has the following major effects that specifically address water quality:

- Requires sewage disposal facilities to provide advanced waste treatment before discharging into certain impaired waters by January 1, 2033.

[15] For the current status of DEP's rulemaking activities, see https://floridadep.gov/water/domestic-wastewater/content/water-reuse-news-rulemaking-information. (Accessed Nov 2024.)
[16] The 2024 edition of this report stated that twenty-three of the thirty-two BMAPs were included in the applicable list. This discrepancy is likely due to the Indian River Lagoon's multiple BMAP designations.
[17] Chapter 2021-168, Laws of Florida. See http://laws.flrules.org/2021/168. (Accessed Dec 2023.)
[18] Florida Department of Environmental Protection. (2025, January 16). *2023 Reuse Inventory Report*. Reuse Inventory Database and Annual Report. https://floridadep.gov/water/domestic-wastewater/content/reuse-inventory-database-and-annual-report (Accessed Feb 2025.)
[19] 2022 Senate Summary of Legislation Passed, available at: https://www.flsenate.gov/PublishedContent/Session/2022/BillSummary/CombinedPDF/EN.pdf.
[20] *Water Quality Enhancement Area Rulemaking*. Florida Department of Environmental Protection. (2024, July). https://floridadep.gov/water/engineering-hydrology-geology/content/water-quality-enhancement-area-rulemaking (Accessed Nov 2024.)

- Requires that, for waters that become impaired after July 1, 2023, sewage disposal facilities must provide advanced waste treatment within 10 years of the designation.
- Prohibits new onsite sewage treatment and disposal systems (OSTDSs) within a BMAP, reasonable assurance plan, or pollution reduction plan where sewer is available. On lots one acre or less where sewer is not available, new OSTDSs must be an enhanced system or other treatment system that achieves at least 65 percent nitrogen reduction.
- For BMAPs that include an Outstanding Florida Spring, the bill expands the area for which an OSTDS remediation plan is required from a "priority focus area" to the entire BMAP.
- Establishes the Indian River Lagoon Protection Program (IRLPP), consisting of the Banana River Lagoon BMAP, the Central Indian River Lagoon BMAP, the North Indian River Lagoon BMAP, and the Mosquito Lagoon Reasonable Assurance Plan.
- Prohibits new OSTDSs (unless previously permitted) within the IRLPP area beginning January 1, 2024, where a central sewerage system is available. For new developments where sewer is not available, only enhanced nutrient-reducing OSTDSs will be authorized.
- Requires any commercial or residential property with an existing OSTDS located within the IRLPP area to connect to central sewer or upgrade to an enhanced nutrient-reducing OSTDS or other wastewater treatment system that achieves at least 65 percent nitrogen reduction by July 1, 2030.[21]

Septic to sewer is discussed further in this chapter.

Additionally, CS/CS/HB 1405 established a biosolids grant program so that "DEP may provide grants to counties, special districts, and municipalities to support projects that: evaluate and implement innovative technologies and solutions for the disposal of biosolids; or, construct, upgrade, expand, or retrofit domestic facilities that convert wastewater residuals to Class AA biosolids, nonfertilizer uses or disposal methods, or alternatives to synthetic fertilizers."[22]

Finally, SB 2502 initiated a moratorium on new fertilizer ban ordinances for the state until July 1, 2024.[23] Ordinances already in place prior to June 30, 2023, were permitted to continue, but county and municipal governments could not initiate new bans. This pause coincided with the appropriation of funds to the University of Florida to convene a study of the effectiveness of local fertilizer ordinances. In the previous edition of this report, only the literature review had been completed.[24] Since the previous edition, the study has been completed, and found that "counties with fertilizer ordinances exhibited improved quality trends in LAKEWATCH lakes, but the magnitude and overall change in trend depended on the ordinance," and further found that winter

[21] The Florida Senate. *CS/CS/HB 1379 — Environmental Protection*. 2023 Bill Summaries. https://www.flsenate.gov/Committees/billsummaries/2023/html/3087 (Accessed Oct 2024.)
[22] The Florida Senate. *2023 Bill Summaries*. https://www.flsenate.gov/Committees/BillSummaries/2023/
[23] Appropriations. (2023, May 9). *Sb2502*. Senate Bill 2502 (2023) - The Florida Senate. https://www.flsenate.gov/Session/Bill/2023/2502
[24] Cardenas, B., Dukes, M. D., Zhuang, Y., Unruh, J. B., Reisinger, A. J., Lindsey, A. J., Krimsky, L. S., & Atkinson, M. K. (2023, December 22). *Report: Effectiveness of timing of seasonal fertilizer restrictions on urban landscapes*. Center for Land Use Efficiency. https://clue.ifas.ufl.edu/report-effectiveness-of-timing-of-seasonal-fertilizer-restrictions-on-urban-landscapes/ (Accessed Oct 2024.)

seasonal bans "were the only ordinance type to exhibit trend improvements across all water quality metrics analyzed."[25]

In 2024, several bills passed that directly or indirectly affect water quality. Notably, the legislature passed CS/CS/HB 1557 which "requires certain wastewater treatment facilities that provide reclaimed water within a basin management action plan or reasonable assurance plan area to meet advanced waste treatment standards."[26] Further, this legislation directs "DEP to establish an enhanced nutrient-reducing OSTDS approval program."[27] Related issues in CS/SB 7040 for stormwater management systems are discussed in Chapter 5.

Water Quality Assessment and Total Maximum Daily Loads for Impaired Waters

Water quality assessment begins with water quality standards. The federal Clean Water Act (CWA) directs states to establish surface water quality standards, or if the state fails to act, requires the EPA to do so.[28] Florida's surface water quality standards are adopted by rule in chapter 62-302 of the Florida Administrative Code, and consists of designated uses,[29] numeric and narrative criteria necessary to safely support such uses, the state's anti-degradation policy, and moderating provisions (such as variances, mixing zone rules, or exemptions).[30] See Table 4.1.1 which identifies the seven classes of designated uses in Florida, beginning with the classification having the highest degree of protection (*i.e.*, Class I – Potable Water Supplies).

Table 4.1.1 Classification of Surface Waters

CLASS I	Potable Water Supplies
CLASS I-Treated	Treated Potable Water Supplies
CLASS II	Shellfish Propagation or Harvesting
CLASS III	Fish Consumption; Recreation, Propagation, and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
CLASS III-Limited	Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife
CLASS IV	Agricultural Water Supplies
CLASS V	Navigation, Utility, and Industrial Use

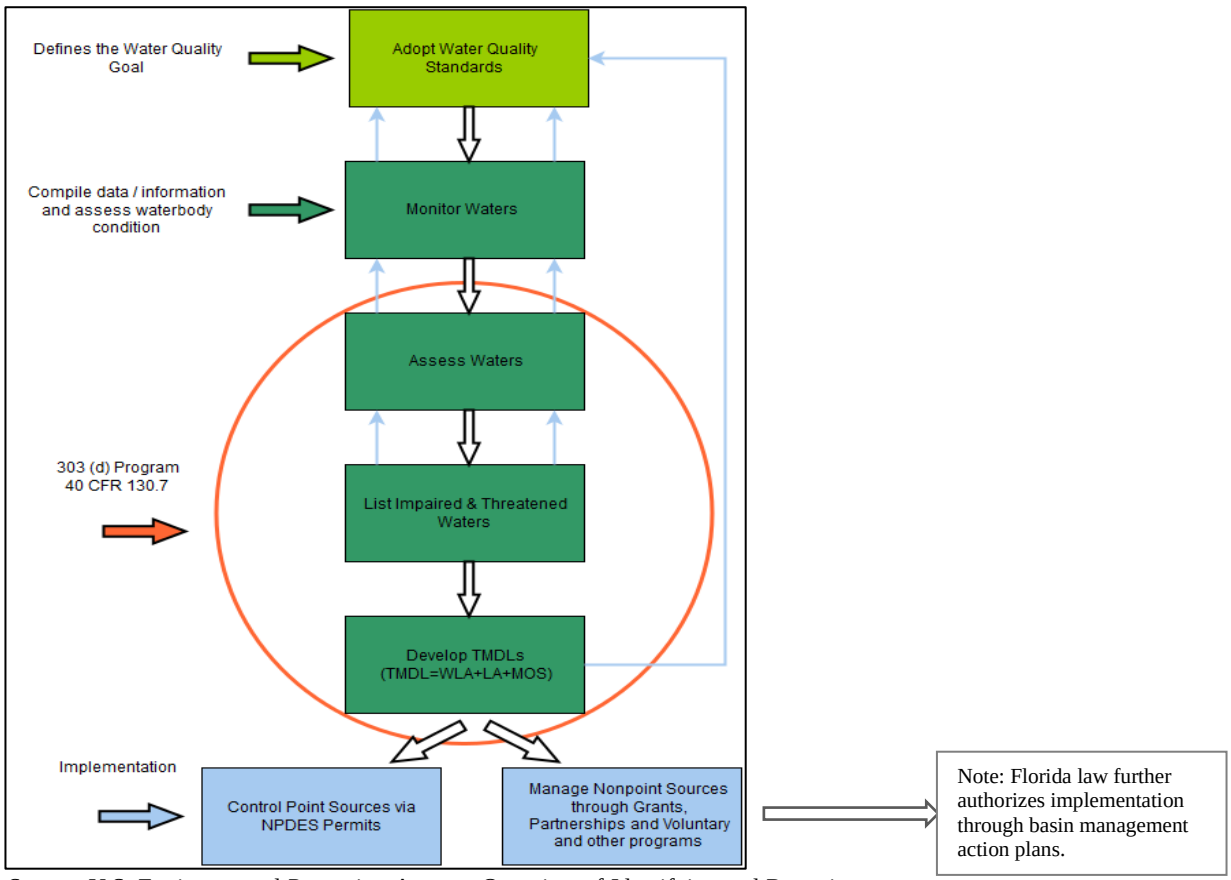
Source: Fla. Admin. Code R. 62-302.400(1).

The cornerstone of water quality restoration under the CWA is the development and implementation of total maximum daily loads (TMDLs) for waterbodies or waterbody segments

[25] Reisinger, A. J., Dukes, M., Iannone III, B. V., Unruh, J. B., & Smidt, S. J. (2024). Effects of Urban Fertilizer Ordinances on Water Quality: SL511/SS724, 01/2024. *EDIS*, *2024*(1). https://doi.org/10.32473/edis-ss724-2024 (Accessed Mar 2025.)
[26] The Florida Senate; Committee on Environment and Natural Resources. https://www.flsenate.gov/PublishedContent/Session/2024/BillSummary/Environment_EN1557en_01557.pdf. (Accessed Jun 2025.)
[27] The Florida Senate. *2024 Bill Summaries*. https://www.flsenate.gov/Committees/BillSummaries/2024/. (Accessed Jun 2025.)
[28] 33 U.S.C. § 1313(a)-(c).
[29] The term "designated use" is defined as "the present and future most beneficial use of a body of water as designated by the Environmental Regulation Commission by means of the Classification system contained in [rule chapter 62-302]." Fla. Admin. Code R. 62-302.200(9).
[30] Fla. Admin. Code R. 62-302.200(42).

that are not fully meeting their designated uses. In 1999, the Florida Legislature passed the Florida Watershed Restoration Act, section 403.067, Florida Statutes, which established the state's TMDL program to implement the requirements in section 303(d) of the federal Clean Water Act.[31] Under this program, waters that DEP has identified as not meeting applicable water quality standards are placed on the department's Verified List of impaired waterbodies for which TMDLs must be developed.[32] This list is adopted by DEP secretarial order and is submitted to the EPA biennially.[33] The EPA must approve or disapprove the submitted list and may independently add additional waterbodies not identified by the state. Figure 4.1.1 illustrates the general approach for water quality restoration under the CWA.

Figure 4.1.1 Water Quality-Based Approach of the Federal Clean Water Act



Source: U.S. Environmental Protection Agency, Overview of Identifying and Restoring Impaired Waters under Section 303(d) of the CWA[34]

[31] 33 U.S.C. § 1313(d). DEP is the lead agency for administering section 303(d).
[32] *See generally* Fla. Admin. Code Ch. 62-303 (establishing the methodology for identifying impaired waters to be included on the state's Verified List of impaired waters, as well as the Planning List and Study List identifying potentially impaired waters and waters where additional information is needed, respectively).
[33] *See* Fla. Admin. Code R. 62-303.100(1); *see also* Fla. Admin. Code R. 62-303.150(1). The current Statewide Comprehensive Verified List of Impaired Waters was adopted on August 16, 2024, and is available at: https://floridadep.gov/dear/watershed-assessment-section/content/assessment-lists. (Accessed Oct 2024.)
[34] Environmental Protection Agency. *Overview of Identifying and Restoring Impaired Waters under Section 303(d) of the CWA*. EPA. https://www.epa.gov/tmdl/overview-identifying-and-restoring-impaired-waters-under-section-303d-cwa (accessed Oct 2024.)

The DEP utilizes a statewide watershed management approach for water resource management in Florida. First, DEP has delineated the state into assessment units with unique water body identification numbers (WBIDs) that represent waterbodies at the watershed or sub-watershed scale.[35] These WBIDs include "drainage basins, lakes, lake drainage areas, springs, rivers and streams, segments of rivers and streams, coastal, bay and estuarine waters in Florida."[36] The WBIDs are used by DEP in implementation of a number of responsibilities including impaired waters assessment and the TMDL and BMAP programs.[37] In its analysis for this Edition, EDR was able to identify 6,796 WBIDs in Florida.

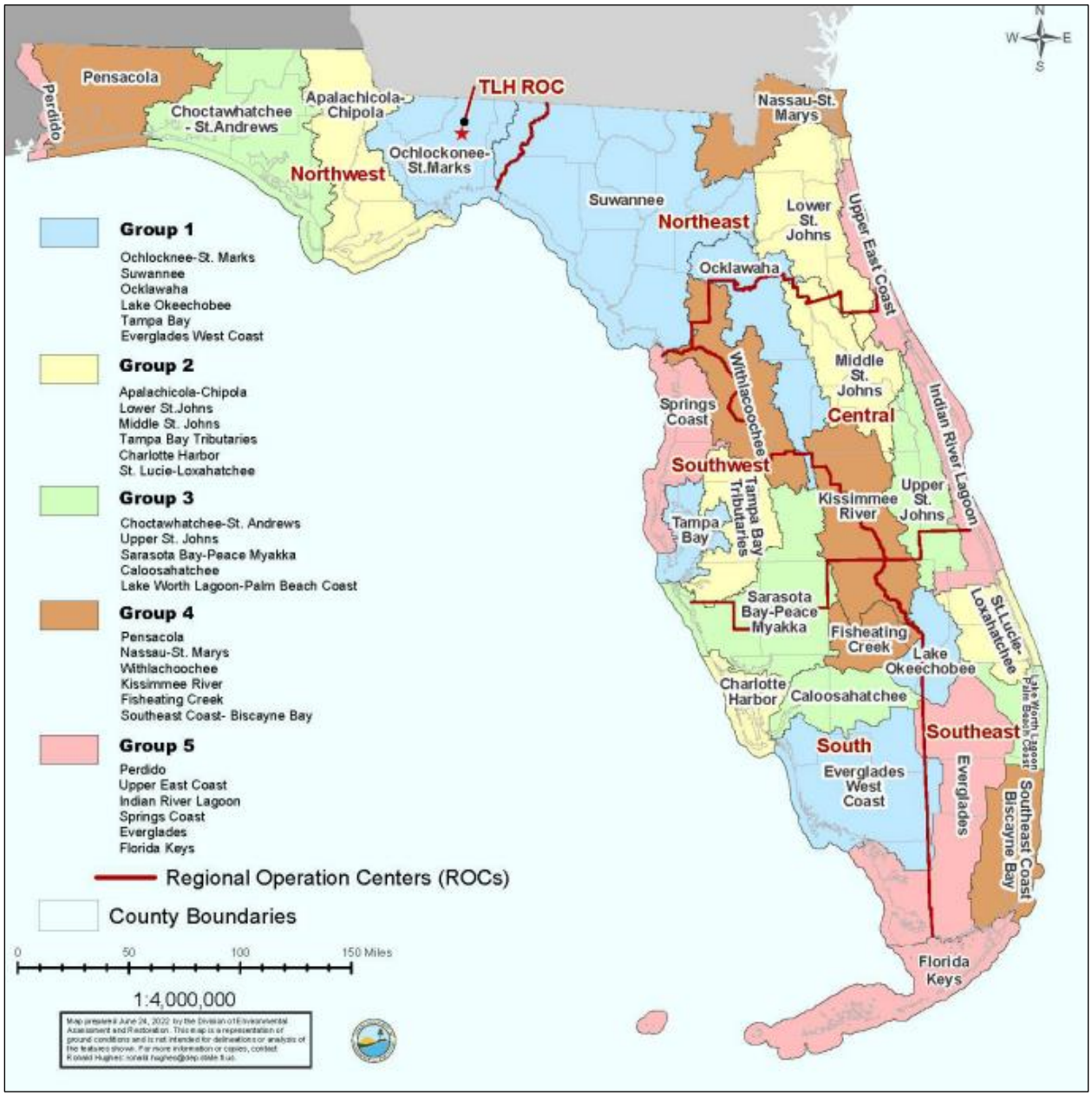
Second, as part of the watershed management approach, Florida's 29 basins have been historically divided into five basin groups that continuously move through a five-year, five-phase cycle of restoration activities that begins with the first phase of preliminary basin evaluation.[38] In 2020, the department transitioned to a statewide biennial assessment process whereby all waterbody segments are assessed every two years instead of using the five-year basin rotation cycle. According to DEP, "All assessments will have the same data assessment period, the consistent application of water quality criteria, and essentially equal timeframes." These results are in full use for the first time in 2024. Under both approaches, the assessed WBIDs are placed in assessment categories or subcategories from one through five.

See Figure 4.1.2 for a map of the state's 29 basins, and Figure 4.1.3 for a map of the state's WBIDs. See Table 4.1.2 for data regarding water body types, Table 4.1.3 for the assessment categories, and Figure 4.1.4 for an illustration of the previous rotating watershed management approach.

[See figure on next page]

[35] Florida Department of Environmental Protection, Basin 411, What is a WBID? https://floridadep.gov/dear/watershed-assessment-section/content/basin-411-0. (Accessed Oct 2024.)
[36] *Id.*
[37] *Id.*
[38] *See* Florida Department of Environmental Protection, Final Integrated Water Quality Assessment for Florida: 2016 Sections 303(d), 305(b), and 314 Report and Listing Update, Table 6.2. Phases of the basin management cycle at 168, available at: https://floridadep.gov/sites/default/files/2016-Integrated-Report.pdf. (Accessed Oct 2024.) *See also* Florida Department of Environmental Protection, Final Integrated Water Quality Assessment for Florida: 2018 Sections 303(d), 305(b), and 314 Report and Listing Update, at 136-39 (describing the watershed management approach), available at: https://floridadep.gov/sites/default/files/2018_integrated_report.pdf. (Accessed Oct 2024.).

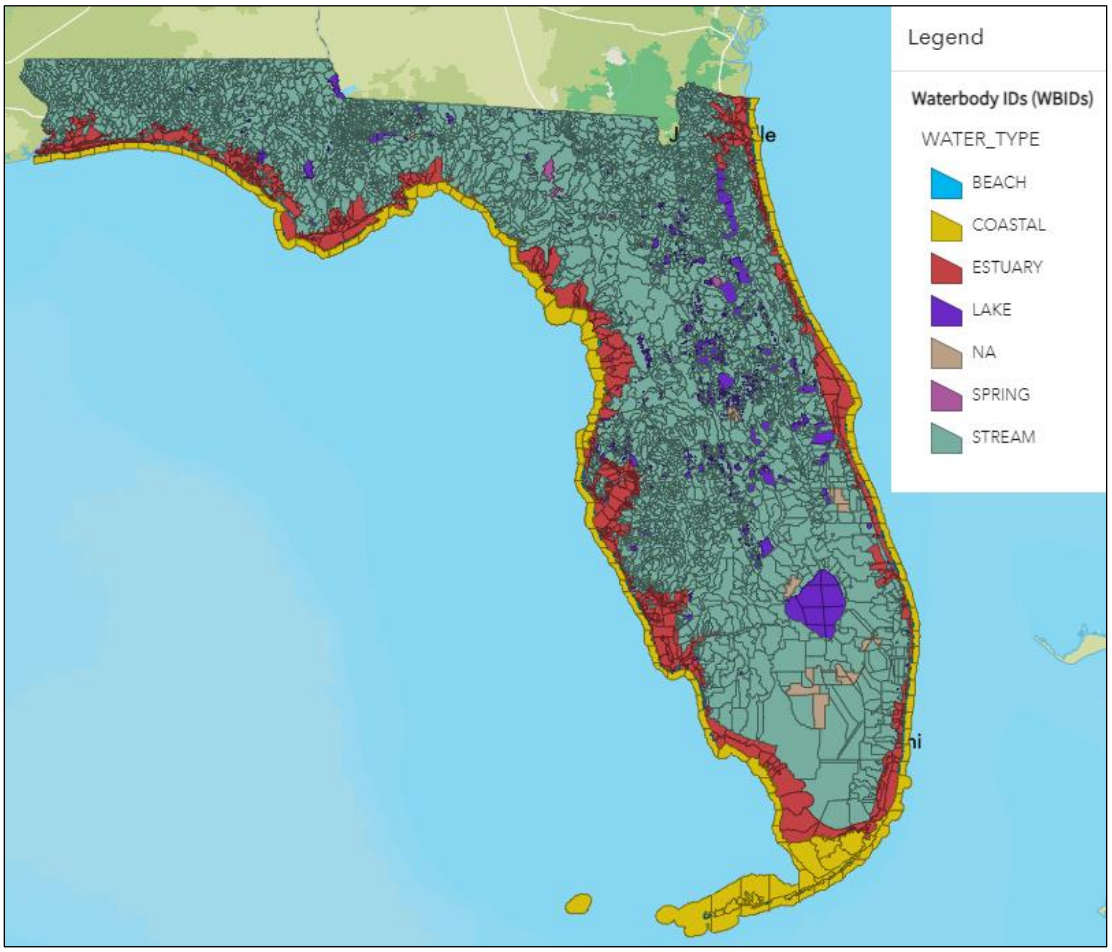
Figure 4.1.2 Florida's Watershed Basins



Source: DEP's Statewide Basin Contacts[39]

[39] Division of Environmental Assessment and Restoration. (2022, June 24). *Statewide Basin Contacts*. Florida Department of Environmental Protection. https://publicfiles.dep.state.fl.us/DEAR/DEARweb/WAS/BasinContacts_November_2024.pdf (Accessed Jan 2025.)

Figure 4.1.3 Water Body IDs (WBIDs)



Source: DEP's Geospatial Open Data[40]

Table 4.1.2 Waterbody Types

Waterbody Type	Count	Miles	Square Miles
Beach	359	773.7	
Coastal	161		6,667.7
Estuary	790		2,666.9
Lake	1,475		1,675.4
N/A	28	32.5	0.6
Spring	178	25.6	0.2
Stream	3,805	24,211.0	
SUM	6,796	25,042.8	11,010.7

Source: DEP's Geospatial Open Data[40]

[40] Florida Department of Environmental Protection. *Waterbody ids (WBIDS)*. Geospatial Open Data. https://geodata.dep.state.fl.us/datasets/FDEP::waterbody-ids-wbids/explore?filters=eyJXQVRFUl9UWVBFIjpbIkxBS0UiLCJFU1RVQVJZIiwiQkVBQ0giLCJTUFJJTkciLCJDT0FTVEFMIiwiU1RSRUFNIiwiTkEiXX0%3D&location=27.796445%2C-83.466600%2C5.94&style=WATER_TYPE (Accessed Dec 2024.)

Table 4.1.3 Assessment Categories

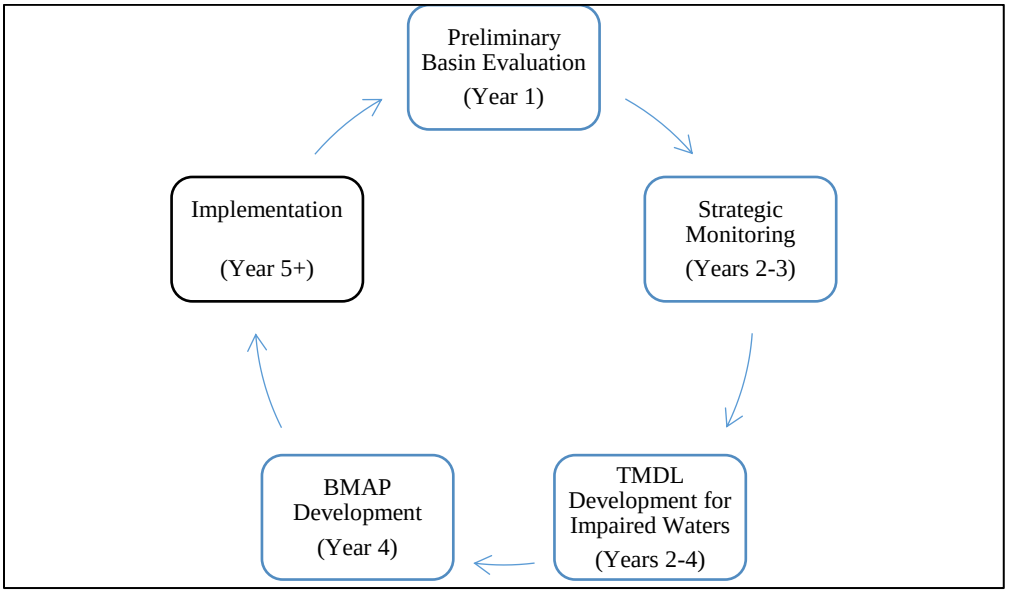
Assessment Category	Assessment Category Definitions
1	Attains all designated uses
2	Attains some designated uses and insufficient or no information or data are present to determine if remaining uses are attained
3a	No data and information are present to determine if any designated use is attained
3b	Some data and information are present but not enough to determine if any designated use is attained
3c	Enough data and information are present to determine that one or more designated uses may not be attained according to the Planning List methodology in Chapter 62-303 of the Florida Administrative Code
4a	Impaired for one or more designated uses but does not require TMDL development because a TMDL has already been completed
4b*	Impaired for one or more designated uses but does not require TMDL development because the water will attain water quality standards due to existing or proposed measures
4c	Impaired for one or more criteria or designated uses but does not require TMDL development because impairment is not caused by a pollutant
4d	Waterbody indicates non-attainment of water quality standards, but the Department does not have enough information to determine a causative pollutant; or current data show a potentially adverse trend in nutrients or nutrient response variables; or there are exceedances of stream nutrient thresholds, but the Department does not have enough information to fully assess non-attainment of the stream nutrient standard.
4e**	Waterbody indicates non-attainment of water quality standards and pollution control mechanisms or restoration activities are in progress or planned to address non-attainment of water quality standards, but the Department does not have enough information to fully evaluate whether proposed pollution mechanisms will result in attainment of water quality standards.
5	Water quality standards are not attained and a TMDL is required.

