

**Annual Assessment of
Florida's Water Resources:
Infrastructure Investments for Stormwater
and Wastewater**

2023 Edition
Chapter 5

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Abstract

This chapter focuses on reports produced by local governments in response to new statutory requirements. In 2021, the Florida Legislature passed Committee Substitute for Committee Substitute for Committee Substitute for House Bill 53. This bill created two new statutes, s. 403.9301, F.S., and s. 403.9302, F.S., regarding wastewater and stormwater planning, respectively. Fulfilling the new 20-year needs analysis requirements was a significant undertaking for Florida’s counties, municipalities, and special districts.

Throughout this process, local governments shared their time, knowledge, and expertise with the Office of Economic and Demographic Research (EDR) to produce the final results contained in this report. Their professional judgement of future needs presents a statewide picture that is far more comprehensive and detailed than anything previously available to policymakers, reaching out to near the midcentury.

The statewide report relies on data from 832 stormwater management submissions and 276 wastewater services submissions from counties, municipalities, and special districts across the state. Altogether, the needs for the next twenty years total \$201.5 billion, with 55 percent associated with routine operations and maintenance (O&M) costs and 45 percent associated with major capital improvement projects.

Expenditure Needs Over 20 Years (in \$millions)

Expenditure Type	Stormwater Management	Wastewater Services	Total	Percent of Total
O&M	\$ 34,484	\$76,369	\$110,853	55%
Capital Improvement*	\$28,125	\$62,498	\$90,623	45%
Total	\$62,610	\$138,867	\$201,477	100%

* Note: This is the estimated project expenditure total, including projects that have a committed funding source, those that have no identified funding source, and those with a blank funding source. “Capital Improvement” expenditures are referred to as “Expansion” in the templates.

Because O&M expenditures are expected to be funded first, this report focuses on future capital improvement projects. In the detailed data, these projects have been grouped by type of issue the local government is attempting to address. Using dollars as a proxy for overall importance, the following table shows the areas with greatest investments to the least. The three largest project types are shared between stormwater and wastewater programs. As long suspected, End of Useful Life Replacement is the largest category of need, followed by Water Quality and Resiliency.

Total of Capital Improvement Projects by Type (in \$millions)

Project Type	Stormwater	Wastewater*	20-Year Total	Percent of Total
End of Useful Life Replacement	\$ 5,547	\$ 25,083	\$ 30,630	33.8%
Water Quality	\$ 6,051	\$ 8,046	\$ 14,097	15.6%
Resiliency	\$ 7,589	\$ 6,163	\$ 13,752	15.2%
Effluent Management	\$ -	\$ 10,077	\$ 10,077	11.1%
Septic to Sewer Conversions	\$ -	\$ 9,000	\$ 9,000	9.9%
Flood Protection	\$ 8,938	\$ -	\$ 8,938	9.9%
Reuse Development	\$ -	\$ 4,056	\$ 4,056	4.5%
Total	\$ 28,125	\$ 62,424	\$ 90,550	100%

*These aggregates only include projects assigned a committed funding source or no identified funding source. Projects with a funding source left blank are excluded.

Capital improvement projects are further characterized as either having a committed funding source or not. Of the \$90.6 billion in overall capital improvement projects, only 45.2%, or \$41.0 billion, currently has committed funding sources. To detect possible future problems, the lack of an identified funding source can be used as an indicator of significant funding stress. Grouping the potentially underfunded projects by type, the following table is presented (also in descending order). Note that Resiliency overtakes Water Quality when projects with a committed funding source are removed.

Total of Capital Improvement Projects with No Identified Funding Source by Type (in \$millions)

Project Type	Stormwater	Wastewater	20-Year Total	Percent of Total
End of Useful Life Replacement	\$ 3,886	\$ 9,988	\$ 13,875	28.0%
Resiliency	\$ 5,689	\$ 3,050	\$ 8,739	17.6%
Water Quality	\$ 4,561	\$ 2,846	\$ 7,407	14.9%
Septic to Sewer Conversions	\$ -	\$ 6,705	\$ 6,705	13.5%
Flood Protection	\$ 5,662	\$ -	\$ 5,662	11.4%
Effluent Management	\$ -	\$ 5,649	\$ 5,649	11.4%
Reuse Development	\$ -	\$ 1,601	\$ 1,601	3.2%
Total	\$ 19,799	\$ 29,838	\$ 49,637	100%

Local governments were also asked to identify potential strategies and estimate new revenues to close their funding gaps. Overall, Florida's wastewater industry has experience with long-term planning that stormwater management does not, leading to more certainty that significant progress can be made to closing—but not eliminating—the funding gaps in that sector. The planning horizon for stormwater management has typically been short, but the new legislation has required local governments to shift their perspectives to the longer term.

This report is the first in a 5-year data cycle, with updated 20-year needs analyses expected in 2027. This first round of submissions represents a significant improvement over any data previously available. However, the next round of submissions are expected to be even better, reflecting both the lessons learned from this round of reports and more time to interact with local governments. This longer timeline may be particularly helpful for fiscally constrained counties, which had a low response rate for the stormwater management needs analysis. Prior to those submissions, the assumption that projected O&M expenditures can be fully funded will be tested against the historical data submitted by the local governments as part of this round of reports.

As important as the needs analyses for stormwater and wastewater are, they represent only a portion of the state's water-related infrastructure needs. In next year's Annual Assessment, data from the companion drinking water survey should be available. In addition, EDR plans to undertake a special initiative with the five water management districts to address their unique needs. This effort is planned for the 2025 Annual Assessment.

5. Florida’s Water Infrastructure

Part of section 403.928(1)(b), Florida Statutes, requires an annual assessment of future governmental and utility expenditures to comply with laws and regulations governing water supply and demand and those governing water quality protection and restoration. Intrinsic to supplying water and water quality protection is the infrastructure that transports and the facilities that treat drinking water, wastewater, and stormwater.

In this edition, this chapter focuses on reports produced by local governments in response to statutory requirements. In 2021, the Florida Legislature passed Committee Substitute for Committee Substitute for House Bill 53. This bill created two new statutes, s. 403.9301, F.S., and s. 403.9302, F.S., regarding wastewater and stormwater, respectively.¹ The language in the two statutes is largely similar, differing mainly in definitions and in listing what industry-specific information to include in the evaluation. The two statutes are included in table 5.0.1, Statute Comparison for 20-Year Needs Analysis Requirements, with the differences highlighted.

Table 5.0.1 Statute Comparison for 20-Year Needs Analysis Requirements

<p>403.9301 Wastewater services projections.— (1) The Legislature intends for each county, municipality, or special district providing wastewater services to create a 20-year needs analysis. (2) As used in this section, the term: (a) “Domestic wastewater” has the same meaning as provided in s. 367.021. (b) “Facility” means any equipment, structure, or other property, including sewerage systems and treatment works, used to provide wastewater services. (c) “Treatment works” has the same meaning as provided in s. 403.031(11). (d) “Wastewater services” means service to a sewerage system, as defined in s. 403.031(9), or service to domestic wastewater treatment works. (3) By June 30, 2022, and every 5 years thereafter, each county, municipality, or special district providing wastewater services shall develop a needs analysis for its jurisdiction over the subsequent 20 years. In projecting such needs, each local government shall include the following:</p>	<p>403.9302 Stormwater management projections.— (1) The Legislature intends for each county, municipality, or special district providing a stormwater management program or stormwater management system to create a 20-year needs analysis. (2) As used in this section, the term: (a) “Facility” means any equipment, structure, or other property, including conveyance systems, used or useful in connection with providing a stormwater management program or stormwater management system. (b) “Stormwater management program” has the same meaning as provided in s. 403.031(15). (c) “Stormwater management system” has the same meaning as provided in s. 403.031(16). (3) By June 30, 2022, and every 5 years thereafter, each county, municipality, or special district providing a stormwater management program or stormwater management system shall develop a needs analysis for its jurisdiction over the subsequent 20 years. In projecting such needs, each local government shall include the following:</p>
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¹ § 403.9301, Fla. Stat., <https://www.flsenate.gov/Laws/Statutes/2022/403.9301>. (Accessed January 2023.) § 403.9302, Fla. Stat., <https://www.flsenate.gov/Laws/Statutes/2022/403.9302>. (Accessed January 2023.)

<p>(a) A detailed description of the facilities used to provide wastewater services.</p> <p>(b) The number of current and projected connections and residents served calculated in 5-year increments.</p> <p>(c) The current and projected service area for wastewater services.</p> <p>(d) The current and projected cost of providing wastewater services calculated in 5-year increments.</p> <p>(e) The estimated remaining useful life of each facility or its major components.</p> <p>(f) The most recent 5-year history of annual contributions to, expenditures from, and balances of any capital account for maintenance or expansion of any facility or its major components.</p> <p>(g) The local government's plan to fund the maintenance or expansion of any facility or its major components. The plan must include historical and estimated future revenues and expenditures with an evaluation of how the local government expects to close any projected funding gap.</p> <p>(4) Upon completing the requirements of subsection (3), each municipality or special district shall submit its needs analysis, as well as the methodology and any supporting data necessary to interpret the results, to the county within which the largest portion of its service area is located. Each county shall compile all analyses submitted to it under this subsection into a single document and include its own analysis in the document. The county shall file the compiled document with the coordinator of the Office of Economic and Demographic Research no later than July 31, 2022, and every 5 years thereafter.</p> <p>(5) The Office of Economic and Demographic Research shall evaluate the compiled documents from the counties for the purpose of developing a statewide analysis for inclusion in the assessment due January 1, 2023, pursuant to s. 403.928.</p> <p>(6) This section applies to a rural area of opportunity as defined in s. 288.0656 unless the requirements of this section would create an undue economic hardship for the county, municipality, or special district in the rural area of opportunity.</p>	<p>(a) A detailed description of the stormwater management program or stormwater management system and its facilities and projects.</p> <p>(b) The number of current and projected residents served calculated in 5-year increments.</p> <p>(c) The current and projected service area for the stormwater management program or stormwater management system.</p> <p>(d) The current and projected cost of providing services calculated in 5-year increments.</p> <p>(e) The estimated remaining useful life of each facility or its major components.</p> <p>(f) The most recent 5-year history of annual contributions to, expenditures from, and balances of any capital account for maintenance or expansion of any facility or its major components.</p> <p>(g) The local government's plan to fund the maintenance or expansion of any facility or its major components. The plan must include historical and estimated future revenues and expenditures with an evaluation of how the local government expects to close any projected funding gap.</p> <p>(4) Upon completing the requirements of subsection (3), each municipality or special district shall submit its needs analysis, as well as the methodology and any supporting data necessary to interpret the results, to the county within which the largest portion of its stormwater management program or stormwater management system is located. Each county shall compile all analyses submitted to it under this subsection into a single document and include its own analysis in the document. The county shall file the compiled document with the Secretary of Environmental Protection and the coordinator of the Office of Economic and Demographic Research no later than July 31, 2022, and every 5 years thereafter.</p> <p>(5) The Office of Economic and Demographic Research shall evaluate the compiled documents from the counties for the purpose of developing a statewide analysis for inclusion in the assessment due January 1, 2023, pursuant to s. 403.928.</p> <p>(6) This section applies to a rural area of opportunity as defined in s. 288.0656 unless the requirements of this section would create an undue economic hardship for the county, municipality, or special district in the rural area of opportunity.</p>
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In brief, these statutes require each local government providing the relevant service to create a 20-year needs analysis that includes an inventory, population and service area projections, historical and projected expenditures, and plans on how to close any projected funding gap. Each local government had to submit its needs analysis to the county within which it is located by June 30, 2022. The county then compiled the needs analyses and submitted them to EDR (and DEP, in the case of stormwater management) by July 31, 2022.

Soon after these statutes were established, multiple local governments reached out to EDR requesting assistance in interpreting the statutory requirements. Though EDR’s statutory responsibilities begin near the end of the process, EDR was directed by the House and Senate to create templates for the needs analyses to assist local governments in complying with the law. A stormwater management needs analysis template was published in October 2021, followed by a wastewater needs analysis template in February 2022.

This chapter will first discuss the 20-year needs analyses for stormwater management, followed by an analysis of wastewater services.

5.1 Stormwater Management 20-Year Needs Analysis

At the statewide level, Florida’s projected stormwater needs have not been examined in detail prior to the new requirement taking effect. Before this analysis, the major data source was the U.S. Environmental Protection Agency’s (EPA’s) Clean Watersheds Needs Survey (CWNS), which is conducted and published in compliance with the Clean Water Act, section 516(b)(1)(B).² The most recently completed assessment is based on data from 2012. It is a survey of Publicly Owned Treatment Works’ (POTW) wastewater and stormwater capital investment needs. In that assessment, Florida’s 20-year capital improvement expenditure estimate for stormwater infrastructure was \$499.08 million. The shortcomings of the CWNS estimates are discussed in detail in the 2020 Edition of this report, but major limitations include only allowing expenditures for projects with extensive documentation and excluding all Operation & Maintenance (O&M) expenditures.

Based on the new data received by EDR and summarized in Table 5.1.1, the total 20-year expenditure estimate for Florida’s county, municipal, and district stormwater expenditures is \$62.61 billion. Of that, \$28.13 billion dollars are for non-O&M expenditures.

Table 5.1.1 Reported Stormwater Expenditure Projection Totals (in \$millions)

Expenditure Type	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	All Years
O&M	\$ 7,156	\$ 8,057	\$ 9,147	\$ 10,125	\$ 34,484
Capital Improvement*	\$ 9,813	\$ 6,945	\$ 5,503	\$ 5,864	\$ 28,125
Total	\$ 16,969	\$ 15,001	\$ 14,650	\$ 15,989	\$ 62,610

* Note: This is the estimated project expenditure total, including projects that have a committed funding source and those that have no identified funding source.

This analysis contains an explanation of EDR’s template and the structure of the data, followed by an overview of submissions, a discussion of inventory and stormwater management program activities, and then a discussion of these expenditure projections.

² EPA, Clean Watersheds Needs Survey 2012, Florida database, <https://ordspub.epa.gov/ords/cwms2012/f?p=134:25:>. (Accessed January 2023.)

Stormwater Needs Analysis Template

As mentioned above, EDR published a template in response to requests for assistance from local governments. Though EDR could not require the use of the template, it was highly encouraged for both uniformity of data and ease of use. As the statutory directive was fairly broad with respect to providing descriptions and certain costs related to stormwater management, and as this was the first round of reporting, the template allowed EDR to standardize the submissions to more easily build a statewide model. Though this discussion focuses on the stormwater needs analysis template, much of the explanation of the template's underlying structure also applies to the wastewater needs analysis template.

Much of the information required by the statute already existed in documentation or databases maintained by local governments. For example, many local governments signaled their intention to use existing data management programs such as Geographic Information System (GIS), and other mapping or inventory tracking methods, to extract some of the data required by HB 53. Moreover, some data reporting is already required by the federal National Pollutant Discharge Elimination System (NPDES) under the municipal separate storm sewer system (MS4) permit. However, not all local governments are regulated under the MS4 rules, and for those that are, the focus of the MS4 program is limited. There is little to no information related to current or historical costs in MS4 documentation, let alone projected expenditures.

