Annual Assessment of Florida's Water Resources: Infrastructure Investments

2025 Edition
Chapter 5

Acknowledgements

EDR wishes to thank staff members of the following organizations for their substantial assistance with this report:

Florida Department of Environmental Protection

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

U.S. Environmental Protection Agency

The utilities and local governments who provided information to EDR.

The 168 drinking water systems that provided Lead Service Line Inventory data.

The 273 local governments that submitted a 20-Year Wastewater Services Needs Analysis

The 823 local governments that submitted a 20-Year Stormwater Management Needs Analysis

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Executive Summary

This chapter focuses on updated national estimates for water-related infrastructure and information from lead service line inventories collected from water systems. In 2021, the U.S. Environmental Protection Agency (EPA) conducted the Seventh Drinking Water Infrastructure Needs Survey and Assessment (DWINSA). The following year, the EPA conducted the Clean Watershed Needs Survey for the first time in a decade. The reported capital improvement needs from these surveys is over $65 billion for the State of Florida. Adjusted for inflation using the Bureau of Labor Statistics' Cost Price Index for All Urban Consumers and the *Engineering News-Record*'s Construction Cost Index, the needs exceed $72 billion over the next 20 years.[1]

Reported Expenditure Needs Over 20 Years (in $millions)

	EPA Estimates			
Needs Type	**Official Need (unadjusted)**	**FY 2023-24 CPI Estimate***	**FY 2023-24 ENR CCI Estimate***	**Comparison: EDR's Total Needs Estimates**
Drinking Water (2021)	$26,749.61	$31,656.90	$31,074.63	$104,057.46
Stormwater (2022)	$12,909.96	$14,215.04	$13,888.18	$48,346.71
Wastewater (2022)	$25,385.15	$27,951.36	$27,308.65	$139,528.78
Total	**$65,044.72**	**$73,823.30**	**$72,271.46**	**$291,932.95**

*The inflation adjustments were made by using multipliers to calculate expenditures for state fiscal year 2023-24. The multipliers for the January, 2021 estimate were 1.1834526 (CPI) and 1.1616853 (ENR CCI). The January, 2022 estimate's multipliers were 1.1010911 (CPI) and 1.0757725 (ENR CCI). EDR's Total Needs Estimates, which include Operations & Maintenance expenditures, are unadjusted.

Because other expenditures, like Operations and Maintenance (O&M), are excluded from the EPA's surveys, they are not included in the EPA's expenditure estimates in the table above. EDR's total needs estimates, by contrast, do include an O&M expenditure forecast as well as a higher capital improvement expenditure baseline. Historically, O&M expenditures constitute a higher proportion of total expenditures for public utilities than capital improvement.

The EPA's revised estimate of 1,014,952 service lines with lead content improved Florida's prior position as the state with the highest lead service lines in the country. Soon after the revised estimates were published, water systems completed their first lead service line inventories. Judging from the self-reported service line inventories, however, Florida's number of service lines that should be replaced is much lower than even the revised estimate. For example, there are only 40,140 service lines requiring replacement in the Florida Department of Environmental Protection's statewide inventory database.

Though this chapter's focus is primarily drinking water infrastructure, the next edition will be focused on the Stormwater Management and Wastewater 20-Year Needs Assessments required

[1] BLS, CPI-All Urban Consumers, Series ID: CUUR0000AA0. The *Engineering News-Record*'s Construction Cost Index was the index used by the EPA for its 2002 report "The Clean Water and Drinking Water Infrastructure Gap Analysis" to adjust CWNS estimates.

by section 403.9301, Florida Statutes, and s. 403.9302, F.S., respectively. The next needs assessments are due June 30, 2027. Those assessments will contain both capital improvement expenditure estimates and O&M forecasts.

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 2024, the Florida Legislature passed Committee Substitute for Committee Substitute for House Bill 1557, Engrossed.[2] Sections 17 and 18 of that bill amend sections 403.9301 and 403.9302, Florida Statutes, adding identical language regarding the Stormwater Management and Wastewater 20-Year Needs Analyses local governments are required to submit to the office of Economic and Demographic Research (EDR) every five years. That new language states "Beginning July 1, 2024, and by the July 1 following subsequent publications of the analysis required by this section, the Office of Economic and Demographic Research shall provide a publicly accessible data visualization tool on its website that allows for comparative analyses of key information."[3] EDR published these visualizations in 2024.[4] As soon as the next round of needs analyses are received, those visualizations will updated and accompanied by new comparisons between needs analysis submissions.

In this edition, the first section of this chapter presents the U.S. Environmental Protection Agency's (EPA's) 2022 Clean Watersheds Needs Survey and compares those estimates with the previously published stormwater and wastewater needs analyses that were submitted to EDR under ss. 403.9302 and 403.9301, F.S. An overview of the EPA's other water infrastructure survey, the Drinking Water Infrastructure Needs Survey and Assessment, is presented in section 5.2.

EDR reached out to public and private water systems of all sizes throughout the state to request their detailed Lead Service Line Inventories and current budget information. Though the budget data was helpful to get a broad idea of water system priorities, the lead service line inventories provided valuable data on one aspect of Florida's water distribution systems. Section 5.3 includes a detailed discussion of the lead service line inventories, trends in data submissions and building patterns, and comparisons with the EPA's 2023 estimate. Section 5.4 reviews state, local government, and regional special district revenue and expenditures for water-infrastructure related activities.[5] Section 5.5 presents private utility revenue and expenditures, and Section 5.6 concludes the chapter and contains a discussion of the next steps.

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[2] Bill history and analyses available at: https://www.myfloridahouse.gov/Sections/Bills/billsdetail.aspx?BillId=80310&SessionId=103. (Accessed March 2024.)
[3] Committee Substitute for Committee Substitute for House Bill 1557, Engrossed, available at: https://www.myfloridahouse.gov/Sections/Documents/loaddoc.aspx?FileName=_h1557er.docx&DocumentType=Bill&BillNumber=1557&Session=2024. (Accessed March 2024.)
[4] The Stormwater Management, Wastewater, and Combined Estimates are available at: https://edr.state.fl.us/Content/natural-resources/stormwaterwastewater.cfm. (Accessed June 2024.)
[5] In editions prior to 2024, this data was published alongside water quality revenue and expenditure data in chapter 4.

5.1 The EPA's 2022 Clean Watersheds Needs Survey

The EPA conducts the Clean Watersheds Needs Survey (CWNS) to compile the estimated capital investment needed to comply with the requirements of the Clean Water Act, section 516(b)(1)(B). Though congress intended the survey be conducted every other year, it was quadrennial between 1996 and 2012 and not conducted again until 2022. After a decade of statutory updates between the previous and most recent surveys, the needs categories in the 2022 survey were slightly redefined and estimates for two categories (Category XII, Decentralized Wastewater Treatment Systems, and VII, Nonpoint Source Control) were added to the official totals.[6]

The background and limitations of the CWNS estimates are discussed in detail in chapter 6 of the 2020 Edition of this report. Major limitations include only allowing expenditures for projects eligible for Clean Watershed State Revolving Fund financing, requiring extensive documentation, excluding all Operation & Maintenance (O&M) expenditures, a low response rate, and the fact that the EPA does not extrapolate the submitted data to calculate a true statewide expenditure estimate which takes into account non-responding local governments.

The 20-year capital improvement expenditure estimate for Florida's stormwater infrastructure and nonpoint source control totaled $12.91 billion, while the wastewater estimate reached $33.65 billion. Though Florida did not report any needs for three categories (secondary wastewater treatment, combined sewer overflows, and desalination), the state's total needs estimate is the third largest after California and New York. Table 5.1.1, CWNS 20-Year Expenditure Estimates for Florida, includes the estimates reported for the 2022 CWNS by category and subcategory. It lists the estimates in January 2022 dollars as well as adjustments for inflation using the Bureau of Labor Statistics' Cost Price Index for All Urban Consumers (CPI) and the Engineering News-Record's Construction Cost Index (CCI).[7]

[See table on next page.]

[6] The 2012 CWNS included an estimate for Category XII, Decentralized Wastewater Treatment Systems, though it was not included in the official total estimate. For the 2022 survey, the EPA included these costs in the official totals in order to reflect current law.

[7] BLS, CPI-All Urban Consumers, Series ID: CUUR0000AA0. The *Engineering News-Record*'s Construction Cost Index was the index used by the EPA for its 2002 report "The Clean Water and Drinking Water Infrastructure Gap Analysis" to adjust CWNS estimates.

Table 5.1.1 CWNS 20-Year Expenditure Estimates for Florida (in $millions)

Category or Subcategory*	2022 Estimate	FY 2023-24 CPI Estimate**	FY 2023-24 ENR CCI Estimate**
I. Secondary Wastewater Treatment	$0.00	$0.00	$0.00
II. Advanced Wastewater Treatment	$13,862.52	$15,263.90	$14,912.92
III. Conveyance System Repair			
III-A. Infiltration/Inflow (I/I) Correction	$465.04	$512.05	$500.28
III-B. Sewer Replacement/ Rehabilitation	$4,840.78	$5,330.14	$5,207.58
IV. New Conveyance Systems			
IV-A. New Collector Sewers and Appurtenances	$4,621.94	$5,089.18	$4,972.16
IV-B. New Interceptor Sewers and Appurtenances	$643.87	$708.96	$692.66
V. Combined Sewer Overflow (CSO) Correction	$0.00	$0.00	$0.00
VI. Stormwater Management Program			
VI-A. Gray Infrastructure	$11,365.98	$12,514.98	$12,227.21
VI-B. Green Infrastructure	$117.52	$129.40	$126.42
VI-C. General Stormwater Management	$555.92	$612.12	$598.04
VII. NPS Control			
VII-K. NPS Control: Hydromodification	$854.03	$940.36	$918.74
VII-M. NPS Control: Other Estuary Management Activities	$16.51	$18.18	$17.76
X. Water Reuse	$951.00	$1,047.14	$1,023.06
XII. Decentralized Wastewater Treatment Systems	$8,263.71	$9,099.10	$8,889.87
XIV. Desalination	$0.00	$0.00	$0.00
Total	**$46,558.82**	**$51,265.50**	**$50,086.70**

* Subcategories with no reported needs for Florida have been omitted.
** The estimates are adjusted from January 2022 to Fiscal Year 2023-24 using inflation multipliers. The CPI multiplier was 1.10109108 and the ENR CCI multiplier was 1.07577247.

Even with the limitations described above, in particular the response rate, the expenditure projections reported in the 2022 CWNS rose sharply from those reported a decade before. Table 5.1.2, 2012 & 2022 CWNS Expenditure Estimate Comparisons, contains the 2012 estimates adjusted for inflation using the Bureau of Labor Statistics' Cost Price Index for All Urban Consumers and the *Engineering News-Record*'s Construction Cost Index.[8]

Table 5.1.2, 2012 & 2022 CWNS Expenditure Estimate Comparisons (in $millions)

Needs Categories	2012 CWNS Estimate	CPI-Adjusted 2012 Estimate*	ENR CCI-Adjusted 2012 Estimate*	2022 Estimate
I. Secondary Wastewater Treatment	$0.00	$0.00	$0.00	$0.00
II. Advanced Wastewater Treatment	$11,328.06	$14,050.98	$15,500.22	$13,862.52
III. Conveyance System Repair	$1,691.62	$2,098.23	$2,314.65	$5,305.82
IV. New Conveyance Systems	$2,802.39	$3,476.00	$3,834.52	$5,265.81
V. CSO Correction	$0.00	$0.00	$0.00	$0.00
VI. Stormwater Management Program	$499.08	$619.04	$682.89	$12,039.41
VII. NPS Control	N/A	N/A	N/A	$870.55
X. Water Reuse	$2,101.66	$2,606.83	$2,875.71	$951.00
XII. Decentralized Wastewater Treatment Systems**	$5,586.00	$6,928.70	$7,643.34	$8,263.71
XIV. Desalination	N/A	N/A	N/A	$0.00
Total	**$24,008.81**	**$29,779.80**	**$32,851.33**	**$46,558.82**

* The estimates are adjusted from January 2012 to January 2022 using multipliers. The CPI multiplier was 1.24036949 and the ENR CCI multiplier was 1.36830318.
** XII, Decentralized Wastewater Treatment Systems was an ancillary estimate and not included in the official needs for the 2012 CWNS. It has been included in this table so the two surveys can be better compared.

