

20-Yr Needs Analysis Survey for HB 53

**Michael Bateman, P. E.
Project Hydrology, Inc.**

***Formerly* Legislative Office of Economic &
Demographic Research**

**Sanibel Harbor
June 2023**

CS/CS/CS/House Bill 53

- NEW Section 403.9302 - Requires Cities, Counties, and Special Districts to perform a 20-Year financial needs-analysis for stormwater and wastewater
- Report in 5-year increments up to 2041/2042
- Repeat the analysis every five years
- Data was due to county of residence by June 30, 2022
- Counties had to compile data and report to EDR and DEP by July 31, 2022
- EDR filed report to House/Senate by Jan 1, 2023

Statutory Requirements Were Very Broad in Scope (Vague?)

- First time this analysis has been performed statewide for stormwater
- Stormwater is not wastewater; data collection and tracking is inconsistent
- Many local governments reached out for help
- Strict reading of the statute made this task unbelievably difficult!
- EDR received authorization from the legislature to create distinct reporting categories and to develop a template for local government usage

EDR's Template

Sought and received feedback from various partners including:

- Florida Stormwater Association
- Regional Planning Councils
- Water Management Districts
- Association of Counties
- League of Cities
- Florida Association of Special Districts
- DEP's NPDES Stormwater Program
- DEP's Office of Resilience and Coastal Protection
- Private Consultants

Template Guiding Principles

- Exclude stormwater systems owned/operated by:
 - Private entities, federal government, state government, WMDs, DOT, school districts, state universities or colleges
- Current laws and rules prevail. Assume no change in stormwater rule status
- Make data gathering as painless as possible for local governments

EDR Template Development

- Tried to fashion the template to be fill-in-the-blank as much as possible; Excel spreadsheet with most cells locked and format locked
- EDR management included specific items that were known to be of interest to the legislature (added resiliency/sea level rise/funded or not)
- Spreadsheet format (Part 1, Part 2, etc.) followed the statutory requirements (Section (3)(a),(b), etc.)

Part 1 – Provide a Detailed Description of the Stormwater Management Program

- EDR *Reduced* a “Detailed” program description into simple subparts:
 - Brief Narrative, Goal Ranking, Itemized Program Activities (yes/no questions) Itemized O&M Activities (yes/no questions)

Part 2 – Provide a Detailed Description of the Stormwater Management System

- EDR **Reduced** a “Detailed” system description into an aggregate summary list requiring gross estimates for items such as:
 - Miles or Feet of buried storm sewer, *etc.*
 - Number of wet and dry ponds
 - Number of pump stations, *etc.*
 - “Other” category for those practices not listed
- Yes/No questions related to green infrastructure

Part 3 – Provide the Number of Current and Projected Residents Served

- Really, this is a wastewater-related data set
- However, EDR Performed this Calculation for Cities and Counties
- For Independent Special Districts (ISDs), EDR asked for GIS shapefiles of service area boundaries to calculate populations...

Part 4 – Provide the Current and Projected Service Area

- Another Wastewater-related data set
- EDR reduced this requirement to be “exception-based,” that is, if the stormwater “service area” extended beyond the jurisdiction’s geographic limits - then explain
- Otherwise, do not report anything

Part 5 – Estimate the Current and Projected Cost of Providing Services

For simplicity, “Services” was limited to:

1. **Routine Operation & Maintenance:** O&M items including administration and non-structural elements
2. **Expansion** – Defined herein as “improvement” of the stormwater management system, or in other words, new work, new projects, retrofitting, and significant upgrades

Part 5, Continued – Estimate the Current and Projected Cost of Providing Services

- The template separated expansion into four categories:
 - Flood protection/abatement projects
 - Water quality projects
 - Resiliency projects (addressing sea level rise and increased flood events)
 - Major end of useful life replacement projects (aging infrastructure)

Part 5, Continued – Estimate Current and Projected Cost of Providing Services

- EDR further broadened Part 5 to include expenditures within the four expansion categories as either having a committed funding source or having no identified funding source.