Working closely with local governments and other interested parties, the Microsoft Excel template was crafted for local governments to 'fill in the blanks,' generally following each of the requirements listed in paragraphs (3)(a) through (g) of the statute. Guidance was provided for use of the template for each subparagraph in the statute (Section 403.9302, subparagraphs (a) through (g), F.S.). The spreadsheet was published on EDR's website for use by local governments. Outreach efforts were made by EDR in order to engage as many of the affected local governments as possible regarding the use of the template. This involved workshop presentations to associations and stormwater affiliated groups. A copy of the full template is provided in the Appendix.³

The template introduction included guidance to local governments to explain which local governments should report data and frame the data needs. This was particularly important with stormwater management, as there is less consistency in how "stormwater" activities are characterized by local governments as compared to wastewater and potable water. The template's scope was summarized as:

“For the purposes of this document, a stormwater management program and a stormwater management system are as defined in statute (s. 403.031(15) and (16), F.S., respectively...). Plainly speaking, the “program” is the institutional framework whereby stormwater management activities (MS4 NPDES permit activities, and other regulatory activities, construction, operation and maintenance, etc.) are carried out by the public authority. The “system” comprises the physical infrastructure that is owned and/or operated by the local government or special

³ The Excel template is available for download here: <http://edr.state.fl.us/Content/natural-resources/stormwaterwastewater.cfm>.

district that specifically is intended to control, convey or store stormwater runoff for treatment and flood protection purposes.”

The statute directs “each county, municipality, or special district providing a stormwater management program or stormwater management system to create a 20-year needs analysis.” In response to feedback, EDR further specified that private entities, the federal government, the state of Florida (including the Department of Transportation), school districts, and state universities or colleges were excluded from reporting requirements. Further, even though the five WMDs are technically special districts, their mission is not directly comparable to that of local governments, and they were excluded for this reason. On the other hand, the actions, assets, and expenditures of any dependent districts were to be included in the needs analysis of its governing authority.

The stormwater needs analysis template was divided into eight parts, first focusing on the programmatic and inventory aspects of stormwater management, then addressing expenditures. In order to ensure that data from local governments as large as Miami-Dade County and as small as community development districts was comparable, EDR requested that much of the inventory data be aggregated and the programmatic information be provided by answering a series of yes or no questions. For any questions about future plans or expenditures, EDR asked that local governments base their responses on the state’s present legal framework. That is to say, current law and current administration prevails throughout the 20-year period.

Expenditure projections were reported in totals for 5-year increments. The template guidance specified that for expenditure projections, respondents were to assume that operation and maintenance (O&M) expenditures would be fully funded before any additional capital expenditures. Beyond O&M, the template allowed local governments to report capital improvement (referred to as expansion) expenditures by listing major projects planned or expected to be undertaken. Projects were classified in two ways: project type and funding source type. The four stormwater project types were:

1. Flood Protection: projects related to flood protection/flood abatement, including infrastructure elements such as storage basins, piping and other conveyances, land purchases for stormwater projects, and major hardware purchases such as vactor/jet trucks.
2. Water Quality Projects: projects related to water quality such as treatment basins, alum injection systems, green infrastructure, water quality retrofits, or basin management action plans (BMAPs).
3. Resiliency: projects related to sea level rise, increased flood events, or other adverse effects of climate change. This category includes stormwater infrastructure relocation or modification projects and new capital investments specifically related to resiliency. Unlike other project types, expenditures for future (not ongoing) resiliency projects should include O&M costs.
4. End of Useful Life: major projects related to replacing or retrofitting facilities or components at the end of their useful life. Major replacements include culverts and pipe networks, control structures, pump stations, physical/biological filter media, etc. Unlike other project types, this category has a minimum threshold. In order to distinguish between routine maintenance projects and replacement projects with ‘major’ expenses, a major expense is defined as any single replacement project greater than 5% of the jurisdiction’s

total O&M expenditures over the most recent five-year period (such as a project in late 2021 costing more than 5% of the O&M expenditures for fiscal years 2016-2017 to 2020-2021). In order for expenditures to exceed the minimum threshold, a project could include grouped replacements (e.g., a neighborhood, a type of component within a system).

The two funding source types were “committed funding source” and “no identified funding source.” Committed funding sources include “the capacity to absorb the project’s capital cost within current budget levels or forecasted revenue growth; financing that is underway or anticipated (bond or loan); known state or federal funding (appropriation or grant); special assessment; or dedicated cash reserves for future expenditure.”⁴ No identified funding source includes projects or anticipated need(s) without formal funding commitments(s), formal pledges, or obligations.

Stormwater management planning at the expenditure level rarely extends 20 years into the future. Even forward thinking stormwater management system administrators may not have anything planned more than five or ten years into the future. As the statute required a 20-year forecast, EDR allowed local governments to report projects without supporting documentation. For issues or problems that are expected to arise in the far future, local governments were encouraged to report expenditure estimates for placeholder projects. That is to say, EDR requested local governments to include projects even if, in the intervening years, a better technique or technology is developed to confront that issue.

By aggregating expenditures for projects with no identified funding source, the statutorily required funding gap estimate can be calculated. The template’s last section includes a table for strategies and revenue estimates to close any funding gaps a local government has identified. However, the funding gap data is not well reported in this first round of stormwater needs analysis submissions for two reasons. First, local governments may have been reluctant to report to the legislature future projects they are unable to pay for when local elected officials have yet to approve those projects. This reasoning, of course, also means that the expenditure projections for projects with no identified funding source are underreported. Secondly, the total no identified funding source expenditures were often misreported when project data was pasted into the template, causing a reporting error in the template cell. This caused local governments to not list or to under report strategies combatting funding gaps.

Stormwater Data Overview

EDR’s analysis includes 832 submissions from counties, municipalities, and independent special districts.⁵ Even though the majority of needs analyses were submitted by independent special districts (527 are included), the vast majority of management activities and expenditures belong to counties (49 are included) and municipalities (256). Though 25 percent of counties and 38 percent of municipalities did not submit stormwater needs analyses, the submitted county and municipal needs analyses cover 93.6 percent of Florida’s 2022 population.⁶ Table 5.1.2, County and

⁴ Part 5.0, Stormwater 20-Year Needs Analysis Template. See the Appendix.

⁵ Additionally, there were a few submissions that were not based on EDR’s template which were excluded due to the difficulty of synthesizing the data.

⁶ EDR, April 1, 2022 Estimate (Population Estimates Less Inmates), <http://edr.state.fl.us/Content/population-demographics/data/index-floridaproducts.cfm>.

Municipal Population Included in Stormwater Submissions, breaks down the aggregated populations of counties and municipalities based on whether the county is coastal or inland. These population estimates assume that service areas cover the entire area within a jurisdiction’s boundaries.

Table 5.1.2 County and Municipal Population Included in Stormwater Submissions

Population within Jurisdiction Type	County Location*	Included in Analysis	Not Included in Analysis	Total Population
Unincorporated County Areas	Coastal	7,474,772	65,194	7,539,966
	Inland	3,182,349	267,435	3,449,784
Municipalities	Coastal	8,300,022	753,009	9,053,031
	Inland	1,791,841	341,509	2,133,350
Statewide		20,748,984	1,427,147	22,176,131
Population within Jurisdiction Type	County Location*	Included in Analysis	Not Included in Analysis	Total Population
Unincorporated County Areas	Coastal	99.1%	0.9%	100.0%
	Inland	92.2%	7.8%	100.0%
Municipalities	Coastal	91.7%	8.3%	100.0%
	Inland	84.0%	16.0%	100.0%
Statewide		93.6%	6.4%	100.0%

* Landlocked municipalities located within counties with any coastline are included in the coastal category.

Stormwater Programs and Inventory

Unlike other water-related services, stormwater management is not necessarily provided by a utility. Many local governments provide management services directly. Among counties and municipalities, only seven counties and 71 municipalities provided utility names. All respondents were asked to provide a brief description of their current institutional strategy, including a mission statement, department dedicated to stormwater management, or dedicated funding sources. Figure 5.1.1, Stormwater Institutional Strategy Word Cloud, visually displays the most commonly used words in these descriptions (excluding “stormwater,” which is by far the most frequent word).

[See figure on following page.]

Table 5.1.4 Count of County and Municipal Goal Importance Ratings

		Less Important			More Important		Average
		1	2	3	4	5	
Drainage & flood abatement (such as flooding events associated with rainfall and hurricanes)	Inland	1	0	3	12	54	4.69
	Coastal	2	2	5	23	183	4.78
Water quality improvement (TMDL Process/BMAPs/other)	Inland	0	3	16	12	44	4.29
	Coastal	5	11	26	62	117	4.24
Reduce vulnerability to adverse impacts from flooding related to increases in frequency and duration of rainfall events, storm surge and sea level rise	Inland	6	5	18	11	33	3.82
	Coastal	4	7	32	41	138	4.36

Note: Not every submission included ratings for all three goals, so the total number of responses does not match the total submissions.

Stormwater management program activities vary depending on the jurisdiction, budgetary limitations, and local needs. Among the activities the template specifically asked whether a local government performed, the only activity for which more than half of the special districts answered “Yes” was having a system to administer stormwater management complaints. Counties and municipalities are more engaged in a wide variety of activities, as shown in table 5.1.5, County and Municipal Program Activities. Nearly across the board, coastal counties and municipalities had more active stormwater management programs.

Table 5.1.5, County and Municipal Program Activities

Activities	Counties		Municipalities	
	Count	Percent	Count	Percent
A construction sediment and erosion control program for new construction (plans review and/or inspection)?	46	92%	237	93%
An illicit discharge inspection and elimination program?	39	78%	220	86%
A public education program?	38	76%	215	84%
A program to involve the public regarding stormwater issues?	39	78%	205	80%
A “housekeeping” program for managing stormwater associated with vehicle maintenance yards, chemical storage, fertilizer management, etc.?	37	74%	203	79%
A stormwater ordinance compliance program (i.e., for low phosphorus fertilizer)?	30	60%	187	73%
Water quality or stream gage monitoring?	30	60%	130	51%
A geospatial data or other mapping system to locate stormwater infrastructure (GIS, etc.)?	43	86%	207	81%
A system for managing stormwater complaints?	44	88%	219	86%

Many programmatic activities don't directly involve physical infrastructure, though some, like asset management systems, do. The template asked whether or not a local government had an asset management system. These systems, which are used to locate and track the history and condition of a system's infrastructure assets, are tools that require large initial investments (in money, time, effort, and political capital) but eventually provide cost savings and lower risk.⁷ Table 5.1.6, County and Municipal Stormwater Asset Management Systems, shows the instance of asset management systems among inland and coastal counties and municipalities. Additionally, among the jurisdictions that do have asset management systems, few actually have all of their assets recorded in their system.

Table 5.1.6 County and Municipal Stormwater Asset Management Systems

	Counties		Municipalities	
	Inland	Coastal	Inland	Coastal
[You have] An asset management system?	10	22	25	95
If you have an asset management system, are 100% of your assets accounted for in the system?	4	8	18	61

Development of an accurate and complete asset management system is a major endeavor for any stormwater management program, regardless of the size. Though asset management systems are not universally implemented and often don't contain all of a local government's stormwater assets, submissions did include aggregated inventories. The next two tables contain inventory totals for all submissions, divided in two ways. First, table 5.1.7, Inland and Coastal Inventory Aggregates, contains data for local governments located in coastal counties and inland counties. Table 5.1.8, Inventory Aggregates by Local Government Type, instead presents inventory totals for counties, municipalities, and districts.

Table 5.1.7 Inland and Coastal Inventory Aggregates

	Inland	Coastal	Total
Estimated miles of buried culvert	9,882	31,222	41,104
Estimated miles of open ditches/conveyances (lined and unlined)	19,942	45,027	64,969
Estimated number of storage or treatment basins (i.e., wet or dry ponds)	12,526	34,923	47,449
Estimated number of gross pollutant separators including engineered sediment traps	1,685	7,401	9,086
Number of chemical treatment systems	17	48	65
Number of stormwater pump stations	132	598	730
Number of dynamic water level control structures	3,403	7,831	11,234
Number of stormwater treatment wetland systems	30	219	249

⁷ EPA, "Asset Management Programs for Stormwater and Wastewater Systems: Overcoming Barriers to Development and Implementation," 2017, <https://www.epa.gov/sites/default/files/2018-01/documents/overcoming-barriers-to-development-and-implementation-of-asset-management-plans.pdf>. (Accessed January 2023.)

Table 5.1.8 Inventory Aggregates by Local Government Type

	County	Municipality	District	Total
Estimated miles of buried culvert	18,955	20,097	2,052	41,104
Estimated miles of open ditches/conveyances (lined and unlined)	47,829	11,650	5,490	64,969
Estimated number of storage or treatment basins (i.e., wet or dry ponds)	22,013	15,001	10,435	47,449
Estimated number of gross pollutant separators including engineered sediment traps	1,835	5,771	1,480	9,086
Number of chemical treatment systems	12	52	1	65
Number of stormwater pump stations	251	379	100	730
Number of dynamic water level control structures	6,328	3,819	1,087	11,234
Number of stormwater treatment wetland systems	31	53	165	249

Special districts have only 5 percent of the state’s buried culverts, but have an incredible 66% of the stormwater treatment wetland systems. All 165 of the stormwater treatment wetland systems owned by special districts are located in either the South Florida Water Management District or the Southwest Florida Water Management District. While the majority of the county- and municipality-owned systems are also located in those two districts, other water management districts have also permitted stormwater treatment wetland systems to counties and municipalities. Though on the whole counties and municipalities are much more active in stormwater management, these regional differences in management strategies and permitting should be investigated further in a future analysis. There may be implications regarding flexibility and adoption speed for new stormwater management techniques or technologies.

Stormwater Expenditures and Projections

Expenditure projections were broadly reported as Operations and Maintenance (O&M) and expansion, or capital improvements. Reported O&M expenditures are over half (55.1 percent) of the total projected expenditures. For these estimates, shown in table 5.1.9, Reported O&M Projections (in \$millions), O&M includes any non-capital improvement expenditure, including asset replacements that do not cross the 5% of the jurisdiction’s 5-year O&M threshold. In EDR’s projections, local governments are assumed to have committed funding sources for all O&M expenditures.

Table 5.1.9 Reported O&M Projections (in \$millions)

Jurisdiction Type	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
Counties	\$ 1,391	\$ 1,520	\$ 1,715	\$ 1,886	\$ 6,512
Municipalities	\$ 5,028	\$ 5,732	\$ 6,542	\$ 7,253	\$ 24,555
Districts	\$ 737	\$ 806	\$ 890	\$ 986	\$ 3,418
Total	\$ 7,156	\$ 8,057	\$ 9,147	\$ 10,125	\$ 34,484

Special districts account for 10 percent of the O&M expenditures in each 5-year increment throughout the 20-year projection. Counties account for approximately 20 percent, and municipalities for the remaining 70 percent throughout the horizon. Dividing each jurisdiction type between county locations, approximately 9 to 10 percent of the O&M expenditures take place within inland counties for all types.

To estimate the statewide total of O&M expenditures after taking account of non-reporting counties and municipalities, a multiplication factor was developed based on the missing percentage of the State’s total population. For example, 99.1 percent of residents living in unincorporated areas of coastal counties live in counties that submitted a stormwater needs analysis, while the same is true for only 91.7 percent of those living in incorporated areas of coastal counties. Table 5.1.10, O&M Expenditure Projections (in \$millions), Reported and Total Population (in \$millions), shows the reported O&M expenditures, the multiplication factor for each jurisdiction group, and the extrapolated statewide expenditure estimate for the 20-year projections.