[8] BLS, CPI-All Urban Consumers, Series ID: CUUR0000AA0. The *Engineering News-Record*'s Construction Cost Index was the index used by the EPA for its 2002 report "The Clean Water and Drinking Water Infrastructure Gap Analysis" to adjust CWNS estimates.

Florida's needs in two categories, Advanced Wastewater Treatment and Water Reuse, fell in the decade since the prior survey. The sharpest increase in needs is in stormwater management programs, which rose from $500 million (in 2012 dollars) to $12.04 billion in 2022.

As discussed in the 2023 and 2024 editions of this chapter, long-term planning for stormwater management has only recently come into focus for many local governments. Even with an increase of 1,845 percent (based on the CPI-adjusted 2012 estimate) in the 2022 survey, the EPA survey still underreports actual needs for the entire 20-year time frame. The expenditures are heavily front-loaded and largely concentrated in the first few years of the forecast. For example, of stormwater management program expenditures reported on the CWNS that included a project completion year, nearly 62% are expected to conclude in or by 2026.

Stormwater Management Program and Nonpoint Source Control Needs

Table 5.1.3, CWNS Stormwater Management & Nonpoint Source Expenditures by County, contains the expenditures reported to the EPA by publicly owned treatment works within each county. [9] The stormwater management subcategories, of which there were previously four, have been combined to three types in the 2022 survey. They are:

- Category VI-A, Gray Infrastructure – "needs for stormwater management program activities associated with the planning, design, and construction of stormwater conveyance structures (e.g., pipes, inlets, roadside ditches, and other similar mechanisms)" and "needs associated with the planning, design, and construction of structural BMPs that treat stormwater (e.g., wet ponds, dry ponds, manufactured devices)."
- Category VI-B, Green Infrastructure – program activity needs "associated with the planning, design, and construction of low-impact development and green infrastructure."
- Category VI-C, General Stormwater Management – "needs for activities associated with implementing a stormwater management program" including asset management systems, equipment, education program costs, and plan development.[10]

The two subcategories of Nonpoint Source Control that were present in Florida's data are combined in the table below. They are Hydromodification (which "includes needs to address the degradation of water resources as a result of altering the hydrological characteristics of coastal and non-coastal waters") and Other Estuary Management Activities (which is limited to "management activities in the study areas of the 28 National Estuary Programs (NEPs) designated under section 320 of the CWA").[11] The majority of Florida's Nonpoint Source Control expenditures were reported by the South Florida Water Management District's hydromodification projects, which are all reported in Palm Beach County.[12]

[9] Database with download available: https://sdwis.epa.gov/ords/sfdw_pub/r/sfdw/cwns_pub/data-download.
[10] EPA, "Clean Watersheds Needs Survey 2022 Report to Congress," (April 2024), p. A-2, https://www.epa.gov/system/files/documents/2024-05/2022-cwns-report-to-congress.pdf. (Accessed February 2025.)
[11] *Ibid.*
[12] South Florida Water Management District's headquarters are located in West Palm Beach, FL.

Table 5.1.3, CWNS Stormwater Management & Nonpoint Source Expenditures by County (in $millions)

County	Gray Infrastructure	Green Infrastructure	General Stormwater Mgmt.	Nonpoint Source Control	Stormwater & Nonpoint Source Total
Alachua			$2.09		$2.09
Baker					
Bay	$59.28		$2.02		$61.30
Bradford					
Brevard	$56.11	$61.55	$3.29		$120.95
Broward	$442.07		$13.97		$456.04
Calhoun					
Charlotte	$16.88				$16.88
Citrus	$2.81		$0.27		$3.08
Clay			$3.41		$3.41
Collier	$169.86	$12.60	$10.40		$192.85
Columbia					
DeSoto					
Dixie	$12.86				$12.86
Duval	$213.41		$0.34		$213.75
Escambia	$1.52		$14.19		$15.71
Flagler					
Franklin	$2.12	$0.99	$0.31		$3.42
Gadsden			$0.69		$0.69
Gilchrist					
Glades					
Gulf					
Hamilton					
Hardee			$0.20		$0.20
Hendry	$5.98		$0.41		$6.39
Hernando	$13.50		$0.58		$14.08
Highlands					
Hillsborough	$212.20	$9.78	$23.02	$2.16	$247.16
Holmes					
Indian River	$22.41				$22.41
Jackson	$14.05		$4.52		$18.58
Jefferson					
Lafayette					
Lake	$5.35		$1.11		$6.46
Lee	$82.77		$1.20		$83.97
Leon	$53.50		$5.18	$0.80	$59.48
Levy	$3.52				$3.52
Liberty					
Madison	$1.78				$1.78
Manatee	$39.94		$1.37		$41.31
Marion			$3.37		$3.37
Martin	$13.86				$13.86
Miami-Dade	$5,780.85	$0.40	$6.33	$12.32	$5,799.91
Monroe					
Nassau	$13.25				$13.25
Okaloosa	$5.07		$2.02		$7.09
Okeechobee	$25.77				$25.77
Orange	$95.20		$14.39		$109.59
Osceola	$35.00		$1.76		$36.76

County	Gray Infrastructure	Green Infrastructure	General Stormwater Mgmt.	Nonpoint Source Control	Stormwater & Nonpoint Source Total
Palm Beach	$3,393.67	$31.90	$385.08	$852.56	$4,663.21
Pasco			$3.44		$3.44
Pinellas	$263.23		$0.51		$263.74
Polk	$89.67		$9.49		$99.17
Putnam	$0.54				$0.54
Santa Rosa	$9.11		$3.04		$12.15
Sarasota	$28.69	$0.28			$28.97
Seminole	$62.63		$15.89		$78.52
St. Johns	$46.02				$46.02
St. Lucie	$26.03		$1.51		$27.54
Sumter	$1.07				$1.07
Suwannee					
Taylor					
Union			$0.20		$0.20
Volusia	$37.45		$14.88		$52.33
Wakulla	$6.72			$2.71	$9.43
Walton					
Washington	$0.27		$5.44		$5.71
Total	**$11,365.98**	**$117.52**	**$555.92**	**$870.55**	**$12,909.96**

When broken down by county, it's clear that numerous local governments either did not participate or their expenditures were not included in the EPA's forecast, as multiple counties have no expected stormwater or nonpoint source expenditures at all. Whether those local governments did not participate due to not responding to the survey or because they were not able to (*e.g.*, their projects are not eligible for funding through the Clean Water State Revolving Fund or they were eligible but exceeded the survey's time frame) is not known. Regardless, contrary to the Drinking Water Infrastructure Needs Survey and Assessment, the EPA does not scale the reported data to a statewide estimate and the CWNS 20-year estimate includes only the needs that were reported on the survey.[13]

As a comparison to the CWNS 20-year $12.039 billion forecast for Stormwater Management (Category VI), Table 5.1.4 contains the aggregated needs for stormwater management projects from EDR's 20-year needs estimate reported by 823 local governments. Based on EDR's stormwater management forecast of $28.123 billion, the entirety of the CWNS estimate will be exhausted in the first decade.[14] Even this much higher forecast is likely an underestimation of the need. In local fiscal year 2021-22 alone, Florida's local governments reported $1.89 billion in actual stormwater expenditures (under expenditure code 538 – Flood Control/Stormwater Control).[15]

[13] This is not true for the Decentralized Wastewater Treatment System Category, but is true for the stormwater and nonpoint source categories as well as all other wastewater categories.
[14] This estimate includes all projects reported by local governments for stormwater management needs and is not limited to those eligible for grants or loans from the Clean Water State Revolving Fund, as the CWNS estimate is. Additionally, expenditure forecasts for EDR's needs analysis submissions included an adjustment for future inflation.
[15] This total includes expenditures made by multi-county special districts.

Table 5.1.4, EDR's Stormwater Management Needs Analysis Expenditures by Project Type (in $millions)

Project Category	2022-23 to 2026-27	2027-28 to 2031-32	2032-33 to 2036-37	2037-38 to 2041-42	20-Year Total
Flood Protection	$3,266.66	$2,349.71	$1,658.62	$1,663.09	$8,938.10
Water Quality	$1,808.29	$1,861.76	$1,274.71	$1,106.53	$6,051.29
Resiliency	$3,288.33	$1,419.05	$1,208.97	$1,672.39	$7,588.74
End of Useful Life	$1,449.57	$1,314.11	$1,360.94	$1,422.24	$5,546.85
Total	**$9,812.85**	**$6,944.63**	**$5,503.25**	**$5,864.24**	**$28,124.98**

In Table 5.1.4, the project estimates do not include associated expenditures for Operations & Maintenance (O&M). Table 5.1.5 calculates a rough O&M estimate based on the proportion of O&M to project expenditures in EDR's 20-year needs estimate. In this total estimate, NPS expenditures are assumed to have the same shares of expenditures for O&M and projects as stormwater management activities do. The calculation is accompanied by estimates adjusted for inflation to State Fiscal Year 2023-24 using the CPI and the ENR's CCI.[16]

Table 5.1.5, Total Stormwater & NPS Expenditure Estimates (with O&M), (in $millions)

	EDR Stormwater 20-Year Total	Percent of Total
O&M	$20,221.73	41.83%
SW Projects	$28,124.98	58.17%
Total	**$48,346.71**	

CWNS Calculation	Estimated Total 20-Year Needs	FY 2023-24 CPI Estimate	FY 2023-24 ENR CCI Estimate
O&M Estimate	$9,282.20	$10,220.55	$9,985.54
CWNS SW & NPS Total	$12,909.96	$14,215.04	$13,888.18
Calculated Total	**$22,192.16**	**$24,435.59**	**$23,873.71**

*The CPI multiplier used was 1.10109108 and the ENR CCI multiplier was 1.1075772.

Wastewater System and Treatment Needs

The 2022 CWNS included needs for Florida's wastewater projects in the following categories and subcategories:

- Category II, Advanced Wastewater Treatment – "needs for attaining or maintaining a level of treatment that is more stringent than secondary treatment or producing a significant reduction in nonconventional or toxic pollutants in the wastewater treated by a facility" in accordance with EPA standards.
- Category III-A, Infiltration/Inflow (I/I) Correction – expenditure needs for I/I corrections and associated system analysis and surveys. "For infiltration, this includes controlling the penetration of water into a sanitary or combined sewer system from the ground through defective pipes or manholes. For inflow, it includes controlling the penetration of water into the system from drains, storm sewers, and other improper entries."

[16] BLS, CPI-All Urban Consumers, Series ID: CUUR0000AA0. The *Engineering News-Record*'s Construction Cost Index was the index used by the EPA for its 2002 report "The Clean Water and Drinking Water Infrastructure Gap Analysis" to adjust CWNS estimates.