Source: Florida Department of Environmental Protection, Watershed Assessment Section, available at: https://floridadep.gov/dear/watershed-assessment-section. (Accessed Oct 2024.) *See also* Memorandum from Robert H. Wayland III, Director, Office of Wetlands, Oceans and Watersheds to EPA Regional Directors et al. dated November 19, 2001, 2002 Integrated Water Quality Monitoring and Assessment Report Guidance, available at: https://www.epa.gov/sites/production/files/2015-10/documents/2002_02_13_tmdl_2002wqma.pdf. (Accessed Oct 2024.)

*Water segments in the 4b assessment category have Reasonable Assurance Plans in place and are not included in the state's 303(d) list.

** Water segments categorized in the 4e assessment category have Alternative Restoration Plans (also referred to as Pollutant Reduction Plans) in place and are included in the state's 303(d) list. Note that Florida's 4e category is comparable to EPA's 5-alternative (or 5-alt) category as they both recognize ongoing restoration activities for otherwise impaired waterbody segments.

Figure 4.1.4 Historic Watershed Management Approach



Assessed water segments that are identified as impaired and placed in assessment category 5 require TMDL development.[41] Establishing TMDLs for impaired waters represents a major first step towards restoring water quality. A TMDL is a water quality restoration goal that represents the maximum amount of a specific pollutant that a waterbody or waterbody segment can assimilate from all sources while still maintaining applicable water quality standards.[42] Using the TMDL as the maximum value, DEP then assigns individual wasteload allocations for point sources, load allocations for nonpoint sources, and a margin of safety to account for uncertainty in the scientific analysis.[43] Existing point sources may include wastewater treatment facilities, industrial facilities, and municipal separate storm sewer systems (known as MS4s). Existing nonpoint sources may include agricultural runoff and atmospheric deposition. These allocations along with other management and restoration strategies are intended to achieve the pollutant reductions necessary to meet the TMDL.[44]

Expressed mathematically, the TMDL is the summation of the wasteload for existing NPDES wastewater facilities and NPDES stormwater systems, the load allocation for existing nonpoint sources and natural background, and a margin of safety:

$$\mathbf{TMDL} = \sum \mathbf{WLA_{NPDES}} + \sum \mathbf{WLA_{NPDES\ Stormwater}} + \sum \mathbf{LA_{Nonpoint\ Sources}} + \mathbf{MOS}$$

As of December 31, 2024, DEP has adopted a total of 463 TMDLs for impaired WBIDs. Specifically, there are 275 TMDLs for dissolved oxygen (DO), nutrients, and/or un-ionized ammonia; 179 TMDLs for bacteria; and four for metals.[45] In addition to these site-specific TMDLs, in 2013, DEP adopted a single statewide TMDL for mercury that affects nearly 1,600 waterbody segments in fresh and marine waters previously listed for mercury impairment.[46] There are also 26 TMDLs currently under development. For a map of TMDL activities in the state, see Figure 4.1.5.

Note: WLA refers to wasteload allocation for point sources, LA refers to load allocations for nonpoint sources, and MOS refers to the margin of safety to account for uncertainty.

[41] A single WBID may be impaired for multiple analytes, generating more than one TMDL. Conversely, some analytes can be combined, reducing the number of TMDLs.

[42] *See* Fla. Admin. Code R. 62-303.200(31).

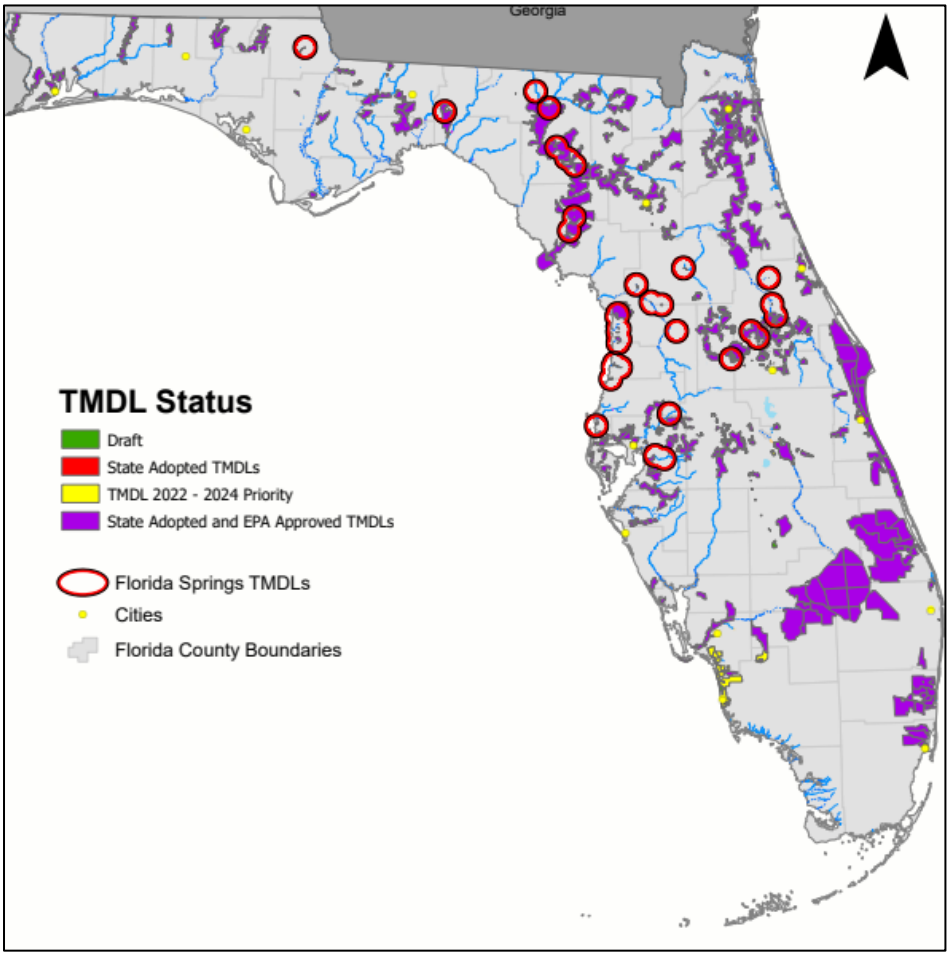
[43] All TMDLs include either an explicit margin of safety (*i.e.*, a specified amount of loading held in reserve) or implicit margin of safety (*i.e.*, conservative assumptions made and documented during TMDL development).

[44] § 403.067(6), Fla. Stat.

[45] Florida Department of Environmental Protection, 2023 Statewide Annual Report on Total Maximum Daily Loads, Basin Management Action Plans, Minimum Flows or Minimum Levels, and Recovery or Prevention Strategies, available at: https://floridadep.gov/dear/water-quality-restoration/content/statewide-annual-report. (Accessed Oct 2024.)

[46] Note that mercury impairment is based upon potential risks to human health through consumption of fish with elevated levels of mercury in their tissues and not on an exceedance of the state's water quality criterion for mercury. *See* Final Report, Mercury TMDL for the State of Florida, October 24, 2013, available at: https://floridadep.gov/sites/default/files/Mercury-TMDL.pdf Accessed Oct 2024.)

Figure 4.1.5 Status of TMDL Development in Florida



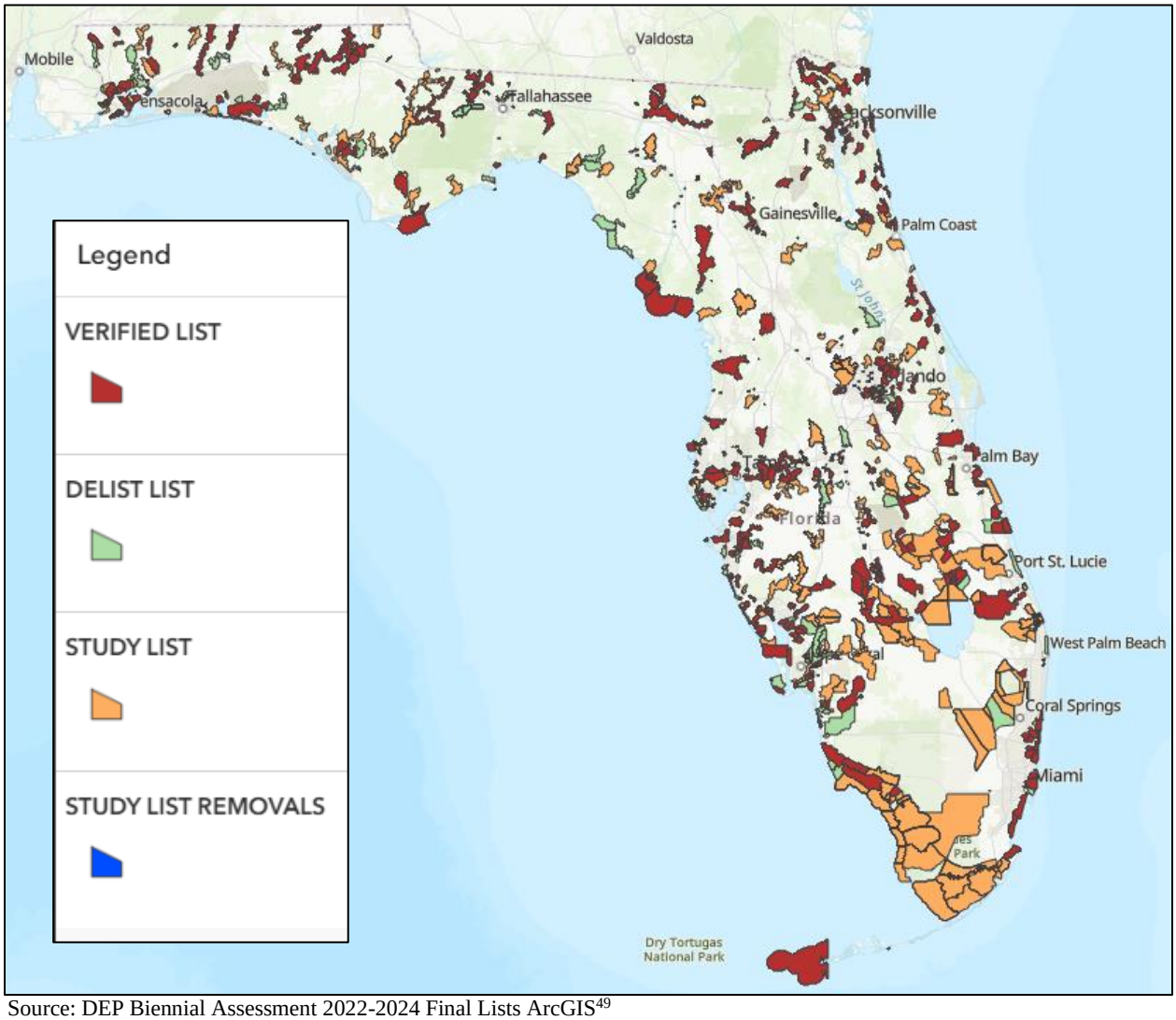
Source: DEP's TMDL Map[47]

Based on DEP's statewide Comprehensive Verified List of impaired waters, which includes the most recent updates published on August 26, 2024, there are approximately 2,202 waterbody-parameter combinations, or 1,361 unique WBIDs, in Florida that are listed as impaired and require a TMDL.[48] Of note, the waterbody-parameter combinations are nearly 20 percent higher than the prior edition, and the unique WBIDs are nearly 15 percent higher. Overall, the most frequently identified pollutants causing water impairment relate to excessive nutrients. For a map of the 2022-2024 Biennial Assessment List designations, see Figure 4.1.6.

[47] Florida Department of Environmental Protection. (2024, April 18). *Impaired waters, TMDLs, and Basin Management Action Plans Interactive Map*. Division of Environmental Assessment and Restoration. https://floridadep.gov/dear/water-quality-restoration/content/impaired-waters-tmdls-and-basin-management-action-plans Accessed Oct 2024.)

[48] Florida Department of Environmental Protection. (2024b, August 16). *Comprehensive Verified List*. Division of Environmental Assessment and Restoration. https://floridadep.gov/dear/watershed-assessment-section/documents/comprehensive-verified-list (Accessed Oct 2024.)

Figure 4.1.6 DEP's 2022-2024 Biennial Assessment List Designations



Source: DEP Biennial Assessment 2022-2024 Final Lists ArcGIS[49]

In 2015, DEP set forth a priority framework document addressing how Florida's TMDL program would implement the new long-term vision that EPA announced for section 303(d) of the Clean Water Act. The TMDL priority setting focuses on impaired waters where site-specific TMDLs are the best available option for water quality restoration.[50] Where appropriate, alternatives to the TMDL approach are implemented through alternative restoration plans (ARPs).

In 2020, DEP updated their prioritization framework and initiated "Prioritization 2.0" for the 10-year period from 2022 through 2032. According to the department, the framework will be used

[49] Florida Department of Environmental Protection . (2024, November 6). *Biennial Assessment 2022 - 2024 Final Lists*. Map Viewer. https://fdep.maps.arcgis.com/apps/mapviewer/index.html?webmap=84773af76da44c1fa20f7317279cdca7 (Accessed Jan 2025.)

[50] Letter from Gregory P. DeAngelo, P.E.., Florida Department of Environmental Protection, to Gracy Danois, Chief, U.S. Environmental Protection Agency (September 1, 2015) at 2, available at: https://floridadep.gov/sites/default/files/PriorityFrameworkDocument.pdf. (Accessed Oct 2024.)

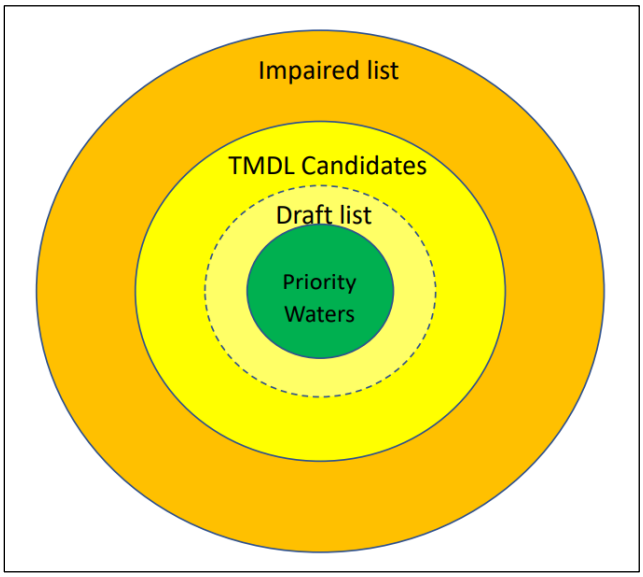
"to select a set of waterbodies where TMDLs are the best tool to guide ecosystem restoration and support community objectives for those waters." The Framework for Florida TMDL Prioritization guide indicates that key considerations include "(1) the waterbody type (e.g., estuary, lake, stream), (2) the parameter causing impairment, (3) the magnitude and/or frequency of water quality criterion exceedance, (4) the ecological significance (e.g., Outstanding Florida Waters, Aquatic Preserves, parks), (5) the needs of disadvantaged and/or underserved communities, and (6) the opportunities for stakeholder-led TMDL alternatives (i.e., reasonable assurance plans [RAPs] and pollutant reduction plans [PRPs])." While maintaining focus on nutrient impairments, this approach will consolidate fecal indicator bacteria (FIB) TMDLs to "use limited state resources more efficiently and speed up the restoration of bacteria-impaired waters."

The conceptual diagram in Figure 4.1.7 describes the Prioritization 2.0 process.[51] The complete circle represents all 1,361 unique impaired WBIDs that could receive TMDLs from the Verified List. Of those, the yellow and green rings represent those for which DEP has determined a TMDL would be the best path of restoration, unofficially called the Candidate List. As of the publishing of this edition, DEP has published the 2024-2026 TMDL Priority List. The draft list reports 15 WBIDs for which "DEP will initiate [nutrient] TMDL development during the 2-year workplan but may not complete." The Priority Waters list is the list of 13 nutrient TMDLs that DEP intends to complete within the 2-year work period.[52]

[See figure on next page]

[51] In 2022, DEP refined its prioritization process ("TMDL Prioritization 2.0") to include biennial work plans. The process was further revised in 2024. See https://floridadep.gov/sites/default/files/Florida_TMDL_Prioritization_Process_2024.pdf.
[52] Florida Department of Environmental Protection. (2024c, November 8). *2024-2026 TMDL Priority List*. Division of Environmental Assessment and Restoration. https://floridadep.gov/dear/water-quality-evaluation-tmdl/documents/2024-2026-tmdl-priority-list (Accessed Apr 2025.)

Figure 4.1.7 Prioritization 2.0



Source: Framework for Florida's TMDL Prioritization 2.0[53]

Forecast of Future Expenditures Necessary to Comply with Laws Governing TMDLs

The DEP's statewide Comprehensive Verified List of impaired waters provides a list of WBIDs over which TMDLs need to be established, unless an alternative is found.[33] Further, they are prioritized into high, medium, or low priority.[54] While these priorities are not associated with a legally required time to completion, the list indicates that high priority are to be addressed within 5 years, medium within 5 to 10 years, and low within 10 years. As of the August 2024 update, there were 457 WBIDs with high priority for TMDL development, 856 with medium priority, and 366 with low priority.[55] For details regarding impairment parameters, see Appendix B. The methodology for TMDL establishment provided by DEP suggests that for each WBID, impairments for dissolved oxygen, total nitrogen, total phosphorus, chlorophyll-a, macrophytes, biology, algal mats, nitrates-nitrites, total ammonia, and un-ionized ammonia could be combined into a single TMDL and that all other impairments would require individual TMDLs. The history can be found in Table 4.1.4. In 2024, three TMDLs were established for copper, the first of their kind.

[53] Bubel, A., Weaver, K., & Tano, E. (2022, December). *Framework for Florida's TMDL Prioritization 2.0*. Division of Environmental Assessment and Restoration. https://publicfiles.dep.state.fl.us/DEAR/DEARweb/TMDL/Prioritization/Framework%20for%20Florida%20TMDL%20Prioritization%202.0%20December%202022.pdf

[54] Less than 1 percent of the WBIDs on the verified list are not assigned a priority. EDR categorizes them as low priority.

[55] According to DEP staff, the state's bacteria water quality criteria for fresh waters in Florida Administrative Code Rule 62-302.530 were updated from fecal coliform to E. coli to be consistent with EPA recommendations. As DEP begins assessing waters under the new E. coli criteria, waterbody segments currently identified as impaired for fecal coliform and requiring a TMDL may be updated accordingly to reflect E. coli impairment or delisted for fecal coliform.

Table 4.1.4 TMDLs Established by Parameter and Year

	2006 & prior	CY 2007	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015
DO, Nutrients, Unionized Ammonia	39	8	53	46	2	-	2	37	10	10
Fecal Coliform	25	5	21	40	31	-	39	1	17	-
Iron	1	-	-	-	-	-	-	-	-	-
Lead	-	-	-	3	-	-	-	-	-	-
Mercury in Fish Tissue (statewide)	-	-	-	-	-	-	-	1	-	-
Turbidity	-	-	-	-	-	-	-	1	-	-
Copper	-	-	-	-	-	-	-	-	-	-
Total	**65**	**13**	**74**	**86**	**33**	**-**	**41**	**40**	**27**	**10**

	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	All Years
DO, Nutrients, Unionized Ammonia	4	13	17	12	9	4	8	1	-	275
Fecal Coliform	-	-	-	-	-	-	-	-	-	179
Iron	-	-	-	-	-	-	-	-	-	1
Lead	-	-	-	-	-	-	-	-	-	3
Mercury in Fish Tissue (statewide)	-	-	-	-	-	-	-	-	-	1
Turbidity	-	-	-	-	-	-	-	-	-	1
Copper	-	-	-	-	-	-	-	-	3	3
Total	**4**	**13**	**17**	**12**	**9**	**4**	**8**	**1**	**3**	**463**

*The one TMDL for Mercury covers 1,132 WBIDs.

Finally, DEP provided internal expenditure data that allowed a breakdown between TMDL development expenditures and other TMDL-related expenditures (*e.g.*, funding for restoration efforts). This series was produced with confidence going back to Fiscal Year 2012-13. Between that time and Fiscal Year 2023-24, the state of Florida has expended $31.2 million on TMDL development. Using the consumer price index to adjust each year, this represents $38.7 million in Fiscal Year 2023-24 dollars.[56] Over that same period, 148 TMDLs were established. Assuming similar costs going forward, this suggests an average cost per TMDL of $261,623.68. Applying this cost to the anticipated 1,679 TMDLs from the verified list as adjusted by EDR, and considering the timing differences between priority groups, produces the expenditure forecast shown in Table 4.1.5.

[56] CPI-All Urban Consumers (Current Series) was used. Series Id: CUUR0000AA0; Not Seasonally Adjusted (Series Title: All items - old base in U.S. city average, all urban consumers, not seasonally adjusted; Area: U.S. city average).

Table 4.1.5 Forecast of TMDL Development Expenditures Necessary to Comply with the Law (in $millions)

	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34
Total	$55.88	$55.88	$55.88	$55.88	$55.88	$31.97	$31.97	$31.97	$31.97	$31.97

Note: One new TMDL was developed in 2023 and three new TMDLs were developed in 2024.

Underlying this forecast is an assumption of approximately 214 TMDLs established per year for the first five years of the forecast and approximately 122 TMDLs established per year for the last five years of the forecast, given appropriate funding. This assumption is becoming increasingly implausible. DEP staff indicated that under their current staffing and funding they are capable of developing TMDLs for approximately 20 WBIDs per year. At that rate, the state would need to expend approximately $5.2 million annually through Fiscal Year 2107 to establish TMDLs for the WBIDs on the current verified list. Even DEP's assumption of 20 WBIDs per year appears questionable based on the past 10 years of history where an annual average of 8.1 TMDLs were established. Establishing a TMDL, however, is not the only method through which waterbodies can be removed from the verified list. The Comprehensive Delist List is also maintained by DEP and indicates a wide variety of reasons for a WBID being removed from the Verified List, including becoming part of an alternative restoration approach, correcting analytical flaws, meeting a TMDL, and no longer being impaired.[57]

Basin Management Action Plans

In 2005, the Florida Watershed Restoration Act was amended to authorize DEP to adopt basin management action plans (BMAPs), which are water quality restoration plans that are unique to Florida. As such, the BMAPs are the state's primary mechanism for restoring impaired waters within the TMDL rubric. Addressing both surface waters and groundwater-fed springs, they provide a blueprint for managing nonpoint sources of pollution. The plans are intended to integrate all management strategies committed to by state, regional, local, and private stakeholders to reduce pollutant sources, and thereby achieve water quality standards for the pollutants causing impairment. BMAPs are adopted by DEP secretarial order and are enforceable by law.[58]

A BMAP includes an equitable allocation of pollutant reductions to individual basins, as a whole to all basins, or to each identified point source or category of nonpoint sources.[59] With the assistance of governmental and private stakeholders, DEP identifies appropriate management strategies, schedules for implementation, feasible funding strategies, plans for evaluating the effectiveness of the management strategies, and strategies to address potential future increases in pollutant loadings.[60] Each BMAP must include milestones for implementation and water quality improvement, as well as an associated water quality monitoring component to evaluate the

[57] Available at: https://floridadep.gov/dear/watershed-assessment-section/documents/comprehensive-delist-list. (Accessed Oct 2024.)
[58] § 403.067(7)(d)1., Fla. Stat. (providing that BMAPs are enforceable pursuant to sections 403.067, 403.121, 403.141, and 403.161, Florida Statutes).
[59] § 403.067(7)(a)2., Fla. Stat.
[60] *See* § 403.067(7)(a), Fla. Stat.

progress of pollutant reductions. Except as discussed below, the implementation of a BMAP is not required to achieve the associated TMDLs within a particular time frame; however, an assessment of the progress toward meeting the milestones is conducted every five years and revisions to BMAPs are made when deemed necessary or appropriate. Special treatment has been established in law for the Outstanding Florida Springs BMAPs[61] and the BMAPs adopted for Lake Okeechobee, the Caloosahatchee Estuary Basin, and the St. Lucie Estuary Basin under the Northern Everglades and Estuaries Protection Program.[62] To ensure expeditious implementation of those BMAPs, a 20-year target to achieve the TMDLs is identified, with 5-year, 10-year, and 15-year intermediate milestones.[63] As of July 1, 2023, enhanced provisions have also been put in place for the BMAPs included in the Indian River Lagoon Protection Program.