Part 6 – Estimate the Remaining Useful Life of Each Facility or Its Major Components

- A Daunting task for many stormwater components
- EDR ***Reduced*** this to a summary list of those stormwater projects scheduled or identified for replacement due to old age/failure
- Limited to those projects considered “Major”
- Major defined as any single replacement project greater than 5% of the total O&M expenditures over the most recent five-year period.



Part 7 – Provide the Past 5-Year History of Expenditures

- Actual Expenditures over past 5-years
- Divided into Same categories as projections: Routine O&M, Expansion, Resiliency, and Aging Infrastructure

Part 8 – Plan to Fund the Stormwater Program Over 20-year Horizon, Including How to Close any Funding Gap

- The workbook calculates funding gaps based on data provided in workbook tables
- The workbook provides space to describe strategies to close funding gaps (if any) and the expected revenues from such strategies

Survey Results

- Excellent Response: 832 Total Submissions
 - 256 Cities
 - 49 Counties
 - 527 Special Districts
- Most local governments used the spreadsheet (thank you)
- Non-submittals primarily small, rural areas; and many exempt thru Economic Hardship provisions of the Bill
- Even though 25% of counties and 38% of cities did not respond, the submitted analyses cover approx. 93.6% of Florida's 2022 population

EDR Data Management

- EDR performed QA/QC analyses of reported data
- Issues that needed to be addressed:
 - Mis-reporting items; required EDR to move data to different categories (drainage pipe moved to buried culvert; canal to open conveyance)
 - Data reported in different format (pdf, etc,)
 - Reporting in actual dollars vs thousands

EDR Quality Assurance – Dollar Adjustments

- Dollars reported for historic and future spending a mixed bag
- EDR reviewed every dollar value
- Comparative analysis conducted for those suspected value errors
 - Compared stormwater spending to total budget (many budgets found online)
 - Calculated dollars spent per capita – Generally under \$2 per capita, typically much less, on the order of \$0.50.

Stormwater System Data Culls

- “Gross Pollutant Separators” misinterpreted: skimmers, weirs, ponds, etc. Eliminated entire category from report.
- “Wetland Treatment Systems” misinterpreted, thousands reported, included things like green space and wetland fringe or littoral zone on wet ponds. Reduced to the number of ERP permits per WMD.

“Other” Stormwater System Data Culls

Certain reported data not relevant. Stormwater infrastructure is generally not:

- Golf courses
- Bridges
- Boat Ramps
- Paved Roads, etc.

“Other” Green Infrastructure Data Culls

Looking for rain gardens, pervious pavement, harvesting, green roofs, etc.

Green Infrastructure is generally not:

- Dry ponds
- Wet ponds
- Silt fence
- Purchases
- Aquatic weed control
- Injection wells
- Pavement washdown/aircraft washdown, etc.

Survey Results

- All data presented taken directly from submittals or from EDR's report to the legislature
- [http://edr.state.fl.us/Content/natural-resources/2023 AnnualAssessmentInfrastructureInvestments Chapter5.pdf](http://edr.state.fl.us/Content/natural-resources/2023%20AnnualAssessmentInfrastructureInvestments%20Chapter5.pdf)

Description of the Stormwater Management Program

- Brief Narrative – This was somewhat problematic:
 - Multiple Descriptions (What we asked for)
 - Not easy to “Rack & Stack” Data for Reporting (Impossible)
- Solution: Word Cloud?

Program Goal Importance Ratings

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

Program Activity Participation (Yes/No)

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%

Asset Management (Total Count)

Table 5.1.6 County and Municipal Stormwater Asset Management Systems

	Counties		Municipalities	
	Inland	Coastal	Inland	Coastal
[Do 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

System Inventory List

- Length of Buried Culvert = 41,085 Miles
- Length of Open Conveyances = 64,981 Miles
- Number of Stormwater Ponds = 47,492
- Number of Dynamic Control Structures = 11,234
- Number of Chemical Treatment Systems = 64
- Number of Pump Stations = 720



Interesting Facts from “Other” Category

- Exfiltration Trench: Over 1.7 million feet
- Maintain Lake Banks/shoreline: Over 1 million feet
- Miami-Dade County: 2,600 miles of swales
- Palm Coast: 1,200 miles of swales and 60 miles of canals
- City of Miami: 28,000 inlet structures