- Category III-B, Sewer Replacement/ Rehabilitation – "needs for the maintenance (above and beyond ongoing operations and maintenance), reinforcement, or reconstruction of structurally deteriorating sanitary or combined sewers. The corrective actions must be necessary to maintain the structural integrity of the system."
- Category IV-A, New Collector Sewers and Appurtenances – "needs for new pipes used to collect wastewater from a sanitary or industrial wastewater source and carry it to an interceptor sewer that will convey it to a treatment facility."
- Category IV-B, New Interceptor Sewers and Appurtenances – needs for relief sewers and for "for constructing new interceptor sewers and pumping stations to convey wastewater from collection sewer systems to a treatment facility or to another interceptor sewer."
- Category X, Water Reuse – "needs associated with conveyance of treated wastewater that is being reused, including associated rehabilitation/ replacement needs." This excludes treatment for potable reuse, but includes conveyance pipes to a drinking water distribution system or facility and non-potable reuse equipment.
- Category XII, Decentralized Wastewater Treatment Systems – "needs associated with the rehabilitation, replacement, or new installation of on-site wastewater treatment systems or clustered (community) systems" and the treatment portion of those systems. This category excludes the cost to switch a decentralized cluster system to a centralized system. Public ownership is not required for this category.[17]

Table 5.1.6, CWNS Wastewater Needs by County, shows county-level needs for each of these categories and sub-categories. For all categories except XII, Decentralized Wastewater Treatment Systems, the needs are limited to those reported to the EPA by publicly owned treatment works. Category XII alone is based on the population dependent on these systems and the average cost of decentralized wastewater treatment systems. Florida's needs are the highest in the nation for advanced wastewater treatment, new conveyance systems, and decentralized wastewater treatment systems.

[See table on next page.]

[17] EPA, "Clean Watersheds Needs Survey 2022 Report to Congress," (April 2004), pp. A-1 through A-6, https://www.epa.gov/system/files/documents/2024-05/2022-cwns-report-to-congress.pdf. (Accessed February 2025.)

Table 5.1.6, CWNS Wastewater Needs by County (in $millions)

		Conveyance System Repair		New Conveyance Systems				
County	**Advanced Wastewater Treatment**	**Infiltration / Inflow (I/I) Correction**	**Sewer Replacement/ Rehabilitation**	**New Collector Sewers and Appurtenances**	**New Interceptor Sewers and Appurtenances**	**Water Reuse**	**Decentralized Wastewater Treatment Systems**	**Total**
Alachua	$2.51		$5.01				$108.78	$116.29
Baker							$24.03	$24.03
Bay	$128.84	$14.08	$37.32	$11.58		$9.95	$103.76	$305.54
Bradford	$19.60		$6.24				$174.17	$200.01
Brevard	$139.25	$1.09	$129.14	$97.03		$17.44	$126.57	$510.51
Broward	$310.26	$91.18	$420.46	$359.34	$2.38	$60.05	$75.99	$1,319.66
Calhoun	$18.39						$19.68	$38.07
Charlotte	$68.88		$0.57	$368.98	$36.66		$239.07	$714.16
Citrus	$49.51	$0.52	$25.00	$857.51	$84.07	$0.00	$285.34	$1,301.95
Clay	$79.94		$21.62	$2.14	$15.92		$71.37	$190.99
Collier	$136.68		$111.72	$17.58	$2.68	$2.64	$176.50	$447.80
Columbia	$1.72		$1.53		$1.41		$117.07	$121.72
DeSoto	$0.15		$3.34				$23.16	$26.66
Dixie							$20.55	$20.55
Duval	$690.06		$138.87		$12.21	$38.07	$217.29	$1,096.49
Escambia	$7.17	$47.04	$33.54	$62.31	$8.66		$125.87	$284.59
Flagler	$108.88		$23.05			$19.21	$20.94	$172.08
Franklin	$23.29	$0.31	$0.16				$32.11	$55.86
Gadsden				$1.20			$42.36	$43.56
Gilchrist							$43.18	$43.18
Glades	$3.99			$9.10			$14.80	$27.88
Gulf							$18.86	$18.86
Hamilton							$10.44	$10.44
Hardee	$5.52	$2.00	$2.33				$15.23	$25.08
Hendry	$42.43		$2.71	$0.06			$41.54	$86.73
Hernando	$68.29		$28.20	$980.22		$0.81	$303.38	$1,380.89
Highlands	$2.22	$0.09	$0.83	$2.67	$36.15	$0.00	$99.61	$141.57
Hillsborough	$876.88		$372.03	$203.39	$171.71	$54.62	$296.57	$1,975.20
Holmes	$15.20		$3.29	$4.45			$25.05	$47.99
Indian River	$12.95		$24.38	$9.29	$9.49		$224.75	$280.87
Jackson	$9.95	$0.70	$12.63	$6.71	$2.35	$0.00	$42.55	$74.88
Jefferson	$0.06						$14.02	$14.08
Lafayette	$6.83		$0.97				$10.40	$18.19

		Conveyance System Repair		New Conveyance Systems				
County	**Advanced Wastewater Treatment**	**Infiltration / Inflow (I/I) Correction**	**Sewer Replacement/ Rehabilitation**	**New Collector Sewers and Appurtenances**	**New Interceptor Sewers and Appurtenances**	**Water Reuse**	**Decentralized Wastewater Treatment Systems**	**Total**
Lake	$147.30	$0.56	$17.30	$1.84		$9.46	$329.73	$506.19
Lee	$253.70	$2.55	$175.47	$257.86		$236.91	$399.83	$1,326.32
Leon	$175.76		$54.35	$685.95	$29.43	$0.89	$134.54	$1,080.91
Levy	$0.18		$19.64				$78.09	$97.91
Liberty				$4.69			$8.75	$13.44
Madison	$2.70	$18.83					$23.11	$44.64
Manatee	$166.60	$20.86	$124.94		$4.74	$14.41	$50.58	$382.12
Marion	$66.34	$12.38	$10.93	$0.51	$45.26	$2.38	$496.07	$633.87
Martin	$10.42		$19.48	$32.42	$3.77		$115.18	$181.28
Miami-Dade	$7,345.27	$114.56	$970.67	$423.02	$97.59	$0.00	$278.97	$9,230.08
Monroe	$10.95		$18.40	$0.28			$1.16	$30.80
Nassau	$94.62	$6.93	$27.16	$5.84	$0.60	$64.14	$61.94	$261.24
Okaloosa	$44.36		$25.02	$8.82	$0.28	$0.25	$131.96	$210.70
Okeechobee	$29.67		$4.73	$18.17			$36.41	$88.99
Orange	$469.01	$8.66	$477.70	$7.35	$3.66	$121.15	$436.89	$1,524.43
Osceola	$56.57	$8.91	$34.80	$9.60	$0.24	$34.64	$80.37	$225.13
Palm Beach	$286.37	$34.83	$441.78	$17.29	$26.64	$74.25	$161.25	$1,042.40
Pasco	$239.00		$92.78		$20.17	$1.11	$219.68	$572.75
Pinellas	$321.71	$25.33	$272.09	$5.22		$43.48	$45.68	$713.50
Polk	$272.95	$2.21	$81.42	$7.53		$28.81	$409.77	$802.70
Putnam			$3.39	$2.33	$1.61		$72.58	$79.90
Santa Rosa	$25.18	$2.08	$8.86	$17.97		$0.26	$216.49	$270.83
Sarasota	$119.83	$18.22	$95.93	$8.53	$10.91	$10.05	$249.74	$513.22
Seminole	$246.73	$6.66	$213.27	$36.83		$77.40	$147.77	$728.66
St. Johns	$230.04	$9.51	$66.15	$0.76		$9.13	$120.98	$436.58
St. Lucie	$138.54	$11.30	$29.42	$5.14	$10.91	$0.91	$88.59	$284.80
Sumter	$55.21		$13.28			$2.96	$60.01	$131.46
Suwannee	$15.92	$0.74	$0.56	$3.61			$74.76	$95.59
Taylor		$0.86					$13.10	$13.97
Union	$19.04		$0.35				$13.68	$33.07
Volusia	$142.43	$1.42	$116.45	$16.64	$3.91	$10.73	$381.60	$673.17
Wakulla	$7.93		$7.14	$41.06		$4.90	$61.07	$122.10
Walton	$37.38		$12.38	$4.15	$0.44		$64.31	$118.67
Washington	$1.39	$0.65		$4.99			$34.04	$41.08
Total	**$13,862.52**	**$465.04**	**$4,840.78**	**$4,621.94**	**$643.87**	**$951.00**	**$8,263.71**	**$33,648.86**

The CWNS has a much more stringent standard of proof than EDR's Stormwater Management and Wastewater Needs Analyses, but a comparison may be useful to show how much the CWNS understates Florida's needs over the next two decades. Table 5.1.7, Reported Expenditures by Project Type, contains the estimates local governments reported to EDR for the 20-year period between Local Fiscal Year 2022-23 and LFY 2041-42.

Table 5.1.7, EDR's Wastewater Needs Analysis Expenditures by Project Type (in $millions)

Project 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	$3,603.64	$3,116.02	$1,928.34	$1,345.46	$9,993.47
Water Quality	$4,455.52	$1,476.19	$1,440.53	$673.82	$8,046.05
Resiliency	$2,467.48	$788.13	$2,050.79	$842.99	$6,149.39
Reuse Development	$1,664.60	$890.89	$837.86	$642.79	$4,036.14
End of Useful Life Replacement	$7,789.45	$4,592.06	$7,220.62	$5,446.85	$25,048.98
Septic to Sewer Conversions	$3,121.69	$2,038.67	$2,130.13	$1,722.15	$9,012.65
Total	**$23,102.38**	**$12,901.97**	**$15,608.26**	**$10,674.06**	**$62,286.68**

The CWNS's wastewater estimate for comparable project expenditures (*i.e.*, excluding stormwater, nonpoint source, and decentralized wastewater treatment systems categories), totals $25,385.15 million for the full 20-year period. Note that the CWNS data is all based on January 2022 dollars, while local governments calculated an inflation adjustment for their needs analysis submissions to EDR. Even with that difference in base year dollars, the entire CWNS needs estimates for wastewater barely outweighs the first five years of forecasted expenditures reported to EDR.

Projecting an O&M estimate for the wastewater needs reported in the CWNS, Table 5.1.8 calculates an O&M forecast by using the same ratio of project expenditures as found in EDR's 20-year needs estimate. The calculation is accompanied by estimates adjusted for inflation to State Fiscal Year 2023-24 using the CPI and the ENR's CCI.[18] This calculation initially excludes CWNS Category XII, Decentralized Wastewater Treatment, as EDR's analysis did not contain a category that would include those costs.

Table 5.1.8, Total Wastewater Expenditure Estimates (with O&M), (in $millions)

	EDR Wastewater 20-Year Total	Percent of Total
O&M	$77,242.10	55.36%
WW Projects	$62,286.68	44.64%
Total	**$139,528.78**	

CWNS Calculation	Estimated Total 20-Year Needs	FY 2023-24 CPI Estimate*	FY 2023-24 ENR CCI Estimate*
O&M Estimate	$31,480.28	$34,662.66	$33,865.62
CWNS WW Total	$25,385.15	$27,951.36	$27,308.65
Calculated Total	**$56,865.43**	**$62,614.02**	**$61,174.27**
Decentralized WW	$8,263.71	$9,099.10	$8,889.87
Total with Decentralized	**$65,129.15**	**$71,713.12**	**$70,064.14**

*The CPI multiplier used was 1.10109108 and the ENR CCI multiplier was 1.1075772.

[18] BLS, CPI-All Urban Consumers, Series ID: CUUR0000AA0. The *Engineering News-Record*'s Construction Cost Index was the index used by the EPA for its 2002 report "The Clean Water and Drinking Water Infrastructure Gap Analysis" to adjust CWNS estimates.

According to the EPA's 2022 CWNS and extrapolating O&M expenditures, Florida's stormwater, nonpoint source, and wastewater needs will reach $79.058 billion through 2041 (climbing to $87.321 billion with decentralized wastewater treatment). Adjusted for inflation based on the ENR's Construction Cost Index to FY2023-24, that estimate reaches $85.050 billion ($93.938 billion when including decentralized wastewater treatment).