Table 5.1.10 O&M Expenditure Projections (in \$millions)

Local Government Type	Operations & Maintenance Projections				Reported Value Multiplication Factor
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 1,247	\$ 1,358	\$ 1,539	\$ 1,692	100.87%
Inland Counties	\$ 143	\$ 162	\$ 176	\$ 194	108.40%
Coastal Municipalities	\$ 4,583	\$ 5,233	\$ 5,977	\$ 6,635	109.07%
Inland Municipalities	\$ 446	\$ 499	\$ 565	\$ 618	119.06%
Districts (All)	\$ 737	\$ 806	\$ 890	\$ 986	None
Statewide	\$ 7,156	\$ 8,057	\$ 9,147	\$ 10,125	

Local Government Type	Operations & Maintenance Projections (Full Population)				All Years
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 1,258	\$ 1,369	\$ 1,553	\$ 1,707	\$ 5,887
Inland Counties	\$ 155	\$ 176	\$ 191	\$ 211	\$ 732
Coastal Municipalities	\$ 4,998	\$ 5,708	\$ 6,519	\$ 7,237	\$ 24,463
Inland Municipalities	\$ 531	\$ 594	\$ 672	\$ 735	\$ 2,532
Districts (All)	\$ 737	\$ 806	\$ 890	\$ 986	\$ 3,418
Statewide	\$ 7,679	\$ 8,653	\$ 9,825	\$ 10,876	\$ 37,032

Note that special district estimates are not extrapolated to a statewide figure, as the population living within a special district providing any type of stormwater management is unknown for non-reporting districts.

Capital improvement, or expansion, expenditure projections are more detailed than the O&M estimates. In addition to projects being reported as having a committed funding source or having no identified funding source, they were also assigned one of four project categories (Flood Protection, Water Quality, End of Useful Life, and Resiliency). Table 5.1.11, Reported Expenditures by Project Type and Funding Source (in \$millions), contains the total projected expenditures for each 5-year increment for all submissions.

Table 5.1.11 Reported Expenditures by Project Type and Funding Source (in \$millions)

Project Type	Committed Funding Source				No Identified Funding Source			
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Flood Protection	\$ 1,770	\$ 625	\$ 432	\$ 450	\$ 1,497	\$ 1,724	\$ 1,227	\$ 1,213
Water Quality	\$ 831	\$ 330	\$ 193	\$ 137	\$ 977	\$ 1,532	\$ 1,082	\$ 970
End of Useful Life	\$ 579	\$ 339	\$ 355	\$ 388	\$ 871	\$ 975	\$ 1,006	\$ 1,034
Resiliency	\$ 1,421	\$ 241	\$ 119	\$ 119	\$ 1,868	\$ 1,178	\$ 1,090	\$ 1,553
Total	\$ 4,600	\$ 1,535	\$ 1,098	\$1,094	\$ 5,213	\$ 5,410	\$ 4,405	\$ 4,771

Project Type	Committed + No Identified Funding Sources				Total & Percentage	
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	Total (All Years)	Project Type Percentage
Flood Protection	\$ 3,267	\$ 2,350	\$ 1,659	\$ 1,663	\$ 8,938	32%
Water Quality	\$ 1,808	\$ 1,862	\$ 1,275	\$ 1,107	\$ 6,051	22%
End of Useful Life	\$ 1,450	\$ 1,314	\$ 1,361	\$ 1,422	\$ 5,547	20%
Resiliency	\$ 3,288	\$ 1,419	\$ 1,209	\$ 1,672	\$ 7,589	27%
Total	\$ 9,813	\$ 6,945	\$ 5,503	\$ 5,864	\$28,125	100%

Excluding the End of Useful Life category, committed funding source projects are heavily front-loaded. The other three project types have over half of the expenditures for projects with committed funding sources spent in the first five years. Project expenditures with no identified funding source are more evenly spread out over the 20-year horizon. As shown in table 5.1.12, Funding Source by Project Type, only 30% of the total expected expenditures were classified as having a committed funding source. Water Quality and Resiliency projects were the least likely to have a committed funding source.

Table 5.1.12 Funding Source by Project Type

Project Type	Committed Funding Source	No Identified Funding Source
Flood Protection	37%	63%
Water Quality	25%	75%
End of Useful Life	30%	70%
Resiliency	25%	75%
Total	30%	70%

While the fact that 70% of the expenditure projections have no identified funding source is not ideal, it is less worrying than it may appear for two reasons. First, EDR’s template included any funding that the local government could not completely guarantee in the “no identified funding source” classification. This includes highly probable but not officially confirmed loans, grant funding that has not yet been officially awarded but that a local government has sufficient confidence to plan around, or local funding that, for whatever reason, has not yet been set in stone. Second, long-term planning at the expenditure level is still not very common for stormwater

management. In completing their 20-year needs analyses, many local governments were looking further than their 5-year Capital Improvement Plan for the first time. These caveats should not be interpreted to mean that local governments can comfortably deal with the increasing stormwater management challenges with the current level of support from the state. Instead, local governments report that they will need support in order to adequately confront the challenges they will face in stormwater management and, while the funding is uncertain, the necessity is not.

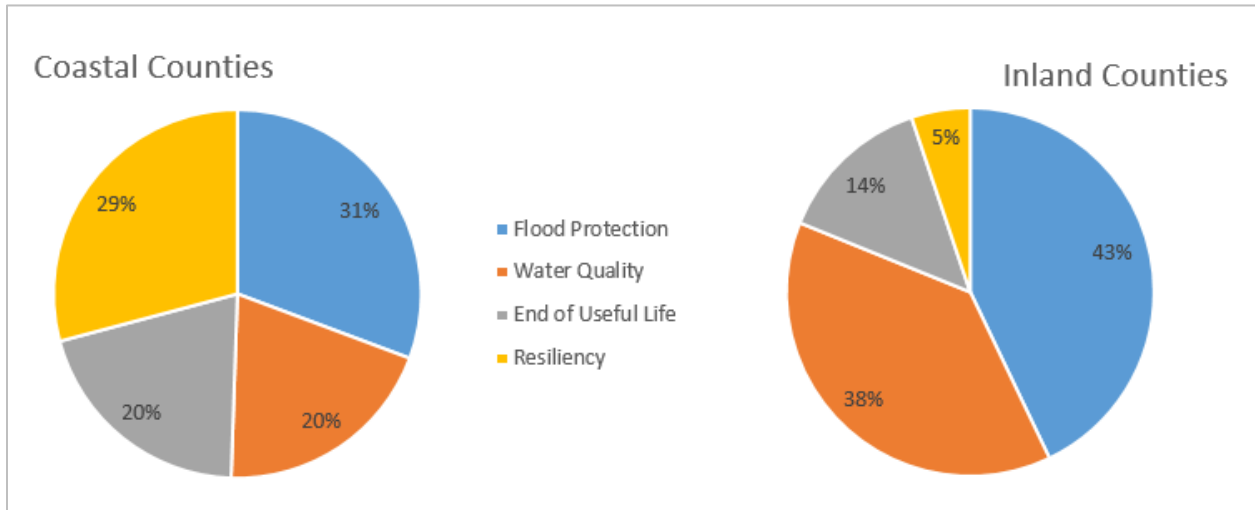
The following tables and graphs further break down the reported capital improvement needs. Project expenditure totals are shown in Table 5.1.13 by funding source type, project type, and county location.

Table 5.1.13 Reported Inland and Coastal Project Expenditures by Funding Source and Project Type (in \$millions)

Location	Project Type	Committed Funding Source				No Identified Funding Source			
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Coastal	Flood Protection	\$ 1,562	\$ 586	\$ 402	\$ 422	\$ 1,233	\$ 1,457	\$ 1,044	\$ 1,148
	Water Quality	\$ 693	\$ 234	\$ 99	\$ 107	\$ 651	\$ 1,407	\$ 988	\$ 906
	End of Useful Life	\$ 493	\$ 313	\$ 330	\$ 357	\$ 827	\$ 927	\$ 959	\$ 994
	Resiliency	\$ 1,388	\$ 236	\$ 116	\$ 119	\$ 1,824	\$ 1,159	\$ 1,069	\$ 1,547
Inland	Flood Protection	\$ 207	\$ 40	\$ 30	\$ 27	\$ 264	\$ 268	\$ 183	\$ 65
	Water Quality	\$ 138	\$ 95	\$ 94	\$ 29	\$ 326	\$ 125	\$ 94	\$ 64
	End of Useful Life	\$ 86	\$ 26	\$ 25	\$ 31	\$ 44	\$ 48	\$ 47	\$ 40
	Resiliency	\$ 32	\$ 5	\$ 3	\$ 0	\$ 44	\$ 19	\$ 21	\$ 6
Total		\$ 4,600	\$ 1,535	\$ 1,098	\$ 1,094	\$ 5,213	\$ 5,410	\$ 4,405	\$ 4,771

Geographic differences in priorities can be seen by comparing the percentage of expenditures for each project type between local governments in coastal and inland counties. This is shown in figure 5.1.2. Resiliency is clearly a higher concern for local governments within counties with a coastline than it is for inland counties, while water quality is a much larger concern within inland counties. Flood protection also takes a larger percentage of projected expenditures for inland counties, though that might be due to projects that fit within multiple project types (*e.g.*, a pump that will be used to manage stormwater during all severe rain events and normal rain events during high tides could be considered either flood protection or resiliency.)

Figure 5.1.2 Percent of Project Expenditures by County Location and Project Type



The next four figures show the projected expenditures by project type and funding source. Though most of the changes in the level of expenditures are spread out over dozens of projects being added or finished, there is one major exception in the resiliency projects with no identified funding source. The large jump in the last five-year increment in resiliency is due to only two project entries: one in St. Pete Beach to install 36 pump stations and a Monroe County sea level rise adaptation project budgeted for \$363 million. Particularly for the Monroe County project, it is important to keep in mind that local governments were encouraged to include projects aimed at problems stormwater administrators anticipate, with expenditures at the scale of what they expect to spend, even if exact details are unknown.

[See figures on following page]

Figure 5.1.3 Line Graph for No Identified Funding Source Projects in Coastal Counties (in \$millions)

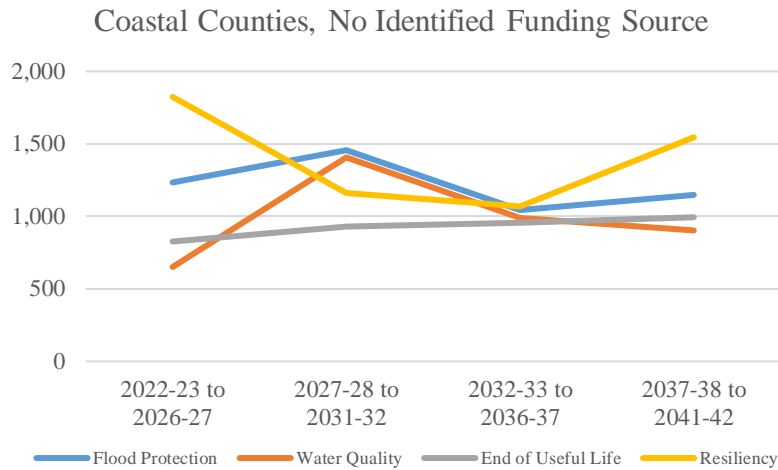


Figure 5.1.4 Line Graph for No Identified Funding Source Projects in Inland Counties (in \$millions)

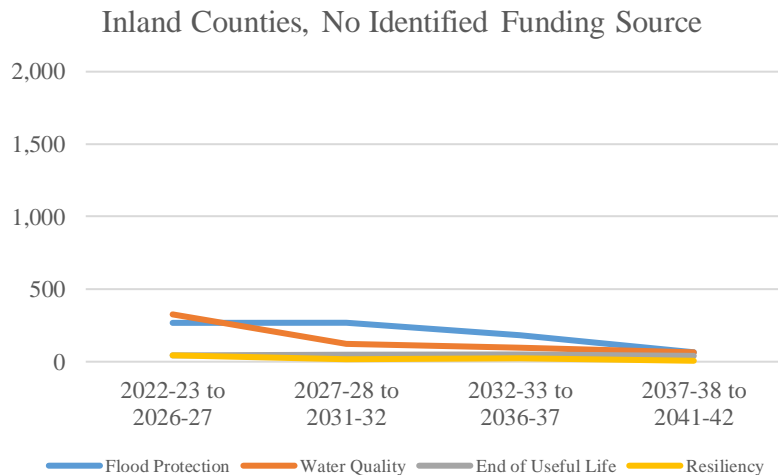


Figure 5.1.5 Line Graph for Committed Source Projects in Coastal Counties (in \$millions)

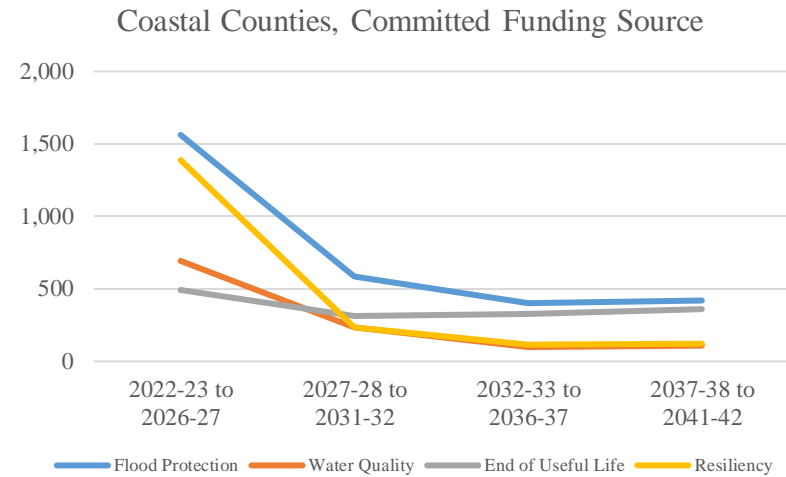
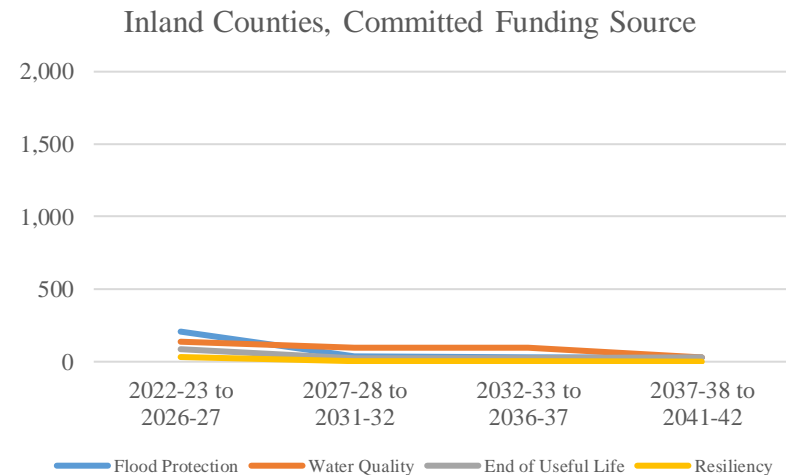


Figure 5.1.6 Line Graph for Committed Funding Source Projects in Inland Counties (in \$millions)



Examining projected expenditures by local government type, special districts expenditures are dwarfed by counties and municipalities, regardless of funding source or project type. Table 5.1.14, Special District Expenditures by Project Type and Funding Source (in \$millions), shows the projected expenditures by special districts for reported stormwater projects.