A Few Observations

- Minimal use of “Green Infrastructure,” Clearly not widely embraced
- Large number of drainage wells in use (420 reported)
- Increasing use of tide gates suggest sea level rise an issue
- TMDLs may be driving investment in practices such as Floating Treatment Wetlands, Continuous Monitoring Adaptive Control (CMAC)
- Stormwater Utilities still a minority: Out of 832 locals reporting, only 64 have utilities

Population (by EDR)

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%

Special District Boundaries for Population Estimates by EDR



Populations could not be determined based on files submitted

Service Area

- No extensions beyond local government boundaries reported
- No reported changes to any service areas



Expenditure Projections for O&M

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

Expenditure Percentages: Counties: 20%, Cities: 70%, Districts: 10%

Expenditure Projections for Projects

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 2041-4
Flood Protection	\$ 1,770	\$ 625	\$ 432	\$ 450	\$ 1,497	\$ 1,724	\$ 1,227	\$ 1,2
Water Quality	\$ 831	\$ 330	\$ 193	\$ 137	\$ 977	\$ 1,532	\$ 1,082	\$ 9
End of Useful Life	\$ 579	\$ 339	\$ 355	\$ 388	\$ 871	\$ 975	\$ 1,006	\$ 1,0
Resiliency	\$ 1,421	\$ 241	\$ 119	\$ 119	\$ 1,868	\$ 1,178	\$ 1,090	\$ 1,5
Total	\$ 4,600	\$ 1,535	\$ 1,098	\$1,094	\$ 5,213	\$ 5,410	\$ 4,405	\$ 4,7

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%

Expenditure Projections for Projects

Percentage of Total Funding

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%

Statewide Project Types

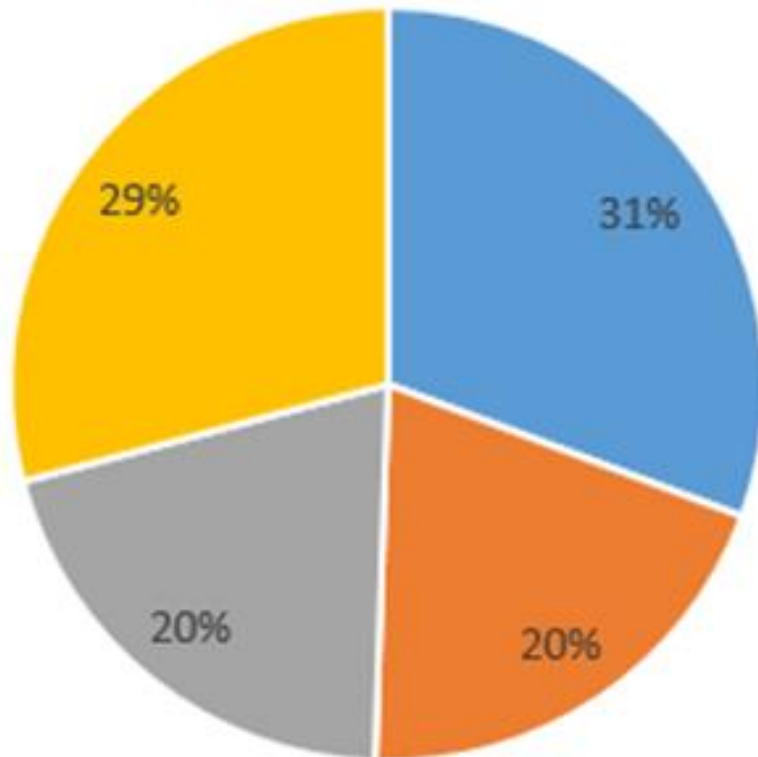
- Number of Projects: 5,279
- Largest project category based on cumulative in-county expenditures:
 - Flood Protection: 26 Counties
 - Water Quality: 10 Counties
 - Replacement: 7 Counties
 - Resiliency: 5 Counties