EDR will, in 2027, collect updated needs analyses from local governments under ss. 403.9302 and 403.9301, F.S., and be able to present a more accurate estimate of the state's needs through 2047. The next of edition of this report will include a discussion of the updated templates EDR will publish to assist local governments in their forecasts.

5.2 Drinking Water Infrastructure Needs Survey and Assessment

In 1996, amendments to 1974's Safe Drinking Water Act (SDWA) established the Drinking Water State Revolving Loan Fund (DWSRF) to assist states and public water systems in protecting the health of the public through low-interest loans. By law, the EPA allocates the DWSRF capitalization grants among the states and other areas[19] based on the needs reported in the most recent Drinking Water Infrastructure Needs Survey and Assessment (DWINSA). Through a series of surveys, completed by a sample of community water systems, the EPA collects estimated capital expenditure data over a 20-year forecast period.[20]

The 2020 edition of this chapter contains a detailed discussion of DWINSA's aims and limitations. Major reporting limitations include the facts that, like the CWNS, DWINSA estimates do not include O&M expenditures and reported expenditures are confined in their scope to subjects for which the EPA offers loans and grants through the DWSRF or other federal funding mechanisms. Additionally, the forecasts do not incorporate inflation so in this case, the expenditures are reported in January 2021 dollars. Contrary to the CWNS data, DWINSA needs are modeled to estimate true statewide totals for all eligible drinking water systems in the state, as opposed to just those systems that responded to the survey. Table 5.2.1, DWINSA 20-Year Expenditure Estimates for Florida by Category, contains the state's 20-year needs totals for each traditional need category (which are eligible for DWSRF funding) for the base year. The estimates are then adjusted by both a CPI and an ENR CCI multiplier to State Fiscal Year 2023-24.

[See table on next page.]

[19] In addition to the 50 states, the District of Columbia, and Puerto Rico, funding is allocated to American Indian and Alaskan Native Village Water Systems and American Samoa, Guam, the Northern Mariana Islands, and the Virgin Islands.
[20] The CWNS and DWINSA are generally referred to as "quadrennial," though neither is consistently conducted at four year intervals. Previous Drinking water Infrastructure Needs Survey and Assessments were conducted every four years from 1995 to 2015, but the next survey was delayed. The Clean Watersheds Needs Survey (previously called the Clean Water Needs Survey) was conducted every two years from 1978 to 1992, every four years from 1996 to 2012, then in 2022. For the DWINSA, all large systems (serving over 100,000 people), a random sample of medium systems in every state (each serving between 3,301 and 100,000 people), a national random sample of small community water systems (serving up to 3,300 people), and a national random sample of not-for-profit noncommunity water systems, were surveyed.

Table 5.2.1 DWINSA 20-Year Expenditure Estimates for Florida by Category (in $millions)

Category	2021 DWINSA	FY 2023-24 CPI Estimate*	FY 2023-24 ENR CCI Estimate*
Distribution / Transmission	$17,615.23	$20,846.79	$20,463.36
Treatment	$5,135.64	$6,077.78	$5,966.00
Storage	$1,778.06	$2,104.25	$2,065.54
Source	$1,454.83	$1,721.72	$1,690.05
Other	$765.86	$906.36	$889.68
Total	**$26,749.61**	**$31,656.90**	**$31,074.63**

* The estimates are adjusted from January 2021 to Fiscal Year 2023-24 using inflation multipliers. The CPI multiplier was 1.1834526 and the ENR CCI multiplier was 1.1616853.

Table 5.2.2, DWINSA 20-Year Expenditure Estimates for Florida by System Size/Type, shows the same survey results broken down by system size. Small systems serve 3,300 or fewer people, while medium systems serve 3,301 to 100,000 people, and large systems serve over 100,000 people. Not-for-profit non-community water systems do not serve permanent populations. All 41 large systems and a random sample of medium systems were surveyed. National samples were used to estimate needs for small and not-for-profit non-community water systems.

Table 5.2.2, DWINSA 20-Year Expenditure Estimates for Florida by System Size/Type (in $millions)

System Size/Type	2021 DWINSA	FY 2023-24 CPI Estimate*	FY 2023-24 ENR CCI Estimate*
Large	$12,409.59	$14,686.16	$14,416.04
Medium	$10,668.24	$12,625.36	$12,393.14
Small	$2,821.14	$3,338.69	$3,277.28
NPNCWS	$850.64	$1,006.69	$988.17
Total	**$26,749.61**	**$31,656.90**	**$31,074.63**

*The CPI multiplier used was 1.1834526 and the ENR CCI multiplier was 1.1616853.

Like the CWNS total expenditure estimates calculated at the end of the preceding section, a drinking water O&M estimate can be calculated using the proportion of O&M expenditures compared to capital improvement and other expenditures, though this calculation is based on historical data reported in EDR's 2021 Drinking Water Survey.

Table 5.2.3, Total Drinking Water Expenditure Estimates (with O&M), (in $millions)

	Estimated Total 20-Year Needs	Percent of Total*
O&M Estimate	$77,307.85	63.92%
DWINSA Total	$26,749.61	22.12%
	$104,057.46	

DWINSA Total Expenditure Calculation	FY 2023-24 CPI Estimate**	FY 2023-24 ENR CCI Estimate**
O&M Estimate	$91,490.17	$89,807.39
DWINSA Total	$31,656.90	$31,074.63
	$123,147.07	**$120,882.03**

*The percents do not add up to 100% because the drinking water expenditure categories this calculation is based on includes a third, "Other," category. That category is not included in the Stormwater or Wastewater estimates so it has been excluded from this table. The full methodology for this calculation can be found in Appendix A of this report's 2024 Edition. Available at https://edr.state.fl.us/Content/natural-resources/2024_AnnualAssessmentInfrastructureInvestments_Chapter5.pdf.

** The CPI multiplier used was 1.1834526 and the ENR CCI multiplier was 1.1616853.

5.3 Lead Service Line Inventory

The EPA's major tool to eliminate lead in the nation's drinking water is the Lead and Copper Rule (LCR), first published in 1991. A major update to the rule in December 2020 required systems to publicly identify the locations of lead service lines (LSLs) and test schools and childcare facilities.[21] Further LCR updates were proposed in November 2023, with which the EPA aims to achieve 100% lead pipe replacement within a decade. These Lead and Copper Rule Improvements (LRCI) require systems to keep their lead service line inventory up to date and accessible to the public, further improve sampling, and lower the lead action level from 15 parts per billion to 10 parts per billion.[22]

This section will discuss multiple lead service line inventory estimates and datasets, starting with the EPA's 2021 DWINSA results, the EPA's revision of that estimate for Florida, and the EPA's system-level estimates. Following that, the inventory summaries and detailed inventories EDR received from water systems throughout the state will be analyzed. DEP's statewide LSL inventory dataset will be examined, finally concluding with a comparison between the disparate estimates. Before looking at LSL inventories, a short introduction to service lines is necessary.

A service line is a "portion of pipe that connects the water main (or other conduit for distributing water to individual consumers or groups of consumers) to the building inlet" or, lacking a building, to the outlet.[23] Service lines can be made from whatever is the prevailing material at the time of installation or replacement. Over time, this has included modern plastic (such as PVC), galvanized metal (a "service line that is made of iron or steel that has been dipped in zinc to prevent corrosion and rusting"[24]), and, at one point, lead. For the LSL inventories, the EPA defines a lead service line as a "service line that is made of lead or where a portion of the service line is made of lead. A lead-lined galvanized service line is defined as a lead service line."[25]

Service lines are typically owned by the water system up to a point and owned by the customer beyond that point. The point at which ownership changes might be the property boundary or the meter–the specifics are highly localized and system-dependent. Figure 5.3.1, Example of Service Line Ownership Distinction between the Water System and Customer, is an illustration made by the EPA in their LSL inventory guidance.[26] The majority of water systems in EDR's LSL Inventory dataset reported that the ownership of the service line switches from the system to the property owner at the water meter, which is not necessarily at the property boundary.

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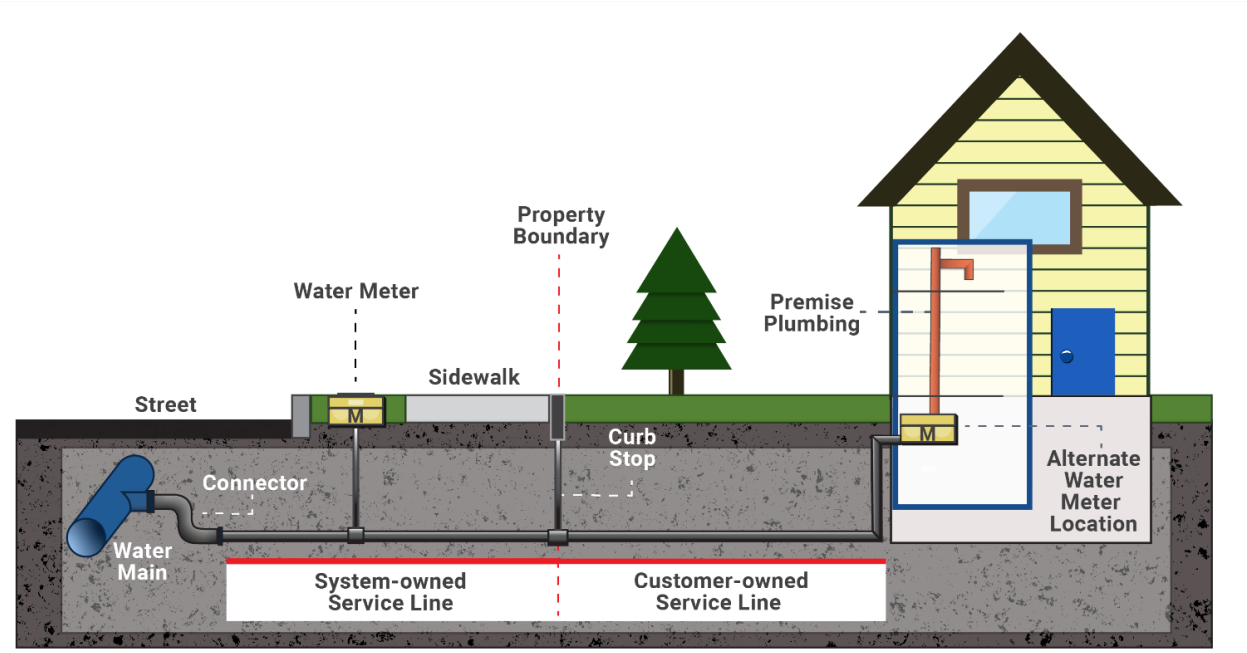
[21] EPA, Revisions to the Lead and Copper Rule, https://www.epa.gov/ground-water-and-drinking-water/revised-lead-and-copper-rule. (Accessed February 2024.)
[22] A full list of federal requirements and state responsibilities is available in the "National Primary Drinking Water Regulation Crosswalk: Control of Lead and Copper," https://www.epa.gov/system/files/documents/2025-09/final-lcr-crosswalk-august-2025.docx (Accessed August 2025.)
[23] EPA, "EPA's Final Lead and Copper Rule Improvements Technical Fact Sheet: Service Line Inventory and Replacement Requirements," p. 1 (October 2024), https://www.epa.gov/system/files/documents/2024-10/final_lcri_fact-sheet_service-line-inventory.pdf. (Accessed May 2025.)
[24] *Ibid.*
[25] *Ibid*.
[26] EPA, "Guidance for Developing and Maintaining a Service Line Inventory," p. 2-4 (August 2022), https://www.epa.gov/system/files/documents/2022-08/Inventory%20Guidance_August%202022_508%20compliant.pdf. (Accessed November 2023.)