Table 5.1.14 Special District Expenditures by Project Type and Funding Source (in \$millions)

Project Type	Committed Funding Source				No Identified Funding Source			
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Flood Protection	\$ 89	\$ 29	\$ 1	\$ 1	\$ 62	\$ 9	\$ 11	\$ 14
Water Quality	\$ 15	\$ 11	\$ 8	\$ 10	\$ 45	\$ 16	\$ 18	\$ 17
End of Useful Life	\$ 72	\$ 60	\$ 73	\$ 81	\$ 32	\$ 28	\$ 29	\$ 34
Resiliency	\$ 1	\$ 0	\$ 0	\$ -	\$ 6	\$ 1	\$ 1	\$ -
Total	\$ 177	\$ 101	\$ 83	\$ 91	\$ 145	\$ 54	\$ 59	\$ 64

County and municipal committed funding source projects by county location and type are aggregated in table 5.1.15, while the same breakdown for no identified funding source expenditures is shown in table 5.1.16.

Table 5.1.15 Committed Funding Source County and Municipal Expenditures by County Location and Project Type (in \$millions)

Location	Project Type	Committed Funding Source				All Years
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal	Flood Protection	\$ 1,479	\$ 557	\$ 401	\$ 422	\$ 2,859
	Water Quality	\$ 679	\$ 223	\$ 91	\$ 98	\$ 1,090
	End of Useful Life	\$ 428	\$ 256	\$ 261	\$ 280	\$ 1,225
	Resiliency	\$ 1,387	\$ 236	\$ 115	\$ 119	\$ 1,858
Inland	Flood Protection	\$ 201	\$ 40	\$ 30	\$ 27	\$ 298
	Water Quality	\$ 137	\$ 95	\$ 94	\$ 29	\$ 355
	End of Useful Life	\$ 79	\$ 22	\$ 21	\$ 27	\$ 150
	Resiliency	\$ 32	\$ 5	\$ 3	\$ 0	\$ 40
Coastal Total		\$ 3,973	\$ 1,272	\$ 868	\$ 918	\$ 7,032
Inland Total		\$ 449	\$ 162	\$ 148	\$ 84	\$ 843
Total		\$ 4,422	\$ 1,434	\$ 1,016	\$ 1,003	\$ 7,875

Table 5.1.16 No Identified Funding Source County and Municipal Expenditures by County Location and Project Type (in \$millions)

Location	Project Type	No Identified Funding Source				All Years
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal	Flood Protection	\$ 1,185	\$ 1,448	\$ 1,033	\$ 1,135	\$ 4,801
	Water Quality	\$ 607	\$ 1,391	\$ 970	\$ 888	\$ 3,856
	End of Useful Life	\$ 795	\$ 900	\$ 930	\$ 960	\$ 3,585
	Resiliency	\$ 1,818	\$ 1,158	\$ 1,068	\$ 1,547	\$ 5,590
Inland	Flood Protection	\$ 250	\$ 267	\$ 183	\$ 65	\$ 765
	Water Quality	\$ 326	\$ 125	\$ 94	\$ 64	\$ 610
	End of Useful Life	\$ 44	\$ 48	\$ 47	\$ 40	\$ 179
	Resiliency	\$ 44	\$ 19	\$ 21	\$ 6	\$ 90
Coastal Total		\$ 4,404	\$ 4,897	\$ 4,001	\$ 4,531	\$ 17,833
Inland Total		\$ 664	\$ 459	\$ 345	\$ 175	\$ 1,644
Total		\$ 5,069	\$ 5,356	\$ 4,346	\$ 4,706	\$ 19,477

Finally, table 5.1.17, County-Level Project Expenditures for All Government and Project Types (in \$thousands) includes county, municipal, and district estimates aggregated at the county level. In addition to the expenditure estimates (both with committed funding sources and no identified funding source), the table also includes a count of projects (with reported values) and a note of which project type had the highest total expenditure estimate in each county. Counties that are entirely missing from the table had either no local governments that submitted information or the information that they submitted could not be incorporated. Note that the data is presented in thousands of dollars, not millions, in this table.

[See table on following page]

Table 5.1.17 County-Level Project Expenditures for All Government and Project Types (in \$thousands)

County	Committed Funding Source				No Identified Funding Source				Project Count	Largest Project Type
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42		
Alachua	\$ 10,607	\$ 6,024	\$ 5,379	\$ 5,379	\$ 19,352	\$ 12,701	\$ 14,751	\$ 2,551	46	Water Quality
Bay	\$ 80,678	\$ 500	\$ 500	\$ 500	\$ 58,458	\$ 87,021	\$ 91,021	\$ 96,021	47	Water Quality
Brevard	\$ 48,815	\$ 21,000	\$ 14,944	\$ 23,097	\$ 87,906	\$ 55,993	\$ 48,217	\$ 46,246	257	Water Quality
Broward	\$ 280,054	\$ 81,676	\$ 56,317	\$ 57,064	\$ 441,993	\$ 271,414	\$ 179,748	\$ 144,082	518	Flood Protection
Charlotte	\$ 6,069	\$ 75	\$ 75	\$ 75	\$ 5,349	\$ 15	\$ 15	\$ 10	11	End of Useful Life
Citrus	\$ 11,900	\$ 1,250	\$ 1,250	\$ 1,250	\$ 64,065	\$ 66,622	\$ 43,203	\$ 43,856	35	Flood Protection
Clay	\$ 5,243	\$ 87	\$ 117	\$ 147	\$ -	\$ -	\$ -	\$ -	10	Flood Protection
Collier	\$ 329,538	\$ 10,311	\$ 7,387	\$ 8,317	\$ 13,213	\$ 103,130	\$ 68,788	\$ 30,952	69	Flood Protection
Columbia	\$ 11,138	\$ -	\$ -	\$ -	\$ 4,850	\$ 9,000	\$ 6,250	\$ 4,500	13	Water Quality
DeSoto	\$ 3,263	\$ 263	\$ 263	\$ 263	\$ 5,500	\$ -	\$ -	\$ -	4	Resiliency
Duval	\$ 331,587	\$ 72,414	\$ 50,860	\$ 51,003	\$ 354,716	\$ 1,086,971	\$ 1,094,401	\$ 1,299,471	89	Water Quality
Escambia	\$ 31,647	\$ 2,100	\$ -	\$ -	\$ 190,323	\$ 89,666	\$ 93,152	\$ 143,955	247	Flood Protection
Flagler	\$ 18,377	\$ 7,320	\$ 6,988	\$ 7,289	\$ 36,489	\$ 11,451	\$ 12,298	\$ 13,219	26	End of Useful Life
Gadsden	\$ 875	\$ 1,500	\$ -	\$ -	\$ 3,380	\$ 750	\$ -	\$ -	12	Resiliency
Glades	\$ 113	\$ 114	\$ 116	\$ 118	\$ -	\$ -	\$ -	\$ -	2	End of Useful Life
Hardee	\$ -	\$ -	\$ -	\$ -	\$ 333	\$ 346	\$ 360	\$ 374	1	End of Useful Life
Hendry	\$ 5,642	\$ 1,250	\$ 1,250	\$ 1,250	\$ 5,454	\$ 3,742	\$ 5,211	\$ 3,014	31	End of Useful Life
Hernando	\$ 9,762	\$ 1,289	\$ 1,495	\$ 1,733	\$ 400	\$ 10,713	\$ 7,700	\$ 6,400	36	Flood Protection
Highlands	\$ 15,470	\$ 6,165	\$ 1,225	\$ 1,270	\$ 9,950	\$ 15,900	\$ 15,000	\$ 5,000	11	Flood Protection
Hillsborough	\$ 271,952	\$ 170,293	\$ 100,003	\$ 101,854	\$ 364,994	\$ 425,571	\$ 487,349	\$ 486,874	72	End of Useful Life
Indian River	\$ 20,190	\$ 3,920	\$ 4,542	\$ 4,864	\$ 135,126	\$ 172,637	\$ 170,163	\$ 71,302	72	Water Quality
Lake	\$ 20,711	\$ 7,744	\$ 8,546	\$ 9,467	\$ 43,345	\$ 47,751	\$ 35,046	\$ 27,828	113	Water Quality
Lee	\$ 286,511	\$ 218,081	\$ 231,645	\$ 233,209	\$ 151,617	\$ 105,513	\$ 69,420	\$ 62,210	160	Flood Protection
Leon	\$ 49,069	\$ 23,000	\$ 22,997	\$ 23,003	\$ 24,592	\$ 106,112	\$ 121,300	\$ 2,812	26	Flood Protection
Levy	\$ 913	\$ -	\$ -	\$ -	\$ 2,407	\$ 1,535	\$ 1,729	\$ 1,947	8	Flood Protection
Liberty	\$ 800	\$ -	\$ -	\$ -	\$ 1,300	\$ -	\$ -	\$ -	3	Flood Protection

County	Committed Funding Source				No Identified Funding Source				Project Count	Largest Project Type
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42		
Manatee	\$ 9,802	\$ 3,899	\$ 3,890	\$ 5,008	\$ 229,255	\$ 6,570	\$ 9,696	\$ 103,365	215	Flood Protection
Marion	\$ 15,947	\$ -	\$ -	\$ -	\$ 8,528	\$ 9,713	\$ 9,504	\$ 14,466	42	Flood Protection
Martin	\$ 40,010	\$ 65	\$ -	\$ 65	\$ 66,943	\$ 106,030	\$ 69,707	\$ 62,731	123	Water Quality
Miami-Dade	\$ 1,232,565	\$ 294,905	\$ 150,221	\$ 158,699	\$ 593,061	\$ 1,040,407	\$ 534,302	\$ 500,336	409	Resiliency
Monroe	\$ 34,222	\$ -	\$ -	\$ -	\$ 991,207	\$ 250,131	\$ 221,284	\$ 432,959	39	Resiliency
Nassau	\$ 12,291	\$ 7,105	\$ 7,172	\$ 7,507	\$ 19,260	\$ 9,380	\$ 7,240	\$ 7,740	28	Flood Protection
Okaloosa	\$ 28,025	\$ 5,200	\$ 11	\$ -	\$ 18,412	\$ 27,838	\$ 30,048	\$ 26,043	83	Flood Protection
Okeechobee	\$ 2,134	\$ -	\$ -	\$ -	\$ 5,586	\$ 30,591	\$ -	\$ -	16	Flood Protection
Orange	\$ 116,047	\$ 82,834	\$ 86,992	\$ 27,075	\$ 261,489	\$ 87,468	\$ 84,981	\$ 67,835	199	Water Quality
Osceola	\$ 4,381	\$ -	\$ -	\$ -	\$ 64,329	\$ 8,929	\$ -	\$ -	41	Flood Protection
Palm Beach	\$ 198,029	\$ 63,631	\$ 70,760	\$ 75,035	\$ 74,085	\$ 124,391	\$ 180,789	\$ 180,818	300	Flood Protection
Pasco	\$ 60,136	\$ 60,413	\$ 68,234	\$ 78,937	\$ 500	\$ 18,015	\$ 2,575	\$ 5,800	83	Flood Protection
Pinellas	\$ 334,698	\$ 172,480	\$ 69,653	\$ 79,273	\$ 105,970	\$ 240,256	\$ 198,792	\$ 402,293	480	Flood Protection
Polk	\$ 122,488	\$ 14,349	\$ 4,629	\$ 2,671	\$ 144,723	\$ 68,545	\$ 12,700	\$ 4,652	170	Flood Protection
Santa Rosa	\$ 54,683	\$ -	\$ -	\$ -	\$ 22,845	\$ 44,035	\$ 44,965	\$ 44,365	82	Flood Protection
Sarasota	\$ 53,044	\$ 29,105	\$ 19,976	\$ 23,553	\$ 146,167	\$ 196,674	\$ 98,800	\$ 75,534	135	Water Quality
Seminole	\$ 67,542	\$ 22,117	\$ 19,905	\$ 17,352	\$ 60,387	\$ 57,114	\$ 38,997	\$ 41,118	206	Flood Protection
St Johns	\$ 135,234	\$ 25,156	\$ 29,303	\$ 34,470	\$ 23,545	\$ 78,501	\$ 46,004	\$ 81,545	190	Flood Protection
St Lucie	\$ 63,990	\$ 100,723	\$ 44,705	\$ 45,527	\$ 90,064	\$ 97,903	\$ 32,036	\$ 29,365	243	End of Useful Life
Sumter	\$ 12,081	\$ -	\$ -	\$ -	\$ 15,307	\$ 1,500	\$ 1,500	\$ 1,500	17	Flood Protection
Taylor	\$ 4,000	\$ -	\$ -	\$ -	\$ 145	\$ -	\$ -	\$ -	6	Flood Protection
Volusia	\$ 121,240	\$ 13,059	\$ 6,946	\$ 7,323	\$ 239,625	\$ 218,716	\$ 213,735	\$ 192,720	229	Flood Protection
Walton	\$ 26,392	\$ 3,568	\$ -	\$ -	\$ 6,580	\$ 2,400	\$ 2,400	\$ 2,805	24	Resiliency
Total	\$ 4,599,904	\$ 1,534,986	\$ 1,098,296	\$ 1,093,648	\$ 5,213,123	\$ 5,409,659	\$ 4,405,176	\$ 4,770,612	5,279	

Like with O&M projections, the county and municipal expenditures can be estimated for non-responding local governments by accounting for the population of those jurisdictions. Because independent special districts provide specialized services and their populations are so difficult to estimate, EDR’s full population expenditure estimate does not address non-responding district expenditures. For all years, the total project expenditure estimate is \$29.65 billion.

Table 5.1.18 Project Expenditure Projections, Reported and Total Population (in \$millions)

Local Government Type	All Reported Project Expenditures				Reported Value Multiplication Factor
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 3,917	\$ 3,148	\$ 2,756	\$ 3,187	100.87%
Inland Counties	\$ 608	\$ 354	\$ 292	\$ 51	108.40%
Coastal Municipalities	\$ 4,461	\$ 3,021	\$ 2,112	\$ 2,262	109.07%
Inland Municipalities	\$ 505	\$ 267	\$ 201	\$ 209	119.06%
Districts (All)	\$ 322	\$ 154	\$ 142	\$ 156	None
Statewide	\$ 9,813	\$ 6,945	\$ 5,503	\$ 5,864	

Local Government Type	All Project Expenditures (Full Population)				All Years
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 3,951	\$ 3,175	\$ 2,780	\$ 3,215	\$ 13,121
Inland Counties	\$ 659	\$ 384	\$ 317	\$ 55	\$ 1,416
Coastal Municipalities	\$ 4,866	\$ 3,295	\$ 2,304	\$ 2,467	\$ 12,933
Inland Municipalities	\$ 601	\$ 318	\$ 239	\$ 248	\$ 1,407
Districts (All)	\$ 322	\$ 154	\$ 142	\$ 156	\$ 774
Statewide	\$ 10,399	\$ 7,327	\$ 5,782	\$ 6,141	\$ 29,649

The final section of the template focused on the funding gap calculated from projects with no identified funding source. Local governments were asked to list strategies and estimate additional revenues from those strategies. Table 5.1.19, Strategies to Close Funding Gaps (in \$millions), contains the aggregated revenues local governments hope to raise, grouped in types assigned by EDR based on the strategy description. While separately identified from other state and federal funding, the potential revenues identified as “Grants” may also originate from state or federal sources.