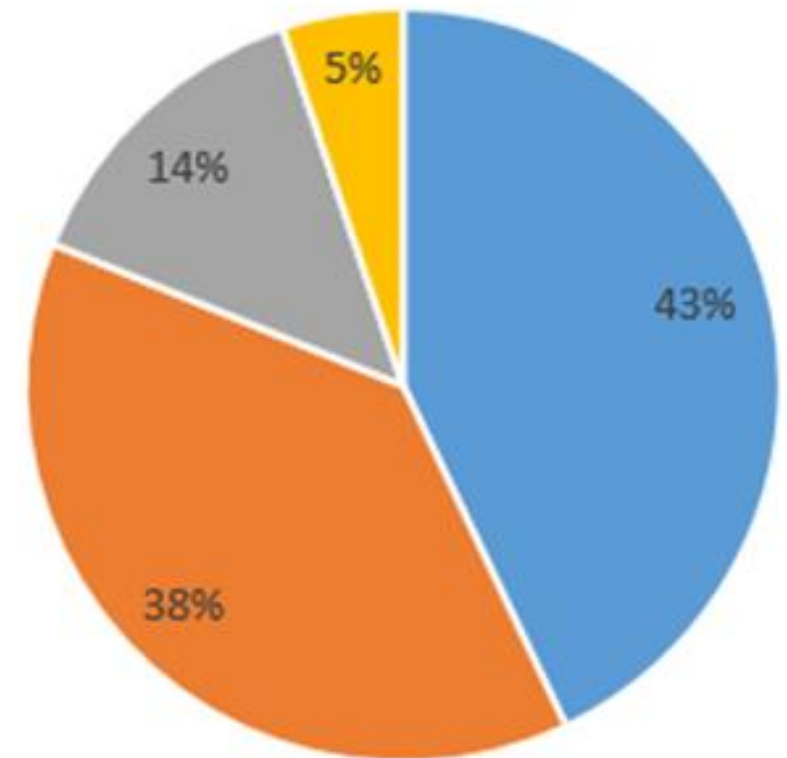
Expenditure Projections for Projects

Percent of Expenditures by Location & Project Type

Coastal Counties



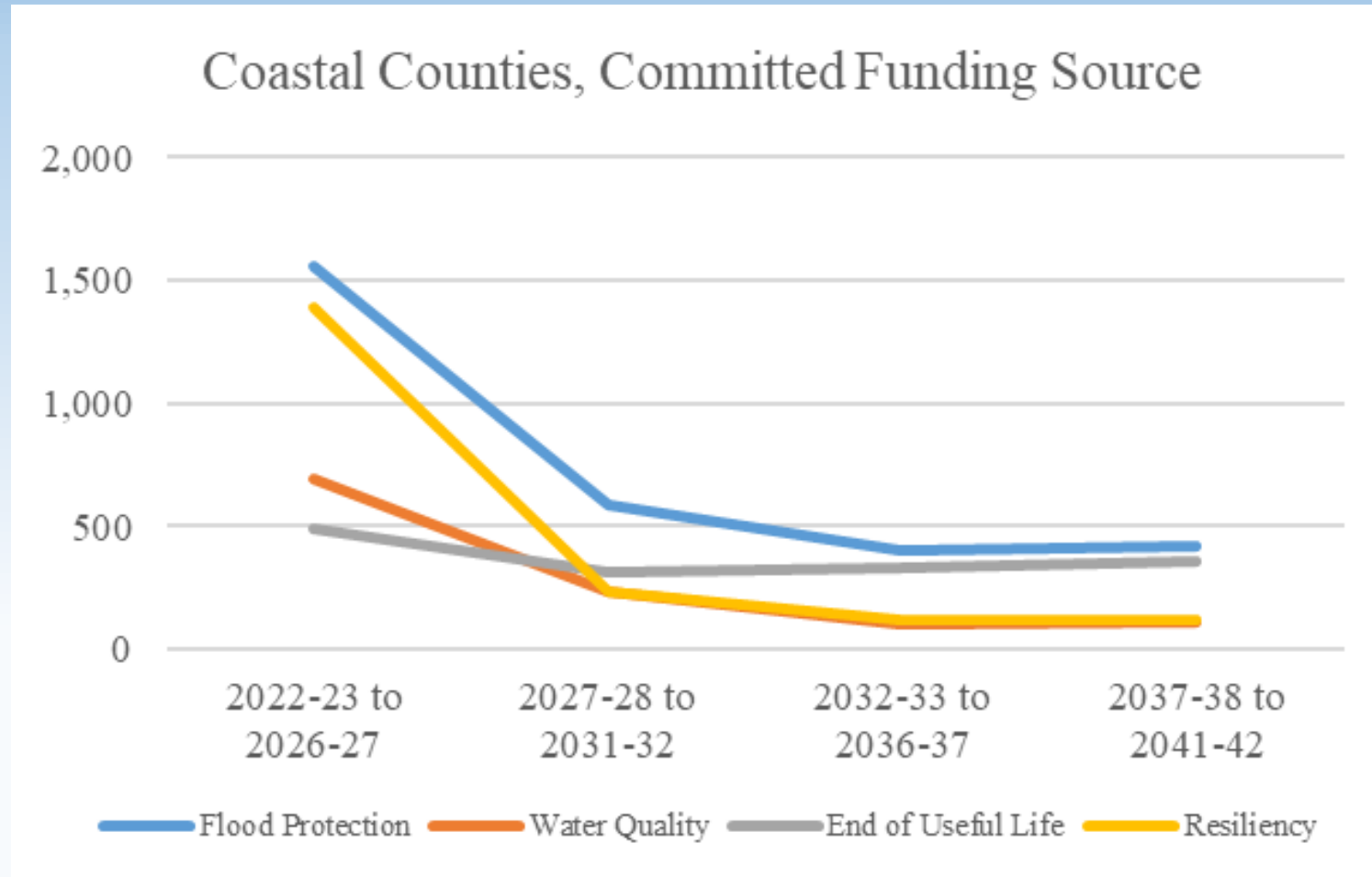