In 2024, DEP submitted its seventh statewide annual report (STAR Report) to the Governor and Florida Legislature, which, in part, provides the status of each TMDL and BMAP as of December 31, 2023.[45] In the STAR Report, DEP must include the status of projects within adopted BMAPs, and, if applicable, an explanation of possible causes and potential solutions for any unmet 5-year, 10-year, or 15-year milestone, or 20-year target.[64] The report must also include project descriptions, estimated costs, proposed priority project ranking, and funding needs to achieve the TMDLs.[65]

The latest STAR Report provides a progress report on 33 adopted BMAPs, the majority of which address nutrient impairments.[66] Note that EDR has not included in its analysis any BMAPs or revisions to BMAPs that were not included in DEP's STAR Report.[67] For a list of adopted BMAPs included in the STAR Report see Table 4.1.6. For a map of all adopted BMAPs as of November 2024, see Figure 4.1.8.

[See table on following page]

[61] *See* Florida Springs and Aquifer Protection Act, §§ 373.801 – 373.813, Fla. Stat.
[62] § 373.4595, Fla. Stat.
[63] *See* § 373.4595, Fla. Stat. (requiring DEP to develop a schedule establishing 5-year, 10-year, and 15-year milestones and targets to achieve the TMDL within 20 years after adoption of the Lake Okeechobee BMAP, Caloosahatchee Estuary BMAP, and the St. Lucie River and Estuary BMAP; or else provide an explanation of the constraints that prevent achievement within 20 years, an estimate of the time needed, and additional 5-year measurable milestones); *see also* § 373.807, Fla. Stat. (requiring DEP to develop a schedule establishing 5-year, 10-year, and 15-year milestones and targets to achieve the nutrient TMDLs within 20 years of adopting a BMAP for an Outstanding Florida Spring).
[64] § 403.0675(1), Fla. Stat.
[65] *Id*.
[66] In DEP's STAR report, only 32 BMAP IDs are designated; however, Lower St. Johns River Tributaries I and II (which are shown under one ID) are addressed by separate BMAPs.
[67] A current list of adopted BMAPs is available at: https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps. (Accessed Oct 2024.)

Table 4.1.6 BMAPs Included in Analysis

BMAP Type	BMAP Name	FY* Original Document	FY* Document Updated	Starting FY* for DEP's Milestones
Fecal Indicator Bacteria	Alafia River Basin	2014		N/A**
	Bayou Chico	2012		N/A**
	Hillsborough River Basin	2010		N/A**
	Long Branch***	2008		N/A**
	Lower St. Johns River Tributaries I and II****	2009 and 2011	2016 (both)	N/A**
	Manatee River Basin	2014		N/A**
Northern Everglades and Estuaries Protection Program	Caloosahatchee Estuary Basin	2013	2020	2013
	Lake Okeechobee	2015	2020	2015
	St. Lucie River and Estuary	2013	2020	2013
Outstanding Florida Springs	Crystal River/Kings Bay	2018		2019
	DeLeon Springs	2018		2019
	Gemini Springs	2018		2019
	Homosassa and Chassahowitzka Springs Groups	2018		2019
	Jackson Blue Spring and Merritts Mill Pond Basin	2016	2018	2019
	Santa Fe River	2012	2018	2021
	Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River	2016	2018	2021
	Suwannee River	2016	2018	2021
	Upper Wakulla River and Wakulla Springs	2016	2018	2019
	Volusia Blue Spring	2016	2018	2021
	Wacissa River and Wacissa Spring Group	2018		2019
	Weeki Wachee	2018		2019
	Wekiva River, Rock Springs Run, and Little Wekiva Canal	2016		2021
Surface Water: Nutrients	Everglades West Coast Basin	2013		N/A**
	Indian River Lagoon Basin: Banana River Lagoon	2013	2021	IRLPP
	Indian River Lagoon Basin: Central Indian River Lagoon	2013	2021	IRLPP
	Indian River Lagoon Basin: North Indian River Lagoon	2013	2021	IRLPP
	Lakes Harney, Monroe, Middle St. Johns River, and Smith Canal	2013		N/A**
	Lake Jesup	2010	2020	N/A**
	Lower St. Johns River Main Stem	2009		N/A**
	Orange Creek	2008	2020	N/A**
	Upper Ocklawaha River Basin	2008	2020	N/A**
	Wekiwa Spring and Rock Spring	2018		N/A**

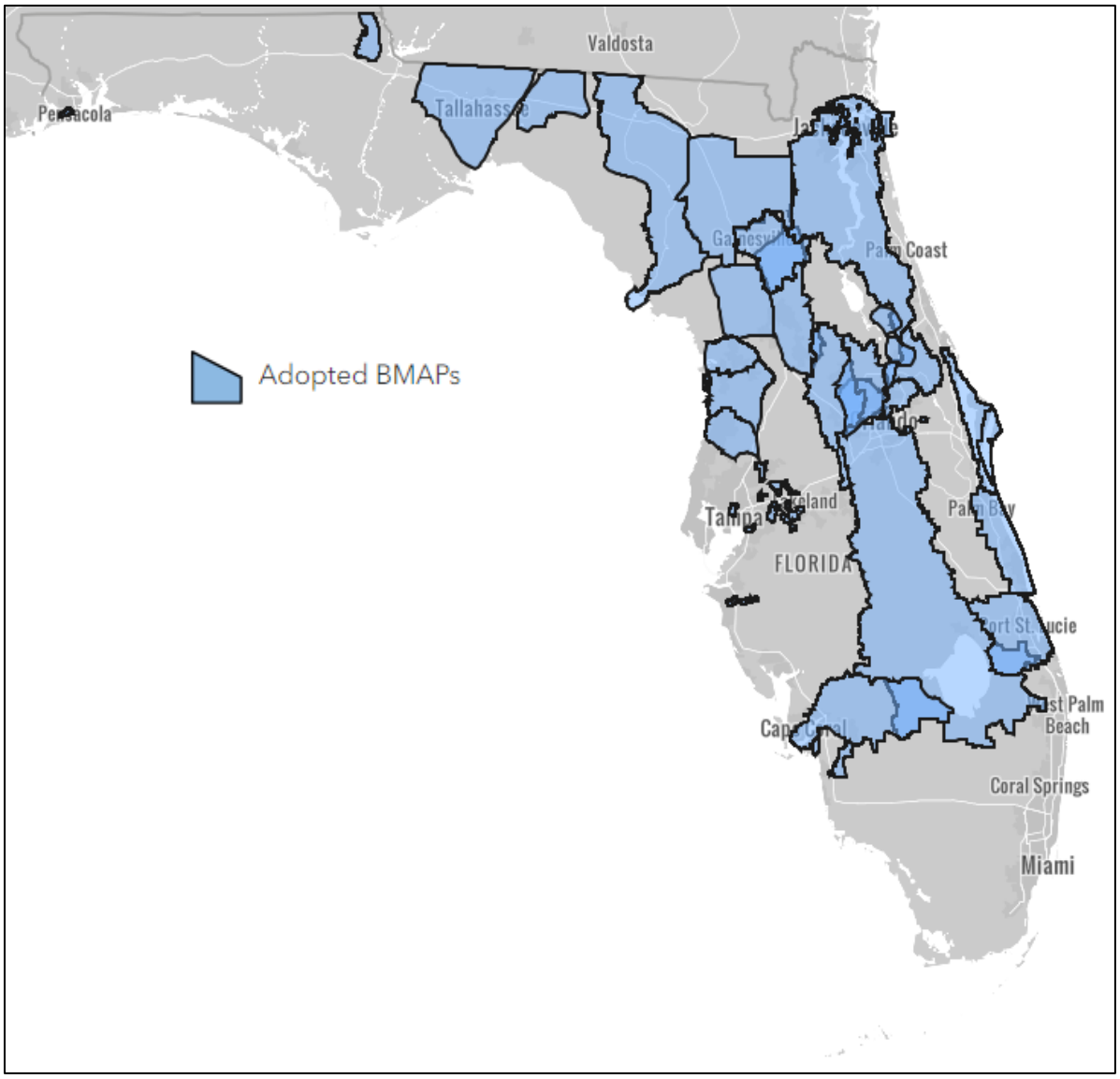
* The Fiscal Year ends in the listed year. For example, 2014 represents Fiscal Year 2013-14.

** The 5, 10, 15, and 20-year milestones are only applicable to BMAPs for the Northern Everglades and Estuaries Protection Program and Outstanding Florida Springs. For timing of expenditures for the other BMAPs in EDR's analysis, the fiscal year of the original document is used. In the case of the Lower St Johns River Tributaries I and II, the average of 2010 is used.

*** See DEP's interactive BMAP map at https://floridadep.gov/dear/water-quality-restoration/content/impaired-waters-tmdls-and-basin-management-action-plans. In the Long Branch BMAP Story Map, the assessment status indicates "[t]here are no longer standards for fecal coliform assessment, so this parameter is now listed Not Applicable (NA). The new bacteria parameter, E. coli, was placed into Category 4e (Ongoing Restoration Activities) for this waterbody and will be placed on the Statewide Comprehensive Study List. DO, Chlorophyll-a, Total Nitrogen (TN), and Total Phosphorus (TP) are not impaired." See https://fdep.maps.arcgis.com/apps/MapSeries/index.html?appid=f8adf3667af645bcaf4d65384d5154c0. (Accessed Aug 2023.)

****Although displayed here under one BMAP name, Tributaries I and II are addressed by separate BMAPs.

Figure 4.1.8 Basin Management Action Plans

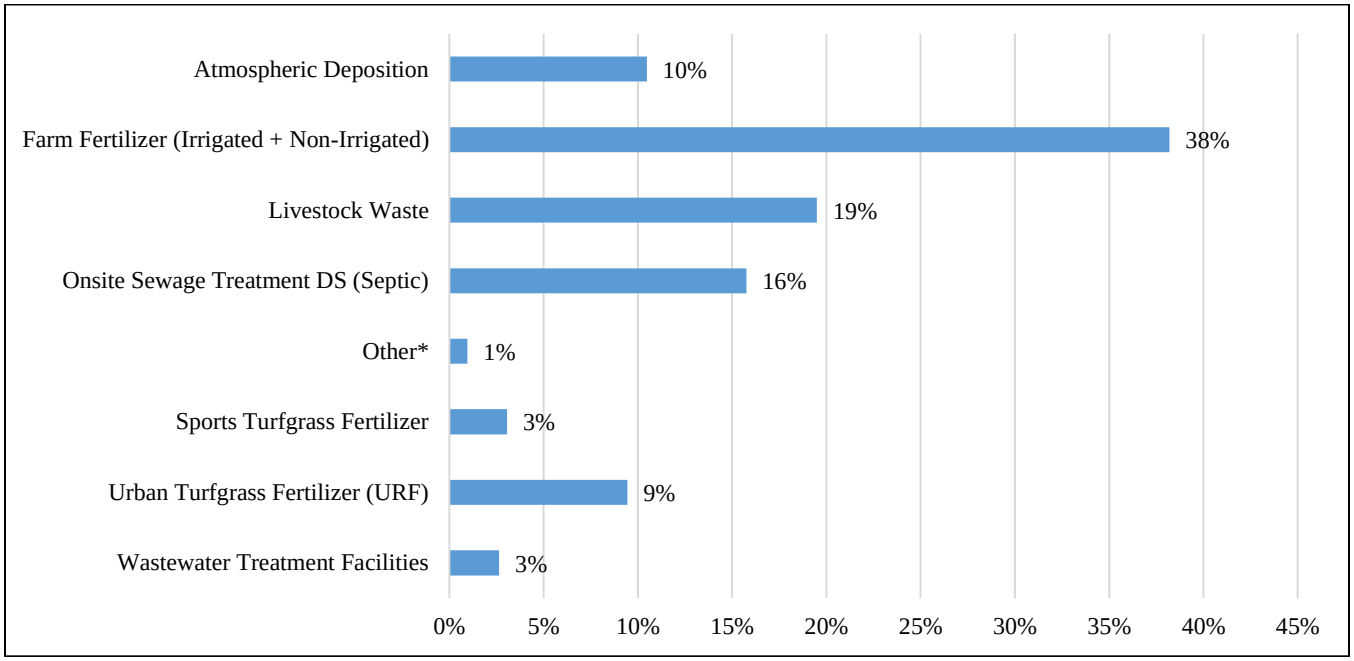


Source: DEP ArcGIS

While TMDLs are implemented through appropriate changes in NPDES permit conditions (such as new discharge limits) for point sources of pollution, the reduction of nonpoint sources of pollution is primarily achieved through the implementation of best management practices (BMPs). The nonpoint source dischargers included in BMAPs are required to implement BMPs or conduct water quality monitoring approved by DEP or the applicable WMD to demonstrate compliance with pollutant load reductions.[68] Figure 4.1.9 illustrates data from the nineteen BMAPs with nitrogen source information.

[68] *See* § 403.067(7)(b)2.g., Fla. Stat.

Figure 4.1.9 Sources of Nitrogen Statewide



Source: Of the thirty-three BMAP reports included in the analysis, nineteen reported nitrogen source information in their 2018 updates.
*Note: "Other" includes Wastewater Treatment Facility reuse, drainage wells, permitted dairies, and nurseries.

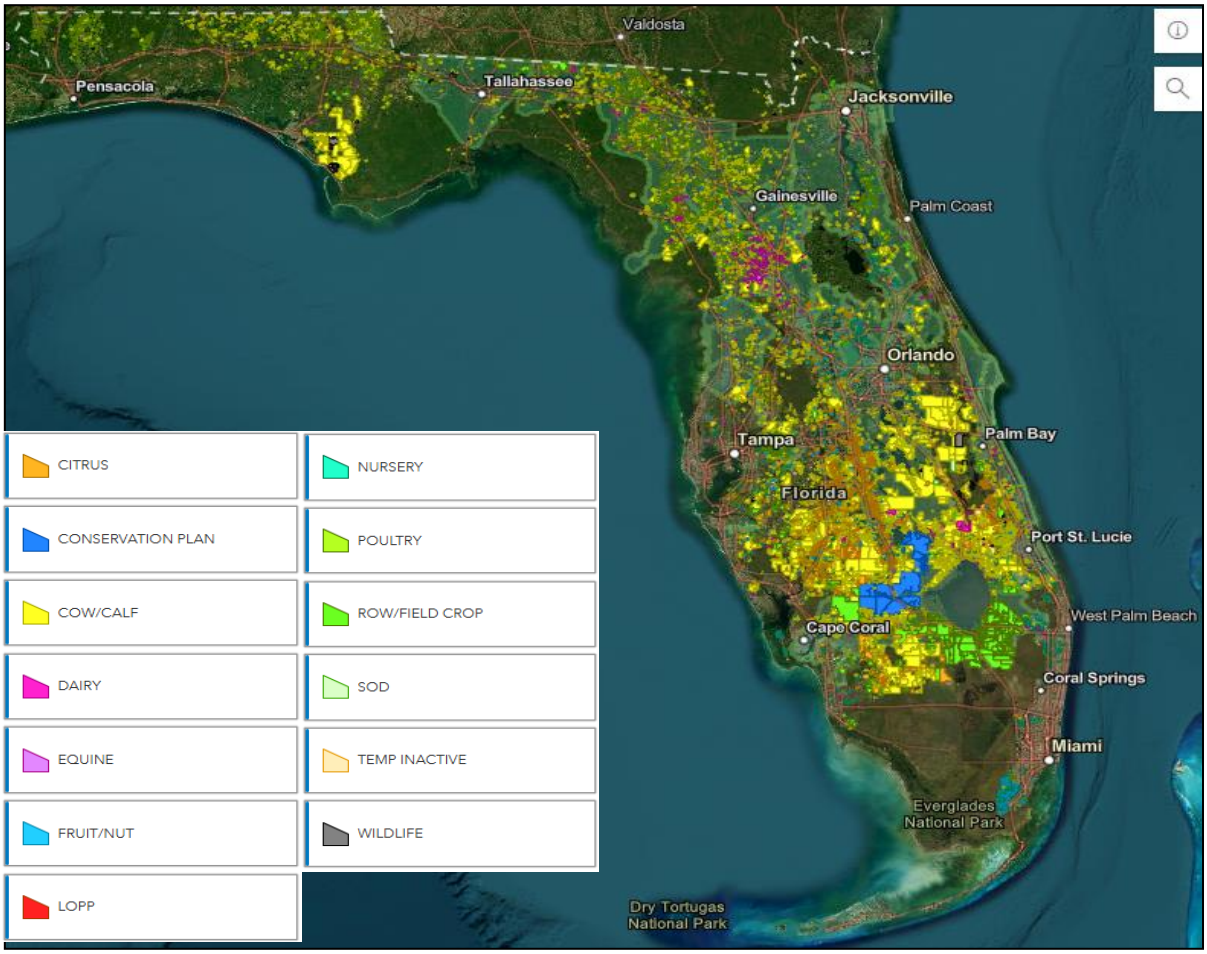
To address nonpoint source pollution from urban and suburban areas (*i.e.* non-agricultural areas), responsible BMAP stakeholders have identified structural and non-structural BMPs to address stormwater runoff and discharges to receiving waterbodies. Structural BMPs involve constructed systems that are generally intended to reduce the volume of stormwater discharge or reduce concentrations of pollutants. This includes wet or dry detention ponds. Non-structural BMPs focus on preventing, controlling, and treating pollutants at their source before they enter the environment. This includes land conservation, local ordinances (such as fertilizer ordinances), land use planning, watershed planning, and low impact development strategies. According to the BMAP project list provided with the STAR Report, wet detention ponds comprise the most widely identified structural BMP, while education efforts are the most common non-structural practice.[45] Combining structural and non-structural projects, the most common project type is stormwater practices related to fecal indicator bacteria ("FIB-Stormwater").

Agricultural BMPs are intended to be practical, cost-effective measures that agricultural producers can undertake to both conserve water and reduce the amounts of pollutants that enter water resources. They are specific to the producers' commodities and as of December 2024, there were ten BMP manuals in effect: citrus, cow/calf, dairy, equine, nurseries, poultry, sod, specialty fruit and nut crops, vegetable and agronomic crops, and wildlife (state imperiled species).[69] The first of these manuals was published in 2008 for cow/calf operations, but development has continued through subsequent years, with the latest update of the sod manual adopted in 2024. An

[69] *See* DACS, Agricultural Best Management Practices, What Are Agricultural Best Management Practices, https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices. (Accessed Oct 2024.)

agricultural producer who implements and maintains verified, DACS-adopted BMPs receives a presumption of compliance with state water quality standards for the pollutants addressed by the BMPs.[70] According to the DACS Office of Agricultural Water Policy, approximately 61 percent of the agricultural acreage in Florida is enrolled in the BMP program, including 83 percent of the state's irrigated agricultural acreage.[71] See Figure 4.1.10 for a map of BMP-enrolled agricultural lands statewide, excluding silviculture and aquaculture.

Figure 4.1.10 Map of BMP-enrolled Agricultural Lands (Excluding Silviculture & Aquaculture)



Source: Office of Agricultural Water Policy: BMP Enrollment Map[72] (Accessed December 2024.)

[70] § 403.067(7)(c), Fla. Stat.
[71] Office of Agricultural Water Policy. Status of Implementation of Agricultural Nonpoint Source Best Management Practices. https://ccmedia.fdacs.gov/content/download/119077/file/2025-Status-of-Implementation-of-BMPs-Report-July-1-2025.pdf (Accessed Jul 2025.)
[72] Office of Agricultural Water Policy. BMP Enrollment Map. https://gis.fdacs.gov/portal/apps/instant/interactivelegend/index.html?appid=3218360f54b141e99e58899456dd4514 (Accessed Dec 2024.)

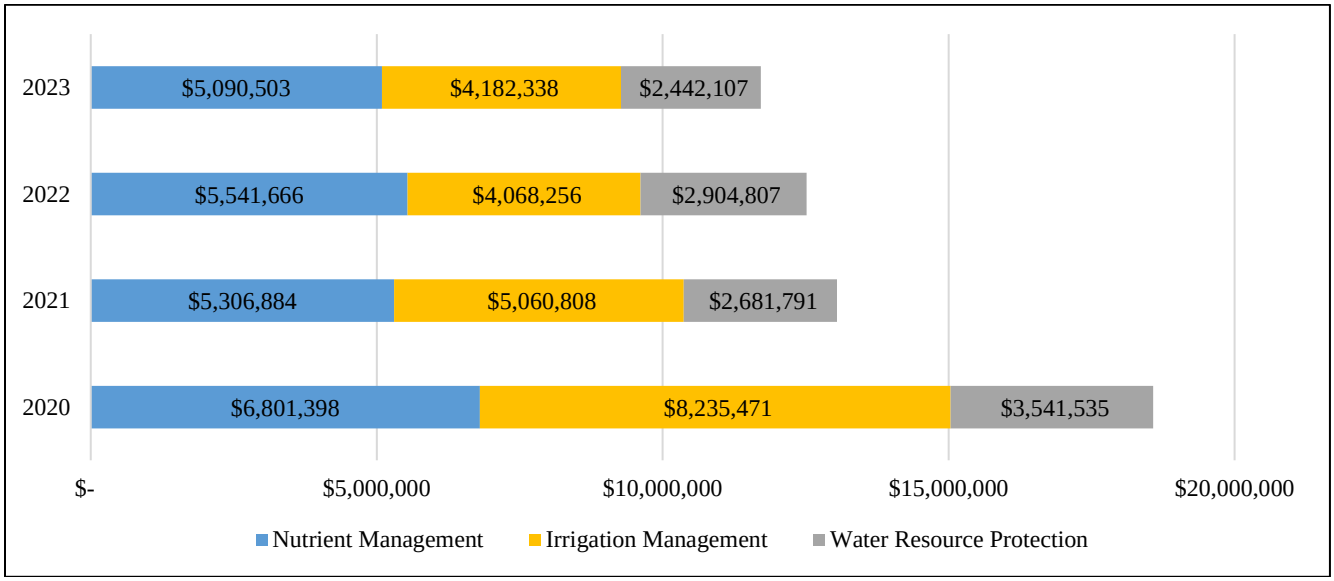
To enroll in a BMP, a producer or landowner must publish a Notice of Intent (NOI) to participate. One producer may have multiple commodities for which to register and, therefore, would publish multiple NOIs. Conversely, a producer who owns multiple property parcels can combine parcels, assuming they produce the same commodity, into one "management unit" and would need to register only one NOI for that unit.

Enrolled producers are eligible for cost-share funding from FDACS to implement certain BMPs. This funding is based on both operational needs and availability. In 2023, $11,714,948 was dispersed to implement 418 projects, for an average cost of $28,026 per project. These projects fell into three categories: nutrient management (43% of funding), irrigation management (36% of funding), and water resource protection (21% of funding). FDACS' reports that they will:

> "...match or overmatch other agency/entity funding as long as the total cost share award does not exceed 90% of the total cost to the awarded producer. If there are no other agency/entity funding partners, FDACS will allow for cost share reimbursement up to a maximum project total of $150,000 per project for approved services, equipment, and improvements…Most cost share agreements average 75%."

See Appendix C for a list of project types eligible for cost share funding. Additionally, producers may request an item or project that is not currently listed by submitting a request to FDACS.[73] Figure 4.1.11 illustrates funding distributions over the last four years.

Figure 4.1.11 Statewide Cost-Share Funding by BMP Project Type



Source: FDACS' Agricultural Water Policy

[73] Florida Department of Agriculture and Consumer Services. *Cost Share Funding Percentages*. BMP Cost Share Program. https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices/BMP-Cost-Share-Program

The provisions of Chapter 2020-150, Laws of Florida, went into effect on July 1, 2020. Among other things, the law requires FDACS to conduct Implementation Verification (IV) site visits at each BMP-enrolled property at least every two years. These visits serve multiple purposes:

- to verify the applicability of established BMPs,
- to verify that cost-share projects are being utilized effectively, and
- to collect and retain records of nutrient applications.

According to the department, "Between January 1, 2022, and December 31, 2023, FDACS staff completed BMP implementation verification activities statewide for over 8,600 NOIs. Eighty-six percent of these verification activities occurred within BMAP areas." To assist with this labor-intensive verification process in 2023, FDACS' Office of Agricultural Water Policy (OAWP) had twenty-four contract employees costing $1.46 million in total. These employees were hired through the Soil and Water Conservation Districts.[74]

Of the 2,509 site visits performed in 2023, 93 percent (2,344) were performed within BMAPs. Across all site visits, only seventeen required Implementation Assistance (less than one percent). According to the Department, "The most common types of corrective measures involved deficiencies in record keeping, soil or tissue testing, or exceeding fertilizer application rates." See Table 4.3.2 for additional expenditure information.

Forecast of Future Expenditures Necessary to Implement Adopted BMAPs

The STAR Report contains a full list of completed, underway, and planned projects within each BMAP. Project costs and nutrient load reductions are included when available. For some projects, a cost estimate or load reduction may not be applicable. For the instances where costs were unavailable but applicable, EDR estimates them based on average costs of projects of the same type that included cost information.[75]

The duration and timing of the expenditure forecast is unique to each BMAP. Nutrient reduction achieved through completed projects is compared to the initial load reduction requirement in the BMAP to calculate how much progress has been made. Then, the reductions that are still needed are spread across the remaining years expected for that BMAP. EDR caps each BMAP at 20 years from its adoption, assuming projects identified as planned will be completed within five years and the funding for costs associated with underway projects has already been committed and spent.[76]

For BMAPs whose reduction goal(s) are not met by the planned projects, expenditure projections are continued into the subsequent years using that BMAP's most cost-efficient strategy as a basis for the calculations.[77] Once the reduction goal is met in its entirety, the expenditures end. Fecal Indicator Bacteria BMAPs are assumed to be achieved once the existing underway and planned projects are completed.

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[74] Office of Agricultural Water Policy. Status of Implementation of Agricultural Nonpoint Source Best Management Practices. https://ccmedia.fdacs.gov/content/download/119077/file/2025-Status-of-Implementation-of-BMPs-Report-July-1-2025.pdf (Accessed Jul 2025.)

[75] Project types used are those identified in the project list and consist of 88 different types.

[76] Alternatively, assuming the underway projects have not been funded results in a total expenditure increase of $8,069.39 million, or an increase of 78 percent.

[77] For additional information regarding TN and TP projects and cost efficiency, see the 2021 Edition.