Table 5.1.19 Strategies to Close Funding Gaps (in \$millions)

	Strategy Type (based on description)	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
Grants & Debt	Grants	\$ 117	\$ 126	\$ 135	\$ 131	\$ 509
	Debt	\$ 173	\$ 71	\$ 41	\$ 7	\$ 292
	Grants and/or Debt	\$ 29	\$ 24	\$ 19	\$ 13	\$ 84
	Cost Shares	\$ 4	\$ 9	\$ 7	\$ 9	\$ 29
Governmental Funding	Legislative Appropriations	\$ 7	\$ 12	\$ 7	\$ 8	\$ 33
	State or Federal (Non-Grant) Funding	\$ 18	\$ 43	\$ 42	\$ 42	\$ 145
Local Funding Sources	Local Government Funding	\$ 12	\$ 19	\$ 48	\$ 33	\$ 113
	Discretionary Sales Tax	\$ 33	\$ 8	\$ 8	\$ 9	\$ 58
	Assessments*	\$ 13	\$ 13	\$ 8	\$ 8	\$ 43
	Fees or Stormwater Rate Increases*	\$ 11	\$ 19	\$ 27	\$ 38	\$ 94
	Utility*	\$ 8	\$ 10	\$ 10	\$ 10	\$ 37
	Development Agreement**	\$ 0	\$ -	\$ -	\$ -	\$ 0
Other	Multiple or Unknown Types***	\$ 134	\$ 97	\$ 122	\$ 122	\$ 476
Strategy Totals		\$ 558	\$ 450	\$ 477	\$ 430	\$ 1,915

* The Utility category includes strategies with the names “Stormwater Utility” or “Potential Stormwater Utility.” Many of the Assessments or Fees or Stormwater Rate Increases strategy descriptions mention an existing stormwater utility, but specify an assessment, fee, or rate increase.

** Zero indicates revenues that round to less than \$1 million, while “\$ -” indicates no revenues at all.

*** Strategies assigned the Unknown label have vague descriptions (“Vulnerability,” “Future Project Funding,” *e.g.*). Strategies with multiple types list two or more types, for example “Requesting future state and federal grants and appropriations as opportunities become available, and planned increases in Stormwater Utility Fees as needed to cover gaps.”

All told, approximately ten percent of the reported funding gap (among all jurisdictions) is erased by the estimated revenues raised by the strategies, with over a quarter of these additional revenues covered by grant funding (at minimum, as possible grant funding also accounts for some of the strategies with multiple types and at least some of the Grants and/or Debt type).

Not all jurisdictions that reported future expenditures with no identified funding source were able to list strategies and estimate revenues to close that funding gap. As mentioned in the template overview, there were problems in EDR’s template that, depending on how the data was entered, may have caused errors in the total funding gap formula and the value that was displayed underreported the funding gap. Some local governments listed enough strategies to cover the gap that was shown on their template, but which would not fully cover the actual aggregated expenditures with no identified funding source. Additionally, while the employees filling out these templates are experts in the needs of their jurisdictions, they may not be experts (or may not be comfortable) strategizing about new revenue sources in a report for the legislature.

There were 266 jurisdictions with projects and expenditures that had no identified funding source, and 111 jurisdictions that reported strategies and revenues to close a funding gap. Of particular interest, four of the jurisdictions with strategies to raise new revenues did not report any project expenditures with no identified funding source. Among the 107 jurisdictions that reported both a

funding gap (by reporting projects with no identified funding source) and listed at least one strategy to close that gap, approximately one-third of local governments completely closed their funding gaps with the additional estimated revenues. Table 5.1.20, Funding Gap and Strategies (in \$millions), shows the aggregated gaps and strategies for all jurisdictions (“All Local Governments”) as well as for that subset of local governments that reported both expenditures with no identified funding source and strategies to raise new revenues to close that funding gap (“Local Governments with Gap & Strategy”). As demonstrated in this table, many local governments identified funding gaps but suggested no new revenues to close them.

Table 5.1.20 Funding Gap and Strategies (in \$millions)

		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
All Local Governments	Funding Gap	\$ 5,213	\$ 5,410	\$ 4,405	\$ 4,771	\$ 19,799
	Strategies to Close Gap	\$ 558	\$ 450	\$ 477	\$ 430	\$ 1,915
	Percent of Gap Closed	11%	8%	11%	9%	10%
<hr/>						
Local Governments with Gap & Strategy	Funding Gap	\$ 999	\$ 1,507	\$ 1,015	\$ 1,002	\$ 4,524
	Strategies to Close Gap	\$ 557	\$ 450	\$ 476	\$ 429	\$ 1,912
	Percent of Gap Closed	56%	30%	47%	43%	42%

Stormwater Conclusion

In the next 20 years, Florida’s local governments will face a monumental challenge in managing stormwater. This endeavor will require increased and longer-term planning and huge amounts of cooperation between governments at the local, regional, and state level. Even with the relatively short-term planning ability that many local governments have today, local governments that submitted stormwater management needs analyses will need \$34.48 billion for O&M and \$28.13 for project expenditures over the next 20 years. Table 5.1.21, All Expenditures, Reported and Total Population (in \$millions), adjusts those needs for Florida’s full population, showing an estimated total of \$66.68 billion will be needed.⁸ While there is a significant portion of that sum that has no identified funding source, local governments have already begun planning how to close that funding gap.

⁸ This is a 6.5 percent increase over the submitted expenditure projections. Non-responding counties and municipalities were often low population areas, including 18 fiscally constrained counties.

Table 5.1.21 All Expenditures, Reported and Total Population (in \$millions)

Local Government Type	Total Reported Expenditure Projections				Reported Value Multiplication Factor
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 5,164	\$ 4,505	\$ 4,295	\$ 4,879	100.87%
Inland Counties	\$ 752	\$ 516	\$ 468	\$ 245	108.40%
Coastal Municipalities	\$ 9,044	\$ 8,254	\$ 8,089	\$ 8,897	109.07%
Inland Municipalities	\$ 950	\$ 766	\$ 766	\$ 826	119.06%
Districts (All)	\$ 1,059	\$ 960	\$ 1,032	\$ 1,141	None
Statewide	\$ 16,969	\$ 15,001	\$ 14,650	\$ 15,989	

Local Government Type	Total Expenditure Projections (Full Population)				All Years
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	
Coastal Counties	\$ 5,209	\$ 4,544	\$ 4,333	\$ 4,922	\$ 19,008
Inland Counties	\$ 815	\$ 560	\$ 507	\$ 266	\$ 2,148
Coastal Municipalities	\$ 9,864	\$ 9,003	\$ 8,823	\$ 9,705	\$ 37,395
Inland Municipalities	\$ 1,132	\$ 912	\$ 911	\$ 984	\$ 3,938
Districts (All)	\$ 1,059	\$ 960	\$ 1,032	\$ 1,141	\$ 4,192
Statewide	\$ 18,078	\$ 15,979	\$ 15,607	\$ 17,017	\$ 66,681

Asking local governments to create a 20-year needs analysis for their stormwater management programs kicked off a monumental effort from Florida’s counties, municipalities, and special districts. Their willingness to work with EDR is much appreciated, and their professional judgement of future needs presents a statewide picture that is far more comprehensive and detailed than previously available to policymakers, reaching out to near the midcentury.

5.2 Wastewater Services 20-Year Needs Analysis

Like with stormwater, the only existing statewide 20-year needs analysis for wastewater is the EPA’s Clean Watersheds Needs Survey (CWNS). The most recently completed survey, from 2012, estimated approximately \$18 billion for various aspects of wastewater services, as well as \$5.5 billion needed for decentralized wastewater treatment systems.⁹ Using the reports submitted by local governments, EDR’s 20-year needs analysis includes \$62.5 billion in wastewater utility expenditures for projects, as well as \$76.4 billion in O&M expenditures. An additional \$827 million is needed from customers for septic-to-sewer projects.

⁹ EPA, Clean Watersheds Needs Survey 2012, Florida database, <https://ordspub.epa.gov/ords/cwms2012/f?p=134:25:>. (Accessed January 2023.)

Table 5.2.1 Reported Wastewater Services Expenditure Projection Totals (in \$millions)

Expenditure Type	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	All Years
O&M	\$ 15,258	\$ 17,512	\$ 20,349	\$ 23,250	\$ 76,369
Capital Improvement*	\$ 23,194	\$ 12,957	\$ 15,627	\$ 10,720	\$ 62,498
Total	\$ 38,452	\$ 30,470	\$ 35,975	\$ 33,970	\$ 138,867

* Note: This is the estimated project expenditure total, including projects that have a committed funding source, those that have no identified funding source, and those with a blank funding source or project type.

Like the discussion of stormwater management, the wastewater services analysis will explain the template, provide an overview of submissions, compile inventory information, and develop expenditure estimates.

Wastewater Needs Analysis Template

EDR’s template for wastewater services was developed after publishing the stormwater needs analysis template, so it is structurally similar to the previously discussed stormwater template. Broadly, the template asks for local government information, location information, some overview data, inventory aggregates, population information, and expenditure data. In the introduction, EDR outlined “wastewater services” with the following guidance:

“For the purposes of this document, wastewater services are as defined in statute s. 403.9301(2)(d), F.S., to mean service to a sewerage system as defined in s. 403.031(9), F.S., or service to a domestic wastewater treatment facility. The ‘facility’ comprises the physical infrastructure, meaning ‘any equipment, structure, or other property, including sewerage systems and treatment works, used to provide wastewater services.’”

As with the stormwater management needs analysis template, EDR specified that private entities, the federal government, the state of Florida (including the Department of Transportation), school districts, state universities or colleges, and the five WMDs were excluded from reporting requirements. The actions, assets, and expenditures of any dependent districts were to be included in the needs analysis of that district’s governing authority. Additionally, local governments were asked to complete the analysis based on their needs under current rule and law.

One factor that makes wastewater services slightly more complicated than stormwater is that a utility can collect wastewater from customers and, as a wholesale customer of another utility, send it elsewhere for treatment. In addition to basic information on location, WMD, and DEP district, utilities were asked to specify whether they treated their own wastewater and which utility treated it if the respondent did not. Further, utilities were asked if they treated another utility’s wastewater and for the names of those wholesale customers. Utilities without treatment facilities were directed to skip the treatment questions in the inventory section. Unlike the stormwater template, wastewater utilities were asked for current and projected population and connection data. In lieu of service area maps, population information by jurisdiction was requested.

The statutory requirements for expenditure history and projections were identical, but there were two major differences between the stormwater and wastewater templates in how EDR organized the expenditure estimates. First is that local governments could only report a project in one project type. The stormwater management template allowed a project to be split over multiple project categories, but the wastewater template asked that each project only be listed in a single category. The second major difference is the industry-specific project categories for wastewater services. In addition to six categories, each category had a list of possible subcategories. The categories and subcategories were described as follows:¹⁰

1. **Effluent Management:** This includes capital projects intended for effluent management to meet regulatory and statutory mandates such as compliance with SB 64 from 2021 (s. 403.064(17), F.S.). For this category, the subcategory options refer to recent statutory requirements. If a project falls outside of those provisions and their accompanying regulations, “other” was to be selected. The statutory options are: s. 403.064(17), F.S. (surface water discharge elimination); s. 403.086(10), F.S. (ocean outfalls legislation); Clean Waterways Act; and the 2016 Springs and Aquifer Protection Act.
2. **Water Quality Projects:** This includes projects to meet regulatory requirements to improve water quality such as advanced wastewater treatment, surface water discharge, biosolids, etc. If a project addresses multiple governmental purposes (beyond those directly related to wastewater), the projected expenditures should reflect only those costs associated with the wastewater components. Projects may be associated with impaired waters or waters with total maximum daily loads (TMDLs), BMAPs, state adopted Restoration Plans, Alternative Restoration Plans, other statutory or regulatory requirements, or other local water quality needs. Subcategories for Water Quality include: advanced wastewater treatment, surface water discharge, biosolids, nutrient removal, and other.
3. **Reuse Development Projects:** This includes projects to improve or expand reuse as an alternative water supply, such as potable reuse projects, expansion of existing reuse systems, aquifer recharge, etc. If the project addresses multiple governmental purposes, the projected expenditures reflected only those costs associated with wastewater components. The respondents were directed to include O&M costs for these projects. Subcategories for Reuse Development include: alternative water supply, potable reuse, construction of new reuse systems, expansion of existing reuse systems, aquifer recharge, and other.
4. **Resiliency Initiatives Related To Climate Change:** This category includes initiatives or projects undertaken to avoid or minimize adverse effects of climate change. The respondents were directed to include O&M costs for these future resiliency projects. Further, if the jurisdiction participates in a Local Mitigation Strategy, expenditures associated with the wastewater management system were to be included in this category. Subcategories for Resiliency Initiatives refer to the primary motivation (*i.e.*, what the project is undertaken to avoid or minimize the effects of): sea-level rise, increased flood events, drought, increased inflow/infiltration, severe storm impact/mitigation, and other.
5. **End of Useful Life Replacement Projects:** Rather than reporting the exact number of useful years remaining for individual components, this section is constructed to focus on

¹⁰ These descriptions are excerpted from the template, paraphrased for readability. A copy of the template is reproduced in the Appendix. An Excel version of the template is available for download here: <http://edr.state.fl.us/Content/natural-resources/stormwaterwastewater.cfm>.

infrastructure components that are targeted for replacement and will be major expenses within the 20-year time horizon. Major replacements may include pipe networks, treatment units, pump stations, physical/biological filter media, biosolids dryers, etc. In order to distinguish between routine maintenance and replacement projects as used in this part, only major expenses are included here. A major expense is defined as any single replacement project greater than 5% of the jurisdiction's total O&M expenditures over the most recent five-year period (fiscal years 2016-2017 to 2020-2021). Subcategories refer to the part of the wastewater system being replaced: collection system (pipes), lift station or component, treatment facility, and other.

6. **Septic to Sewer Conversions:** This category includes septic to sewer initiatives. Unlike other parts of this needs analysis, this section distinguishes between the utility's direct expenses (e.g., for collection mains) and the projected infrastructure costs associated with new connections typically borne by customers. Additionally, a separate column was added to these tables to indicate the estimated number of new connections for each initiative.

After speaking with local governments, EDR further explained that the first two categories, Effluent Management and Water Quality Projects, are the two general categories where basic, business as usual, capital improvement projects could be grouped. The other categories were more specialized.

Wastewater Services Data Overview

There are 276 submissions included in EDR's 20-year wastewater services needs analysis. Only 40 submissions from independent special districts are included, though that is undoubtedly due to the fact that few districts run wastewater utilities. Of greater statistical importance, the overall analysis includes data from 200 municipalities and 36 counties. Though that is only 54 percent of Florida's counties, many counties do not have involvement with wastewater service. Indeed, according to the population data submitted, the 36 counties served 40 percent of the population reported in the 276 submissions.

Unlike the stormwater analysis, there is a currently insurmountable barrier to estimating statewide wastewater expenditures for non-responding jurisdictions. For large swaths of the state, there are no publicly owned wastewater services. According to the DEP, approximately 30 percent of Floridians rely on septic tanks to treat their wastewater, with about 2.6 million onsite sewer treatment and disposal systems in the state.¹¹ Even for areas served by wastewater utilities, the utility is not necessarily publicly owned. According to the 2022 Water and Wastewater Rates published by the Florida Public Utilities Commission (PSC), there were 107 private wastewater utilities in the 38 counties the PSC regulates.¹² None of these (nor the private utilities in the PSC's non-jurisdictional counties) are included in EDR's analysis. Thus, the missing portion of Florida's population is likely not served by publicly owned wastewater service providers. Table 5.2.2, Service Population and Total Population Comparison, shows the reported population served by

¹¹ DEP, General Facts and Statistics about Wastewater in Florida, 2022, <https://floridadep.gov/water/domestic-wastewater/content/general-facts-and-statistics-about-wastewater-florida>. (Accessed March 2023.)