Inland Counties



- Flood Protection
- Water Quality
- End of Useful Life
- Resiliency

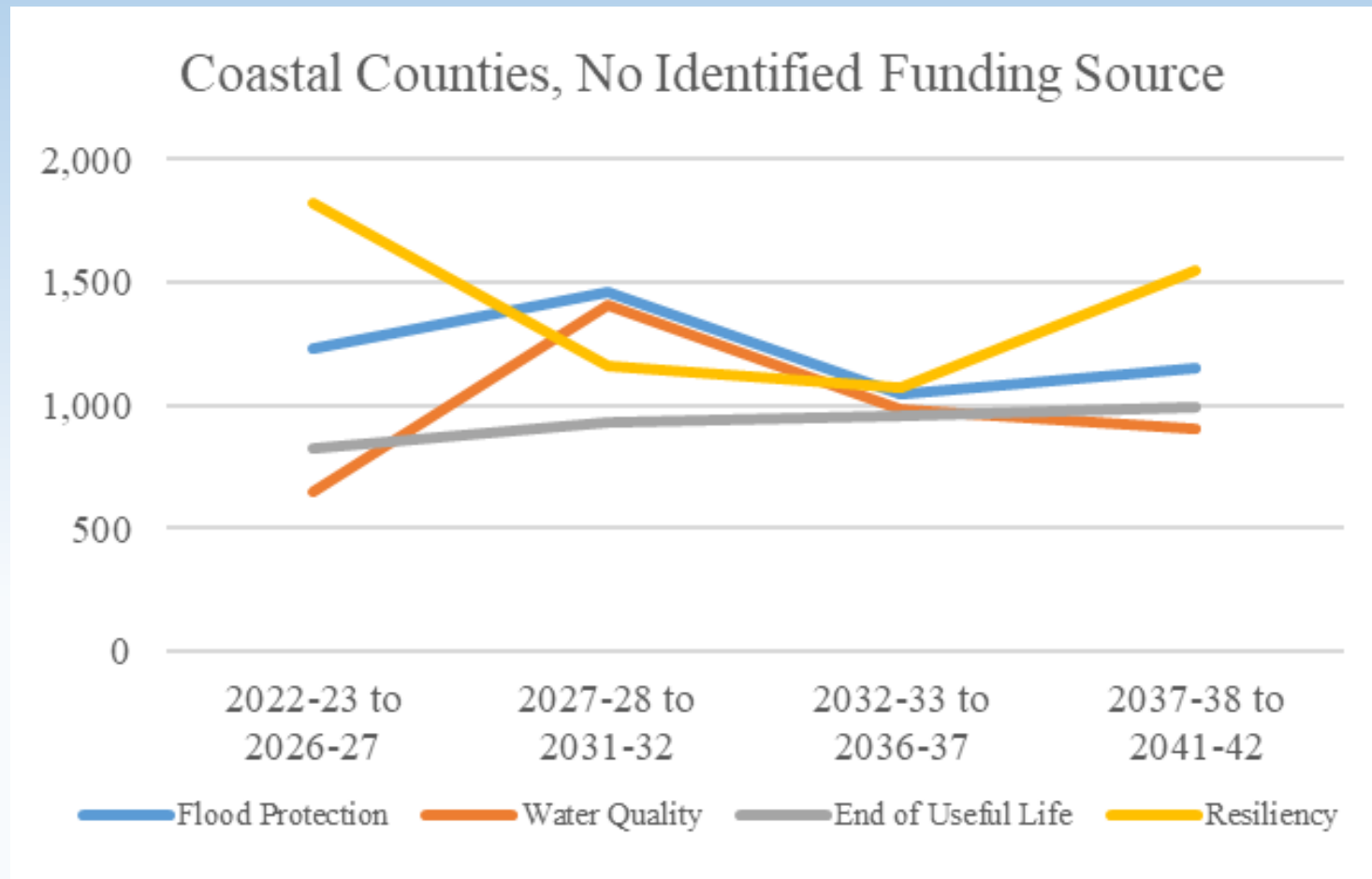
Expenditure Projections for Projects – Coastal Counties