The forecast of expenditures necessary to comply with laws governing the BMAP program is provided in Table 4.1.7. The first year of this forecast has increased since the previous edition, possibly due to inflation. The forecast will change further in future years–perhaps substantially–as more project data becomes available and more BMAPs are adopted. In compiling the list of projects, DEP is likely more informed regarding projects involving state funds than those that do not, upwardly biasing EDR's estimates of the state's share. Conversely, it is likely that the cheaper or more cost-effective projects would be completed first, meaning that future projects would be more expensive. As such, EDR's methodology based on historical and existing projects may underestimate future project costs. It is currently assumed that these errors are largely offsetting.

Table 4.1.7 Forecast of BMAP Expenditures Necessary to Comply with the Law (in $millions)

	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34
Local	$532.15	$363.72	$347.49	$347.49	$347.49	$199.21	$199.21	$199.21	$195.93	$195.93
Regional	$193.57	$132.30	$126.40	$126.40	$126.40	$72.46	$72.46	$72.46	$71.27	$71.27
State	$1,165.15	$796.37	$760.83	$760.83	$760.83	$436.17	$436.17	$436.17	$428.98	$428.98
Federal	$281.76	$192.58	$183.99	$183.99	$183.99	$105.48	$105.48	$105.48	$103.74	$103.74
Private	$17.08	$11.67	$11.15	$11.15	$11.15	$6.39	$6.39	$6.39	$6.29	$6.29
Total	$2,189.71	$1,496.65	$1,429.86	$1,429.86	$1,429.86	$819.72	$819.72	$819.72	$806.21	$806.21

	FY 34-35	FY 35-36	FY 36-37	FY 37-38	FY 38-39	FY 39-40	FY 40-41	FY 41-42	Total
Local	$91.70	$91.70	$36.79	$36.79	$36.79	$20.97	$20.97	$20.97	**$3,284.52**
Regional	$33.36	$33.36	$13.38	$13.38	$13.38	$7.63	$7.63	$7.63	**$1,194.72**
State	$200.78	$200.78	$80.54	$80.54	$80.54	$45.92	$45.92	$45.92	**$7,191.44**
Federal	$48.55	$48.55	$19.48	$19.48	$19.48	$11.10	$11.10	$11.10	**$1,739.06**
Private	$2.94	$2.94	$1.18	$1.18	$1.18	$0.67	$0.67	$0.67	**$105.42**
Total	$377.33	$377.33	$151.36	$151.36	$151.36	$86.29	$86.29	$86.29	**$13,515.15**

Source: DEP's 2023 STAR Report, Adopted BMAP Projects[45]

The overall total for the 18 forecast years shown in the table increased by over $3 billion relative to the 18 forecast years shown in last year's table. The STAR report designates each project's status as one of the following: canceled, completed, ongoing, planned, underway, or void. Between the 2022- and 2023-STAR reports, the total number of projects listed increased by 219. See Table 4.1.8 for a comparison of project status designations between the 2022- and 2023-STAR Reports.

Table 4.1.8 BMAP Project Statuses

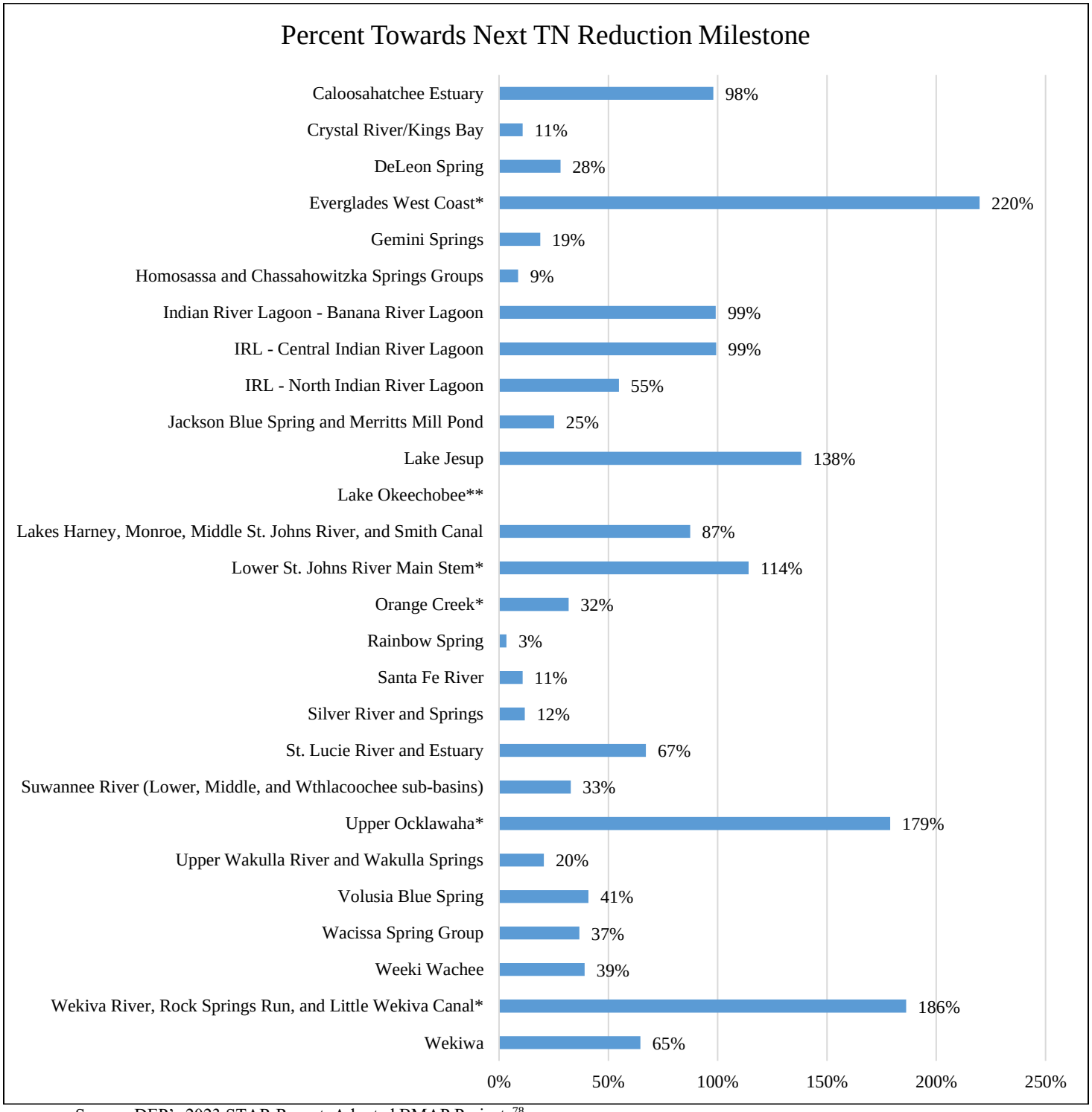
	Canceled	Complete	Ongoing	Planned	Underway	Void	Total
2022 STAR Report	385	3,872	1,287	581	601	27	6,753
2023 STAR Report	390	4,062	1,302	583	593	42	6,972
Change	**+5**	**+190**	**+15**	**+2**	**-8**	**+15**	**+219**

Source: DEP's 2022 and 2023 STAR Report, Adopted BMAP Projects[45]

Most BMAPs have a unique Total Nitrogen (TN) and Total Phosphorous (TP) reduction end goal, and five-year milestones between the inception and that end goal. Progress is reported in estimated pounds reduced from the initial baseline readings. See Appendix D for information regarding TN and TP reductions by BMAP and project status. Figures 4.1.12 and 4.1.13 show the progress those BMAPs have made toward their next reduction milestones for TN and TP, respectively. Notice that progress is over 100% in several BMAPs, meaning that they have exceeded the next milestone benchmark.

[See figure on following page]

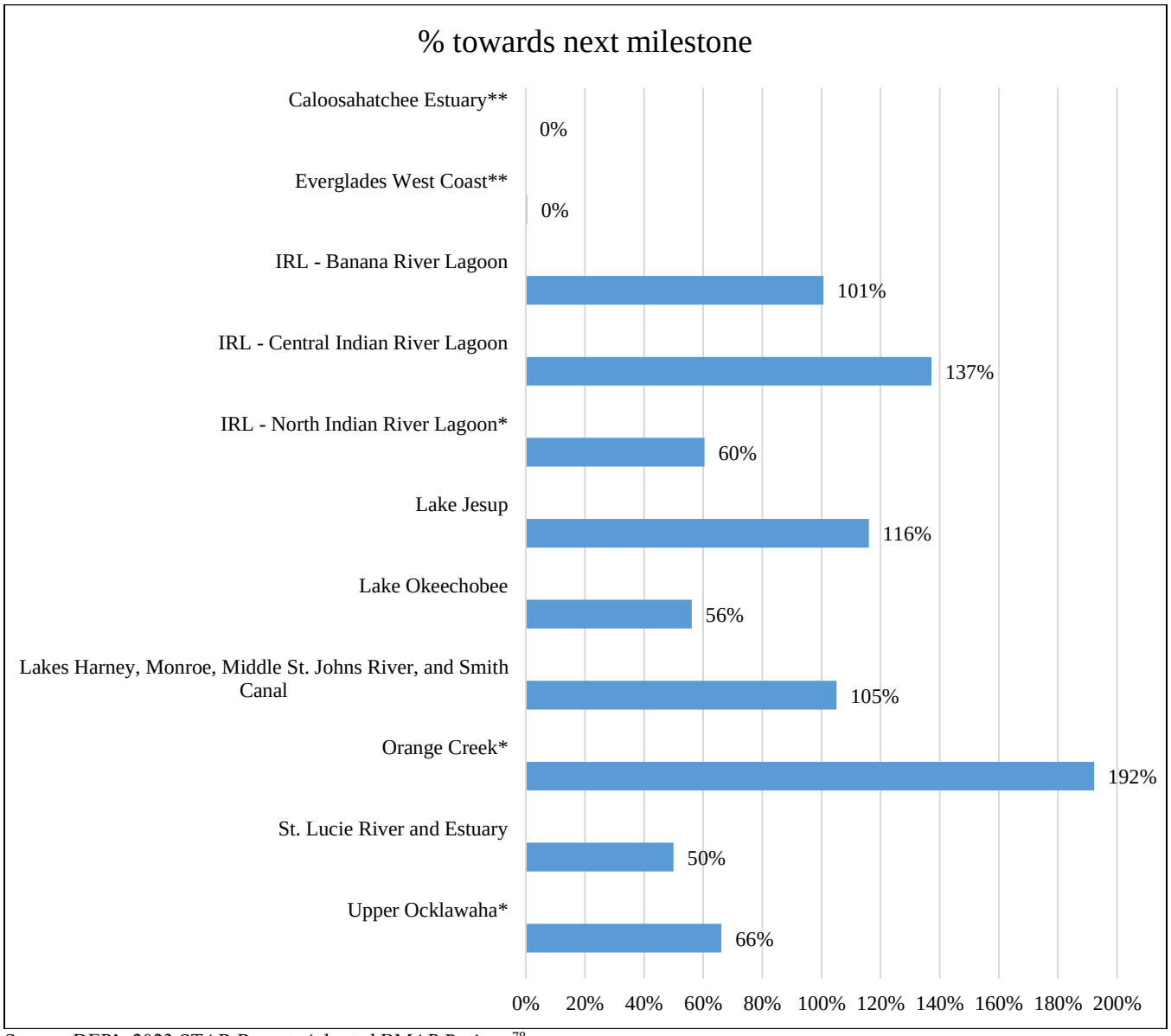
Figure 4.1.12 Progress toward Next TN Reduction Milestone



Source: DEP's 2023 STAR Report, Adopted BMAP Projects[78]
*Did not have milestones. Percentage represents progress towards end goal.
**Did not have milestones or stated end goal.

[78] *Basin Management Action Plans (BMAPs)*. Florida Department of Environmental Protection. https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps

Figure 4.1.13 Progress toward Next TP Reduction Milestone



Source: DEP's 2023 STAR Report, Adopted BMAP Projects[78]
*Did not have milestones. Percentage represents progress towards end goal.
**Did not have milestones or stated end goal.

Alternative Restoration Plans (ARPs)

The EPA recognizes that under certain circumstances, the TMDL development approach required under the CWA may not be the most efficient or effective strategy to attain water quality standards.[79] In some limited cases, water quality standards may be attained through (1) technology-based effluent limitations for permitted point sources, (2) more stringent effluent limitations required by the local, state, or federal authority, or (3) other pollution requirements such as best management practices.[80] As a result, the EPA created assessment category 4b for CWA reporting purposes, which recognizes that other pollution control mechanisms in lieu of TMDL development may result in the attainment of applicable water quality standards in the near-term.[81] The 4b waters are not included in a state's 303(d) impaired waters list, and therefore, are not prioritized for TMDL development. The EPA also recognizes a 5-alternative category of waters that are included in a state's 303(d) list and prioritized for TMDL development but are being addressed in the near-term through alternative restoration efforts.

In Florida, DEP encourages local stakeholders to develop and implement water quality restoration activities as soon as practicable, which may obviate the need to use state resources to develop TMDLs and implement BMAPs.[82] At a minimum, effectively addressing water quality concerns ahead of these regulatory steps may reduce the state and local expenditures necessary to restore water quality. In Florida, there are two types of restoration plans that are intended to promote water quality improvements prior to development of a TMDL: 4b reasonable assurance plans (4b plans or RAPs) and 4e water quality restoration plans (4e plans). Both types of alternative approaches are initiated and driven by stakeholder involvement. The main difference between the 4b and 4e plans concerns the level of certainty regarding when applicable water quality standards will be attained, with 4b plans having greater certainty that reasonable progress will be made by the next assessment cycle for that basin.[83] DEP encourages the adoption of alternate restoration plans (ARPs) because they are often a more efficient process than TMDL development. However, these alternate plans can be difficult to establish. DEP's guidance manual suggests considering whether there is an active stakeholder group, local support, monetary resources to dedicate to the plan, and/or existing monitoring networks to ensure achievability. When deciding which alternate plan to pursue, the guide recommends considering the level of impairment and whether that includes FIB, ongoing or planned restoration projects, and whether there is a desire to propose changes to quality standards for that water. All of these should be considered when undertaking a 4b or 4e restoration plan. Figure 4.1.14 illustrates a possible decision tree for choosing to implement an ARP.

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[79] *See* Integrated Reporting Guidance under CWA Sections 303(d), 305(b) and 314 for the years 2004, 2008 (providing, in part, guidance on the use of assessment category 4b) available at: https://www.epa.gov/tmdl/integrated-reporting-guidance-under-cwa-sections-303d-305b-and-314. (Accessed Dec 2023.)

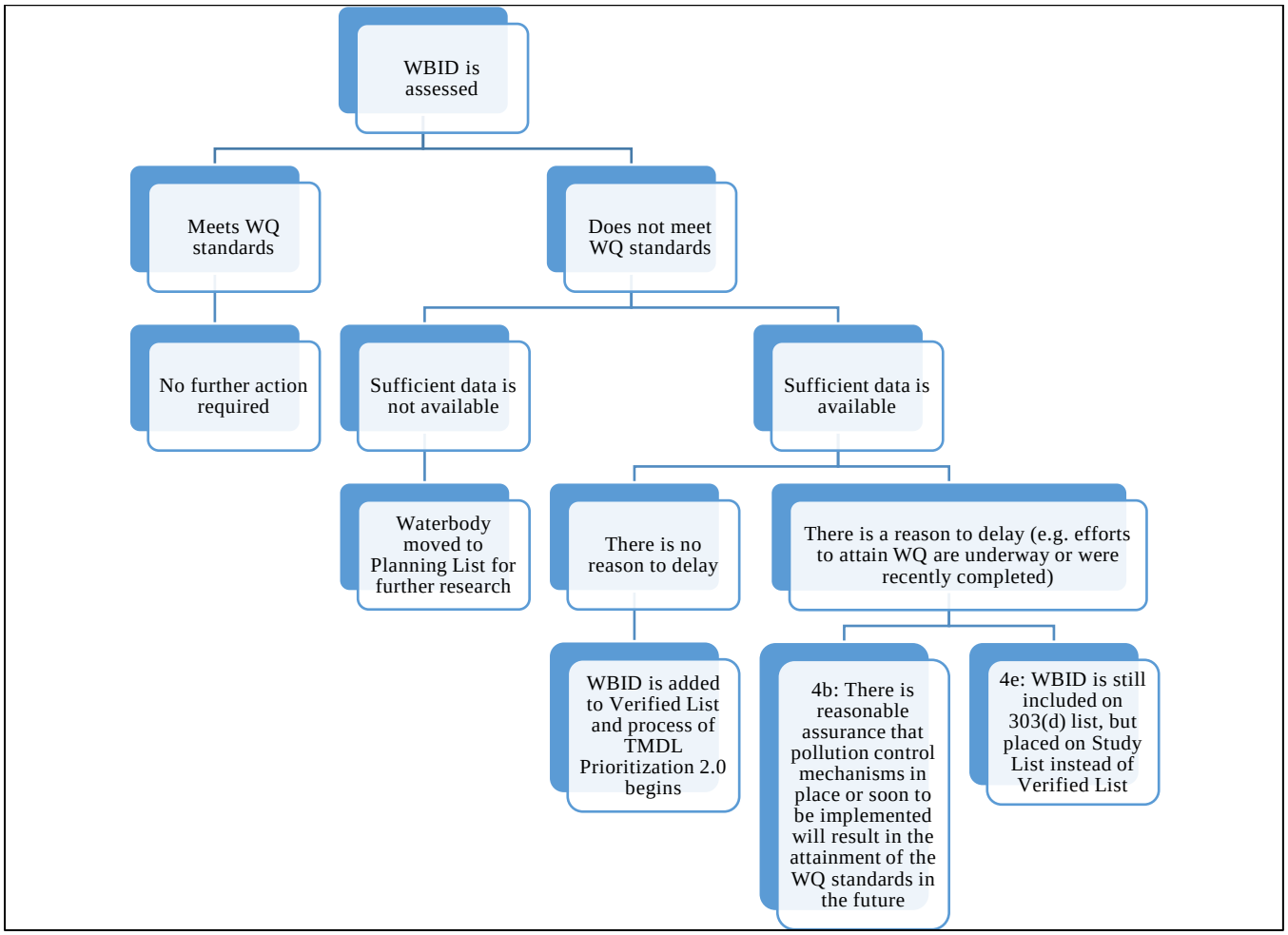
[80] *See* 40 C.F.R § 130.7(b)(1).

[81] As discussed previously, the state water quality reporting requirements are under sections 303(d), 305(b), and 314 of the CWA. These reports are often referred to as integrated reports since a single report meeting all of the requirements are submitted to EPA.

[82] *See* Florida Department of Environmental Protection, *Guidance on Developing Plans as Alternatives to TMDLs – Assessment Category 4b and 4e Plans*, June 2015, at 1, available at: https://floridadep.gov/sites/default/files/4b4ePlansGuidance.pdf. (Accessed Dec 2023.)

[83] Florida Department of Environmental Protection, *Category 4e Assessments and Documentation*, https://floridadep.gov/dear/alternative-restoration-plans/content/category-4e-assessments-and-documentation. (Accessed Aug 2023.)

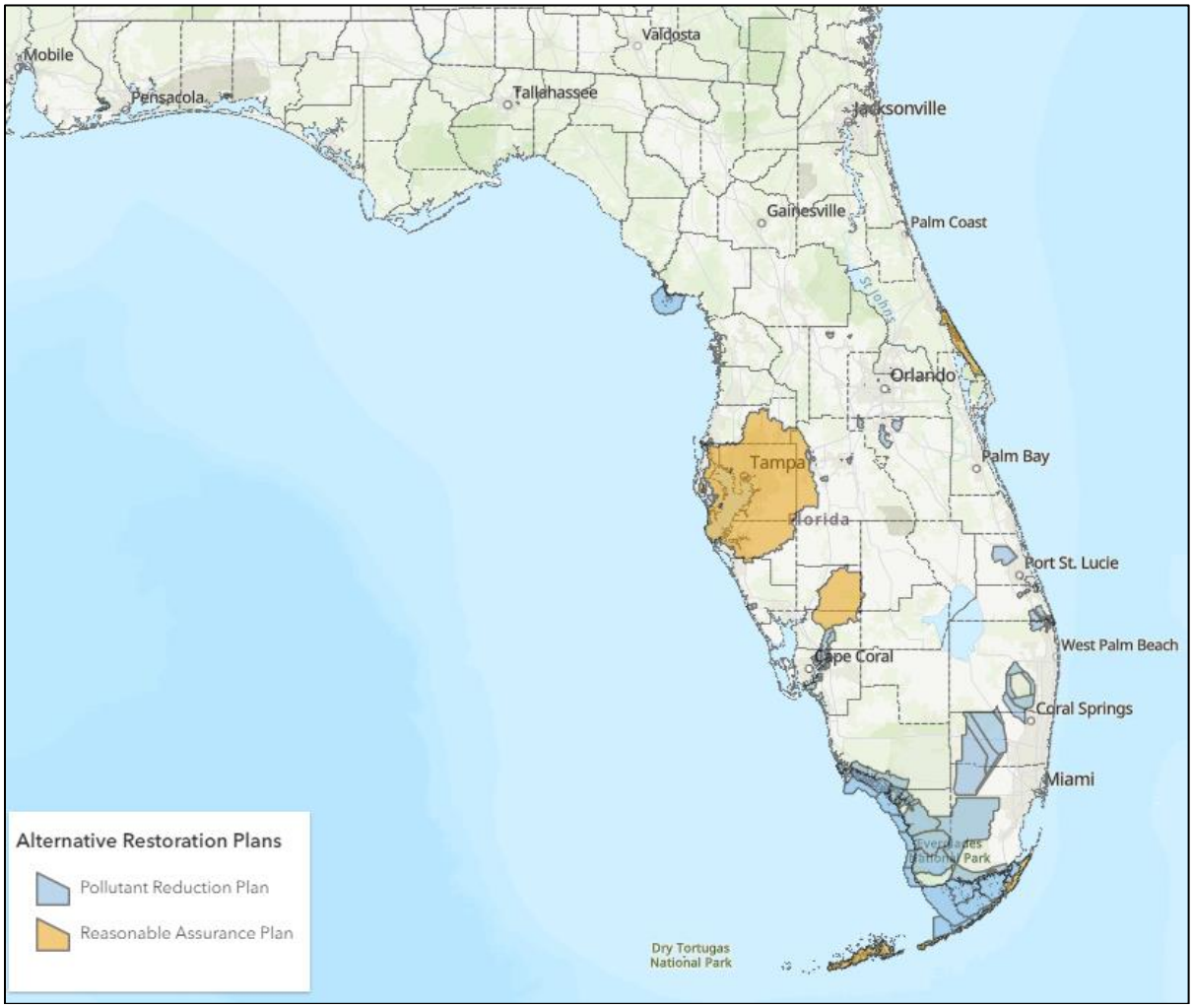
Figure 4.1.14 Decision to Implement ARP



For a full list of the state's assessment categories, see Table 4.1.3. See Figure 4.1.15 for a map of the 4b and 4e plans currently being implemented in Florida.

[See figure on following page]

Figure 4.1.15 Alternative Restoration and Reasonable Assurance Plans



Source: DEP ArcGIS (Accessed Dec 2024.)

For 4b plans, there is reasonable assurance that, due to pollution control mechanisms, the waterbody is "expected to attain water quality standards in the future and is expected to make reasonable progress towards attainment of water quality standards by the time the next section 303(d) list for the basin is scheduled to be submitted to EPA."[84] The 4b plans are developed by local stakeholders, approved by DEP, and adopted by DEP secretarial order. As of December 2024, there are five 4b plans that are being implemented in Florida.[85] See Table 4.1.9 for project implementation costs identified in 4b plans. According to DEP staff, while not required, DEP may try to track 4b project implementation data in a similar format as basin management action plan projects, which may include cost estimates and timeframes for completion. As this data becomes available, EDR will refine the expenditure analysis to include 4b plans.

[84] Fla. Admin. Code R. 62-303.600.
[85] *See* Florida Department of Environmental Protection, *Reasonable Assurance Plans (RAPs): Category 4b Assessments and Documentation*, https://floridadep.gov/dear/alternative-restoration-plans/content/reasonable-assurance-plans-raps-category-4b-assessments. (Accessed December 2024.)

Table 4.1.9 Reasonable Assurance Plans (4b Plans)

Reasonable Assurance Plans	Lead Entity	Most Recent Plan Updates	Total Identified Expenditures*	Estimates Represent Fiscal Years:
Florida Keys	DEP	2024	$330.64	22-25
Lake Seminole	Pinellas County	2024	$18.66	Unlisted
Mosquito Lagoon	City of Edgewater, City of New Smyrna Beach, City of Oak Hill, Department of Transportation, and Volusia County	2019	$20.92	20-28
Shell, Prairie, and Joshua Creeks	Southwest Florida WMD	2024	$19.65	14-24
Tampa Bay Estuary	Tampa Bay Estuary Program	2022	$178.28	92-21

*These expenditures are in millions of dollars and may be historical or planned.
Source: DEP's Alternative Restoration Plans Cost Expenditures.
Note: These amounts are the most recent funding amounts published. Previous editions of this report summed all historical funding amounts for each RAP.