¹² PSC, Water and Wastewater Rates as of December 31, 2022, <https://www.floridapsc.com/pscfiles/website-files/PDF/Utilities/WaterAndWastewater/WaterandWasteWaterRates.pdf>. (Accessed February 2023.)

the responding public wastewater utilities and Florida’s total 2022 population (less inmates) based on county location.¹³

Table 5.2.2 Service Population and Total Population Comparison

County Location	Reported Population Served	Total Population Estimate*	Missing Population
Inland	3,313,823	5,583,134	2,269,311
Coastal	13,052,877	16,592,997	3,540,120
Total	16,366,700	22,176,131	5,809,431

* April 1, 2022 Population Estimate (Less Inmates), EDR.

All of this makes the covered population projections more nuanced. The estimated 30 percent of Florida’s total population using septic tanks is larger than the “Missing Population” reported in these submissions and demonstrates that wastewater services are not uniformly provided throughout geographic areas even when publicly owned services are available.

Wastewater Programs and Inventory

Among the 276 submissions, 86 utilities reported that they collected wastewater, but did not treat it. Slightly fewer utilities reported having wholesale treatment customers, as some of those listed multiple wholesale customers. Table 5.2.3, Collection & Treatment Utility Counts by Government Type, shows the number of responses for these questions. The priorities and expenditures for jurisdictions that only collect wastewater are vastly different than those that treat wastewater as well.

Table 5.2.3 Collection & Treatment Utility Counts by Government Type

Government Type	Collect & Treat		Serve Wholesale Customers	
	Yes	No	Yes	No
County	35	1	13	23
Municipality	132	68	34	166
District	23	17	5	35
Total	190	86	52	224

Among the 190 utilities that treat wastewater, there are 370 treatment facilities in operation. Ten additional facilities are under construction. Across the state, these wastewater treatment facilities have a total design capacity of 3,763.52 MGD. Because treatment facilities are designed to be able to handle more than the permitted or actual average daily flow of wastewater, the total permitted

¹³ EDR, April 1, 2022 Estimate (Population Estimates Less Inmates), <http://edr.state.fl.us/Content/population-demographics/data/index-floridaproducts.cfm>.

average daily flow was 3,303.47 MGD, or 88 percent of the design capacity. The actual average daily flow of 1,820.35 MGD is well within the permitted capacity. These numbers do not mean that the current treatment capacity is necessarily enough. These averages are annual, so in areas with a large non-permanent population the average daily flow during peak tourist seasons could be much higher. Additionally, as more and more utilities pursue septic-to-sewer conversion projects, the volume of wastewater needing treatment will rise, even if a utility’s service area or a jurisdiction’s population stays stable.

Regarding best management practices (BMPs), the majority of local governments reported engaging in at least some “green” practices. Table 5.2.4, Green BMPs, contains the count of submissions that reported currently engaging in a particular practice, and the count of local governments that do not currently engage in that practice but planned to do so within the next 20 years. Among these BMPs, a handful of jurisdictions currently engage in a practice but do not plan to continue. Though cost may be the driving factor for one or more of these (e.g., cost of maintaining a reclaimed water distribution system), other concerns such as water quality, ending a pilot program, or just realigned priorities may be the reasoning behind ending a practice.

Table 5.2.4 Green BMPs

Green Infrastructure Best Management Practice*	Currently in Use	Planned (Not currently in use)		Currently in Use, but Plan to Stop**	
		Yes	No or Blank	Yes	No
Answer Description:	Currently In Use	Yes	No or Blank	Yes	No
	Planned	(any response)	Yes	No	No
Lining		205	15	5	34
Co-generation (energy)		10	8	2	205
Reuse of reclaimed water		166	21	5	67
Hydrogen sulfide recovery/use		9	2	2	208
Beneficial use of biosolids		89	21	8	131

* Local governments may have left a question blank, so totals do not add up to 276.

** Local government answered “Yes” to Current and “No” to Planned. Jurisdictions are also counted in the “Currently in Use” column.

Local governments reported nearly seventy-five thousand miles of wastewater collection mains, with over fifty thousand lift stations and 1.1 million manholes. The following two tables are categorized by DEP district, as opposed to county location (inland/coastal).¹⁴ Table 5.2.5, Collection System Assets, shows the total number of utility- and privately-owned lift stations that are connected to the collection systems, as well as manholes and valves.

¹⁴ The Northwest District contains Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, and Washington counties. The Northeast District contains Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor and Union counties. The Central District contains Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter and Volusia counties. The Southwest District contains Citrus, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas and Polk counties. The Southeast District contains Broward, Dade, Indian River, Martin, Monroe, Okeechobee, Palm Beach, and St. Lucie counties. The South District contains Charlotte, Collier, DeSoto, Glades, Hendry, Highlands, Lee, and Sarasota counties.

Table 5.2.5 Collection System Assets

District	Lift Stations		Manholes	Valves
	Utility Owned	Privately Owned		
Northeast District	3,156	4,073	130,970	21,407
Northwest District	1,453	1,963	66,574	7,781
Central District	5,601	3,496	218,892	15,058
Southeast District	7,245	3,071	324,090	43,545
South District	6,533	2,640	113,908	19,091
Southwest District	5,641	5,888	253,352	29,337
Multiple Districts	143	0	1,624	97
Statewide	29,772	21,131	1,109,410	136,315

Table 5.2.6, Wastewater Mains, contains the linear feet of gravity mains and force mains reported. Though not all local governments reported the linear feet of their collection mains, four jurisdictions reported owning no gravity mains at all, favoring or only using force mains. Depending on the local topography and size of the service area, gravity mains can be more expensive than low pressure force mains or a vacuum system.

Table 5.2.6 Wastewater Mains

District	Linear Feet of WW Mains			Miles
	Gravity Mains	Force Mains	Total	Total
Northeast District	27,713,138	13,168,017	40,881,155	7,743
Northwest District	15,762,252	6,095,674	21,857,926	4,140
Central District	49,752,583	19,365,266	69,117,849	13,091
Southeast District	69,376,032	25,769,913	95,145,945	18,020
South District	27,982,261	13,841,319	41,823,580	7,921
Southwest District	102,897,014	20,823,463	123,720,477	23,432
Multiple Districts	247,078	140,048	387,126	73
Statewide	293,730,358	99,203,701	392,934,059	74,419

Compared to the stormwater template, the wastewater template asked fewer questions about the programmatic side of wastewater services. This is largely due to the fact that the wastewater industry has long been more engaged in long-term planning and outcome-driven business processes. Thus, EDR did not ask wastewater utilities for their institutional strategies or how many wastewater utilities have asset management systems. In lieu of an institutional strategy word cloud, Figure 5.2.1 contains a word cloud based on the most common words used in the names of wastewater projects. Regarding administrative activities and resources used in completing the inventory section of the template, 44% of respondents reported relying their asset management system data to answer the questions, and 75% of respondents reported using GIS data. Nearly two-thirds used budget data, while approximately a quarter used aerial photos or water quality project documentation.

As noted in the previous section, the wastewater projections will not be expanded into a statewide estimate by population. Because a significant number of residents use onsite sewage treatment and disposal systems (*i.e.*, septic tanks), and there are some private wastewater utilities, not every county, municipality, or special district provides wastewater services.

In addition to O&M costs, the other major category of future expenditures is capital improvement, which in EDR’s template was referred to as expansion. Table 5.2.8, Reported Expenditures by Project Type and Funding Source (in \$millions), shows projected local government expenditures for the six project types for projects with a committed funding source and for those with no identified funding source.

Table 5.2.8 Reported Expenditures by Project Type and Funding Source (in \$millions)

Project Type	Committed Funding Source				No Identified Funding Source			
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Effluent Management	\$ 2,653	\$ 779	\$ 546	\$ 449	\$ 973	\$ 2,359	\$ 1,383	\$ 934
Water Quality	\$ 3,660	\$ 631	\$ 662	\$ 248	\$ 796	\$ 845	\$ 779	\$ 426
Resiliency	\$ 2,033	\$ 452	\$ 286	\$ 342	\$ 448	\$ 337	\$ 1,765	\$ 501
Reuse Development	\$ 1,272	\$ 527	\$ 374	\$ 282	\$ 404	\$ 368	\$ 467	\$ 362
End of Useful Life Replacement	\$ 6,399	\$ 3,106	\$ 2,679	\$ 2,911	\$ 1,401	\$ 1,493	\$ 4,550	\$ 2,543
Septic to Sewer Conversions	\$ 1,530	\$ 314	\$ 248	\$ 202	\$ 1,582	\$ 1,717	\$ 1,887	\$ 1,519
Total*	\$ 17,548	\$ 5,809	\$ 4,795	\$ 4,434	\$ 5,605	\$ 7,118	\$ 10,831	\$ 6,285

Project Type	Committed + No Identified Funding Sources				Total & Percentage	
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	Total	Project Type Percentage
					(All Years)	
Effluent Management	\$ 3,627	\$ 3,138	\$ 1,928	\$ 1,383	\$ 10,077	16%
Water Quality	\$ 4,456	\$ 1,476	\$ 1,441	\$ 674	\$ 8,046	13%
Resiliency	\$ 2,481	\$ 788	\$ 2,051	\$ 843	\$ 6,163	10%
Reuse Development	\$ 1,676	\$ 895	\$ 841	\$ 644	\$ 4,056	6%
End of Useful Life Replacement	\$ 7,801	\$ 4,599	\$ 7,229	\$ 5,454	\$ 25,083	40%
Septic to Sewer Conversions	\$ 3,112	\$ 2,031	\$ 2,136	\$ 1,721	\$ 9,000	14%
Total*	\$ 23,152	\$ 12,927	\$ 15,626	\$ 10,719	\$ 62,424	100%

* These values do not include projects not assigned one of the six main project types or the two funding sources. Projects with a funding source of customer expenditures, blank, or other have also been excluded from this table.

A major difference between the stormwater projections and the wastewater data is the fact that a (slight) majority of the wastewater project expenditures has a committed funding source, as seen in table 5.2.9, Funding Source by Project Type. This is heavily front loaded (*i.e.*, the near-term project expenditures tend to have a committed funding source), but still significant. As an industry, wastewater services are much more likely to engage in long-term planning than stormwater management, so this is expected.

Table 5.2.9 Funding Source by Project Type

Project Type	Committed Funding Source	No Identified Funding Source
Effluent Management	44%	56%
Water Quality	65%	35%
Resiliency	51%	49%
Reuse Development	61%	39%
End of Useful Life Replacement	60%	40%
Septic to Sewer Conversions	25%	75%
Total	52%	48%

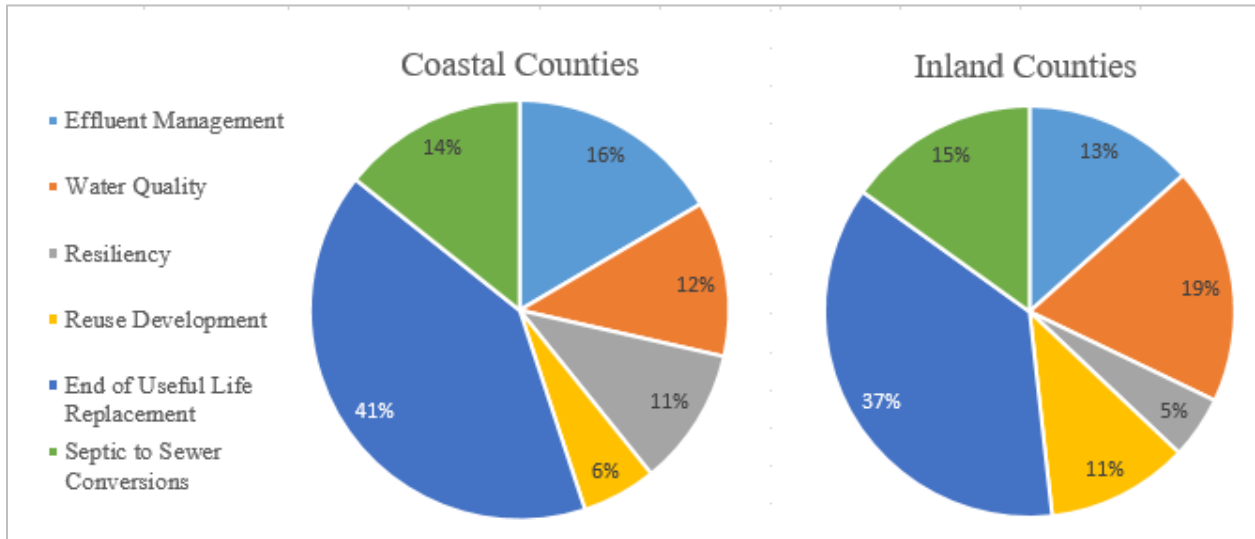
Table 5.2.10 and Figure 5.2.2 divide these projected expenditures by county location. Any local government that reported through a county with any coastline is included in the Coastal group, with the remaining local governments considered Inland. (Coastal includes municipalities in coastal counties even if the municipality is itself landlocked.)

Table 5.2.10 Reported Inland and Coastal Project Expenditures by Funding Source and Project Type (in \$millions)

County Location	Project Type	Committed Funding Source				No Identified Funding Source			
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Coastal	Effluent Management	\$ 2,309	\$ 644	\$ 456	\$ 403	\$ 842	\$ 2,227	\$ 1,274	\$ 770
	Water Quality	\$ 2,924	\$ 468	\$ 467	\$ 118	\$ 739	\$ 746	\$ 624	\$ 361
	Resiliency	\$ 1,953	\$ 416	\$ 243	\$ 294	\$ 340	\$ 303	\$ 1,729	\$ 462
	Reuse Development	\$ 915	\$ 448	\$ 230	\$ 210	\$ 344	\$ 331	\$ 383	\$ 233
	End of Useful Life Replacement	\$ 5,483	\$ 2,605	\$ 2,216	\$ 2,360	\$ 1,245	\$ 1,249	\$ 4,405	\$ 2,378
	Septic to Sewer Conversions	\$ 1,232	\$ 163	\$ 134	\$ 114	\$ 1,401	\$ 1,524	\$ 1,706	\$ 1,432
	Coastal Total*	\$ 14,816	\$ 4,744	\$ 3,745	\$ 3,498	\$ 4,911	\$ 6,380	\$10,121	\$ 5,636
Inland	Effluent Management	\$ 344	\$ 136	\$ 89	\$ 47	\$ 132	\$ 132	\$ 109	\$ 163
	Water Quality	\$ 736	\$ 163	\$ 195	\$ 130	\$ 57	\$ 99	\$ 155	\$ 65
	Resiliency	\$ 80	\$ 36	\$ 43	\$ 48	\$ 108	\$ 33	\$ 35	\$ 39
	Reuse Development	\$ 357	\$ 79	\$ 144	\$ 72	\$ 60	\$ 37	\$ 84	\$ 128
	End of Useful Life Replacement	\$ 916	\$ 501	\$ 464	\$ 551	\$ 156	\$ 244	\$ 146	\$ 166
	Septic to Sewer Conversions	\$ 298	\$ 151	\$ 115	\$ 88	\$ 181	\$ 193	\$ 181	\$ 87
	Inland Total*	\$ 2,732	\$ 1,065	\$ 1,050	\$ 936	\$ 694	\$ 738	\$ 710	\$ 649

* These values do not include projects not assigned one of the six main project types or the two funding sources. Projects with a funding source of customer expenditures, blank, or other have also been excluded from this table.