Figure 5.3.1, Example of Service Line Ownership Distinction between the Water System and Customer



Source: EPA's *Guidance for Developing and Maintaining a Service Line Inventory*.

The connector is distinct from the rest of the service line. The federal definition reads "Connector, also referred to as a gooseneck or pigtail, means a short segment of piping not exceeding three feet that can be bent and is used for connections between service piping, typically connecting the service line to the main. For purposes of [Title 40, Code of Federal Regulations Part 141 Subpart I, Lead and Copper Rule], lead connectors are not considered to be part of the service line."[27]

That definition describes connectors as "short" but does not specify the maximum length. The EPA's LSL inventory definitions and requirements evolved during inventory development. In a 2022 guidance document, connectors were described as "short section of piping, typically not exceeding two feet, which can be bent and used for connections between rigid service piping."[28] By the time the inventories were nearing completion in 2024, the acceptable length of connectors was described by the EPA as "not exceeding 3 feet."[29] Though this single foot in the length of connectors may seem negligible, the fact that service lines can still be considered "non-lead" even if a three foot long connector is made out of lead (or lead lined, or galvanized requiring replacement) pipe is significant and will be discussed with the detailed inventory analysis below.

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[27] Title 40 CFR 141.2 Definitions, accessible at https://www.ecfr.gov/current/title-40/part-141/section-141.2.
[28] EPA, "Guidance for Developing and Maintaining a Service Line Inventory," p. ix (August 2022), https://www.epa.gov/system/files/documents/2022-08/Inventory%20Guidance_August%202022_508%20compliant.pdf. (Accessed November 2023.)
[29] EPA, "EPA's Final Lead and Copper Rule Improvements Technical Fact Sheet: Service Line Inventory and Replacement Requirements," p. 1 (October 2024), https://www.epa.gov/system/files/documents/2024-10/final_lcri_fact-sheet_service-line-inventory.pdf. (Accessed May 2025.)

Original and Revised Statewide EPA Estimates

In the original Seventh DWINSA Report publication that was discussed in the 2024 edition of this report, Florida's LSL estimated count was 792,534, or 17.52 percent of the state's total reported service lines.[30] At that level, Florida accounted for 12.62 percent of the projected total LSL in the US.[31] The EPA based those estimates on the original DWINSA questionnaires, which were completed by a sample set of water systems. According to the EPA, at the time those 2021 LSL counts were being collected, "most systems in the U.S. did not have an inventory of their service lines because initial inventories were required to be submitted by water systems under the EPA's Lead and Copper Rule Revisions (LCRR) by October 16, 2024 – years after 7th DWINSA data collection."[32] Two years after those original questionnaires were collected, state agencies and water systems were allowed the chance to update their original LSL estimates with whatever data they had collected in the intervening time period. This data was published in the 2023 DWINSA update, though it would soon be outdated by the complete inventories that water systems submitted in October 2024.

Table 5.3.1, Comparison of Florida's LSL Estimates, 2021 vs. 2023, contains the original and the revised estimates for the material counts and projected LSL count.

Table 5.3.1, Comparison of Florida's LSL Estimates, 2021 vs. 2023

Florida's Service Line Material Estimates							Projected LSL	
Year of Estimate	Lead Content	Standalone Galvanized	No Lead Content	Unknown	Not Reported	Total	Projected Lead Content	Percent of National Total
2021 Estimates	792,534	791,911	2,939,425	956,068	1,137,447	6,617,385	1,159,300	12.62%
2023 Estimates	638,425	691,380	2,840,070	1,337,655	1,121,628	6,629,158	1,014,952	11.24%
Difference*	154,109	100,531	99,355	381,587	15,819	11,773	144,348	

* Difference reported as an absolute number.

Following the first round of LSL estimates, $15 billion in funding was made available for lead service line replacement expenditures in the Infrastructure Investment and Jobs Act (IIJA, also called the Bipartisan Infrastructure Law). Annually, available funding is $3 billion. Due to the timing, the first year's funding (Fiscal Year 2022) was allocated among states based on the previous (2015) DWINSA results, though that needs assessment did not include any LSL-specific data. The Fiscal Year 2023 allotment calculations were based on the statewide estimates calculated from the LSL questionnaires the EPA received in 2021 with the rest of the drinking water needs surveys.

[30] EPA, "Drinking Water Infrastructure Needs Survey and Assessment, Seventh Report to Congress," EPA 810R23001, page 21 (September 2023), https://www.epa.gov/system/files/documents/2023-09/Seventh%20DWINSA_September2023_Final.pdf. (Accessed April 2025.)
[31] *Ibid*, p. 26.
[32] EPA, "2023 Update to the 7th Drinking Water Infrastructure Needs Survey and Assessment Lead Service Line Information: Addendum to the EPA's Report to Congress," page 1 (January 2025), https://www.epa.gov/system/files/documents/2025-01/update-to-the-7th-drinking-water-infrastructure-needs-survey-and-assessment-lead-service-line-information-adde_0.pdf. (Accessed April 2025.)

According to the EPA's Office of Inspector General (OIG), "[i]n the fall of 2023, the EPA offered states and water systems the opportunity to make a voluntary, one-time update to their original 7th DWINSA responses based on new service line inventory information or to provide a response if they did not previously complete the lead service line questionnaire."[33] Working with the EPA's OIG, the EPA's DWSRF team performed quality assurance tests on the original LSL submissions and identified two states that may have benefitted from an over-allotment in the 2023 funding. Those two states, Florida and Texas, were asked to provide more information as part of the OIG's investigation into data quality and the resulting funding allocation.

The EPA found that both Florida and Texas initially overestimated their LSL inventories. In the 2023 addendum and update to the previously published lead service line information, Florida's LSL count estimates were accompanied by footnotes stating:

> "[T]he EPA identified concerns regarding unreliable reporting of information provided by Florida in the original 7th DWINSA and took actions as part of the 2023 update to address it to the extent possible at the time. Since the update, the EPA has considered and taken further corrective actions."[34]

Those further corrective actions include the EPA's determination "that it is necessary to de-obligate $226,138,000 from Florida's Fiscal Year 2023 Bipartisan Infrastructure Law Lead Service Line Replacement capitalization grant."[35] Based on the revised calculations, Florida's allotment was lowered to the base rate of 1%. Florida was only allotted $28,650,000 for Fiscal Year 2024.

Before analyzing any actual data reported in inventories completed in October 2024, a brief discussion of the DWINSA system-level estimates is necessary. The EPA published updated LSL estimates not only at the statewide level, but also at the system level in May 2024.[36] These estimates are proportionally consistent with the updated 2023 DWINSA statewide totals, but they are far higher than the data reported by the systems. Because Florida was one of the two states whose initial LSL submissions were found to have been overestimated, additional data from the investigation was made available from the EPA's OIG.[37]

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[33] EPA OIG, "Report: Data Reliability Issues Impede the EPA's Ability to Ensure Its Allotment of Infrastructure Investment and Jobs Act Funding for Lead Service Line Replacements Reflects Needs," Report # 24-N-0039, p. 2, (May 2024), https://www.epa.gov/sites/default/files/oig/documents/_epaoig_20240515-24-n-0039_cert_1.pdf. (Accessed October 2025.) Further documentation can be found at https://www.epa.gov/office-inspector-general/report-data-reliability-issues-impede-epas-ability-ensure-its-allotment. (Accessed October 2025.)

[34] EPA, "2023 Update to the 7th Drinking Water Infrastructure Needs Survey and Assessment Lead Service Line Information: Addendum to the EPA's Report to Congress," pp. 5, 8, & 22, (January 2025), https://www.epa.gov/system/files/documents/2025-01/update-to-the-7th-drinking-water-infrastructure-needs-survey-and-assessment-lead-service-line-information-adde_0.pdf. (Accessed April 2025.)

[35] EPA, Florida and Texas LSL Corrective Actions, https://www.epa.gov/dwsrf/florida-and-texas-lsl-corrective-actions.

[36] EPA, "2024 Updated 7th DWINSA System Level Service Lines (xlsx)," (May 2024), https://www.epa.gov/system/files/documents/2024-05/updated-7th-dwinsa-system-level-service-lines-2.xlsx. (Accessed April 2025.)

[37] EPA OIG, "Florida Surveyed Systems LCRR Inventories Submitted by State (xlsx)," (January 2025), https://www.epa.gov/system/files/documents/2025-01/florida-surveyed-systems-lcrr-inventories-submitted-by-state.xlsx. (Accessed October 2025.)

Table 5.3.2, LSL Comparison between DWINSA Estimates and EPA OIG Reporting, contains the total for the systems whose individual service line material counts were published. Any systems that only responded to one of the two data requests have been excluded from this comparison (*i.e.*, the system answered the OIG information request but did not respond to the DWINSA questionnaire, or vice versa). Note that the total service line counts changed for every system between the two datasets, so the service line totals do not match.

Table 5.3.2, Service Line Material Comparison between DWINSA Estimates and EPA OIG Reporting

	Service Line Category	EPA System-Level Estimates	Reported to OIG
Requiring Replacement	1. Service lines that contain any lead pipe	329,534	107
	2. Service lines that do not contain any lead pipe but have lead connectors	24,962	0
	3a. Service lines that contain galvanized pipe and were previously downstream from a lead source	63,781	21,642
Non-Lead	3b. Service lines that contain galvanized pipe that have never been downstream from any lead source	432,069	0
	4a. Service lines that do not contain any lead pipe or galvanized pipe and that do not have lead connectors	1,733,877	2,453,131
Unknown	4b. Service lines for which the material makeup of the service line and of the connector are not known	972,283	774,007
	Total	**3,556,506**	**3,248,887**

Service Line Category	EPA System-Level Estimates	Reported to OIG
Requiring Replacement	11.76%	0.67%
Non-Lead	60.90%	75.51%
Unknown	27.34%	23.82%

In this comparison, it's clear that the LSL counts reported by water systems are much lower than the final DWINSA estimates. Even removing lines with an unknown material from the sample, the service lines requiring replacement in the OIG's dataset account for 0.88 percent of the total, compared to 16 percent of the DWINSA estimate. Additionally, when EDR contacted water systems regarding the DWINSA system-level estimates, system employees were surprised by the estimated LSL counts and assured EDR that the DWINSA estimates were not correct.

Lead Service Line Inventory Overview

The discussion above is largely concerned with the summarized estimates that a representative sample of Florida's water systems provided in response to a questionnaire in 2021 and 2023. The full-system inventories water systems that were required to complete by October 16, 2024, have much more detailed information. As part of EDR's information requests for this edition, public water systems were asked to provide current budgets, capital improvement plans, and their LSL Inventory Excel workbook or, if they were not comfortable sharing that level of detailed information, the summary data from the inventory.

EDR received LSL inventory data from 76 water systems, though some systems only submitted summary information. Adding to that data, additional inventories were downloaded from DEP's

Document Management System (often referred to as Oculus).[38] Medium and large systems were prioritized when downloading additional inventories from Oculus, though some available inventories were undoubtedly missed thanks to difficulties searching for and filtering results. In total, high-level data was obtained for 168 systems and 162 detailed inventories were added to EDR's database. The detailed inventories contained entries for 2,355,399 service lines, slightly less than the 2,368,415 connections reported in the summary data EDR collected.

As with many new regulatory reports, the quality of the data gathered varies wildly. Some detailed inventories listed every single connection with its associated in-depth data, while others had connections with little more than location data (connection ID number, address, "unknown" in a service line material field). The completeness of the data even fell across the spectrum within a single water system's inventory.