DEP's 4e category is comparable to EPA assessment category 5-alternative (or 5-alt). This category recognizes that there are recently completed or ongoing water quality restoration activities being implemented to address impairment.[86] The 4e waters are included in the state's 303(d) list and the state's study list (for additional data gathering), but the decision to develop a TMDL is deferred until the next assessment cycle.[87] As explained above, 4e plans involve less certainty of when water quality standards will be attained than the 4b plans.[88] The goal of an approved 4e plan "is to implement appropriate restoration activities and, if necessary, additional study so that by the next assessment cycle either a 4b plan can be approved [by DEP] or the waterbody attains water quality standards for the parameter causing impairment."[89] As of September 2024, there are 119 waterbodies currently listed as 4e. This is 34 fewer than reported last year. See Table 4.1.10 for a tabulation of parameters exceeded by water group since 2007.[90] A complete list of parameters by WBID can be found in Appendix E. See Table 4.1.11 for 4e Pollutant Reduction Plan (PRP) expenditures provided by DEP for 44 approved plans.[91]

[86] Florida Department of Environmental Protection, *Category 4e Assessments and Documentation*, https://floridadep.gov/dear/alternative-restoration-plans/content/category-4e-assessments-and-documentation. (Dec 2024.)
[87] Fla. Admin. Code R. 62-303.390(2)(d).
[88] *Ibid*.
[89] Florida Department of Environmental Protection, *Guidance on Developing Plans as Alternatives to TMDLs – Assessment Category 4b and 4e Plans*, June 2015, at 10, available at: https://floridadep.gov/sites/default/files/4b4ePlansGuidance.pdf. (Accessed Dec 2023.)
[90] Florida Department of Environmental Protection. (2024, September 10). *Statewide Alternative Restoration Plan Status*. https://floridadep.gov/dear/alternative-restoration-plans/content/statewide-alternative-restoration-plan-status
[91] Source: DEP's Alternative Restoration Plans Cost Expenditures

Table 4.1.10 4e Plans by Parameter(s) Not Attaining Standards

Group	Biology	Dissolved Oxygen	Enterococci	Escherichia Coli	Fecal Coliform	Lead	Nutrients (Algal Mats)	Nutrients (Chlorophyll-a)	Nutrients (Macrophytes)	Nutrients (TP)	Nutrients (TP)	pH	Specific Conductance	Total	Change from Last Year
Caloosahatchee			1	4							1			**6**	**-**
Charlotte Harbour														**0**	**-4**
Everglades		17						13		19	21			**70**	**+15**
Everglades West Coast		3						4		4	3			**14**	**+2**
Florida Keys		14						8		14	6			**42**	**+6**
Indian River Lagoon												2		**2**	**-**
Kissimmee River	1							1		1	1			**4**	**+5**
Lake Worth Lagoon - Palm Beach Coast	1			1				1			1			**4**	**-**
Lower St. Johns														**0**	**-4**
Middle St. Johns	4							5		2	3			**14**	**-5**
Ochlockonee – St. Marks				1				4		3	4			**12**	**-**
Ocklawaha		3						1		1	1			**6**	**-**
Pensacola														**0**	**-1**
Perdido		1						2						**3**	**-2**
Sarasota Bay - Peace - Myakka	3	1						9		9	6			**28**	**+1**
Southeast Coast - Biscayne Bay										1				**1**	**-8**
Springs Coast		1	1					3		2				**7**	**-13**
St. Lucie - Loxahatchee	1	14	12	2	4		1	8	1		3			**50**	**-9**
Tampa Bay	1	4						5		1	2		1	**14**	**-8**
Tampa Bay Tributaries	1					1		1		1	1			**4**	**-3**
Total	**12**	**58**	**14**	**8**	**4**	**1**	**1**	**65**	**1**	**58**	**53**	**2**	**1**	**282**	**-20**
Change from Last Year	**-2**	**+6**	**-10**	**-26**	**+1**	**-**	**-**	**+1**	**-3**	**+5**	**+4**	**-**	**-**	**-20**	

Source: DEP's Statewide Alternative Restoration Plan Status, updated September 10, 2024.[90]

Note: Plans adopted prior to 2007 and those considered "completed" are excluded from this table. Three groups were retained that reported "zero" parameters but were not formally designated as completed.

Table 4.1.11 Pollutant Reduction (4e) Plans

Pollutant Reduction Plan (PRP) Name	Lead Entity	Year of Last Update	Total Identified Expenditures*
Alligator Creek WBID 2030 TMDL Implementation Plan	Sarasota County	2018	$14.50
Anclote River PRP	City of Tarpon Springs Pinellas County	2019	$8.47
Braden River Watershed Management Plan Final Report	Southwest Florida Water Management District	2009	$1.49
Caloosahatchee River Segment 2 PRP	Lee County	2024	$48.47
Cedar Key PRP	DEP	2021	$21.56
Clam Bayou PRP	DEP	2012	$4.75
Courtney Campbell Causeway PRP	DEP	2019	$16.0
Crescent Lake PRP	City of St. Petersburg	2021	$5.33
Crystal Lake PRP	Polk County	2019	$0.97
Danforth Creek PRP	DEP	2019	$4.98
Joe's Creek TMDL Implementation Plan	Pinellas County	2018	$1.72
Killearn Chain of Lakes PRP	City of Tallahassee	2021	$0.26
Lake Arnold PRP	City of Orlando	2020	$2.92
Lake Bass PRP	Orange County	2021	$3.04
Lake Bonnet PRP	City of Lakeland	2021	$62.50
Lake Concord PRP	City of Casselberry	2021	$4.76
Lake Deeson PRP	Polk County	2024	$0.48
Lake Eva PRP	Haines City	2021	$10.27
Lake Gibson PRP	City of Lakeland	2023	$4.63
Lake Hamilton Chain of Lakes PRP	Polk County	2021	$4.60
Lake Howell Management Plan	Seminole County	2018	$1.51
Lake Idyl PRP	City of Winter Haven	2024	$2.88
Lake Maggiore PRP	City of St. Petersburg	2018	$6.28
Lake Mirror PRP	City of Lakeland	2021	$2.08
Lake Morton PRP	City of Lakeland	2021	$2.16
Lake Orlando PRP	Orange County	2021	Not Available
Lake Parker PRP	City of Lakeland	2021	$9.80
Lake Prima Vista PRP	City of Ocoee	2019	$2.44
Lake Smart PRP	Polk County	2024	$6.55
Lake Weston PRP	Orange County	2021	$1.82
Loxahatchee River PRP	Stakeholders in the Loxahatchee River District	2024	$23.27
Marco Island PRP	City of Marco Island	2023	$1.90
Perdido Bay PRP	International Paper/Nutter Ass.	2018	$68.00
Pine Meadows Restoration Plan	St. Johns WMD	2020	$36.00
PRP Billy Creek and Manuel Branch	City of Fort Myers	2021	Not Available
Rocky Bayou PRP	City of Niceville	2019	$6.00
Saddle Creek PRP	Florida Department of Environmental Protection	2019	$63.40
Ten Thousand Islands PRP	DEP	2021	$612.00

Ten Mile Creek PRP	DEP	2019	$57.00
Weems Pond/Lake Lafayette PRP	City of Tallahassee	2018	$6.11
West Emeralda Marsh Conservation Area PRP	St. Johns WMD	2018	$5.22
Whiskey (Wyoua) Creek PRP	Lee County	2023	$14.46
Willoughby Creek PRP	Martin County	2021	$14.99
Yellow Fever Creek PRP	Lee County	2023	$44.23
Total			**$1,209.80**
Average			**$28.80**

*These expenditures are in millions of dollars and may be historical or planned. The numbers are estimated because some projects are in the planning phase.
Source: DEP's Alternative Restoration Plans Cost Expenditures

To estimate expenditures in future editions, EDR will continue working with DEP staff to identify the likely path of the potential 1,679 TMDLs that could be developed in the absence of ARPs. At this point, it is unknown how many of these impaired waters will proceed to the BMAP stage or move under a 4b or 4e plan.

Septic to Sewer

DEP's Division of Water Resource Management (DWRM) estimates that there are 2.6 million septic systems in Florida, serving 30 percent of the state's population. This represents 12 percent of the septic systems in the United States.[92] If they are not properly maintained, are installed in porous soils, or are too close to the water table, they can contaminate groundwater with nutrients, bacteria, or other pathogens. From 2018 to 2023, an average of 29,317 construction permits were issued each year for new OSTDS in Florida.[93] During that same period, an annual average of 23,679 OSTDS repair construction permits were issued in Florida.[94] Even a properly maintained septic system contributes nutrients to the surrounding environment. According to the University of Florida's Institute of Food and Agricultural Sciences (IFAS), Florida's septic systems typically remove only 30 to 40 percent of effluent nitrogen. The closer the site is, the more likely it is to contribute nutrients to a waterbody.[95] As shown in Figure 4.1.9, DEP estimates that 16 percent of the nitrogen in BMAPs comes from OSTDS (septic tanks).

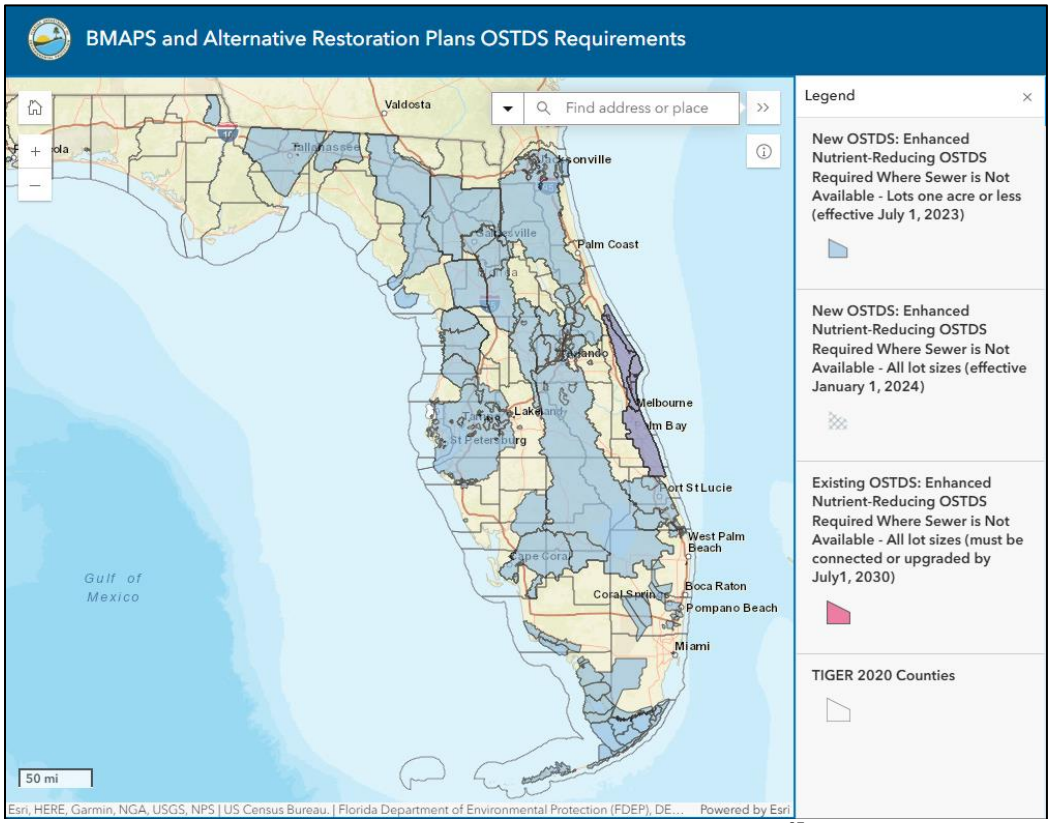
For those who currently have an OSTDS, alternate options include connecting to sewer, where available, or upgrading to a septic system with a higher level of nutrient removal efficiency. Florida Sea Grant estimates the cost of switching to sewer (including removing the old septic tank, performing associated electrical and plumbing work, extending sewer lines, and paying sewer connection fees) to be approximately $20,000 per lot; however, this estimate can vary widely, depending on site location and conditions. If the alternative option is chosen, Florida Sea Grant

[92] Florida Department of Environmental Protection. (n.d.-b). *Onsite Sewage Program*. Division of Water Resource Management. https://floridadep.gov/water/onsite-sewage. (Accessed Apr 2025.)
[93] Ursin, E. (2023, October 9). *OSTDS New Permit Counts from 2018*. Onsite Sewage Program. https://floridadep.gov/sites/default/files/ENR-OSTDS%20N-reducing%20technologies%202023%200718.pdf. (Accessed Apr 2025.)
[94] Ursin, E. (2024, October 14). *OSTDS Repair Permit Counts from 2018*. Onsite Sewage Program. https://floridadep.gov/sites/default/files/ENR-OSTDS%20N-reducing%20technologies%202023%200718.pdf. (Accessed Apr 2025.)
[95] UF IFAS. (n.d.). *Septic Systems in the Save Our Indian River Lagoon Project Plan*. Florida Sea Grant. http://brevardfl.gov/Newsletter/SaveOurIndianRiverLagoonOnSepticSystems. (Accessed Apr 2025.)

estimates the cost of upgrading septic systems to a more efficient septic system to be $16,000 per lot (again, varying based on site locations and conditions).[95]

In 2023, the Legislature passed CS/CS/HB 1379, which contained numerous changes to current environmental protection laws. First, effective July 1, 2023, "[O]n lots of 1 acre or less, if a publicly owned or investor-owned sewage system is not available, only the installation of enhanced nutrient-reducing onsite sewage treatment and disposal systems or other wastewater treatment systems that achieve at least 65 percent nitrogen reduction are authorized." Second, effective January 1, 2024, CS/CS/HB 1379 requires nitrogen-reducing systems for new septic systems on lots of any size in the IRLPP, unless previously permitted.[96] Third, by January 1, 2030, CS/CS/HB 1379 requires any commercial or residential property with an existing OSTDS to connect to central sewer (where available) or upgrade to a nitrogen-reducing system (known as Enhanced Nutrient Reducing OSTDS [ENR-OSTDS]) or other wastewater system that achieves at least 65 percent nitrogen reduction. Figure 4.1.16 shows the areas impacted by these new requirements, which coincide with BMAP and ARP areas.

Figure 4.1.16 CS/CS/HB 1379 Requirements



Source: DEP's BMAPS and Alternative Restoration Plans OSTDS Requirements[97]

[96] *See* § 373.811 (2), Fla. Stat.
[97] Florida Department of Environmental Protection. (n.d.). *BMAPS and Alternative Restoration Plans OSTDS Requirements*. Division of Water Resource Management. https://fdep.maps.arcgis.com/apps/instant/sidebar/index.html?appid=dbb5433133db4012a4355a08cacaaa12. (Accessed Apr 2025.)

The Florida Department of Health's (DOH) Florida Water Management Inventory (FLWMI) project used state property tax data to categorize each parcel's drinking and wastewater system. Of the 10.7 million parcels in the state, 8.1 million were classified. For wastewater, each parcel was designated as "Known Septic," "Known Sewer," "Likely Septic," "Likely Sewer," "NA," "Surface Water Level (SWL) Septic," "SWL Sewer," "Undetermined," or "Unknown."[98] Geographic Information System (GIS) software was used to merge the FLWMI data with DEP's map of the areas affected by CS/CS/HB 1379. Of the 8.1 million parcels with wastewater information, 983,363 parcels were identified as either Known Septic, Likely Septic, or SWL Septic, within BMAP or ARP areas, or 12.2 percent of the state's wastewater systems. There is no indication of whether these septic systems are traditional or have been upgraded to ENR-OSTDS. See Appendix F for detailed information regarding wastewater systems by county.

Areas within the IRLPP area have additional requirements: lots of any size with existing OSTDS are required to connect to sewer or upgrade to ENR-OSTDS by July 1, 2030. The IRLPP consists of the Banana River Lagoon BMAP (BIRL), Central Indian River Lagoon BMAP (CIRL), North Indian River Lagoon BMAP (NIRL), and the Mosquito Lagoon Reasonable Assurance Plan (RAP).[99] There is no indication of whether these 100,214 septic systems are traditional or have been upgraded to ENR-OSTDS. Table 4.1.12 shows summary data for parcels in the IRLPP.

Table 4.1.12 Wastewater Information for Parcels in IRLPP

Restoration Plan	Parcels with WW Information	Sewer*		Septic**		Other***	
		Parcels	Percent	Parcels	Percent	Parcels	Percent
BIRL BMAP	**38,188**	19,508	51%	8,019	21%	10,661	28%
CIRL BMAP	**236,470**	85,915	36%	76,391	32%	74,164	31%
NIRL BMAP	**80,630**	52,394	65%	12,788	16%	15,448	19%
Mosquito Lagoon RAP	**23,817**	17,640	74%	3,016	13%	3,161	13%
Total	**379,105**	**175,457**	**46%**	**100,214**	**26%**	**103,434**	**27%**

Note: Twenty-four parcels in the NIRL BMAP are also located in the Mosquito Lagoon RAP. They are displayed in the NIRL BMAP data.
*"Sewer" includes parcels designated "Known Sewer," "Likely Sewer," or "SWL Sewer" by DOH's FLWMI.
**"Septic" includes parcels designated "Known Septic," "Likely Septic," or "SWL Septic" by DOH's FLWMI.
***"Other" includes parcels designated "Undetermined," "Unknown," or "NA" by DOH's FLWMI.

To assist with the cost of connecting parcels with traditional OSTDS to sewer systems, DEP has provided funds in the form of water quality improvement grants (WQIG) to local governments. Tables 4.1.13, 4.1.14, and 4.1.15 show summary data for these grant amounts, project counts, and the average cost per project, respectively.

[98] Florida Department of Health. (2024, November 12). Florida Water Management Inventory Project. https://www.floridahealth.gov/environmental-health/drinking-water/flwmi/index.html. (Accessed Apr 2025.)
[99] § 373.469(3), Fla. Stat.

Table 4.1.13 WQIG Septic to Sewer Grants (in $millions)

Funding	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Total
County	$122.3	$59.1	$19.6	$39.6	**$240.7**
Municipality	$47.9	$20.4	$56.1	$23.4	**$147.9**
Utility	$16.0	$30.1	$13.5	$20.6	**$80.2**
WMD	$6.1	-	$2.7	-	**$8.8**
Total	**$192.3**	**$109.6**	**$91.9**	**$83.6**	**$477.5**

Source: DEP's WQIG S2S by County, EGA Grant: Project Subtype includes Septic to Sewer

Table 4.1.14 WQIG Septic to Sewer Grant Projects

Project Count	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Total
County	27	11	5	5	**48**
Municipality	24	7	9	5	**45**
Utility	7	7	2	1	**17**
WMD	2	0	1	0	**3**
Total	**60**	**25**	**17**	**11**	**113**

Source: DEP's WQIG S2S by County, EGA Grant: Project Subtype includes Septic to Sewer

Table 4.1.15 WQIG Septic to Sewer Average Grant per Project (in $millions)

Average Grant per Project	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Overall
County	$4.5	$5.4	$3.9	$7.9	**$5.0**
Municipality	$2.0	$2.9	$6.2	$4.7	**$3.3**
Utility	$3.4	$4.3	$6.8	$20.6	**$4.7**
WMD	$3.1	-	$2.7	-	**$2.9**
Overall	**$3.2**	**$4.4**	**$5.4**	**$7.6**	**$4.2**

Source: DEP's WQIG S2S by County, EGA Grant: Project Subtype includes Septic to Sewer

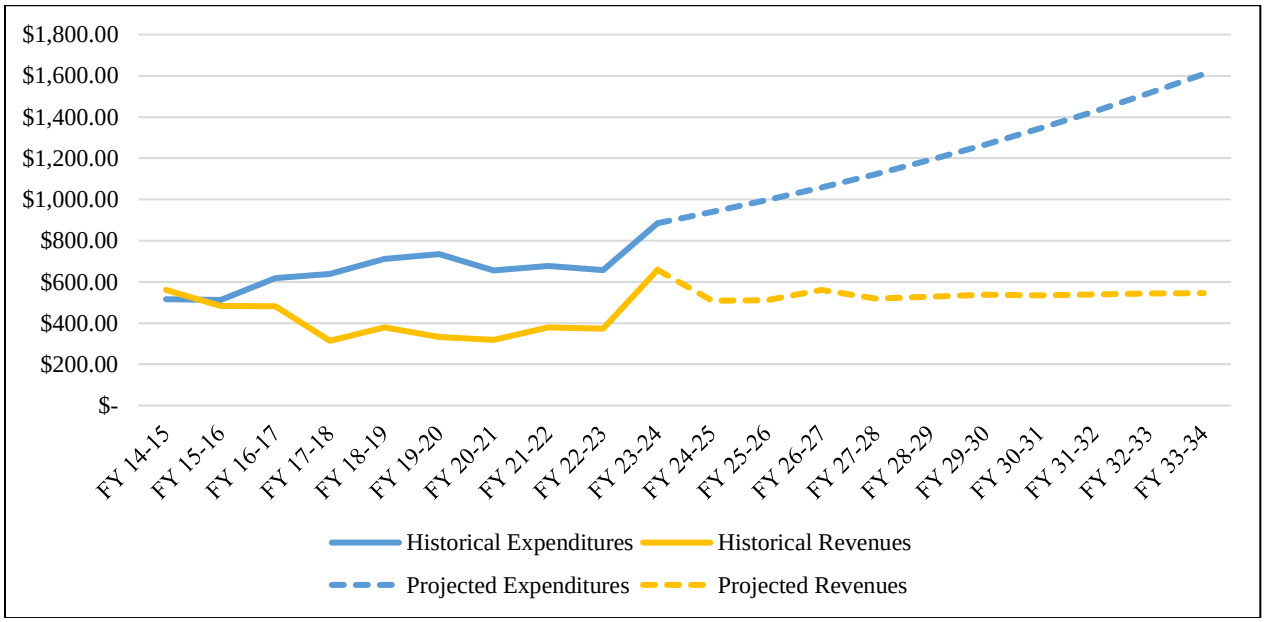
4.2 Florida's Water Quality Funding Gap

Sections 4.2 and 4.3 discuss expenditures and revenues, respectively, pertaining to water quality based on historical patterns. They provide data for completed fiscal years as well as forecasts assuming no changes are made. This means that the forecasts do not take account of the future needs that are developed in other chapters of this report.[100] The state information is summarized in the graphs and tables below. As used in this chapter, expenditures are not equivalent to appropriations, but rather reflect disbursements which may lag appropriations by one or more years. The state revenues discussed in this chapter are those that are dedicated to the purpose of water quality.

[100] Other chapters are available at: http://edr.state.fl.us/Content/natural-resources/index.cfm. (Accessed Apr 2023.)

The first graph and table show the projected state funding gap for water quality, assuming the Legislature continues its current path of expenditures. The previous section shows that investments above and beyond this level are needed to achieve the Legislature's intent of complying with laws and regulations associated with water quality protection and restoration, many of which are federal.

Figure 4.2.1 Historical and Projected Water Quality Funding Gap (in $millions)



Note: Previous editions of this chapter included expenditures related to beach projects and the Everglades. These have been removed in this edition and placed in chapters 2 and 7, respectively.

Table 4.2.1 Projected Water Quality Funding Gap (in $millions)

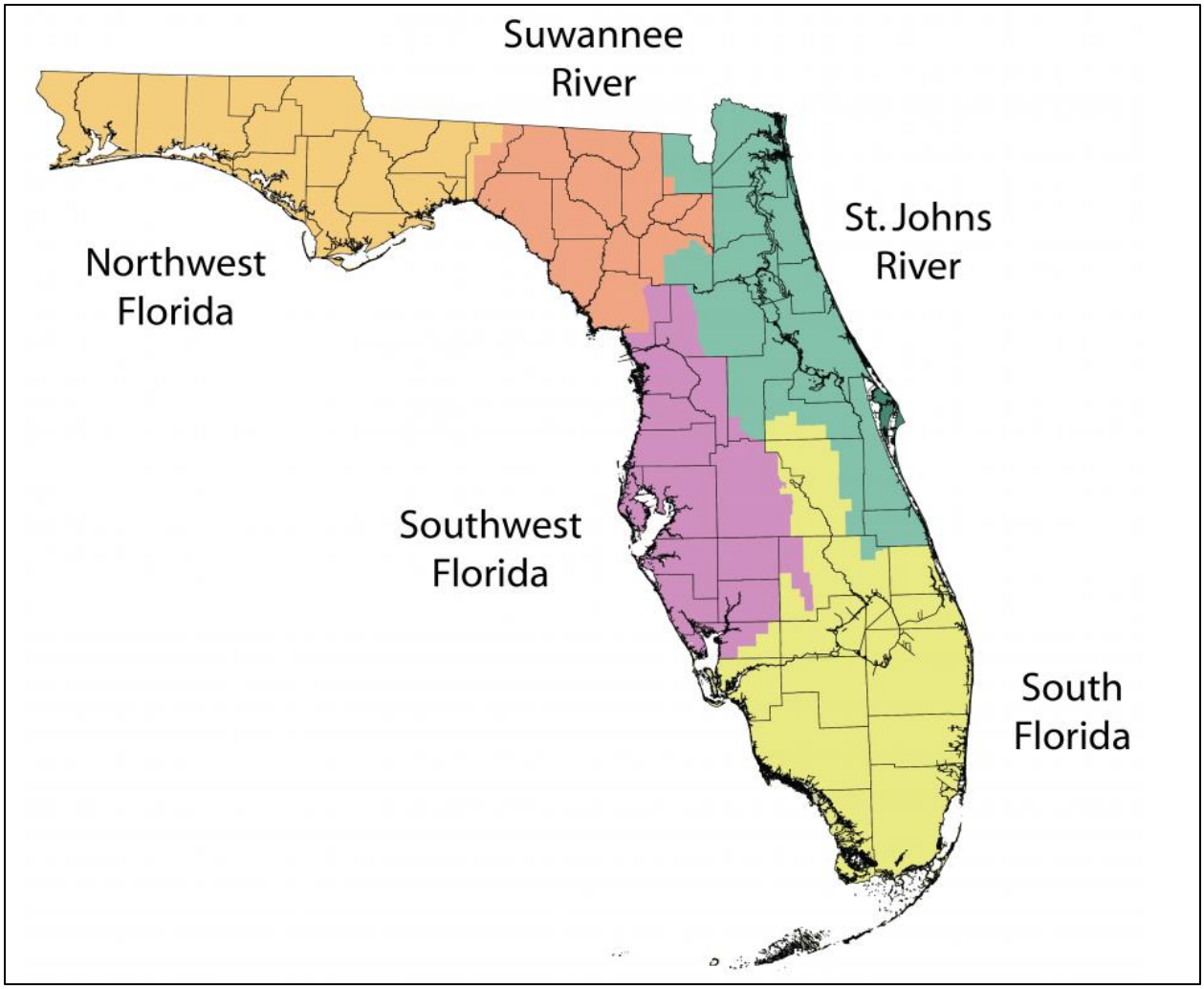
	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34
Projected Revenues	$508.29	$510.65	$560.23	$519.41	$527.88	$538.20	$534.49	$539.51	$543.36	$545.05
Projected Expenditures	$939.10	$996.96	$1,058.37	$1,123.57	$1,192.79	$1,266.27	$1,344.28	$1,427.10	$1,515.01	$1,608.35
Gap	($430.81)	($486.30)	($498.05)	($604.16)	($664.91)	($728.07)	($809.79)	($887.59)	($971.66)	($1,063.29)

Note: The data in this table is calculated in Table 4.3.7 and Table 4.4.2.
Note: Previous editions of this chapter included expenditures related to beach projects and the Everglades. These have been removed in this edition and placed in chapters 2 and 7, respectively.