Figure 5.2.2 Percent of Project Expenditures by County Location and Project Type



The next four figures contain line graphs for Coastal and Inland expenditures by funding source and project type. Throughout, the coastal expenditures dwarf inland projections, but they are not proportional over time periods. End of Useful Life expenditures are by far the largest project type for both county types. There are a handful of projects driving the large coastal increase in expenditures with no identified funding source in the 2032-33 to 2036-37 time period, largely in Miami-Dade County. The Miami-Dade Water and Sewer District reported four End of Useful Life projects beginning in that five-year period with projected expenditures totaling \$2.37 billion.

[See figures on following page.]

Figure 5.2.3 Line Graph for No Identified Funding Source Projects in Coastal Counties (in \$millions)

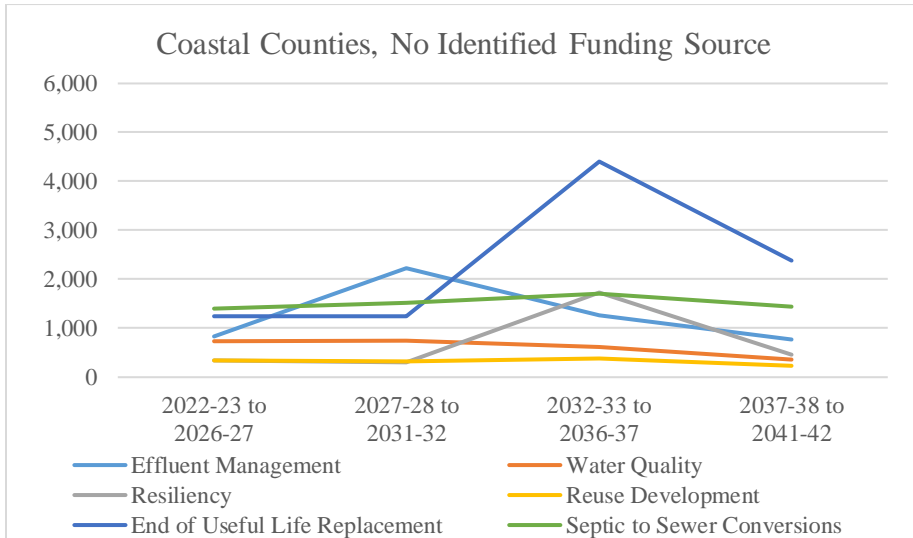


Figure 5.2.4 Line Graph for No Identified Funding Source Projects in Inland Counties (in \$millions)

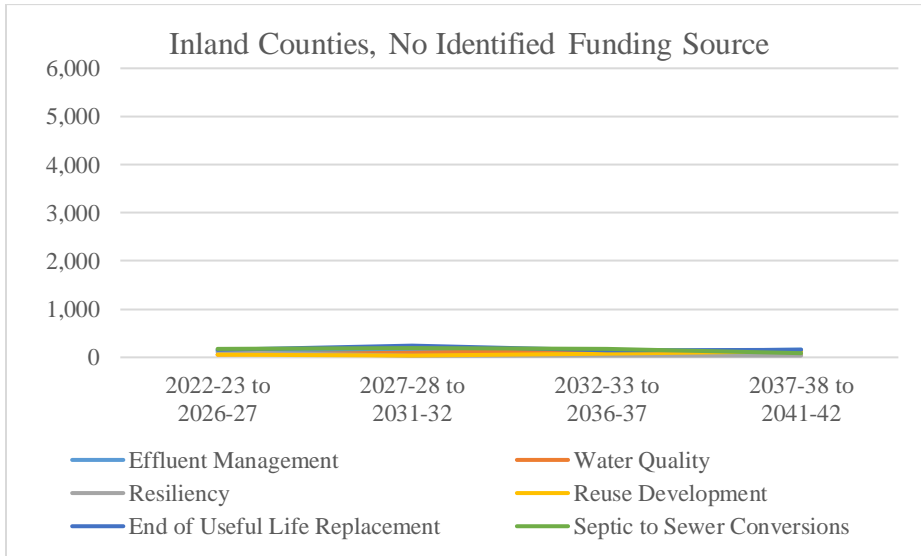


Figure 5.2.5 Line Graph for Committed Source Projects in Coastal Counties (in \$millions)

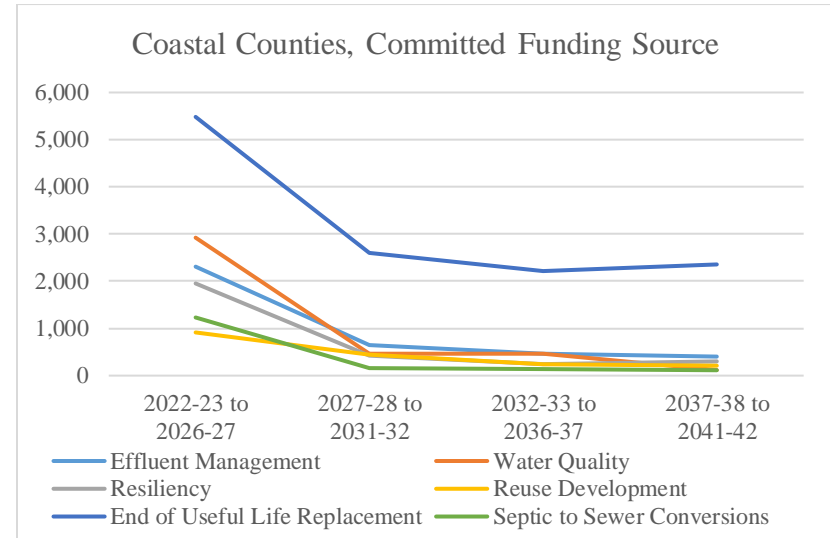
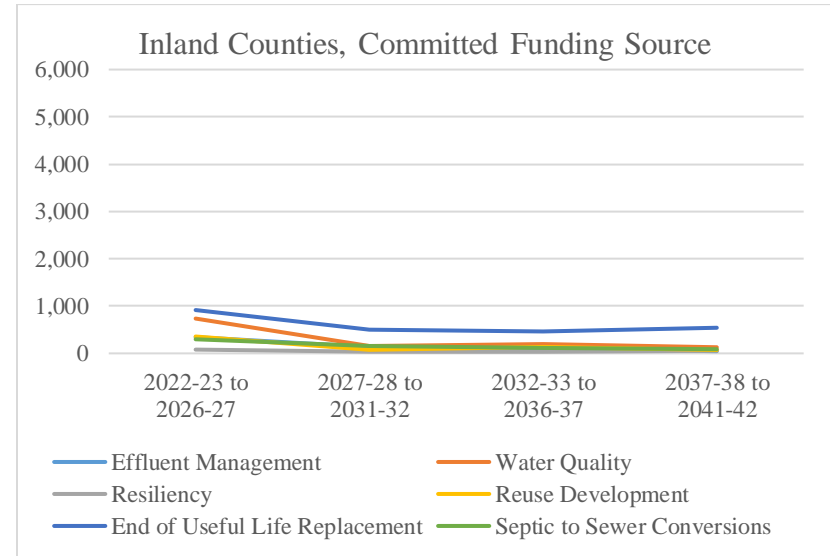


Figure 5.2.6 Line Graph for Committed Source Projects in Inland Counties (in \$millions)



The 40 special district submissions account for approximately six percent of the total projected expenditures. Table 5.2.11, Special District Expenditures by Project Type and Funding Source (in \$millions), contains special district project expenditure projections.

Table 5.2.11 Special District Expenditures by Project Type and Funding Source (in \$millions)

Project Type	Committed Funding Source				No Identified Funding Source			
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Effluent Management	\$ 206	\$ 15	\$ 18	\$ 4	\$ 83	\$ 99	\$ 89	\$ 98
Water Quality	\$ 279	\$ 28	\$ 109	\$ 27	\$ 69	\$ 61	\$ 69	\$ 26
Resiliency	\$ 37	\$ 11	\$ 12	\$ 13	\$ 28	\$ 3	\$ -	\$ -
Reuse Development	\$ 150	\$ 29	\$ 85	\$ 17	\$ 68	\$ 56	\$ 9	\$ 9
End of Useful Life Replacement	\$ 246	\$ 109	\$ 115	\$ 108	\$ 112	\$ 123	\$ 104	\$ 714
Septic to Sewer Conversions	\$ 67	\$ 3	\$ 3	\$ 3	\$ 46	\$ 63	\$ 76	\$ 48
Total*	\$ 985	\$ 195	\$ 343	\$ 171	\$ 405	\$ 405	\$ 347	\$ 896

* These values do not include projects not assigned one of the six main project types or the two funding sources. Projects with a funding source of customer expenditures, blank, or other have also been excluded from this table.

County and municipal projects, divided by county location, are shown in the next two tables. Table 5.2.12 contains projects with committed funding sources, totaling \$30.89 billion. Table 5.2.13, with only county and municipal project expenditures with no identified funding source, totals \$27.79 billion. Though a majority of district projections have no identified funding source, the larger expenditures of municipalities and counties outweigh the district’s trend at the statewide level.

[See tables on following page.]

Table 5.2.12 County and Municipal Expenditures with a Committed Funding Source by Project Type (in \$millions)

County Location	Project Type	Committed Funding Source			
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Coastal	Effluent Management	\$ 2,180	\$ 631	\$ 456	\$ 402
	Water Quality	\$ 2,913	\$ 468	\$ 466	\$ 117
	Resiliency	\$ 1,926	\$ 412	\$ 239	\$ 290
	Reuse Development	\$ 894	\$ 443	\$ 228	\$ 208
	End of Useful Life Replacement	\$ 5,392	\$ 2,557	\$ 2,174	\$ 2,323
	Septic to Sewer Conversions	\$ 1,203	\$ 160	\$ 130	\$ 110
Inland	Effluent Management	\$ 267	\$ 133	\$ 72	\$ 44
	Water Quality	\$ 468	\$ 135	\$ 87	\$ 105
	Resiliency	\$ 70	\$ 28	\$ 35	\$ 39
	Reuse Development	\$ 228	\$ 55	\$ 61	\$ 58
	End of Useful Life Replacement	\$ 762	\$ 440	\$ 389	\$ 481
	Septic to Sewer Conversions	\$ 260	\$ 151	\$ 115	\$ 88
Coastal Total		\$ 14,507	\$ 4,671	\$ 3,693	\$ 3,449
Inland Total		\$ 2,055	\$ 943	\$ 759	\$ 814
Total*		\$ 16,562	\$ 5,614	\$ 4,452	\$ 4,263

* These values do not include projects not assigned one of the six main project types or the two funding sources. Projects with a funding source of customer expenditures, blank, or other have also been excluded from this table.

Table 5.2.13 County and Municipal Expenditures with No Identified Funding Source by Project Type (in \$millions)

County Location	Project Type	No Identified Funding Source			
		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42
Coastal	Effluent Management	\$ 758	\$ 2,127	\$ 1,185	\$ 672
	Water Quality	\$ 671	\$ 685	\$ 560	\$ 359
	Resiliency	\$ 312	\$ 300	\$ 1,729	\$ 462
	Reuse Development	\$ 277	\$ 276	\$ 374	\$ 225
	End of Useful Life Replacement	\$ 1,159	\$ 1,154	\$ 4,317	\$ 1,676
	Septic to Sewer Conversions	\$ 1,391	\$ 1,498	\$ 1,673	\$ 1,391
Inland	Effluent Management	\$ 132	\$ 132	\$ 109	\$ 163
	Water Quality	\$ 56	\$ 99	\$ 150	\$ 40
	Resiliency	\$ 108	\$ 33	\$ 35	\$ 39
	Reuse Development	\$ 59	\$ 36	\$ 84	\$ 128
	End of Useful Life Replacement	\$ 130	\$ 217	\$ 129	\$ 154
	Septic to Sewer Conversions	\$ 146	\$ 155	\$ 138	\$ 80
Coastal Total		\$ 4,568	\$ 6,041	\$ 9,839	\$ 4,785
Inland Total		\$ 631	\$ 672	\$ 645	\$ 604
Total*		\$ 5,200	\$ 6,713	\$ 10,484	\$ 5,388

* These values do not include projects not assigned one of the six main project types or the two funding sources. Projects with a funding source of customer expenditures, blank, or other have also been excluded from this table.

To examine the projected expenditures at the county level, Table 5.2.14, County-Level Project Expenditures for All Government and Project Types (in \$thousands), contains county,

municipality, and district aggregates by county. Municipalities and districts are included in the county where they submitted their needs analyses. Counties that are entirely missing from the table had no local governments that submitted information. Note that this table is reported in the thousands, while most other tables is reported in millions.

[See table on following page.]

Table 5.2.14 County-Level Project Expenditures for All Government and Project Types (in \$thousands)

County	Committed Funding Source				No Identified Funding Source				Project Count	Largest Project Type
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42		
Alachua	\$ 175,462	\$ 189,437	\$ 120,593	\$ 204,504	\$ 53,012	\$ 6,555	\$ 79,000	\$ 104,000	32	End of Useful Life
Bay	\$ 911,950	\$ 32,362	\$ 52,264	\$ 10,426	\$ 119,000	\$ 175,000	\$ 47,000	\$ 89,500	56	Resiliency
Brevard	\$ 386,924	\$ 121,673	\$ 66,066	\$ 48,064	\$ 212,147	\$ 282,948	\$ 135,869	\$ 74,400	165	End of Useful Life
Broward	\$ 1,215,850	\$ 338,129	\$ 261,806	\$ 264,032	\$ 208,808	\$ 166,649	\$ 138,755	\$ 179,177	625	End of Useful Life
Calhoun	\$ 19,188	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	3	Water Quality
Charlotte	\$ 504,466	\$ 59,877	\$ 33,401	\$ 33,522	\$ 45,834	\$ 83,984	\$ 223,492	\$ 113,323	87	Water Quality
Citrus	\$ 89,206	\$ -	\$ -	\$ -	\$ 472,928	\$ 177,406	\$ 331,110	\$ 1,606	64	Septic to Sewer Conversions
Clay	\$ 158,659	\$ 77,040	\$ 236,568	\$ 79,060	\$ 4,200	\$ 2,207	\$ -	\$ -	34	Water Quality
Collier	\$ 371,091	\$ 172,375	\$ 167,545	\$ 152,455	\$ 66,373	\$ 73,977	\$ 54,832	\$ 30,452	148	End of Useful Life
Columbia	\$ 5,400	\$ -	\$ -	\$ -	\$ 14,500	\$ 10,000	\$ -	\$ -	4	Septic to Sewer Conversions
Duval	\$ 1,148,488	\$ 409,528	\$ 347,209	\$ 346,414	\$ 617,720	\$1,981,769	\$ 276,839	\$ 315,185	219	Effluent Management
Escambia	\$ 106,175	\$ 37,545	\$ 35,056	\$ 33,173	\$ 109,862	\$ 205,728	\$ 164,029	\$ 444,485	133	End of Useful Life
Flagler	\$ 93,769	\$ 46,755	\$ 19,255	\$ 19,255	\$ 23,065	\$ 17,465	\$ 9,265	\$ 6,265	52	End of Useful Life
Gadsden	\$ 3,790	\$ -	\$ -	\$ -	\$ 5,020	\$ 7,300	\$ -	\$ -	8	End of Useful Life
Hardee	\$ 5,322	\$ 423	\$ 275	\$ 277	\$ 6,824	\$ 4,198	\$ 9,990	\$ 3,065	34	End of Useful Life
Hendry	\$ 9,996	\$ 84,853	\$ 72,434	\$ -	\$ -	\$ -	\$ -	\$ -	3	Septic to Sewer Conversions
Hernando	\$ 55,565	\$ 3,800	\$ 5,500	\$ 3,600	\$ 9,317	\$ 58,583	\$ 110,484	\$ 203,681	42	Septic to Sewer Conversions
Highlands	\$ 52,032	\$ 3,240	\$ 690	\$ 691	\$ 37,063	\$ 27,063	\$ 2,063	\$ 2,063	17	Septic to Sewer Conversions
Hillsborough	\$ 1,428,096	\$ 419,869	\$ 609,593	\$ 786,398	\$ 95,350	\$ 56,275	\$ 241,800	\$ 38,325	51	End of Useful Life
Indian River	\$ 53,937	\$ 8,802	\$ 7,159	\$ 11,096	\$ 105,257	\$ 37,803	\$ 125,917	\$ 94,731	92	End of Useful Life
Lake	\$ 185,055	\$ 31,429	\$ 32,182	\$ 34,182	\$ 155,012	\$ 123,915	\$ 116,612	\$ 85,238	115	Effluent Management
Lee	\$ 871,160	\$ 364,974	\$ 674,953	\$ 341,982	\$ 445,845	\$ 309,653	\$ 37,577	\$ 37,577	129	Water Quality
Leon	\$ 80,737	\$ 44,254	\$ 51,356	\$ 97,326	\$ -	\$ 67,920	\$ 381	\$ -	44	Septic to Sewer Conversions
Levy	\$ 24,239	\$ 9,109	\$ 3,501	\$ 3,942	\$ 29,606	\$ 16,111	\$ 13,628	\$ 15,304	16	Septic to Sewer Conversions
Liberty	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ -	\$ -	\$ -	2	End of Useful Life
Manatee	\$ 432,947	\$ 474,097	\$ 220,118	\$ 186,555	\$ -	\$ 110,102	\$ 176,379	\$ 185,849	217	End of Useful Life
Marion	\$ 319,002	\$ 17,518	\$ 21,014	\$ 21,610	\$ 41,214	\$ 93,142	\$ 105,948	\$ 25,255	77	Septic to Sewer Conversions