Unexpectedly, many small private systems serving confined areas such as mobile home or RV parks reported detailed data with the highest confidence.[39] Not only were all of the connections in that type of system installed in a single year with a single material, system employees or contractors were sometimes able to visually inspect service line materials for each and every connection, which medium and large systems cannot do. When asked about normal operating activities during which a system collects information on service line material, systems of all sizes reported collecting information across a wide range of activities as seen in Table 5.3.3.

Table 5.3.3, Record Keeping During Normal Activities

System Size	Water meter reading	Water meter repair or replacement	Service line repair or replacement	Water main repair or replacement	Backflow prevention device inspection	Other*
Small	2	41	41	12	2	6
Medium	9	73	70	48	12	20
Large	3	13	13	9	6	3
Total	14	127	124	69	20	29

*Other methods were varied, though generally were not part of normal operations and were undertaken in preparation for the LSL inventory.

Water systems were also asked what they did in order to prepare for the inventory, as shown in Table 5.3.4. Methods that were not used by any system in the dataset have been omitted. They are CCTV Inspection at Curb Box (External and Internal), and Sequential Water Quality Sampling.

Table 5.3.4, LSL Inventory Investigation Methods

[38] Accessible at https://depedms.dep.state.fl.us/Oculus/servlet/login. Basic search parameters were: Catalog = Potable Water Systems Catalog, Profile = Sampling, and Document Type = Lead and Copper Related.
[39] To reiterate, small systems serve 3,300 or fewer people. Medium system serve a population of 3,301 to 100,000 people, and large systems serve populations greater than 100,000.

System Size	Visual Inspection at the Meter Pit	Customer Self-Identification	Water Quality Sampling - Targeted	Water Quality Sampling - Flushed	Water Quality Sampling - Other	Mechanical Excavation	Vacuum Excavation	Predictive Modeling	Other
Small	20	3	1	1	1	13	1	0	5
Medium	74	4	5	1	5	36	10	16	20
Large	15	2	1	0	0	10	1	6	2
Total	109	9	7	2	6	59	12	22	27

* Other methods included metal detectors, review of historical building plans, statistical analyses, and full system excavation.

Systems were questioned about the date and reason why the use of lead was stopped. Lead has been banned in drinking water distribution systems since January, 1989, but some Floridian utilities proactively banned the use of lead years or decades ahead of the federal ban. West Palm Beach stopped using lead in 1930 for the system-side of service lines while in Escambia County, Pensacola passed an ordinance in 1954 to end the use of lead in service lines with the rest of the Emerald Coast Utilities Authority following in 1962. Though the vast majority of systems in EDR's dataset reported the 1989 deadline for banning lead, a handful of municipalities like the City of Tallahassee adopted building codes that banned lead in the 1970s.

Water systems reported their confidence level in their LSL inventories based on inspections, testing, excavation, research, and the timing of lead bans, etc., as part of their submission. Table 5.3.5, Confidence in LSL Initial Inventory, contains counts of how many systems reported High, Medium, or Low confidence. Systems that reported High confidence in an aspect of their data (information for connections installed after a specific date, for certain areas, etc.) and Medium or Low confidence in other aspects are included in multiple confidence counts.

Table 5.3.5, Confidence in LSL Initial Inventory

	Confidence Level by System			Total System Count	Percent of Systems		
System Size	High	Medium	Low	System Count	High	Medium	Low
Small	56	26	0	56	100%	46%	
Medium	83	14	2	95	87%	15%	2%
Large	15	3	1	17	88%	18%	6%
Total	154	43	3	168	92%	26%	2%

Detailed Lead Service Line Data

The detailed LSL Inventory includes more data than this analysis will discuss. A list of the fields on the Detailed Inventory table can be found in Appendix A's Table A.1. This analysis will primarily examine the "Service Line Installation Date" field and, more importantly, the three major material classification fields. Those three fields are: "System-Owned Portion Service Line Material Classification," "Customer-Owned Portion Service Line Material Classification," and "Entire Service Line Material Classification." Depending on a service line's system-owned material classification and customer-owned material classification, the entire service line material is classified as Lead, Galvanized Requiring Replacement (GRR), Non-Lead, or

Unknown in the inventory. That determination is based on the least-desirable classification of either ownership portion, following the classification judgements in the following order:

1. If either side is Lead, the entire line is classified as Lead.
2. Absent Lead, if either side is GRR the entire line is classified as GRR.
3. Absent Lead or GRR:
    - If either side is Unknown the line is classified as Unknown.
    - When both sides are Non-Lead, the line is classified as Non-Lead.

Note that with service lines where one or both parts of the line are galvanized, it is still possible that the line is classified as non-lead. The GRR classification requires that the galvanized pipe is or was, at one point in its service life, downstream of a source lead. Table 5.3.6 contains the total service line counts based on water system size in EDR's detailed dataset.

Table 5.3.6, Service Line Count by System Size (Entire Service Line Material Classification)

System Size	Lead	GRR	Non-Lead	Unknown	(Blank / Error)	Total Service Lines
Small	0	0	29,304	9,843	329	39,476
Medium	110	1,879	904,523	221,283	21,823	1,149,618
Large	0	2,268	891,641	272,370	26	1,166,305
Total	**110**	**4,147**	**1,825,468**	**503,496**	**22,178**	**2,355,399**

When examining the material classification fields for the System- and Customer-Owned Portions of Service Lines, contradictions with the Entire Service Line Material Classification become obvious. As an example, 22 of the 110 service lines labeled Lead in the Entire Service Line Material Classification field are classified as "Non-Lead" in both the system-owned portion of the service line and the customer-owned portion.

In order to clean up the data, in particular the missing material classifications as well as contradictory classifications, EDR created a new field based on the least desirable material recorded the following fields: Entire Service Line Material Classification, System-Owned Portion classification, Customer-Owned Portion classification, and the three fields noting whether the service line has a lead connector, lead solder, or other fittings or equipment containing lead. [40] Table 5.3.7 shows the sequence of judgements dictating the EDR Classification for each service line.

[See table on next page.]

[40] The three inventory fields asked "Is there a Lead Connector?," "Is there Lead Solder in the Service Line?," and "Describe Other Fittings and Equipment Connected to the Service Line that Contain Lead."

Table 5.3.7, EDR Classification Rules

Classification Level	Original Classification	Does the service line have lead connector, solder, or equipment? Yes or No	EDR Classification
Entire Service Line	Lead	Either	Lead
Either System- or Customer-Owned Portion	Lead	Either	Lead
Entire Service Line	GRR	Either	GRR
Either System- or Customer-Owned Portion	GRR	Either	GRR
Either System- or Customer-Owned Portion	Unknown - Likely Lead	Yes	Lead
Either System- or Customer-Owned Portion	Unknown - Likely Lead	No	Likely Lead
Either System- or Customer-Owned Portion	Non-Lead - Galvanized	Yes	GRR
Either System- or Customer-Owned Portion	Unknown or Blank/Error	Yes	Unknown - Lead Equipment
Both System- and Customer-Owned Portions	Non-Lead	Yes	Non-Lead - Lead Equipment
Either System- or Customer-Owned Portion	Unknown or Blank/Error	No	Unknown
Both System- and Customer-Owned Portions	Non-Lead or Non-Lead - Galvanized	No	Non-Lead

These rules shifted service lines between classifications, increasing the number of service lines labeled “Lead” from 110 to 133 and GRR lines from 4,147 to 7,063. EDR classified an additional 14,383 Non-Lead service lines in a new category (“Non-Lead, Lead Equipment”) which will, later in this analysis, be combined into the “Requiring Replacement” group of classifications. Table 5.3.8 presents service line counts for each “Entire Line Classification” type, broken down by System-Owned Portion Material Classification, Customer-Owned Portion Material Classification, and a lead equipment flag, all grouped by the new EDR Classification field.

[See table on next page.]

Table 5.3.8, Service Line Count by Classifications

EDR's Line Classifications	System-Owned Portion Material Classification	Customer-Owned Portion Material Classification	Lead Equipment?	Entire Line Classification					Total
				Lead	GRR	Non-Lead	Unknown	(Blank / Error)	
Lead	Non-Lead - Galvanized	Lead	yes			5			5
	Non-Lead	Lead		34	8	7			49
	Non-Lead	Non-Lead - Galvanized		1					1
	Non-Lead - Galvanized	Lead				2			2
	Lead	Non-Lead		14		1			15
	Lead	Unknown		1					1
	Non-Lead	Non-Lead	yes	22					22
	Non-Lead	Unknown - Likely Lead	yes	2					2
	Unknown	Unknown - Likely Lead	yes	2					2
	Unknown - Likely Lead	Non-Lead	yes	32					32
	Unknown - Likely Lead	Unknown - Likely Lead	yes	2					2
Likely Lead	Non-Lead	Unknown - Likely Lead					558		558
	Unknown	Unknown - Likely Lead				2	8,259		8,261
	Unknown - Likely Lead	Unknown					2,279		2,279
	Unknown - Likely Lead	Unknown - Likely Lead					10		10
GRR	Non-Lead	Non-Lead - Galvanized	yes			3			3
	Non-Lead - Galvanized	Non-Lead	yes			547			547
	Non-Lead - Galvanized	Non-Lead - Galvanized	yes			2,356			2,356
	Non-Lead - Galvanized	(blank/error)	yes		1				1
	Non-Lead - Galvanized	Unknown	yes			5			5
	Non-Lead - Galvanized	GRR			660	11			671
	Non-Lead	GRR			795	2			797
	Non-Lead - Galvanized	Non-Lead - Galvanized			1,280				1,280
	Non-Lead	Non-Lead - Galvanized			896				896
	Non-Lead - Galvanized	Non-Lead			491				491
	Non-Lead	Non-Lead			1				1
	Non-Lead - Galvanized	Unknown			4				4
	Unknown	Non-Lead - Galvanized			10				10
	Non-Lead	Unknown			1				1
Non-Lead, Lead Equipment	Non-Lead	Non-Lead	yes			14,383			14,383
Unknown, Lead Equipment	(blank/error)	(blank/error)	yes					1	1
	Non-Lead	(blank/error)	yes					1	1
	Non-Lead	Unknown	yes			460			460
	Unknown	Unknown	yes			1	13		14
Non-Lead	Non-Lead	Non-Lead				1,635,671	21,619	1,674	1,658,964
	Non-Lead	Non-Lead - Galvanized				11,966	47	32	12,045
	Non-Lead - Galvanized	Non-Lead				19,736	7	19	19,762
	Non-Lead - Galvanized	Non-Lead - Galvanized				16,897	3	17	16,917
Unknown	(blank/error)	(blank/error)				4,733	5,852	1,795	12,380
	(blank/error)	Non-Lead				88	74		162
	(blank/error)	Non-Lead - Galvanized				4	4		8
	Non-Lead	(blank/error)				13,662	1,073	4,072	18,807
	Non-Lead	Unknown				13,771	174,927	8	188,706
	Non-Lead - Galvanized	(blank/error)				10	64	2	76
	Non-Lead - Galvanized	Unknown					14,361		14,361
	Unknown	(blank/error)					359	14,557	14,916
	Unknown	Non-Lead				190	34,920		35,110
	Unknown	Non-Lead - Galvanized				1	66		67
	Unknown	Unknown				90,954	239,001		329,955
			Total	110	4,147	1,825,468	503,496	22,178	2,355,399

Table 5.3.9 shows the shifts between the Entire Service Line Material Classification in the inventory and EDR's new classification. All of EDR's Classifications that are considered to be Requiring Replacement are shown in the top table, separated from Non-Lead and Unknown.

Table 5.3.9, Service Line Classification Shifts

	Classification Source		
Material Classification	**Entire Service Line Material Classification**	**EDR's Classification**	**Difference***
Lead	110	133	23
Likely Lead		11,108	
GRR	4,147	7,063	2,916
Non-Lead, Lead Equipment		14,383	
Unknown, Lead Equipment		476	
Total Requiring Replacement	4,257	33,163	28,906

Classification Source	**Entire Service Line Material Classification**	**EDR's Classification**	**Difference***
Non-Lead	1,825,468	1,707,688	117,780
Unknown	503,496	614,548	111,052
Blank/Error	22,178		

*Difference is shown as an absolute value.