Overall, Florida's waters provide an array of benefits crucial to existence, quality of life, and the state's economy. These benefits include water storage, flood protection, water purification, habitat for plant and animal species, recreational and educational opportunities, and scenic beauty. The management, protection, and restoration of Florida's waters require a coordinated effort among various state agencies, water management districts, public and private utilities, local governments, and other stakeholders. These functions require a more inclusive analysis than one focused solely on state government, unless the state were to absorb the other roles in addition to its own.

Water resource management in Florida is conducted on a state and regional level.[101] Recognizing that water resource problems vary in magnitude and complexity from region to region across the state, the Legislature vests in the Department of Environmental Protection (DEP) the power and responsibility to accomplish conservation, protection, management, and control of waters of the state, but with enough flexibility to accomplish these ends by delegating powers to the five water management districts (WMDs).[102] Chapter 373, Florida Statutes, provides the WMDs with broad authority to implement a wide range of regulatory and non-regulatory programs that address four areas of responsibility: water supply, water quality, flood protection and floodplain management, and natural systems. The five WMDs are identified in Figure 4.2.2. Additional state agencies including the Florida Department of Agriculture and Consumer Services and the Florida Fish and Wildlife Conservation Commission also implement activities that support water quality protection and restoration.

Figure 4.2.2 Water Management Districts



[101] § 373.016(4)(a), Fla. Stat.
[102] § 373.016(5), Fla. Stat.

The following sections of the report provides an assessment of the various programs and initiatives associated with water quality. The assessment includes historic and estimated future expenditures on water programs and projects as well as forecasts of revenues used for these purposes.

4.3 Florida's Expenditures Related to Water Quality

Article II, Section 7 of the Florida Constitution requires that adequate provision in law be made for the abatement of water pollution. Recognizing the importance of the state's water resources, the Florida Legislature passed the Florida Air and Water Pollution Control Act[103] in 1967 and the Florida Water Resource Act[104] in 1972. In addition, the Florida Safe Drinking Water Act[105] was passed in 1977 to ensure "safe drinking water at all times throughout the state, with due regard for economic factors and efficiency in government."[106] Further, Chapter 376, Florida Statutes, addresses surface and groundwater pollution through various programs including state-funded cleanup for petroleum and dry-cleaning solvents, waste cleanup requirements for potentially responsible parties, and restoration of certain potable water systems or private wells impacted by contamination.

Expenditures of State and Federal Funds

To identify the water quality and other water resource-related program expenditures, EDR reviewed the projects and initiatives implemented by DEP and other state agencies related to the protection or restoration of water quality, as well as the activities associated with the regulation of drinking water in Florida. Potentially all existing environmental or natural resource-based programs, projects, and initiatives influence the quality of water. Therefore, EDR attempted to identify those areas that appeared to be more directly related to the protection and restoration of water quality. Future editions may include refinements to these categorizations.

For the water quality and other water resource-related program component, EDR grouped the identified programs, projects, and initiatives into four categories generally following the internal structure of DEP: Environmental Assessment and Restoration; Water Restoration Assistance; Other Programs and Initiatives; and Regulatory/Clean-up Programs.

Environmental Assessment and Restoration

DEP's Division of Environmental Assessment and Restoration (DEAR) implements critical responsibilities under state and federal law relating to the protection and restoration of water quality in Florida. These responsibilities include adopting, reviewing, and revising Florida's surface water quality standards; monitoring and reporting on water quality; assessing waterbodies to identify those that are impaired; developing water quality restoration targets for the impaired waterbodies (*i.e.* TMDLs); developing and implementing water quality restoration plans such as basin management action plans (BMAPs); and providing laboratory services to DEP and other agencies.[107]

[103] Ch. 67-436, Laws of Fla.; § 403.011 et seq.
[104] Ch. 72-299, Laws of Fla.; Ch. 373, Fla. Stat.
[105] Ch. 77-337, Laws of Fla.; § 403.850, Fla. Stat. et seq.
[106] Ch. 77-337, § 2, Laws of Fla.; § 403.851(3), Fla. Stat.
[107] DEP, Division of Environmental Assessment and Restoration, https://floridadep.gov/dear. (Accessed Dec 2023.)

Expenditures related to DEAR, including personnel and operational costs, monitoring programs, laboratory services and support, and the TMDL program, are included in this category. The expenditures identified for the TMDL program are primarily related to projects and activities adopted in BMAPs, which are developed by state, regional, and local stakeholders to achieve one or more TMDLs. The TMDL and BMAP programs are discussed in more detail in Section 4.1.

Since Fiscal Year 2014-15, state-authorized expenditures for environmental assessment and restoration have totaled $322.39 million. Over eighty-two percent of expenditures are from state sources with the remainder coming from federal sources. Most of the federal funding is associated with the TMDL program. Table 4.3.1 shows the annual cash expenditures over the past ten years.

Table 4.3.1 DEP's Division of Environmental Assessment and Restoration Expenditures (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Personnel	$13.02	$12.81	$12.08	$12.00	$12.35	$12.50	$12.62	$12.77	$13.59	$14.66
Operations	$2.59	$2.63	$3.56	$3.25	$2.89	$2.58	$2.47	$2.57	$2.92	$2.89
Lab Support	$0.32	$0.19	$0.51	$0.44	$0.38	$0.25	$0.28	$0.36	$0.41	$0.28
Watershed Monitoring	$3.09	$2.30	$2.33	$2.62	$2.34	$2.48	$2.57	$2.53	$2.50	$2.39
TMDL Program*	$11.77	$24.32	$9.50	$9.46	$11.97	$11.65	$9.62	$8.77	$15.89	$15.09
Other Projects	$1.57	$1.75	$0.95	$0.67	$0.86	$0.39	$0.90	$0.95	$0.65	$0.32
Total	**$32.36**	**$43.99**	**$28.93**	**$28.44**	**$30.78**	**$29.86**	**$28.46**	**$27.95**	**$35.96**	**$35.64**

* Note that this table only includes TMDL expenditures by DEAR and does not include grants awarded to eligible entities by the DEP's Division of Water Restoration Assistance for TMDL implementation. The latter is included in the Nonpoint Source Funds category of Table 4.3.3.

In addition to the expenditures for water quality initiatives associated with assessment and restoration at DEP, the Legislature also provides funding to support water-related programs administered by the Department of Agriculture and Consumer Services (DACS). Since Fiscal Year 2014-15, the expenditures for these programs have totaled $387.71 million, primarily from state sources. Table 4.3.2 shows the annual cash expenditures over the past ten years.

Much of this funding is to support projects and initiatives related to the implementation of agricultural best management practices (BMPs). In addition to cost-sharing programs that assist farmers in implementing BMPs, DACS' water-related expenditures include operation of hybrid wetland treatment technology systems and floating aquatic vegetative tilling wetland treatment facilities, as well as ongoing nitrate and nitrite research and remediation.

DACS has primary authority to develop and adopt BMP manuals, by rule, that address agricultural nonpoint sources of pollution, as well as to verify the implementation of BMPs. BMPs are designed to improve water quality while maintaining agricultural production through practices and measures that reduce the amounts of fertilizers, pesticides, animal waste, and other pollutants that

enter the state's waters. Typical practices include nutrient management, irrigation management, and water resource protection.[108]

Agricultural BMPs serve as the primary tool to prevent and reduce water pollution. DEP, WMDs, and DACS are required to assist agricultural entities with their implementation. To that end, DACS implements cost-share programs to provide financial assistance for BMP implementation. DACS' Office of Agricultural Water Policy reported on December 31, 2023, that 61% of identified agricultural acres are enrolled in BMPs, as well as 83% of irrigated agricultural acres (not including silviculture) (see Figure 4.1.10). The BMP percentage is virtually identical to the numbers reported in the 2024 and 2023 editions of this assessment.

Table 4.3.2 DACS Water-Related Expenditures (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Personnel	$2.58	$2.77	$3.45	$3.91	$4.01	$3.94	$3.98	$4.46	$4.45	$5.74
Operations	$0.50	$0.56	$0.75	$0.53	$0.50	$0.62	$0.83	$0.51	$0.48	$0.99
Best Management Practices	$21.29	$20.24	$34.53	$33.18	$33.68	$34.94	$31.14	$33.20	$36.02	$37.88
Hybrid Wetlands	$4.61	$4.30	$11.55	$-	$-	$-	$-	$-	$-	$-
Nitrate & Nitrite Research and Remediation	$0.42	$0.54	$0.69	$0.60	$0.80	$0.53	$0.44	$0.39	$0.54	$0.63
Other	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	**$29.41**	**$28.40**	**$50.96**	**$38.22**	**$38.99**	**$40.04**	**$45.80**	**$38.56**	**$41.94**	**$45.25**

Water Restoration Assistance

DEP's Division of Water Restoration Assistance (DWRA) is responsible for providing financial assistance in the form of low-interest loans or grants to fund water quality and water quantity projects throughout the state.[109] This includes the federal and state-funded State Revolving Fund; nonpoint source funding from both the federal Clean Water Act Section 319(h) grant and the state's State Water Quality Assistance Grants (formerly known as the TMDL Water Quality Restoration Grants); and the Deepwater Horizon program.[110] DWRA also manages legislatively appropriated water projects and springs restoration funding.[109]

Expenditures related to DEP's DWRA, excluding beach projects and renourishment, but including personnel and the various loan and grant programs, are represented in this category. Since Fiscal

[108] Florida Department of Agriculture and Consumer Services. (2021, March 21). *What is a BMP?* https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Best-Management-Practices (Accessed Dec 2024.)
[109] DEP, *Division of Water Restoration Assistance*, https://floridadep.gov/wra. (Accessed Dec 2023.)
[110] For the 2024 Edition and beyond, expenditures for beach management projects will no longer be included in this section as they are not directly related to water quality restoration and improvement. Instead, they will be addressed in a separate chapter.

Year 2014-15, the expenditures for the identified programs total more than $3.01 billion. Of the total appropriations, approximately 93 percent has been funded from state sources and seven percent from federal sources. Most of the federal funding is associated with the State Revolving Fund, including grants for Wastewater Treatment Facilities Construction and grants for Small Community Wastewater Treatment. Table 4.3.3 shows the annual cash expenditures over the past 10 years.

Table 4.3.3 Water Restoration Assistance Expenditures (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Personnel	$3.38	$3.28	$6.58	$3.88	$4.42	$4.08	$4.29	$4.36	$4.19	$4.64
Operations	$0.48	$0.42	$0.50	$0.35	$0.38	$0.37	$0.43	$0.38	$0.20	$0.27
Revolving Fund - Wastewater Facilities	$162.99	$119.05	$161.73	$169.88	$244.56	$231.12	$158.36	$158.80	$140.13	$229.63
Revolving Fund - Wastewater Small Community	$22.03	$16.49	$7.28	$0.89	$0.90	$1.85	$15.05	$26.03	$3.18	$10.86
Water Projects	$20.07	$43.43	$50.25	$48.03	$33.30	$48.40	$31.07	$49.55	$62.20	$112.39
Nonpoint Source Funds	$2.80	$3.86	$12.72	$17.91	$10.74	$11.16	$12.56	$13.98	$14.44	$14.81
Springs Restoration	$0.06	$5.19	$9.36	$17.00	$15.47	$33.85	$46.06	$36.91	$30.81	$40.19
Non-Mandatory Land Reclamation	$1.53	$2.18	$1.02	$0.17	$0.60	$1.34	$0.83	$1.92	$0.75	$6.22
Deepwater Horizon Projects*	$32.87	$12.92	$19.01	$20.00	$29.96	$17.14	$15.43	$18.29	$12.13	$12.97
Other Projects	$0.01	$0.16	$0.37	$1.82	$4.47	$0.50	$2.04	$2.16	$8.90	$8.69
Total	**$246.22**	**$206.99**	**$268.83**	**$279.95**	**$344.80**	**$349.81**	**$286.11**	**$312.37**	**$276.94**	**$440.67**

***** The amounts shown are those expenditures identified as being related to water resources and are not inclusive of all expenditures funded through Deepwater Horizon-related settlements.
Note: This table has been revised from earlier versions to exclude expenditures for beaches and beach projects. Information regarding beaches can now be found in Chapter 2.

Eligible projects under the Clean Water State Revolving Fund (CWSRF) include the construction or upgrade of wastewater and stormwater infrastructure. A more extensive discussion of CWSRF eligibility and the federal funding allocation to states can be found in Chapter 6 of the 2020 Edition.[111] Projects funded through Section 319 and TMDL grants (nonpoint source funds) are intended to reduce nonpoint source pollution and may include demonstration and evaluation of urban and agricultural BMPs, stormwater retrofits, and public education projects.[112]

[111] EDR, *Annual Assessment of Florida's Water Resources and Conservation Lands 2020 Edition*, page 206, available at: http://edr.state.fl.us/content/natural-resources/LandandWaterAnnualAssessment_2020Edition.pdf. (Accessed Dec 2023.)
[112] DEP, Nonpoint Source Funds, https://floridadep.gov/WRA/319-TMDL-Fund. (Accessed Sep 2023.)

A more recent funding initiative is the annual statutory distribution from the Land Acquisition Trust Fund for spring restoration, protection, and management projects. Of the funds remaining after payment of debt service for Florida Forever bonds and Everglades restoration bonds, the lesser of 7.6 percent or $50 million is appropriated for springs projects.[113] In the five most recent General Appropriations Acts, the Legislature appropriated funds for land acquisition to protect springs and for projects that protect water quality and water quantity that flow from springs. Since Fiscal Year 2014-15, $224.90 million of the funds appropriated for springs restoration had been spent.

The final major category of funding assistance is provided through specific legislative appropriations for water projects identified each year in the General Appropriations Act. These water projects vary from year to year, although some projects have received funding in multiple years. The projects address water quality improvement (including septic-to-sewer projects), stormwater management, wastewater management, waterbody restoration, water supply, flooding, and other water resource-related concerns.[114] Expenditures on water projects have ranged from as little as $20.07 million in Fiscal Year 2014-15 to as high as $112.39 million in Fiscal Year 2023-24, nearly doubling in the last year alone.

Other Programs and Initiatives

In addition to Environmental Assessment and Restoration and Water Restoration Assistance, the Legislature has funded a variety of other water quality restoration projects and initiatives over the past ten years. Since Fiscal Year 2014-15, expenditures for these programs have reached slightly more than $326 million. More than 93 percent of expenditures were from state sources with less than seven percent from federal sources. Previously, funding for the Everglades was included in this section, but this has been removed and placed in Chapter 7. The annual cash expenditures since Fiscal Year 2014-15 are shown in Table 4.3.4.

Table 4.3.4 Other Programs and Initiatives Expenditures (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Office of Water Policy	$2.29	$2.36	$2.32	$2.43	$2.48	$2.40	$2.49	$2.34	$2.44	$2.67
Other Projects†	$15.46	$14.88	$17.76	$19.59	$24.08	$30.51	$28.37	$31.23	$32.90	$49.34
Red Tide Research†	$1.26	$0.62	$0.68	$0.43	$3.67	$7.23	$5.58	$6.03	$6.15	$6.15
Total	**$19.02**	**$17.86**	**$20.76**	**$22.45**	**$30.23**	**$40.15**	**$36.44**	**$39.60**	**$41.49**	**$58.16**

†Appropriation code(s) added.
Note: Previous editions of this chapter included Everglades expenditures. These have been relocated to Chapter 7.

Over the past ten fiscal years, the state has spent an average of $3.78 million per year for ongoing red tide research. The Fish and Wildlife Conservation Commission's Fish and Wildlife Research

[113] § 375.041(3)(b)2., Fla. Stat.
[114] Water supply projects such as drinking water infrastructure projects and alternative water supply projects have also received legislatively-appropriated funding under this category. Although expenditures for drinking water infrastructure projects and alternative water supply projects would relate to water supply, these expenditures are included in this category because insufficient project level data currently exists to allocate the expenditures between water supply and water quality.

Institute partners with Mote Marine Laboratory to monitor the organism that causes most red tides along the southwest coast. Through this partnership, scientists conduct water sampling and monitoring and update the public on the status of red tide.[115]

Regulatory and Clean-Up Programs

EDR included DEP's regulatory section in its analysis of expenditures for water quality and other water resource-related programs because program areas within this section implement or enforce laws related to water quality, provide research that supports water-related programs, and implement programs that are associated with the assessment or remediation of surface and groundwater pollution.

Since Fiscal Year 2014-15, the State of Florida has spent approximately $2.42 billion for regulatory and clean-up programs administered by DEP. Nearly all of this funding, over 94 percent, has been funded from state sources. Most of the expenditures are associated with clean-up programs for hazardous waste sites, petroleum tanks, underground tanks, and water wells. The personnel included in this grouping are employed by DEP's district offices, water resource management, waste management, and the Florida Geological Survey. DEP's district offices are responsible for implementing programs relating to air and waste regulation, as well as water resource protection and restoration. EDR was unable to identify the personnel who exclusively work on water within the available data; therefore, all personnel costs have been included. Table 4.3.5 shows the annual cash expenditures since Fiscal Year 2014-15.

Table 4.3.5 Regulatory and Clean-up Program Expenditures (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Personnel	$58.15	$56.24	$52.74	$65.04	$66.20	$66.11	$66.23	$70.19	$70.24	$76.86
Operations	$7.65	$8.42	$8.63	$10.04	$9.56	$9.23	$8.76	$9.41	$9.08	$8.99
Petroleum Restoration	$59.73	$80.97	$119.44	$122.40	$119.08	$127.91	$120.70	$82.54	$101.98	$120.50
Waste Clean-Up	$28.68	$37.40	$36.11	$36.61	$38.06	$38.18	$39.02	$73.71	$55.80	$72.60
Other Projects	$15.66	$15.98	$16.74	$18.87	$17.31	$17.00	$16.45	$16.85	$16.69	$17.66
Total	**$169.88**	**$199.02**	**$233.66**	**$252.96**	**$250.20**	**$258.43**	**$251.18**	**$252.71**	**$253.78**	**$296.62**

The expenditures shown for Waste Clean-Up include the activities associated with the following major types of clean-up efforts: dry-cleaning solvent contamination, hazardous waste, underground storage tanks, water wells, and contracts with local governments. In addition, the expenditures shown for Other Projects include various programs and projects including waste planning grants, underground storage tank compliance verification, solid waste management activities, and transfers to other agencies for specified activities (*e.g.*, to the Department of Health for Biomedical Waste Regulation).

[115] *See* Florida Fish and Wildlife Conservation Commission, FWC/FWRI-Mote Cooperative Red Tide Program, https://myfwc.com/research/redtide/monitoring/current/coop/. (Accessed Sep 2023.)

Each year in the state budget, the Legislature provides funding to support the WMDs. Since Fiscal Year 2014-15, direct expenditures to support the districts' water quality and other water non-Everglades, resource-related programs have totaled $136.8 million. Table 4.3.6 shows the annual cash expenditures since Fiscal Year 2014-15.

Table 4.3.6 State Aid to Water Management Districts (in $millions)

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Operations and Permitting Assistance	$8.08	$7.95	$7.95	$7.95	$7.95	$7.95	$7.95	$-	$-	$-
Minimum Flows and Levels	$-	$1.50	$1.50	$3.45	$3.45	$3.45	$3.45	$1.20	$2.24	$3.27
Wetland Protection	$0.88	$1.31	$0.00	$-	$-	$-	$-	$-	$-	$-
Dispersed Water Storage	$10.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00
Other Projects	**$-**	**$-**	**$-**	**$-**	**$-**	**$-**	**$0.35**	**$-**	**$-**	**$-**
Total	**$18.96**	**$15.77**	**$14.45**	**$16.40**	**$16.40**	**$16.40**	**$16.75**	**$6.20**	**$7.24**	**$8.27**

Note: "$-" indicates a zero, whereas "$0.00" indicates an amount less than $5,000.

Note: Previous editions of this chapter included Everglades expenditures. These have been removed in this edition and placed in Chapter 7.

Forecast of Expenditures on Water Quality and Other Water Resource-Related Programs

Table 4.3.7 provides a forecast for total state expenditures on water quality and other water resource-related programs. The average annual growth rate of the past ten recorded fiscal years is 6.16% which was used in the forecast.

Table 4.3.7 History and Forecast of State Expenditures on Water Quality and Other Water Resource-Related Programs (in $millions)

History	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Total	$515.84	$512.03	$617.59	$638.43	$711.40	$734.68	$655.33	$677.40	$656.89	$884.61
Forecast	**FY 24-25**	**FY 25-26**	**FY 26-27**	**FY 27-28**	**FY 28-29**	**FY 29-30**	**FY 30-31**	**FY 31-32**	**FY 32-33**	**FY 33-34**
Total	$939.10	$996.96	$1,058.37	$1,123.57	$1,192.79	$1,266.27	$1,344.28	$1,427.10	$1,515.01	$1,608.35

Note: Previous editions of this chapter included beach project and Everglades expenditures. These have been relocated to chapters 2 and 7, respectively.

Regional Expenditures

Similar to the analyses for the WMDs' conservation land acquisition, land management, and water supply projects, in order to identify WMD expenditures related to water quality, EDR reviewed the WMDs' preliminary budgets and tentative budgets developed in accordance with sections 373.535 and 373.536, Florida Statutes, respectively. These budget documents include actual audited expenditures allocated to six program areas and across each of the four areas of responsibility, including water quality.[116]

Table 4.3.8 provides a forecast and details a history of expenditures across all program areas that the WMDs attribute to the water quality area of responsibility. These expenditures include activities related to water quality improvement and restoration, environmental monitoring and data collection, land acquisition and management, and regulatory permitting (*e.g.*, environmental resource permitting program and water well construction permitting). To avoid double counting WMD expenditures between the conservation land and water sections of this report, the total expenditures assigned to "Land Acquisition" and "Land Management" activities have been removed from the expenditures in Tables 4.3.8, 4.3.9, and 4.3.10. Conversely, Everglades funding is included in expenditure tables in this section since a breakout is not currently possible. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years. Rather than using the simple three-year moving average, the forecast also takes into account the three-year moving average growth rate, averaging the two.

Table 4.3.8 Water Management District Water Quality Expenditures (in $millions)

History	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22	LFY 22-23
NWFWMD	$5.83	$4.61	$4.40	$7.22	$16.41
SJRWMD	$36.99	$41.22	$44.83	$49.73	$51.25
SFWMD*	$123.33	$139.64	$187.02	$205.79	$226.97
SWFWMD	$24.30	$20.74	$20.09	$17.89	$17.66
SRWMD	$3.58	$3.62	$3.13	$3.19	$3.53
Total	$194.03	$209.82	$259.48	$283.82	$315.82
Forecast	**SFY 23-24**	**SFY 24-25**	**SFY 25-26**	**SFY 26-27**	**SFY 27-28**
Total	$314.87	$342.05	$368.69	$395.33	$428.93

Source: Annual Budgets of the Water Management Districts.

Local Expenditures

Table 4.3.9 provides a forecast and details a history of water quality protection and restoration expenditures by local governments. Based on survey results, a portion of the local government expenditures in accounts 537 Conservation and Resource Management and 572 Parks and Recreation may be attributed to water quality protection and restoration. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting

[116] The six program areas are: 1.0 Water Resources Planning and Monitoring; 2.0 Land Acquisition, Restoration and Public Works; 3.0 Operation and Maintenance of Works and Lands; 4.0 Regulation; 5.0 Outreach; and 6.0 District Management and Administration. The WMDs report expenditures in the four areas of responsibility at the program level only. Each program area contains multiple activities or sub-activities. The program allocation by area of responsibility are estimates since projects and initiatives may serve more than one purpose.

purposes, it has been converted to state fiscal years. Forecasts rely on a three-year average growth rate as it best fits the nature of the data. Note that this table has been substantially revised since the previous Edition.

Table 4.3.9 Water Quality Protection & Restoration Expenditures by Local Governments (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22
Counties	$1,397.54	$1,490.23	$1,622.02	$1,573.87	$1,841.40
Municipalities	$1,574.96	$1,843.71	$1,594.66	$1,632.28	$1,800.69
Special Districts	$197.39	$221.22	$224.62	$221.16	$251.13
Total	$3,169.89	$3,555.16	$3,441.29	$3,427.30	$3,893.22
Forecast	**SFY 22-23**	**SFY 23-24**	**SFY 24-25**	**SFY 25-26**	**SFY 26-27**
Total	$3,893.52	$4,049.95	$4,282.05	$4,465.34	$4,674.15

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government. Accounts 535, 536, 538, and a portion of 537 and 572 are shared out by local government survey.
Note: Previous editions of this chapter included expenditures in accounts 535 Sewer/Wastewater Services, 536 Water-Sewer Combination Services, and 538 Flood Control/Stormwater Management in this table. Those categories have been removed from this chapter and are discussed in Chapter 3.

4.4 Florida's Revenues Related to Water Quality

EDR is required to forecast "federal, state, regional, and local government revenues dedicated in current law for the purposes…[of projects or initiatives associated with water quality protection and restoration] or that have been historically allocated for these purposes…." There are a variety of revenue sources that support water resources, including specific taxes and fees that are dedicated in law. The following discussion identifies and forecasts the relevant water quality and other water resource-related revenues.