In \$millions



Expenditure Projections for Projects – Coastal Counties

In \$millions



Total Expenditure Projections – All Categories

In \$millions	Total Reported Expenditure Projections				Reported Value Multiplication Factor
	Local Government Type	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	
Coastal Counties	\$ 5,164	\$ 4,505	\$ 4,295	\$ 4,879	100.9%
Inland Counties	\$ 752	\$ 516	\$ 468	\$ 245	107.8%
Coastal Municipalities	\$ 9,044	\$ 8,254	\$ 8,089	\$ 8,897	108.3%
Inland Municipalities	\$ 950	\$ 766	\$ 766	\$ 826	116.0%
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	\$ 4,332	\$ 4,921	\$ 19,006
Inland Counties	\$ 810	\$ 556	\$ 504	\$ 264	\$ 2,135
Coastal Municipalities	\$ 9,796	\$ 8,941	\$ 8,762	\$ 9,637	\$ 37,137
Inland Municipalities	\$ 1,103	\$ 888	\$ 888	\$ 959	\$ 3,838
Districts (All)	\$ 1,059	\$ 960	\$ 1,032	\$ 1,141	\$ 4,192
Statewide	\$ 17,976	\$ 15,890	\$ 15,519	\$ 16,923	\$ 66,307

Future Expenditures Seem Low

- Financial needs probably under-reported because:
 - Reluctance to report needs that are not funded
 - Long-term (20-year) planning at expenditure level not common
 - Spreadsheet had issues when financial data “Pasted,” causing EDR’s data set to leave out some reported expenditures
- Even though values may be lower than anticipated, funding gaps are still significant

Funding Gap & Anticipated Revenue from Strategy

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%
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%

Strategies to Close Gap

Locals Offered Several Strategies:

- Grants & Loans
- State Funding: Legislative appropriations
- Local Funding Sources:
 - Discretionary Sales Tax
 - Assessments
 - Fees or Rate Increases
 - Utility
 - Development Agreement
- Unknown (vague descriptions...hmmmm)

Conclusions

- HB 53 presented a great challenge for local governments (and EDR!)
- The financial need is great over the next 20 years
- Probably warrants longer-term planning
- This is just the first round and hopefully, local governments can better prepare for the next cycle
- EDR will improve the spreadsheet! Better descriptions, more detailed explanations, less data categories?

Questions?

mbateman.phi@gmail.com

Get ready for the next round! Due in 2027!



HB 407

- \$20 Million to DEP for City of Apalachicola
 - Stormwater and wastewater improvements for Apalachicola Bay
 - Starting FY 23/24
 - \$5 million each year for 4 years