To be clear, these inventories are initial submissions. Systems are required to submit revised inventories annually or triennially based on tap sampling frequency.[41] Given the number of contradictions within individual service lines' classifications and the amount of missing information, these inventories demonstrate a monumental first step in an ongoing process. As an example of details that might be revised in later submissions, Midway Water System's detailed LSL inventory contained a total of 8,561 service lines. Of those, EDR classified 8,404 entries as "Non-Lead, Lead Equipment." Three hundred forty-five of those entries note "BFP" (backflow prevention device) and 8,059 entries have "check valve" in the "Describe Other Fittings and Equipment Connected to the Service Line that Contain Lead" field. Of the remaining 157 service lines without anything in that field, 150 service lines are on properties described as vacant elsewhere in the service line entry. Those 8,404 service lines are still included in the totals, though given the installation dates recorded for Midway Water System's service lines, it is likely that the contents of that field did not refer to lead-containing parts of the service lines. Instead, that field may have contained notes of what was inspected or even part of the distribution system upstream of the service lines.

Despite the possibility of shifting all of these non-lead service lines into the lead category being an over-correction, the water system recorded the presence or possibility of lead connected to the service line, so categorizing those lines as Requiring Replacement is consistent with the rest of the analysis. Table 5.3.10, Service Line Count by System Size (EDR Classification), is much like table 5.3.6 above, though the service line material category is updated to EDR's Classification. All classifications that would require service line replacement are aggregated into the Requiring Replacement subtotal column.

[41] EPA, "Guidance for Developing and Maintaining a Service Line Inventory," p. 1-4 (August 2022), https://www.epa.gov/system/files/documents/2022-08/Inventory%20Guidance_August%202022_508%20compliant.pdf. (Accessed October 2025.)

Table 5.3.10, Service Line Count by System Size (EDR Classification)

	Requiring Replacement								
System Size	Lead	Likely Lead	GRR	Non-Lead, Lead Equip.	Unknown, Lead Equip.	Requiring Replacement	Non-Lead	Unknown	Total
Small	0	0	0	1	1	2	29,116	10,358	39,476
Medium	131	11,108	4,782	14,371	475	30,867	880,897	237,854	1,149,618
Large	2	0	2,281	11	0	2,294	797,675	366,336	1,166,305
Total	**133**	**11,108**	**7,063**	**14,383**	**476**	**33,163**	**1,707,688**	**614,548**	**2,355,399**

Looking at the service line types using the year of the service connection, the fact that local governments have been actively working to replace LSLs becomes clear. Table 5.3.11, EDR Classification for Service Lines by Year Group, is based on the year group the system-owned portion of the service line was installed or reinstalled. In the Likely Lead column, the recent rise in service lines is not due to any recent use of lead. Instead, the system-owned portions of older service lines have been replaced, leaving the original customer-owned portion of lines still connected to the water distribution system. (While the detailed inventories have a second installation date column for the customer-owned portion of the line, that field is more likely to be blank. For every service line in EDR's Likely Lead category that has installation dates for both portions of the service line, the customer-owned portion was installed between 1920 and 1988, while the system-owned portion was (re)installed in or after 2010.)

Table 5.3.11's first five columns, Lead, Likely Lead, GRR, Non-Lead with Lead Equipment, and Unknown with Lead Equipment are aggregated into a Requiring Replacement column. Note that the "Non-Lead, Lead Equipment" column likely over-reports the presence of lead equipment in Non-Lead service lines as discussed above.

Table 5.3.11, EDR Classification for Service Lines by Year Group

	Requiring Replacement								
Year Group	Lead	Likely Lead	GRR	Non-Lead, Lead Equip.	Unknown, Lead Equip.	Requiring Replacement	Non-Lead	Unknown	Total
Pre-1940	11	371	104	111	8	605	7,488	7,609	**15,702**
1940s	7	203	12	28	1	251	5,425	4,838	**10,514**
1950s	11	497	103	108	1	720	18,692	19,998	**39,410**
1960s	6	315	618	120	3	1,062	30,549	41,673	**73,284**
1970s	1	353	1,049	2,027	386	3,816	87,419	48,841	**140,076**
1980-1988	63	642	84	1,805	3	2,597	219,489	97,251	**319,337**
1989-1999	1	2	27	2,809	51	2,890	315,760	38,032	**356,682**
2000s	0	0	97	3,107	16	3,220	341,212	52,945	**397,377**
2010s	1	147	40	1,599	0	1,787	190,677	30,341	**222,805**
2020s	0	387	595	2,522	0	3,504	98,807	20,087	**122,398**
(blank)	32	8,191	4,334	147	7	12,711	392,170	252,933	**657,814**
Total	**133**	**11,108**	**7,063**	**14,383**	**476**	**33,163**	**1,707,688**	**614,548**	**2,355,399**

Combining all five classifications that require new service lines, Table 5.3.12 shows the percentage of each year group that requires replacement, is not lead, and is unknown. The unknown material service lines form a substantial portion of the state's service lines. A service line is three times more likely to be made of an unknown material if it was installed before the

1989 lead ban (36.80 percent of pre-1989 service lines vs. 12.86 percent 1989 and after). That being said, included in the "Unknown" category are approximately 166,000 service lines that were labeled "Unknown – Unlikely Lead" on at least one portion of the service line (and did not have a replacement-requiring classification on the other portion of the line).

Table 5.3.12, Percentage of Service Lines in EDR Classifications by Year Group

Year Group	Requiring Replacement	Non-Lead	Unknown	Total
Pre-1940	605	7,488	7,609	**15,702**
1940s	251	5,425	4,838	**10,514**
1950s	720	18,692	19,998	**39,410**
1960s	1,062	30,549	41,673	**73,284**
1970s	3,816	87,419	48,841	**140,076**
1980-1988	2,597	219,489	97,251	**319,337**
1989-1999	2,890	315,760	38,032	**356,682**
2000s	3,220	341,212	52,945	**397,377**
2010s	1,787	190,677	30,341	**222,805**
2020s	3,504	98,807	20,087	**122,398**
(blank)	12,711	392,170	252,933	**657,814**
Total	**33,163**	**1,707,688**	**614,548**	**2,355,399**

	Percent of All Service Lines		
Year Group	Requiring Replacement	Non-Lead	Unknown
Pre-1940	3.85%	47.69%	48.46%
1940s	2.39%	51.60%	46.01%
1950s	1.83%	47.43%	50.74%
1960s	1.45%	41.69%	56.87%
1970s	2.72%	62.41%	34.87%
1980-1988	0.81%	68.73%	30.45%
1989-1999	0.81%	88.53%	10.66%
2000s	0.81%	85.87%	13.32%
2010s	0.80%	85.58%	13.62%
2020s	2.86%	80.73%	16.41%
(blank)	1.93%	59.62%	38.45%
Total	**1.41%**	**72.50%**	**26.09%**

If the lines with an unknown material are removed, over seven percent of connections before 1940 require replacement. Table 5.3.13 contains both the aggregates of known line materials by decade and percent of known line materials.

Table 5.3.13, EDR Classification for Known Material Service Lines by Year Group

Year Group	Requiring Replacement	Non-Lead	Total Known
Pre-1940	605	7,488	**8,093**
1940s	251	5,425	**5,676**
1950s	720	18,692	**19,412**
1960s	1,062	30,549	**31,611**
1970s	3,816	87,419	**91,235**
1980-1988	2,597	219,489	**222,086**
1989-1999	2,890	315,760	**318,650**
2000s	3,220	341,212	**344,432**
2010s	1,787	190,677	**192,464**
2020s	3,504	98,807	**102,311**
(blank)	12,711	392,170	**404,881**
Total	**33,163**	**1,707,688**	**1,740,851**

	Percent of Known Lines:	
Year Group	Requiring Replacement	Non-Lead
Pre-1940	7.48%	92.52%
1940s	4.42%	95.58%
1950s	3.71%	96.29%
1960s	3.36%	96.64%
1970s	4.18%	95.82%
1980-1988	1.17%	98.83%
1989-1999	0.91%	99.09%
2000s	0.93%	99.07%
2010s	0.93%	99.07%
2020s	3.42%	96.58%
(blank)	3.14%	96.86%
Total	**1.90%**	**98.10%**

In this analysis, 1.74 million service lines had an assigned material classification. If the 404,881 lines without an installation year are assumed to be pre-1989, the percent of pre-1989 service lines with a known material requiring replacement grows to 2.78 percent from 2.39 percent.

Appendix A contains tables with more information regarding building and installation dates. Table A.2 presents county-level parcel counts by decade (from Actual Building Year) for residential parcels, and Table A.3 contains the percent of total residential parcels built by decade. Detailed service line installation date counts for both the system-owned portion and customer-owned portion are available in Table A.4, using EDR's material classifications.

Statewide LSL Totals Reported to DEP

The analysis above is based on the individual detailed inventories EDR was able to analyze. Every inventory submitted by a water system in response to federal requirements was received by the Florida Department of Environmental Protection (DEP). Though DEP was not able to provide EDR with all of the detailed inventories, the department has published a GIS map online with system-level service line classifications.[42] Using this dataset, there are 4,441 LSLs and 35,699 GRR lines requiring replacement. Table 5.3.14, Statewide Service Lines by County, contains the service line classification totals by county.[43]

Note that this dataset does not include the "Likely Lead" category or either of the two fields that note the presence of lead equipment in the service line. The only determining fields are entire line classifications for Lead, GRR, Non-Lead, and Unknown.

[See table on next page]

[42] Statewide map available online at: https://geodata.dep.state.fl.us/datasets/FDEP::pws-lead-service-line-inventories-lsli-2/.
[43] County was assigned by merging the LSL Inventory dataset with DEP's Basic Facility Report for Potable Water Systems. The Florida Keys Aqueduct Authority's entry was moved from Miami-Dade to Monroe County to better reflect where the service lines are.