State-Appropriated Revenue Sources

There are several state and federal revenue sources that have been used historically to support appropriations related to water quality. For this analysis, these revenues are categorized as either Documentary Stamp Tax revenue or Non-Documentary Stamp Tax revenue.

Documentary Stamp Tax Revenue

The primary source of revenue currently dedicated to land conservation and water resource-related initiatives is the Documentary Stamp Tax, which is largely dependent on the health of Florida's housing market.[117] Prior to the last 10 years, Florida's housing market was recovering from the extraordinary upheaval of the housing boom and its subsequent collapse. The housing boom peak occurred in Fiscal Year 2005-06 and the bottom was finally reached in Fiscal Year 2009-10. After steadily increasing for ten years from that point, Documentary Stamp Tax collections surged during the pandemic to surpass the previous Fiscal Year 2005-06 peak in Fiscal Year 2020-21, posting total collections of $4.08 billion. Followed by a second record-breaking year in Fiscal

[117] Ch. 201, Fla. Stat.

Year 2021-22 at $5.36 billion before beginning a period of year-over-year losses. Turning positive again in Fiscal Year 2024-25, collections are still in the midst of a multiyear correction to more typical growth rates.

The availability of funding for water resources is closely linked to the trajectory of this revenue source. Table 4.4.1 shows the forecast for total collections from the Documentary Stamp Tax, as well as the constitutionally required distribution to the Land Acquisition Trust Fund (LATF).[118] These estimates were adopted by the Revenue Estimating Conference in August 2024, the forecast most relevant to this edition of the assessment.

Table 4.4.1 Documentary Stamp Tax Forecast (in $millions)

Forecast	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34
Doc Stamp Collections	$3,728.7	$3,889.4	$4,014.7	$4,141.5	$4,266.3	$4,398.8	$4,530.7	$4,666.6	$4,806.6	$4,950.8
Percent Change	4.2%	4.3%	3.2%	3.2%	3.0%	3.1%	3.0%	3.0%	3.0%	3.0%
LATF Debt Service	$104.6	$81.1	$60.7	$44.2	$24.6	$6.7	$6.7	$6.7	$3.4	$3.4
LATF Land Aquis.	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0
LATF Committed to Everglades	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0
LATF Committed to Other Water Resources	$105.0	$105.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0
Uncommitted LATF Based on Statute	$653.6	$730.1	$796.9	$855.3	$916.0	$977.6	$1,021.2	$1,066.0	$1,115.5	$1,163.1
Total to LATF	$1,227.2	$1,280.3	$1,321.6	$1,363.5	$1,404.7	$1,448.4	$1,491.9	$1,536.7	$1,582.9	$1,630.5

Source: Revenue Estimating Conference—Documentary Stamp Tax Forecast, August 2024

Section 201.15, Florida Statutes, directs the distribution of Documentary Stamp Tax revenues.[119] The Documentary Stamp Tax collections forecast for Fiscal Year 2024-25 is $3.73 billion, with an estimated $2.55 billion (68 percent) expected to be distributed to the General Revenue Fund and the LATF. The distribution to the LATF is split into three component parts (debt service, committed uses, and uncommitted uses) that together total the constitutionally required 33 percent after the deduction for the Department of Revenue's administrative costs.

In Fiscal Year 2024-25, the LATF is expected to receive approximately $1.23 billion in total, including $104.6 million for debt service payments and $1.12 billion for other uses. Pursuant to the Florida Constitution, the funds in the LATF must be expended only for the following purposes:

[118] In 2014, Florida voters approved the Water and Land Conservation constitutional amendment (Amendment 1) to provide a dedicated funding source for water and land conservation and restoration. The amendment created article X, section 28 of the Florida Constitution, which requires that starting on July 1, 2015, for 20 years, 33 percent of the net revenues derived for the existing excise tax on documents must be deposited into the Land Acquisition Trust Fund.

[119] A forecast showing the distributions is available on EDR's website: http://edr.state.fl.us/content/conferences/docstamp/docstampresults.pdf.

1) As provided by law, to finance or refinance: the acquisition and improvement of land, water areas, and related property interests, including conservation easements, and resources for conservation lands including wetlands, forests, and fish and wildlife habitat; wildlife management areas; lands that protect water resources and drinking water sources, including lands protecting the water quality and quantity of rivers, lakes, streams, springsheds, and lands providing recharge for groundwater and aquifer systems; lands in the Everglades Agricultural Area and the Everglades Protection Area, as defined in Article II, Section 7(b); beaches and shores; outdoor recreation lands, including recreational trails, parks, and urban open space; rural landscapes; working farms and ranches; historic or geologic sites; together with management, restoration of natural systems, and the enhancement of public access or recreational enjoyment of conservation lands.

2) To pay the debt service on bonds issued pursuant to Article VII, Section 11(e).

Of the LATF revenues available in Fiscal Year 2024-25, approximately $469 million has been dedicated in law to the Everglades, land acquisition, spring restoration, SFWMD and Lake Apopka projects as provided in section 375.041, Florida Statutes.[120] After making debt service payments, the remaining $653.6 million was available for other qualifying purposes authorized and appropriated by the Legislature.

Total State Revenues for Water Quality and Other Water Resource-Related Programs

In addition to the Documentary Stamp Tax discussed above, there are a variety of other revenue sources available for water quality. In order to determine the types of revenue historically allocated for water quality and other water resource-related programs, the various state and federal trust funds from which funds had been appropriated in the most recent five-year period were identified and described in the 2018 Edition of this report.[121] They included the following funds which are still active today: Internal Improvement Trust Fund, Inland Protection Trust Fund, General Inspection Trust Fund, Coastal Protection Trust Fund, Minerals Trust Fund, Permit Fee Trust Fund, Solid Waste Management Trust Fund, Wastewater Treatment and Stormwater Management Revolving Loan Trust Fund, Water Quality Assurance Trust Fund, Non-mandatory Land Reclamation Trust Fund, Grants and Donations Trust Fund, and Federal Grants Trust Fund. Within the identified trust funds, the types of revenue were also identified and described.[122] These revenues include Fees and Licenses; Fines, Penalties, and Judgments; Grants and Donations; Pollutant Taxes and Fees; Repayment of Loans; Sales and Leases; Severance Taxes; and Sale of Bonds.

Except for the repayment of loans and sale of bonds, each of the revenue sources is forecasted by the Revenue Estimating Conference meeting specifically on Transportation Revenues, General Revenue, and the Long-Term Revenue Analysis. The assumptions used within these conferences provide the basis for the overall forecast through Fiscal Year 2033-34. For the repayment of loans, a three-year moving average is used for the forecast. The historical series and the forecast for the

[120] The statutes require the sum of $5 million to be appropriated annually through Fiscal Year 2025-2026 to the St. Johns River Water Management District for projects dedicated to the restoration of Lake Apopka. Thereafter, this set-aside ends.
[121] http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2018Edition.pdf at page 186.
[122] *Ibid.* at page 188.

total revenues available for water quality and other water resource-related programs, comprised of the non-Documentary Stamp Tax revenues and the Documentary Stamp Tax revenues committed to water resources from Table 4.4.1, are shown in Table 4.4.2.

Table 4.4.2 Revenues Available for Water Quality (in $millions)

History	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Fees and Licenses	$28.23	$24.22	$24.23	$23.39	$25.04	$24.76	$27.56	$21.90	$19.67	$20.83
Fines, Penalties, Judgments	$78.62	$9.56	$3.74	$5.39	$47.15	$2.45	$3.47	$4.34	$4.40	$4.48
Grants and Donations	$93.08	$96.89	$82.62	$73.19	$106.87	$107.34	$106.47	$83.57	$97.51	$71.78
Pollutant Taxes and Fees	$260.33	$267.19	$273.15	$286.48	$301.35	$282.40	$265.56	$300.70	$302.58	$318.21
Repayment of Loans	$99.78	$83.38	$95.98	$68.24	$81.72	$119.71	$123.20	$126.28	$106.76	$400.86
Sales of Lands, Goods, and Services	$1.38	$1.33	$1.33	$1.58	$1.06	$1.56	$1.17	$1.47	$1.30	$0.89
Severance Taxes	$4.93	$6.85	$6.61	$6.83	$6.70	$5.94	$9.76	$5.24	$3.88	$2.37
Sale of Bonds	$-	$49.87	$-	$-	$-	$-	$-	$-	$-	$-
Non-Doc Stamp Subtotal	**$561.43**	**$482.57**	**$481.04**	**$458.28**	**$563.18**	**$538.23**	**$527.42**	**$538.27**	**$532.22**	**$817.05**
Doc Stamp Committed to Water Resources	$-	$-	$-	$-	$55.0	$55.0	$55.0	$55.0	$105.00	$105.00
Total Water Quality Revenues	**$561.43**	**$482.57**	**$481.04**	**$513.28**	**$618.18**	**$593.23**	**$582.42**	**$643.27**	**$637.22**	**$922.05**

Forecast	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	FY 33-34
Fees and Licenses	$21.17	$21.47	$24.24	$22.03	$22.30	$22.55	$22.80	$23.03	$23.25	$23.45
Fines, Penalties, Judgements	$4.55	$4.62	$5.22	$4.74	$4.80	$4.85	$4.91	$4.96	$5.00	$5.05
Grants and Donations	$65.49	$65.90	$66.48	$59.47	$60.59	$61.76	$62.82	$63.94	$65.08	$66.20
Pollutant Taxes and Fees	$321.36	$322.93	$324.52	$326.07	$327.64	$329.21	$330.79	$332.38	$333.94	$335.51
Repayment of Loans	$253.81	$253.81	$302.83	$270.15	$275.60	$282.86	$276.20	$278.22	$279.09	$277.84
Sales and Leases	$0.91	$0.92	$1.04	$0.94	$0.96	$0.97	$0.98	$0.99	$1.00	$1.01
Severance Taxes	$2.56	$2.48	$2.48	$2.48	$2.48	$2.47	$2.46	$2.45	$2.43	$2.42
Sale of Bonds	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-Doc Stamp Subtotal	**$667.29**	**$669.65**	**$724.32**	**$683.41**	**$691.88**	**$702.20**	**$698.49**	**$703.51**	**$707.36**	**$709.05**
Doc Stamp Committed to Water Resources	$105.00	$105.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
Total Water Quality Revenues	**$772.29**	**$774.65**	**$824.32**	**$783.41**	**$791.88**	**$802.20**	**$798.49**	**$803.51**	**$807.36**	**$809.05**

Note: Previous editions of this chapter included Everglades expenditures. These have been removed in this edition and placed in Chapter 7.

Regional Revenues

The WMDs are required to report their annual revenues in their Comprehensive Annual Financial Reports. While each district must report its total revenues, the allocation to discrete categories is largely at the discretion of the district. As a result, intergovernmental sources cannot be identified at a granular level. Further, the amount of these revenues used for water supply purposes versus water quality is not identifiable, and projects or initiatives may benefit both purposes. Table 4.4.3 provides a forecast and details a history of WMD revenues from their own sources. Depending on the district, ad valorem collections comprise 50 to 95 percent of this revenue. The remainder is a mix of investment earnings, timber harvesting and sales, apiary use, billboard and cell tower leases, sales of excavated materials, cattle grazing, alligator egg harvests, feral hog hunts, and other miscellaneous revenues.[123] The ad valorem portion of the first two years of the forecast comes from the adopted and tentative budgets of the WMDs while the final three years rely on a three-year moving average growth rate by district.[124] The forecast for the remaining share of this revenue relies on population growth adopted by the August 2024 Demographic Estimating Conference. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years.

Table 4.4.3 Water Management District Revenues from Own Sources (in $millions)

History	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22	LFY 22-23
NWFWMD	$5.69	$5.50	$5.65	$5.22	$6.70
SJRWMD	$98.35	$97.14	$96.09	$92.72	$113.99
SFWMD	$340.40	$328.44	$314.11	$275.62	$326.14
SWFWMD	$130.25	$130.87	$119.01	$101.96	$144.03
SRWMD	$9.86	$9.43	$8.24	$10.26	$10.57
Total	$584.54	$571.39	$543.09	$485.78	$601.43
Forecast	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**	**FY 27-28**
Total	$586.04	$597.04	$614.76	$620.32	$632.16

Source: Comprehensive Annual Financial Reports of the Water Management Districts.

Table 4.4.4 provides a forecast and details a history of WMD revenues sourced from other governments. This can be federal, state, or local cities and counties. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years. As revenues are largely based on population, forecasts rely on population growth rates.

[123] Within the WMDs, there can exist basin boards for various purposes detailed in section 373.0695, Florida Statutes. The WMD's governing board can levy ad valorem taxes within the designated basin of the basin boards. Currently, only three such basin boards exist and all of them are within the SFWMD.

[124] In the 2019 Edition and prior, the forecast for the ad valorem share of this revenue relied on the growth rate of county taxable value as adopted by the Ad Valorem Revenue Estimating Conference. The conference growth rate for the county taxable value was significantly outperforming the growth rate for actual collections.

Table 4.4.4 Water Management District Revenues from Intergovernmental Sources (in $millions)

History	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22	LFY 22-23
NWFWMD	$17.73	$16.82	$19.71	$18.37	$32.74
SJRWMD	$23.80	$18.99	$23.04	$32.68	$53.71
SFWMD	$208.09	$297.87	$376.44	$390.33	$601.08
SWFWMD	$10.14	$14.64	$7.75	$6.13	$8.77
SRWMD	$14.64	$15.00	$13.84	$14.75	$15.06
Total	274.40	363.32	$440.77	$462.26	$711.35
Forecast	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**	**FY 27-28**
Total	$659.63	$669.09	$755.43	$686.57	$694.84

Source: Comprehensive Annual Financial Reports of the Water Management Districts.

4.5 Next Steps and Recommendations

Future editions of this report will continue to improve upon the TMDL development and BMAP implementation forecasts. This will include development costs for TMDLs over any water segments added to the Comprehensive Verified List and BMAP implementation costs for any newly adopted BMAPs identified in DEP's STAR Report. In addition, EDR will produce a forecast of the expenditures necessary to further develop ARPs. EDR will also work with DEP staff to better understand the slow adoption rate of TMDLs and the potential impact on EDR's expenditure forecast.

Regarding the BMAP expenditure forecast, DEP added a new project status to its 2020 and 2021 STAR Reports. The "ongoing" status is defined as "[p]roject or activity which requires action each year to continue providing water quality benefits. These projects are typically non-structural and continuous."[125] In this Edition, EDR treats nutrient reductions for ongoing projects in the same manner as reductions from completed projects, consistent with DEP's current administration of these statuses.

During the 2025 calendar year, EDR will work with DEP and FDACS to analyze BMPs using the longitudinal data enabled by the newly completed IV site visits. The initial round of mandatory site visits was completed at the end of 2022. Once the second round has been published, sites can be compared across time for improvements and cost effectiveness.

Lastly, EDR will work toward identifying the water quality monitoring costs to be presented as a separate expenditure forecast or as a component of other applicable programs. This includes water quality monitoring programs such as the state's Status and Trend monitoring networks for surface waters and the groundwater monitoring network.

At this time, EDR has no formal recommendations for legislative consideration regarding water quality protection and restoration.

[125] Available at: https://floridadep.gov/dear/water-quality-restoration/content/statewide-annual-report. (Accessed Dec 2023.)

Appendix A: Acronyms

Table A.1 List of All Acronyms Used in this Report

Acronym/Label	Meaning
ARP	Alternative Restoration Plan
BMAP	Basin Management Action Plan
BMP	Best Management Practices
BIRL	Banana River Lagoon (BMAP)
BOCC	Board of County Commissioners
CAMA	Coastal and Aquatic Managed Areas (DEP)
CARL	Conservation and Recreation Lands
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CIRL	Central Indian River Lagoon (BMAP)
CPI	Consumer Price Index
CWA	Clean Water Act
CWNS	Clean Watersheds Needs Survey
CWSRF	Clean Water State Revolving Fund
CY	Calendar Year (January 1 through December 31)
DACS	Florida Department of Agriculture and Consumer Services
DEAR	Division of Environmental Assessment and Restoration (DEP)
DEP	Florida Department of Environmental Protection
DFS	Florida Department of Financial Services
DO	Dissolved Oxygen
DOH	Florida Department of Health
DOR	Florida Department of Revenue
DOS	Florida Department of State
DW	Drinking Water
DWINSA	Drinking Water Infrastructure Needs Survey and Assessment
DWRA	Division of Water Restoration Assistance (DEP)
DWRM	Division of Water Resource Management (DEP)
DWSRF	Drinking Water State Revolving Fund
EAA	Everglades Agricultural Area
EDR	Office of Economic and Demographic Research
EEL	Environmentally Endangered Lands
EFA	Everglades Forever Act
ENP	Everglades National Park
ENR-OSTDS	Enhanced Nutrient-Reducing Onsite Sewage Treatment and Disposal System
EPA	U.S. Environmental Protection Agency
FDACS	Florida Department of Agriculture and Consumer Services
FFY	Federal Fiscal Year (October 1 through September 30)
FIB	Fecal Indicator Bacteria
FLWMI	Florida's Water Management Inventory (DOH)
FSAID	Florida Statewide Agricultural Irrigation Demand (version referred to by Roman numeral)
FWC	Florida Fish and Wildlife Conservation Commission
FY	State Fiscal Year (July 1 through June 30)

Acronym/Label	Meaning
GIS	Geographic Information System
GR	General Revenue
IFAS	University of Florida's Institute of Food and Agricultural Sciences
IRL	Indian River Lagoon
IRLPP	Indian River Lagoon Protection Program
LA	Load Allocations (for Nonpoint Sources)
LATF	Land Acquisition Trust Fund
LFA	Lower Floridan Aquifer
LFY	Local Fiscal Year (October 1 through September 30)
MFL	Minimum Flows and Minimum Water Levels
MGD	Millions of Gallons per Day
NIRL	North Indian River Lagoon (BMAP)
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NWFWMD	Northwest Florida Water Management District
OFS	Outstanding Florida Springs
OSTDS	Onsite Sewage Treatment and Disposal System
PRP	Pollutant Reduction Plan
RAP	Reasonable Assurance Plan
SFWMD	South Florida Water Management District
SJRWMD	St. Johns River Water Management District
SOLARIS	Florida State Owned Lands and Records Information System
SRWMD	Suwannee River Water Management District
STA	Stormwater Treatment Area
STAR Report	Statewide Annual Report (published by DEP)
SWFWMD	Southwest Florida Water Management District
SWL	Surface Water Level
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WBID	Water Body Identification Number
WMD	Water Management District
WQIG	Water Quality Improvement Grant (DEP)
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plant

Appendix B: Verified List of Impaired Waters Details

Table B.1 WBID Count by Impairment, DEP's 2022-2024 Verified List

Impairment	High Priority	Medium Priority	Low Priority
Aluminum		2	
Arsenic (in fish tissue)		1	
Bacteria (Beach Advisories)	40	13	5
Biology		54	
Cadmium		1	
Chlordane	1	1	
Chloride	1		
Copper		59	3
Dieldrin	2	1	
Dioxin (in fish tissue)	1		
Dissolved Oxygen	11	95	8
Enterococci	122	45	
Escherichia coli	214	103	
Fecal Coliform	69	43	178
Iron	2	233	6
Lead		59	3
Nutrients (Algal Mats)	2	18	
Nutrients (Chlorophyll-a)	9	235	5
Nutrients (Macrophytes)	3	113	
Nutrients (Nitrate-Nitrite)		26	
Nutrients (Other Information)		1	
Nutrients (Total Nitrogen)		181	
Nutrients (Total Phosphorus)		195	
Pesticides (in fish tissue)		4	
Selenium		1	
Silver		4	
Specific Conductance		4	
Thallium		1	
Total Ammonia		3	
Turbidity		8	8
Total	**477**	**1,356**	**364**

Appendix C: BMP Project Types Eligible for Cost Share Funding

Table C.1 Project Types

Project Category	Project Subtype	Project Type
Nutrient Management:	Dry Fertilizer Implements:	Fertilizer Spreader—Dry VRT
		Fertilizer Applicator—Dry Band
		Fertilizer Tender
	Precision Agriculture:	GPS
		Variable Rate Controller
		GSP—Receiver Display
		GPS—Autosteer
		Sprayer Sensor with Rate Control
		RTK Systems
	Liquid Nitrogen Applicators:	Nitrogen Applicator—Liquid Band
		Nurse Tank
	Conservation Tillage:	Strip Till
		No Till Drip
		Rip/Strip Till
		Ripper
	Cover Crop Management:	Air Seeder
		Seed Tender
	Other Implements:	Aerator
		Manure Spreader
		Pasture Renovator
		Portable Feeder/Hay Wagon
		Roller Crimper
Irrigation Management:	Precision Irrigation:	Soil Moisture Sensor
		Microjet Design
		Weather Station
	Irrigation Upgrades:	Diesel to Electric
		Fertigation Chemigation
		Irrigation Automation
		Irrigation Conversion
		Irrigation Design
		Irrigation Improvement
		Irrigation Power Plant
Water Resource Protection:	Water Conservation:	Tailwater Recovery
		Water Storage and Retention
		Water Control Structure (Ditch Cleaning Eligible)
		Irrigation Drain Tile
	Fencing:	Exclusion Fencing
		Cross Fencing
	Storage Facilities:	Fertilizer Storage
		Potting Soil Storage
		Compost Storage
	Water Resource Protection:	Rock Crossing
		Alternative Water Supply—Livestock
		Earthwork/HIUA Stabilization
		Well Retrofit
	Services and Cover Crops:	Cover Crop
		Grid Sampling

Source: Office of Agricultural Water Policy. BMP Enrollment Map[72]

Appendix D: Nutrient Reductions by BMAP and Project Status

Table D.1 Total Nitrogen (TN) Reductions (lbs/year)

BMAP	Canceled	Completed	Ongoing	Planned	Underway	Void	Total
Alafia River	-	-	-		-		**-**
Bayou Chico	-	-	-	-	-		**-**
IRL-Banana River	-	49,524	9,039	1,310	2,504	-	**62,377**
Caloosahatchee Estuary	-	266,415	581,853	3,602	24,040		**875,910**
Homosassa and Chassahowitzka Springs	-	2,347	16,708	18,889	48,085	-	**86,030**
IRL-Central	41	210,855	96,297	42	53,024	-	**360,260**
DeLeon Spring		0	3,864	547	15,365		**19,776**
Everglades West Coast	-	7,966	14,720	-	3,913		**26,599**
Gemini Springs	-	238	1,913	4,565	7,089		**13,805**
Lakes Harney, Monroe, Middle St. Johns River, and Smith Canal	26,769	50,702	25,933	92	-		**103,496**
Hillsborough River	-	-	-	-	-	-	**-**
Jackson Blue Spring and Merritts Mill Pond	-	771	130,430	413	39,679		**171,293**
Lake Jesup	-	55,828	20,239	9,958	1,169	-	**87,194**
Crystal River/Kings Bay	-	11,632	12,138	134,100	7,494	-	**165,364**
Lower St. Johns River Main Stem	6,459	2,985,373	414,062	231,435	41,364	660	**3,679,353**
Lower St. Johns River Tributaries	-	-	-	-	-		**-**
Manatee River	-	-	-	-	-		**-**
IRL-North	2	110,232	28,245	4,404	9,432	-	**152,315**
Lake Okeechobee	-	215,130	837,163	18,270	10,581		**1,081,143**
Upper Ocklawaha	1	72,094	4,924	442	7,393	-	**84,853**
Orange Creek	82	126,216	29,741	1,230	-	610	**157,880**
Rainbow Spring	-	7,005	35,514	20,511	67,049		**130,079**
Santa Fe River	-	76,499	83,149	34,235	249,889		**443,772**
Silver River and Springs	-	53,106	23,876	16,880	96,131	-	**189,993**
St. Lucie River and Estuary	-	525,419	315,125	565	245,955	-	**1,087,063**
Suwannee River (Lower, Middle, and Withlacoochee sub-basins)	-	395,512	672,849	30,742	233,183		**1,332,286**
Volusia Blue Spring		17,654	2,532	41,541	1,913		**63,640**
Wacissa Spring Group	-	4,755	18,331	8,232	48,553		**79,870**
Upper Wakulla River and Wakulla Springs	-	15,019	7,816	11,860	30,955		**65,650**
Weeki Wachee	53,272	53,975	7,108	53,933	30,323	-	**198,611**
Wekiva River, Rock Springs Run, and Little Wekiva Canal	-	35,262	10,262	108	450	-	**46,082**
Wekiwa	-	81,538	26,766	72,665	17,556	-	**198,525**
TOTAL	**86,626**	**5,431,068**	**3,430,597**	**720,572**	**1,293,088**	**1,270**	**10,963,221**

Table D.2 Total Phosphorous (TP) Reductions (lbs/year)