County	Committed Funding Source				No Identified Funding Source				Project Count	Largest Project Type
	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42		
Martin	\$ 57,425	\$ 10,311	\$ 7,030	\$ 2,900	\$ 40,805	\$ 59,485	\$ 70,603	\$ 8,733	71	Septic to Sewer Conversions
Miami-Dade	\$ 3,321,092	\$ 555,830	\$ 18,178	\$ 14,558	\$ 106,109	\$ 150,033	\$ 5,504,225	\$ 981,172	197	End of Useful Life
Monroe	\$ 54,437	\$ 21,274	\$ 17,926	\$ 17,926	\$ 142,813	\$ 68,867	\$ 99,907	\$ 413,885	68	End of Useful Life
Nassau	\$ 23,824	\$ 2,880	\$ 8,990	\$ 1,540	\$ 19,110	\$ 57,250	\$ 8,400	\$ 7,700	45	End of Useful Life
Okaloosa	\$ 62,165	\$ 22,689	\$ 16,743	\$ 12,046	\$ 134,351	\$ 114,778	\$ 60,892	\$ 38,291	130	Water Quality
Okeechobee	\$ 39,009	\$ 850	\$ 960	\$ 1,050	\$ 31,076	\$ 35,801	\$ 42,947	\$ 7,145	37	Septic to Sewer Conversions
Orange	\$ 781,562	\$ 329,512	\$ 243,131	\$ 241,745	\$ 48,437	\$ 146,070	\$ 147,894	\$ 198,549	204	End of Useful Life
Osceola	\$ 261,813	\$ 8,191	\$ 6,136	\$ 7,118	\$ -	\$ -	\$ -	\$ -	34	Reuse Development
Palm Beach	\$ 451,250	\$ 157,203	\$ 122,526	\$ 101,975	\$ 931,411	\$ 739,493	\$ 704,854	\$ 711,266	524	End of Useful Life
Pasco	\$ 550,512	\$ 326,958	\$ 375,460	\$ 431,686	\$ 51,247	\$ 275,250	\$ 312,505	\$ 357,144	87	Effluent Management
Pinellas	\$ 1,058,901	\$ 422,513	\$ 288,686	\$ 318,466	\$ 96,001	\$ 257,629	\$ 387,274	\$ 278,636	405	End of Useful Life
Polk	\$ 319,605	\$ 100,364	\$ 57,345	\$ 77,445	\$ 183,772	\$ 127,583	\$ 61,840	\$ 147,149	169	End of Useful Life
Santa Rosa	\$ 134,817	\$ 25,488	\$ 7,073	\$ 7,427	\$ 56,101	\$ 31,800	\$ 12,000	\$ 11,000	34	End of Useful Life
Sarasota	\$ 585,876	\$ 201,097	\$ 101,327	\$ 92,603	\$ 379,619	\$ 272,265	\$ 265,715	\$ 224,088	106	Septic to Sewer Conversions
Seminole	\$ 271,882	\$ 141,809	\$ 157,091	\$ 132,989	\$ 70,284	\$ 85,914	\$ 143,594	\$ 76,291	239	End of Useful Life
St Johns	\$ 339,868	\$ 193,175	\$ 187,949	\$ 170,083	\$ 9,100	\$ 198,998	\$ 264,858	\$ 345,470	60	Effluent Management
St Lucie	\$ 224,230	\$ 44,034	\$ 9,778	\$ 10,193	\$ 115,509	\$ 62,077	\$ 21,974	\$ 133,959	74	Effluent Management
Sumter	\$ 43,330	\$ 35,900	\$ 49,775	\$ 37,890	\$ 39,224	\$ -	\$ -	\$ -	46	End of Useful Life
Taylor	\$ 1,002	\$ 992	\$ 912	\$ 912	\$ 91	\$ 91	\$ 91	\$ 91	9	End of Useful Life
Volusia	\$ 252,535	\$ 259,791	\$ 79,073	\$ 75,193	\$ 267,520	\$ 338,542	\$ 320,137	\$ 294,050	180	Water Quality
Walton	\$ 4,115	\$ 1,300	\$ -	\$ -	\$ 298	\$ 435	\$ 435	\$ 435	16	Effluent Management
Total	\$ 17,547,755	\$ 5,809,250	\$ 4,794,628	\$ 4,434,306	\$ 5,604,832	\$ 7,118,111	\$ 10,831,113	\$ 6,284,534	5,204	

Examining one category more closely, septic to sewer projects could include converted connection counts as well as customer expenditures. (The data in previous tables excluded customer expenditure estimates.) Among the Septic to Sewer Conversion projects reported, some reported expenditures without providing connection counts, and some included connection counts without any expenditure estimate. Additionally, a single project could be listed as having a utility expenditure projection (committed or no identified funding source) and listed again with “customer expenditures” as the funding source. Table 5.2.15, Septic to Sewer Projections with Connection Counts by Funding Source (in \$millions), includes customer expenditure estimates. In cases where a project was listed more than once, duplicated connection counts have been removed.

Table 5.2.15 Septic to Sewer Projections with Connection Counts by Funding Source (in \$millions)

Funding Source	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total	Connection Count
Committed	\$ 1,530	\$ 314	\$ 248	\$ 202	\$ 2,295	119,923
No Identified	\$ 1,582	\$ 1,717	\$ 1,887	\$ 1,519	\$ 6,705	155,602
Customers	\$ 252	\$ 191	\$ 291	\$ 94	\$ 827	11,049
Total	\$ 3,364	\$ 2,221	\$ 2,427	\$ 1,815	\$ 9,827	286,574
Additional connections reported with no projected expenditures						11,553

Among all of the septic to sewer conversion projected expenditures reported, 28 percent occur in counties with Springs BMAPs.¹⁵ These same counties only account for 24.6 percent of the state’s population, so wastewater utilities within counties with Springs BMAPs are slightly more focused on removing septic tanks.

Dividing the expenditures and counts by county location, Table 5.2.16 displays the expenditures and connections for all reported projects. It is interesting to note that 72.3 percent of the total coastal costs currently have no identified funding source, while the same is true of only 44.5 percent of the total inland costs. This perhaps implies that the inland projects are further along in the planning process.

[See table on following page.]

¹⁵ These counties include Alachua, Bradford, Citrus, Columbia, Dixie, Gadsden, Gilchrist, Hamilton, Hernando, Jackson, Jefferson, Lafayette, Lake, Leon, Levy, Madison, Marion, Orange, Pasco, Putnam, Seminole, Sumter, Suwannee, Taylor, Union, Volusia, and Wakulla Counties.

Table 5.2.16 Septic to Sewer Expenditures by County Location

County Location	Funding Source	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total	Connection Count
Coastal	Committed	\$ 1,232	\$ 163	\$ 134	\$ 114	\$ 1,643	86,632
	No Identified	\$ 1,401	\$ 1,524	\$ 1,706	\$ 1,432	\$ 6,063	135,003
	Customers	\$ 194	\$ 136	\$ 257	\$ 91	\$ 679	5,812
	Coastal Total	\$ 2,827	\$ 1,823	\$ 2,097	\$ 1,637	\$ 8,385	227,447
Inland	Committed	\$ 298	\$ 151	\$ 115	\$ 88	\$ 652	33,291
	No Identified	\$ 181	\$ 193	\$ 181	\$ 87	\$ 642	20,599
	Customers	\$ 58	\$ 55	\$ 33	\$ 2	\$ 148	5,237
	Inland Total	\$ 537	\$ 398	\$ 330	\$ 178	\$ 1,442	59,127

Much like the stormwater template, the final section focused on the funding gap calculated from the projects with no identified funding source. Local governments were asked to list strategies and estimate additional revenues. Table 5.2.17, Strategies to Close Funding Gaps by Strategy Description (in \$millions), contains the aggregated revenues local governments hope to raise, grouped in types assigned by EDR based on the strategy description.

Table 5.2.17 Strategies to Close Funding Gaps by Strategy Description (in \$millions)

	Strategy Type (based on description)	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
Grants & Debt	Grants	\$ 389	\$ 408	\$ 488	\$ 421	\$ 1,706
	Debt	\$ 632	\$ 649	\$ 485	\$ 469	\$ 2,236
	Grants and/or Debt	\$ 99	\$ 53	\$ 251	\$ 17	\$ 420
	Cost Shares	\$ 28	\$ 49	\$ 55	\$ 35	\$ 167
Governmental Funding	Legislative Appropriations	\$ 14	\$ 12	\$ 4	\$ 3	\$ 33
	State & Federal (Non-Grant) Funding	\$ 99	\$ 44	\$ 49	\$ 84	\$ 277
Local Funding Sources	Local Government Funding	\$ 2	\$ 7	\$ 3	\$ 23	\$ 34
	Fees	\$ 101	\$ 65	\$ 66	\$ 69	\$ 301
	Rate or Customer Base Increases	\$ 81	\$ 94	\$ 165	\$ 119	\$ 459
	Developer Fees/Cost Share	\$ 12	\$ 7	\$ 7	\$ 5	\$ 31
Other	Multiple or Unknown Types*	\$ 58	\$ 199	\$ 206	\$ 169	\$ 632
	Strategy Totals	\$ 1,516	\$ 1,586	\$ 1,779	\$ 1,415	\$ 6,296

* Multiple or Unknown Types include blank strategies, descriptions of a project (e.g., “Reuse System” or “Sewer System Improvements”), unknown abbreviations, or groups of other types (e.g., “Grants / Debt / Rates” or “Rate Increase, Bonds, Loans, Grants, Cost-share programs”).

The template’s Strategy section also allowed local governments to assign a category that a particular strategy’s revenue would target. Table 5.2.18, Strategies to Close Funding Gaps by Primary Project Type (in \$millions), contains the strategy totals by assigned type. A large portion of these strategies were either blank or the local government chose “Multiple” as the project type.

Table 5.2.18 Strategies to Close Funding Gaps by Primary Project Type (in \$millions)

Strategy Category	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
Effluent Management	\$ 43	\$ 163	\$ 171	\$ 186	\$ 563
Water Quality	\$ 81	\$ 236	\$ 242	\$ 55	\$ 614
Reuse Development	\$ 24	\$ 42	\$ 42	\$ 22	\$ 130
Resiliency Initiatives	\$ 81	\$ 98	\$ 52	\$ 53	\$ 284
End of Useful Life Replacement	\$ 339	\$ 271	\$ 189	\$ 270	\$ 1,069
Septic to Sewer Conversions	\$ 130	\$ 171	\$ 200	\$ 242	\$ 742
Multiple Categories or Blank	\$ 817	\$ 605	\$ 884	\$ 587	\$ 2,894
Total	\$ 1,516	\$ 1,586	\$ 1,779	\$ 1,415	\$ 6,296

Finally, Table 5.2.19, Reported Funding Gap and Reported Strategies (in \$millions), aggregates the funding gap and new revenue for all local governments (“All Local Governments”) and for that subset of local governments that reported both expenditures with no identified funding source and strategies to raise new revenues to close that funding gap (“Local Governments with Gap & Strategy”). Not all governments with a gap had any strategies with projected revenue, and at least one local government with no reported funding gap did include a future revenue estimate. Among the local governments that reported both, 65 percent of the gap was closed by the estimated funding raised by the listed strategies.

Table 5.2.19 Reported Funding Gap and Reported Strategies (in \$millions)

		2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
All Local Governments	Funding Gap	\$ 5,605	\$ 7,118	\$ 10,831	\$ 6,285	\$ 29,839
	Strategies to Close Gap	\$ 1,516	\$ 1,586	\$ 1,779	\$ 1,415	\$ 6,296
	Percent of Gap Closed	27%	22%	16%	23%	21%
Local Governments with Gap & Strategy	Funding Gap	\$ 1,971	\$ 2,595	\$ 2,586	\$ 2,457	\$ 9,610
	Strategies to Close Gap	\$ 1,500	\$ 1,571	\$ 1,762	\$ 1,397	\$ 6,230
	Percent of Gap Closed	76%	61%	68%	57%	65%

Wastewater Conclusion

Local governments in Florida providing wastewater services will face new challenges within the next two decades. There are huge costs, both day to day expenses and in project expenditures, that some local governments will struggle to cover without assistance. However, Florida’s wastewater industry has experience with long-term planning that stormwater management does not, leading to more certainty that significant progress can be made to closing the funding gaps. Table 5.2.20, Reported Wastewater Services Expenditure Projection, summarizes the estimated costs that publicly owned wastewater utilities will face.

Table 5.2.20 Reported Wastewater Services Expenditure Projection

Expenditure Type	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	All Years
O&M	\$ 15,258	\$ 17,512	\$ 20,349	\$ 23,250	\$ 76,369
Capital Improvement*	\$ 23,194	\$ 12,957	\$ 15,627	\$ 10,720	\$ 62,498
Total	\$ 38,452	\$ 30,470	\$ 35,975	\$ 33,970	\$ 138,867

* Note: This is the estimated project expenditure total, including projects that have a committed funding source, those that have no identified funding source, and those with a blank funding source or project type.

The new statute, requiring local governments to create a 20-year needs analysis for wastewater services, attempted to draw on the experience that publicly owned utilities have with long-term planning. Even so, their willingness to share their expertise with EDR in this joint initiative is much appreciated. Their professional judgement of future needs presents a statewide picture that is far more comprehensive and detailed than previously available to policymakers, reaching out to near the midcentury.