BMAP	Canceled	Completed	Ongoing	Planned	Underway	Void	Total
Alafia River	-	-	-		-		**-**
Bayou Chico	-	-	-	-	-		**-**
IRL-Banana River	-	6,841	2,114	266	521	-	**9,742**
Caloosahatchee Estuary	-	45,580	41,712	239	2,751		**90,282**
Homosassa and Chassahowitzka Springs	-	-	31	-	-	-	**31**
IRL-Central	6	50,707	17,376	7	4,587	-	**72,683**
DeLeon Spring		-	-	-	-		**-**
Everglades West Coast	-	27	250	-	-		**277**
Gemini Springs	-	-	-	-	-		**-**
Lakes Harney, Monroe, Middle St. Johns River, and Smith Canal	4,927	9,725	8,892	15	-		**23,559**
Hillsborough River	-	-	-	-	-	-	**-**
Jackson Blue Spring and Merritts Mill Pond	-	-	-	-	-		**-**
Lake Jesup	-	8,599	4,186	1,077	174	-	**14,036**
Crystal River/Kings Bay	-	17	7	90	-	-	**114**
Lower St. Johns River Main Stem	7,060	101,965	58,830	2,847	3,050	-	**173,752**
Lower St. Johns River Tributaries	-	-	-	-	-		**-**
Manatee River	-	-	-	-	-		**-**
IRL-North	-	21,050	6,276	1,169	726	-	**29,221**
Lake Okeechobee	-	123,178	120,717	3,061	5,739		**252,695**
Upper Ocklawaha	30	173,089	4,843	264	2,153	-	**180,379**
Orange Creek	16	45,260	13,357	123	-	44	**58,800**
Rainbow Spring	-	65	20	683	-		**768**
Santa Fe River	-	-	-	-	-		**-**
Silver River and Springs	-	33,483	395	-	-	-	**33,878**
St. Lucie River and Estuary	-	144,311	59,591	174	86,727	-	**290,802**
Suwannee River (Lower, Middle, and Withlacoochee sub-basins)	-	-	-	-	-		**-**
Volusia Blue Spring		-	-	-	-		**-**
Wacissa Spring Group	-	-	-	-	-		**-**
Upper Wakulla River and Wakulla Springs	-	-	-	-	-		**-**
Weeki Wachee	-	-	-	-	-	-	**-**
Wekiva River, Rock Springs Run, and Little Wekiva Canal	-	14,618	9,884	26	-	-	**24,528**
Wekiwa	-	7,961	1,577	-	75	-	**9,613**
TOTAL	**12,039**	**786,477**	**350,057**	**10,041**	**106,502**	**44**	**1,265,160**

Appendix E: Alternate Restoration Plans

Table E.1 Reasonable Assurance Plans (Category 4b)

PLAN NAME	WBID	WATERBODY	WATER TYPE	PARAMETER(S)
Florida Keys:	6009	Plantation Key	Coastal	DO, Nutrients (other)
	6010	Long Key	Coastal	DO, Nutrients (other)
	6016	Duck Key	Coastal	Nutrients (other)
	6013A	Saddlebunch Key	Coastal	Nutrients (other)
	6013B	Sugarloaf	Coastal	Nutrients (other)
	6013C	Cudjoe Key	Coastal	Nutrients (other)
	6013D	Little Knockemdown Key	Coastal	Nutrients (other)
	6014A	Key West	Coastal	Nutrients (other)
	6014B	Stock Island	Coastal	Nutrients (other)
	6014C	US Naval Air Station	Coastal	Nutrients (other)
Lake Seminole:	1618	Lake Seminole	Lake	DO, Nutrients (Chlorophyll-a, TN, TP), Turbidity, pH
	1618D	Seminole Bypass Canal	Stream	DO, Nutrients (Chlorophyll-a, Macrophytes)
Mosquito Lagoon:	2924	Mosquito Lagoon	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	2924B1	Mosquito Lagoon	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	2924B2	Mosquito Lagoon	Estuary	Nutrients (Chlorophyll-a)
Shell, Prairie and Joshua Creeks Watershed Management Plan:	1962	Prairie Creek	Stream	Chloride, Specific Conductance, Dissolved Solids
	1963	Lake Slough	Stream	Chloride, Specific Conductance, Dissolved Solids
	1964	Cow Slough	Stream	Chloride, Specific Conductance, Dissolved Solids
	1974	Unnamed Branch	Stream	Chloride, Specific Conductance, Dissolved Solids
	1977	Honey Run	Stream	Chloride, Specific Conductance, Dissolved Solids
	1995	Myrtle Slough	Stream	Chloride, Specific Conductance, Dissolved Solids
	1997	Hawthorne Creek	Stream	Chloride, Specific Conductance, Dissolved Solids
	2001	Hog Bay	Stream	Chloride, Specific Conductance, Dissolved Solids
	2040	Myrtle Slough	Stream	Chloride, Specific Conductance, Dissolved Solids
	2041	Shell Creek	Stream	Chloride, Specific Conductance, Dissolved Solids
	2044	Cypress Slough	Stream	Chloride, Specific Conductance, Dissolved Solids
	2058	Unnamed Ditch	Stream	Chloride, Specific Conductance, Dissolved Solids
	1950A	Joshua Creek Above Peace River	Stream	Chloride, Specific Conductance, Dissolved Solids
	1950B	Joshua Creek Above Honey Creek	Stream	Chloride, Specific Conductance, Dissolved Solids
	2041B	Shell Creek Reservoir (Hamilton Reservoir)	Lake	Chloride, Specific Conductance, Dissolved Solids
Tampa Bay:	1558A	Tampa Bay (Lower Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558B	Tampa Bay (Middle Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558BZ	Tampa Bay (Lower North Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558C	Tampa Bay (Upper Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558E	Hillsborough Bay (Upper Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558F	Old Tampa Bay (Lower Segment)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558G	Old Tampa Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558H	Old Tampa Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558IA	Safety Harbor	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1558	Boca Ciega Bay (South)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1584A2	Ybor Channel	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1694A2	Boca Ciega Bay (Central-South)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1797A	Terra Ceia Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1848A	Manatee River Below Braden River	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1848B	Manatee River Above Braden River	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	1968A	Santa Maria Sound	Estuary	Nutrients (Chlorophyll-a, TN, TP)

Table E.2 Pollutant Reduction Plans (Category 4e)

GROUP NAME	WBID	WATERBODY	WATER TYPE	PARAMETER(S)
Caloosahatchee:	3240EB	Cape Coral Canal	Stream	Nutrients (TP)
	3240J1	Billy Creek (Marine Segment)	Estuary	Enterococci
	3240J2	Billy Creek (Freshwater Segment)	Stream	Escherichia Coli
	3240J3	Ford Street Canal	Stream	Escherichia Coli
	3240J4	Shoemaker And Zapato Canals	Stream	Escherichia Coli
	3240V	Manuel Branch	Stream	Escherichia Coli
Charlotte Harbor:	2030	Alligator Creek (Tidal Segment)	Estuary	DO, Nutrients (Chlorophyll-a)
	2030A*	Alligator Creek	Stream	DO, Nutrients (Macrophytes)
	3289	Shark Slough (Everglades National Park)	Stream	DO
	8066*	Gulf of Mexico (Everglades National Park)	Coastal	Nutrients (Chlorophyll-a, TN)
	8067*	Gulf of Mexico (Everglades National Park)	Coastal	Nutrients (TN, TP)
	8068*	Gulf of Mexico (Everglades National Park)	Coastal	Nutrients (Chlorophyll-a, TN, TP)
	8069*	Gulf of Mexico (Everglades National Park; Cape Sable)	Coastal	Nutrients (Chlorophyll-a, TN)
	8070*	Gulf of Mexico (Everglades National Park; Cape Sable)	Coastal	Nutrients (Chlorophyll-a)
	3252B	WCA 1 (North Sector)	Stream	DO, Nutrients (TP)
	3252D	WCA 1 (West Sector)	Stream	DO, Nutrients (TP)
	3252E	WCA 1 (South Sector)	Stream	DO, Nutrients (TP)
	3252G*	WCA 1 (East Sector)	Stream	DO
	3265F	WCA 2A (West Sector)	Stream	DO, Nutrients (TP)
	3265G	WCA 2A (Central Sector)	Stream	DO, Nutrients (TP)
	3268F*	WCA 3 L-67	Stream	DO
	3268G*	WCA 3A (West Sector)	Stream	DO
	3268H	WCA 3A (East Sector)	Stream	Nutrients (TP)
	3268I	WCA 3A (Central Sector)	Stream	DO, Nutrients (TP)
	3289	Shark Slough (Everglades National Park)	Stream	DO
	3289A*	Oyster Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	3289B*	Huston River	Estuary	Nutrients (TN)
	3289C*	Last Huston Bay	Estuary	Nutrients (TN)
	3289D*	Chatham River	Estuary	Nutrients (TN, TP)
	3289E	Chevelier Bay	Estuary	Nutrients (TN)
	3289G	Cannon Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	3289H	Lostmans Bay (Everglades National Park)	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	3289IA	Whitewater Bay/Ponce De Leon Bay	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	3289L	Alligator Bay	Estuary	Nutrients (TN)
	3289M	Dads Bay	Estuary	Nutrients (TN)
	3289R1	Shark Slough A (Everglades National Park)	Estuary	DO, Nutrients (Chlorophyll-a, TN, TP)
	3289X	Everglades Lakes	Estuary	Nutrients (Chlorophyll-a, TN, TP)
	3303G	Joe Bay (East Segment)	Estuary	Nutrients (Chlorophyll-a, TN)
Everglades West Coast:	8065*	Gulf of Mexico (Monroe County; Collier County)	Coastal	Nutrients (Chlorophyll-a, TN, TP)
	3258B2	Hendry Creek	Estuary	Enterococci
	3259M1*	Ten Thousand Islands	Estuary	DO, Nutrients (Chlorophyll-a, TN, TP)
	3259M2*	Faka Union (Marine Segment)	Estuary	DO, Nutrients (Chlorophyll-a)
	3259M3*	Barron River (Marine Segment)	Estuary	DO
	3278U	Rookery Bay (Coastal Segment)	Estuary	Nutrients (TN)

Florida Keys:	6002	Manatee Bay	Estuary	DO, Nutrients (TN)
	6003	Barnes Sound	Estuary	DO, Nutrients (Chlorophyll-a, TN)
	6005	Long Sound	Estuary	Nutrients (TN)
	6005A	Little Blackwater Sound	Estuary	DO, Nutrients (TN)
	6005B	Blackwater Sound	Estuary	DO, Nutrients (Chlorophyll-a, TN)
	6016*	Duck Key	Coastal	DO
	8077B*	Western Florida Bay	Coastal	DO, Nutrients (Chlorophyll-a, TN, TP)
	8077C*	Central Florida Bay	Coastal	DO, Nutrients (Chlorophyll-a, TN, TP)
	8077D*	Southern Florida Bay	Coastal	DO, Nutrients (Chlorophyll-a, TN, TP)
	8077E*	East Central Florida Bay	Coastal	DO, Nutrients (Chlorophyll-a, TN, TP)
	8077F*	Eastern Back Bay	Coastal	DO, Nutrients (TN, TP)
	8077G*	Western Bay Side	Coastal	DO
	8077H*	Southern Bay Side	Coastal	DO, Nutrients (Chlorophyll-a, TN, TP)
Indian River Lagoon:	3057A	Banana River Below 520 Causeway	Estuary	pH
	3057B	Banana River Above 520 Causeway	Estuary	pH
Kissimmee River:	3168Z3	Lake Arnold	Lake	Nutrients (Chlorophyll-a, TN, TP)
	3173A	Lake Tohopekaliga	Lake	Biology
Lake Worth Lagoon - Palm Beach Coast:	3245B*	Lake Clarke	Lake	Biology, Escherichia Coli, Nutrients (Chlorophyll-a, TP)
Lower St. Johns:	2239	Strawberry Creek	Stream	Escherichia Coli
	2224A	Ribault River (Marine Segment)	Estuary	Enterococci
	2224B	Ribault River (Tidal Segment)	Estuary	Enterococci
	2224C	Palmdale Tributary	Stream	Escherichia Coli
Middle St. Johns:	2986	Soldier Creek	Stream	Escherichia Coli
	2987	Little Wekiva River	Stream	Escherichia Coli
	3004	Little Wekiva Canal	Stream	Escherichia Coli
	3014	Crane Strand Drain	Stream	Escherichia Coli
	2994A	Gee Creek	Stream	Escherichia Coli
	2994K	Lake Concord	Lake	Nutrients (Chlorophyll-a, TP)
	2997B	Lake Howell	Lake	Biology, Nutrients (Chlorophyll-a)
	3002E	Lake Prima Vista	Lake	Biology, Nutrients (Chlorophyll-a, TN)
	3004K	Lake Orlando	Lake	Biology, Nutrients (Chlorophyll-a, TN, TP)
	3011A	Lake Weston	Lake	Biology, Nutrients (Chlorophyll-a, TP)
Ochlockonee - St. Marks:	647F	Lake Kanturk	Lake	Nutrients (Chlorophyll-a, TN, TP)
	647J	Lake Killarney	Lake	Nutrients (Chlorophyll-a, TN, TP)
	647K	Lake Kinsale	Lake	Nutrients (Chlorophyll-a, TN, TP)
	756F	Lake Lafayette (Upper Segment)	Lake	Escherichia Coli, Nutrients (Chlorophyll-a, TP)
Ocklawaha:	2809	Southwest Emeralda Marsh Conservation Area	Lake	DO
	2811	West Emeralda Marsh Conservation Area	Lake	DO, Nutrients (Chlorophyll-a, TN, TP)
	2856	Apopka Marsh	Stream	DO
Pensacola:	676	Carpenter Creek	Stream	Escherichia Coli
Perdido:	489	Elevenmile Creek	Stream	Escherichia Coli

	797	Perdido Bay (Upper Segment)	Estuary	Nutrients (Chlorophyll-a)
	462A	Perdido River (South Marine)	Estuary	DO, Nutrients (Chlorophyll-a)
	489A	Tenmile Creek	Stream	Escherichia Coli
Sarasota Bay - Peace - Myakka:	1937*	Philippi Creek	Stream	Escherichia Coli
	15001	Little Lake Hamilton	Lake	Nutrients (Chlorophyll-a, TN)
	15002	Middle Lake Hamilton	Lake	Biology, Nutrients (Chlorophyll-a, TN, TP)
	15041	Lake Hamilton	Lake	Biology, Nutrients (Chlorophyll-a, TN, TP)
	15101	Lake Eva	Lake	Nutrients (Chlorophyll-a, TN)
	1497A	Crystal Lake	Lake	Nutrients (Chlorophyll-a, TN, TP)
	1497B	Lake Parker	Lake	Biology, Nutrients (Chlorophyll-a, TN, TP)
	1497G	Lake Mirror	Lake	Nutrients (Chlorophyll-a, TN, TP)
	1497H	Lake Morton	Lake	Nutrients (Chlorophyll-a, TN, TP)
	1623K	Saddle Creek Below Lake Hancock	Stream	DO, Nutrients (Chlorophyll-a, TN)
Southeast Coast - Biscayne Bay:	3270	C-14 (Cypress Creek Canal/Pompano Canal)	Stream	Escherichia Coli
	3274	C-13 East (Middle River Canal)	Estuary	Enterococci
	3276	C-12	Stream	Escherichia Coli
	3281	C-11 (East)	Stream	Escherichia Coli
	3276A	New River (North Fork)	Estuary	Enterococci
	3277E	Dania Cutoff Canal	Estuary	Enterococci
	3279A	Snake Creek Canal (North Fork)	Stream	Escherichia Coli
	3288A	Wagner Creek	Estuary	Enterococci
	3303B1	Taylor Slough	Estuary	Nutrients (TN)
Springs Coast:	1440	Anclote River Tidal	Estuary	Enterococci, Nutrients (Chlorophyll-a, TN)
	1556	Cedar Creek (Tidal)	Estuary	Enterococci
	1633	Mckay Creek (Tidal)	Estuary	Enterococci
	1440A	Anclote River Bayou Complex (Spring Bayou)	Estuary	Nutrients (Chlorophyll-a, TN)
	1556A	Cedar Creek	Stream	Escherichia Coli
	1633C*	McKay Creek Below Taylor Lake	Stream	Escherichia Coli
	1633D*	McKay Creek Above Taylor Lake	Stream	Escherichia Coli
	1633E*	McKay Creek Above Walsingham Reservoir	Stream	Escherichia Coli
	1668A	Joe's Creek	Stream	Biology, DO, Escherichia Coli, Nutrients (Macrophytes)
	1668B	Pinellas Park Ditch No 5 (Bonn Creek)	Stream	Escherichia Coli
	1716A	34Th Street Basin	Stream	Escherichia Coli
	1716D	Clam Bayou Drain (Tidal)	Estuary	DO, Enterococci, Nutrients (Macrophytes)
St. Lucie - Loxahatchee:	3215	Danforth Creek	Stream	DO, Nutrients (TP)
	3224	Loxahatchee River (Jonathan Dickinson State Park)	Estuary	DO, Enterococci, Fecal Coliform
	3226	Jupiter Inlet	Estuary	Nutrients (Chlorophyll-a)
	3230	Loxahatchee River Above Cypress Creek	Stream	DO, Nutrients (Algal Mats)
	3232	Unnamed Drain To Loxahatchee River	Stream	DO, Nutrients
	3194A	Tenmile Creek	Stream	Biology, DO, Nutrients (Chlorophyll-a, Macrophytes, TP)
	3208B	Willoughby Creek	Estuary	Enterococci, Nutrients (Chlorophyll-a)
	3224A1	Loxahatchee River (North Fork Lower)	Estuary	Enterococci, Fecal Coliform
	3224B	Kitchings Creek	Stream	Escherichia Coli
	3224C1	Cypress Creek	Stream	DO
	3224C2	Moonshine Creek	Stream	DO

	3226A	Loxahatchee River (Northwest Fork)	Estuary	Enterococci, Fecal Coliform, Nutrients (Chlorophyll-a, TP)
	3226C1*	Loxahatchee River (Southwest Fork)	Estuary	Enterococci, Nutrients (Chlorophyll-a)
	3226C2*	Sims Creek	Estuary	DO, Enterococci, Nutrients (Chlorophyll-a)
	3226C3*	Jones Creek	Estuary	DO, Enterococci, Nutrients (Chlorophyll-a)
	3226C4*	Sims Canal	Estuary	DO, Escherichia Coli
	3226C5*	Jones Creek Tidal	Estuary	DO, Enterococci, Nutrients (Chlorophyll-a)
	3226D	North Fork Loxahatchee River (Marine Segment)	Estuary	Enterococci
	3230A1	Loxahatchee River (Northwest Fork)	Stream	DO
	3232A	Tidal Creek to Loxahatchee River	Estuary	Enterococci
Tampa Bay:	1574	Alligator Creek	Stream	Escherichia Coli
	1605	Delaney Creek	Stream	Escherichia Coli
	1627	Long Branch	Stream	Biology, DO, Escherichia coli, Nutrients (Chlorophyll-a, Macrophytes, TP)
	1570A	Sweetwater Creek (Tidal Segment)	Estuary	DO
	1577A	Pepper Mound Creek	Estuary	DO, Nutrients (Chlorophyll-a)
	1579A	Bellows Lake (East Lake)	Lake	Nutrients (Chlorophyll-a, TN, TP)
	1587A	Woods Creek	Estuary	DO
	1601A	Tampa Bay Channel	Estuary	Nutrients (Chlorophyll-a)
	1627B	Long Branch (Tidal)	Estuary	Enterococci
	1700A	Crescent Lake	Lake	Biology, Nutrients (Chlorophyll-a, TP)
	1731A	Lake Maggiore	Lake	Nutrients (Chlorophyll-a, TN, TP), Specific Conductance
	1731B	Salt Creek	Estuary	DO, Nutrients (Chlorophyll-a)
Tampa Bay Tributaries:	1537A	Lake Bonnet	Lake	Biology, Lead, Nutrients (Chlorophyll-a, TN, TP)
	1848D1	Wares Creek (Estuarine Segment)	Estuary	Enterococci
	1848D2	Wares Creek (Freshwater Segment)	Stream	Escherichia Coli

Source: DEP website at https://geodata.dep.state.fl.us/datasets/FDEP::alternative-restoration-plans-2/explore?location=27.544873%2C-83.729450%2C6.54&showTable=true. (Accessed Oct 2023.)
*Note: indicates WBID is new to list this year.

Appendix F: Wastewater Classification by County

Table F.1 Wastewater System information

County	Parcels with WW Information	All Parcels				Parcels in BMAP or ARP Areas			
		Sewer*		Septic**		Sewer*		Septic**	
		Parcels	% of County	Parcels	% of County	Parcels	% of County	Parcels	% of County
Alachua	85,698	53,218	62%	27,081	32%	51,982	61%	25,374	30%
Baker	9,040	2,233	25%	5,912	65%	-	0%	-	0%
Bay	94,591	56,565	60%	30,269	32%	-	0%	-	0%
Bradford	10,062	2,093	21%	7,547	75%	2,562	25%	7,539	75%
Brevard	265,255	154,113	58%	81,433	31%	92,467	35%	60,358	23%
Broward	722,718	517,466	72%	51,313	7%	178,525	25%	8,168	1%
Calhoun	5,274	1,682	32%	3,101	59%	-	0%	-	0%
Charlotte	113,317	71,843	63%	35,242	31%	415	0%	1,043	1%
Citrus	78,319	28,743	37%	46,678	60%	28,740	37%	46,242	59%
Clay	79,396	48,352	61%	21,199	27%	52,304	66%	21,251	27%
Collier	223,238	184,841	83%	28,574	13%	20,098	9%	1,200	1%
Columbia	25,004	5,076	20%	18,403	74%	6,604	26%	17,393	70%
Miami-Dade	515,606	393,407	76%	107,246	21%	1,885	0%	1	0%
DeSoto	11,315	1,143	10%	4,107	36%	95	1%	1,000	9%
Dixie	8,334	58	1%	7,309	88%	209	3%	5,096	61%
Duval	335,083	239,584	72%	76,399	23%	237,560	71%	72,689	22%
Escambia	128,985	93,901	73%	28,506	22%	17,301	13%	5,934	5%
Flagler	54,308	48,551	89%	4,019	7%	3,391	6%	2,278	4%
Franklin	8,796	1,636	19%	4,970	57%	-	0%	-	0%
Gadsden	16,940	2,405	14%	11,451	68%	-	0%	-	0%
Gilchrist	7,311	643	9%	5,995	82%	841	12%	5,995	82%
Glades	5,518	872	16%	4,332	79%	1,582	29%	4,334	79%
Gulf	9,304	4,578	49%	3,926	42%	-	0%	-	0%
Hamilton	4,833	1,706	35%	2,673	55%	179	4%	560	12%
Hardee	8,873	3,416	39%	5,049	57%	-	0%	-	0%
Hendry	15,169	4,096	27%	10,527	69%	4,352	29%	8,533	56%
Hernando	84,376	34,763	41%	47,251	56%	3,876	5%	6,021	7%
Highlands	46,935	12,485	27%	30,930	66%	11,577	25%	28,472	61%
Hillsborough	461,717	338,900	73%	51,251	11%	353,526	77%	52,247	11%
Holmes	7,485	240	3%	6,213	83%	-	0%	-	0%
Indian River	77,381	40,470	52%	31,494	41%	39,507	51%	30,914	40%
Jackson	17,769	3,643	21%	11,976	67%	220	1%	2,542	14%
Jefferson	7,221	989	14%	5,214	72%	-	0%	-	0%
Lafayette	2,917	400	14%	2,138	73%	454	16%	2,029	70%
Lake	146,581	60,978	42%	69,040	47%	51,252	35%	46,648	32%
Lee	393,390	243,115	62%	94,020	24%	145,267	37%	47,542	12%
Leon	97,070	62,707	65%	30,577	32%	-	0%	-	0%
Levy	20,609	1,278	6%	17,806	86%	1,738	8%	13,281	64%
Liberty	2,787	463	17%	1,906	68%	-	0%	-	0%

Madison	7,216	1,046	15%	5,578	77%	945	13%	3,882	54%
Manatee	173,401	141,495	82%	16,300	9%	113,798	66%	12,442	7%
Marion	161,224	53,365	33%	99,959	62%	51,456	32%	84,305	52%
Martin	77,102	52,429	68%	23,362	30%	44,561	58%	19,203	25%
Monroe	52,760	37,565	71%	14,509	28%	38,659	73%	14,428	27%
Nassau	40,340	18,960	47%	16,459	41%	-	0%	-	0%
Okaloosa	93,041	61,593	66%	14,328	15%	2,264	2%	382	0%
Okeechobee	16,510	2,889	18%	12,828	78%	3,345	20%	12,124	73%
Orange	421,974	295,382	70%	91,146	22%	155,565	37%	35,935	9%
Osceola	136,698	102,250	75%	22,145	16%	102,173	75%	21,333	16%
Palm Beach	615,462	501,602	82%	59,084	10%	28,864	5%	14,775	2%
Pasco	226,558	139,107	61%	74,311	33%	50,201	22%	21,088	9%
Pinellas	422,948	396,725	94%	13,111	3%	257,650	61%	9,450	2%
Polk	255,985	127,993	50%	104,698	41%	70,300	27%	44,500	17%
Putnam	35,615	5,663	16%	28,706	81%	6,032	17%	21,895	61%
Santa Rosa	75,519	33,077	44%	33,153	44%	28,198	37%	8,508	11%
Sarasota	234,880	198,708	85%	35,702	15%	68,311	29%	32,703	14%
Seminole	158,870	124,872	79%	26,372	17%	-	0%	-	0%
St. Johns	100,798	55,842	55%	24,998	25%	27,861	28%	4,258	4%
St. Lucie	144,240	81,784	57%	36,637	25%	90,954	63%	14,993	10%
Sumter	71,986	51,830	72%	12,742	18%	49,814	69%	2,476	3%
Suwannee	16,301	2,005	12%	11,672	72%	2,827	17%	11,305	69%
Taylor	10,147	862	9%	8,605	85%	-	0%	1	0%
Union	3,896	27	1%	3,483	89%	171	4%	3,484	89%
Volusia	235,137	123,917	53%	88,412	38%	29,370	12%	65,209	28%
Wakulla	13,780	2,329	17%	10,280	75%	-	0%	-	0%
Walton	53,977	18,784	35%	20,511	38%	-	0%	-	0%
Washington	10,131	1,469	15%	7,892	78%	-	0%	-	0%
Statewide	**8,075,021**	**5,356,225**	**66%**	**1,950,057**	**24%**	**2,531,828**	**31%**	**983,363**	**12%**

Source: DOH's FLWMI

Note: Approximately 10 percent of parcels were designated "Undetermined" or "Unknown," thus the total does not sum to 100 percent.

*"Sewer" includes parcels designated "Known Sewer," "Likely Sewer," or "SWL Sewer" by DOH's FLWMI.

**"Septic" includes parcels designated "Known Septic," "Likely Septic," or "SWL Septic" by DOH's FLWMI.