Table 5.3.14, Statewide Service Lines by County (DEP Dataset)

County	Lead	GRR	Non-Lead	Unknown	Total
Alachua	0	441	58,207	62,719	**121,367**
Baker	0	0	3,499	0	**3,499**
Bay	0	97	38,568	39,569	**78,234**
Bradford	0	443	2,139	1,397	**3,979**
Brevard	7	285	128,123	117,624	**246,039**
Broward	5	29	406,551	134,837	**541,422**
Calhoun	0	0	2,005	0	**2,005**
Charlotte	0	751	86,000	6,734	**93,485**
Citrus	1	549	44,956	6,863	**52,369**
Clay	1	1	48,904	16,443	**65,349**
Collier	0	0	34,406	20,305	**54,711**
Columbia	0	0	11,506	356	**11,862**
Desoto	0	2,179	6,934	4	**9,117**
Dixie	0	0	2,723	0	**2,723**
Duval	0	8,401	416,930	51,541	**476,872**
Escambia	0	123	118,297	8,760	**127,180**
Flagler	2	2	9,616	4,774	**14,394**
Franklin	0	0	8,840	0	**8,840**
Gadsden	0	0	11,705	3,258	**14,963**
Gilchrist	0	0	987	35	**1,022**
Glades	0	0	1,366	0	**1,366**
Gulf	0	0	9,191	0	**9,191**
Hamilton	0	0	2,369	0	**2,369**
Hardee	4	127	5,842	543	**6,516**
Hendry	0	133	13,155	124	**13,412**
Hernando	280	309	70,494	52	**71,135**
Highlands	16	1,267	30,758	16,368	**48,409**
Hillsborough	0	1,373	386,517	32,542	**420,432**
Holmes	0	0	2,638	98	**2,736**
Indian River	0	0	55,897	18,582	**74,479**
Jackson	0	0	8,744	40	**8,784**
Jefferson	0	0	3,205	0	**3,205**
Lafayette	0	0	641	0	**641**
Lake	14	430	136,236	23,047	**159,727**
Lee	0	60	255,882	19,963	**275,905**
Leon	0	349	67,381	37,080	**104,810**
Levy	0	0	8,186	0	**8,186**
Liberty	0	0	1,346	666	**2,012**
Madison	0	0	3,473	0	**3,473**
Manatee	1	155	118,077	81,118	**199,351**
Marion	1	44	110,557	3,811	**114,413**
Martin	3	3	62,723	2	**62,731**
Miami-Dade	104	119	231,517	389,642	**621,382**
Monroe*	0	85	52,398	1,372	**53,855**
Nassau	0	0	32,459	1,271	**33,730**
Okaloosa	0	25	81,051	3,753	**84,829**
Okeechobee	0	0	10,573	0	**10,573**
Orange	94	258	307,577	85,849	**393,778**
Osceola	0	1	177,918	0	**177,919**
Palm Beach	1	3,241	668,696	28,772	**700,710**
Pasco	24	839	155,015	74,334	**230,212**
Pinellas	0	11,283	177,851	116,871	**306,005**
Polk	3,654	1,547	171,291	84,295	**260,787**
Putnam	0	2	12,225	73	**12,300**
Santa Rosa	81	28	78,364	4,336	**82,809**
Sarasota	5	121	186,101	4,726	**190,953**
Seminole	11	266	141,164	46,040	**187,481**
St. Johns	0	0	60,815	23,493	**84,308**
St. Lucie	126	92	97,171	25,759	**123,148**
Sumter	6	82	78,249	3,007	**81,344**
Suwannee	0	0	2,102	2,053	**4,155**
Taylor	0	0	5,940	0	**5,940**
Union	0	0	880	35	**915**
Volusia	0	158	134,157	48,546	**182,861**
Wakulla	0	0	9,773	667	**10,440**
Walton	0	1	51,393	11	**51,405**
Washington	0	0	4,032	0	**4,032**
Total	4,441	35,699	5,724,286	1,654,160	**7,418,586**

*The Florida Keys Aqueduct Authority's line counts were moved from Miami-Dade County to Monroe County as those service lines are located in Monroe County.

This dataset, with a total of 7,418,586 service lines, contains 40,140 lines that require replacement. Most of those are galvanized requiring replacement, but there are 4,441 service lines recorded as lead. The vast majority of those lead service lines in DEP's dataset are part of Winter Haven's water distribution system. Winter Haven's 3,617 LSLs account for 7.9 percent of the system's service lines. The second highest LSL count in the dataset is Brooksville's 200 lines. According to Winter Haven's Water Utility, the city calculated this number by using predictive modeling with the presumed LSLs concentrated in three small areas of homes built between 1940 and 1970. The classification of these service lines is largely due to the use of lead connectors, or goosenecks, before 1989. As discussed above, lead connectors over a certain length automatically trigger a lead service line classification. The EPA's 2022 guidance set a two foot limit, but their 2024 guidance revised that limitation to three feet.[44]

According to Winter Haven, some of the connectors triggering a "lead" classification are, in fact, shorter than the revised maximum length for lead connectors.[45] Whether that means the actual LSL Inventory overstated lines with lead content (*e.g.*, if the system-owned and customer-owned portions of the service line are lead-free and not galvanized), or accurately reported (if those lines would need to be replaced due to galvanized pipe being downstream of a source of lead) will only be certain when revised LSL inventories are submitted to DEP.

For Winter Haven, using an in-house crew to replace an entire 50-foot service line costs the city slightly less than $1,000 in 2025, while using outside contractors would increase the cost to approximately $2,200.[46] Note that the $1,000 expenditure does not include anything except for the actual line replacement, so administrative costs or expenditures for exploratory digs to check that a service line actually requires replacement are not included in that estimate. Winter Haven plans to replace approximately 160 GRR service lines before 2026 and is budgeting approximately $150,000 annually to inspect and replace service lines.[47]

To conclude, the state's service line inventory is still a work in progress. The dataset combining the highest number of separate data sources is DEP's statewide LSL Inventory, though the line counts in that dataset rely on the summary, Entire Service Line Material Classification field of the inventory. EDR's LSL Detailed Inventories has more accurate material classifications, while the EPA's estimates have been through rigorous statistical testing (though some water systems in Florida disagree with their calculations). Table 5.3.15, Comparison Between LSL Estimates by Dataset, contains the service line material totals based on each dataset. In keeping with the analysis, Requiring Replacement includes Lead, GRR, and lines that contain or likely contain lead equipment. Non-Lead includes Standalone Galvanized and Non-Lead Lines.

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[44] EPA, "Guidance for Developing and Maintaining a Service Line Inventory," p. ix (August 2022), https://www.epa.gov/system/files/documents/2022-08/Inventory%20Guidance_August%202022_508%20compliant.pdf. (Accessed November 2023.) EPA, "EPA's Final Lead and Copper Rule Improvements Technical Fact Sheet: Service Line Inventory and Replacement Requirements," p. 1 (October 2024), https://www.epa.gov/system/files/documents/2024-10/final_lcri_fact-sheet_service-line-inventory.pdf. (Accessed May 2025.)

[45] Winter Haven Water Department, David Hernandez, personal communications (June 26, 2025 and October 27, 2025).

[46] *Ibid*.

[47] The FY2025 Winter Haven Budget Book details $250,000 for "Replace Water Services - Lead & Copper" in Account 4605. Winter Haven, "FY2024-2025 Budget Book," p. 322 (September 2024), https://www.mywinterhaven.com/ArchiveCenter/ViewFile/Item/164. (Accessed June 2025.)

Table 5.3.15, Comparison Between LSL Estimates by Dataset

Source Dataset	Requiring Replacement	Non-Lead	Unknown	Total
Detailed Inventories (EDR's Classification)	33,163	1,707,688	614,548	**2,355,399**
Detailed Inventories (Entire Service Line Classification)	4,257	1,825,468	525,674	**2,355,399**
DEP Statewide Dataset	40,140	5,724,286	1,654,160	**7,418,586**
EPA Revised Estimate (2023)	638,425	3,531,450	2,459,283	**6,629,158**
EPA Projected LSL Total (2023)	1,014,952	5,614,206		**6,629,158**

Percent of Service Lines		
Requiring Replacement	Non-Lead	Unknown
1.41%	72.50%	26.09%
0.18%	77.50%	22.32%
0.54%	77.16%	22.30%
9.63%	53.27%	37.10%
15.31%	84.69%	

If the proportions of line categories from EDR's classifications were applied to DEP's Statewide Dataset, the number of service lines known to require replacement would rise to 104,450. Table 5.3.16 shows the change in category for DEP's dataset.

Table 5.3.16, Revised Service Line Category Estimate for Florida

	Percent of Service Lines			
	Requiring Replacement	Non-Lead	Unknown	
	1.41%	72.50%	26.09%	
Source Dataset	**Requiring Replacement**	**Non-Lead**	**Unknown**	**Total**
Detailed Inventories (EDR Classification)	33,163	1,707,688	614,548	**2,355,399**
DEP Statewide Dataset (EDR Classification Proportions)	104,450	5,378,550	1,935,586	**7,418,586**

Again, even this increased estimate is small compared to the EPAs 1,014,952 service lines requiring replacement estimate for the state. A final proportion of 15.31 percent service lines with some level of lead content is certainly possible but less likely (the connections classified as Unknown are likely older connections that were built when lead or galvanized iron or steel were popular and, thus, are more likely to require replacement). The data collected by water systems both in and beyond the EPA's DWINSA sample group suggests that the state's LSL inventory is much lower.

5.4 Water-Related Infrastructure and Service Financial Information

In editions prior to 2024, local government expenditure and revenue data for stormwater and wastewater were included in Chapter 4. As this chapter now has contains forecasts for these same water-related expenditures, this historical data, and the statewide forecasts based on that data, are below.[48] Each table contains a five-year history of local government financial data

[48] Expenditures and revenues related to water supply (*i.e.*, drinking water) infrastructure are now included in Chapter 3.

obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government. The forecast converts the local fiscal year to the state fiscal year and extends five years to 2026-27.

Table 5.4.1 provides a forecast and details a history of water-related infrastructure and service expenditures by local governments and regional special districts. Water Management Districts are excluded from this forecast. Expenditures in accounts 535 Sewer/Wastewater Services, 536 Water-Sewer Combination Services, and 538 Flood Control/Stormwater Management are grouped into a single reporting category deemed to be water-related infrastructure and service expenditures. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years. Forecasts rely on a statewide population growth rate as it best fits the nature of the data.

Table 5.4.1 Water-Related Infrastructure & Service Expenditures by Local Governments and Regional Special Districts (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22
Counties	$2,443.46	$2,654.40	$2,804.07	$2,784.41	$3,020.08
Municipalities	$3,650.15	$3,822.96	$4,227.59	$4,031.58	$4,429.11
Local Special Districts	$871.25	$1,000.73	$1,043.05	$1,345.98	$1,484.56
Regional Special Districts	$109.21	$125.80	$137.06	$130.15	$188.17
Total	$7,074.06	$7,603.89	$8,211.77	$8,292.11	$9,121.93
Forecast	**FY 22-23**	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Total	$9,062.98	$9,209.58	$9,350.39	$9,479.70	$9,602.69

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government. Accounts 535, 536, 538.

Table 5.4.2 provides a forecast and details a history of revenues used for water-related infrastructure and service purposes by special districts that are located in multiple counties. Based on survey results, a portion of the account identified as 343.700 Service Charge – Conservation and Resource Management is self-generated for use on water-related infrastructure and service projects and initiatives.[49] Further, accounts 323.600 Franchise Fee – Sewer, 343.500 Charges for Services - Sewer-Wastewater Utility, and 343.600 Charges for Services - Water-Sewer Combination Utility are categorized as water-related infrastructure and service self-generated revenue. Accounts 334.350 State Grant – Sewer/Wastewater, 334.360 State Grant – Stormwater Management, and 335.350 State Shared Revenues – Sewer/Wastewater are categorized as water-related infrastructure and service revenues from the state. Finally, account 331.350 Federal Grant – Sewer/Wastewater is categorized as water-related infrastructure and service revenue from the federal government. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to

[49] More information on EDR's local government survey is available in chapter 1 (Annual Assessment of Florida's Conservation Lands) and chapter 4 (Annual Assessment of Florida's Water Resources: Quality). Available at: http://edr.state.fl.us/Content/natural-resources/index.cfm. (Accessed February 2024.)

state fiscal years. As revenues are largely based on population, forecasts rely on population growth rates.

Table 5.4.2 Water-Related Infrastructure & Service Revenues Generated to Regional Special Districts by Government Source (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	FY 20-21	FY 21-22
Self	$82.94	$87.33	$84.99	$91.53	$100.16
State	$2.72	$0.07	$-	$0.27	$-
Federal	$0.01	$-	$-	$-	$-
Forecast	**FY 22-23**	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Self	$99.64	$101.25	$102.80	$104.22	$105.57
State	$0.07	$0.07	$0.07	$0.07	$0.07
Federal	$-	$-	$-	$-	$-

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government. Accounts 323.600, 343.500, 343.600, and survey results are applied to 343.700 for self; 334.350, 334.360, and 335.350 for State; and 331.350 for Federal.

Table 5.4.3 provides a forecast and details a history of self-generated revenues by local governments used for water-related infrastructure and service purposes. Based on survey results, a portion of the local government account 343.700 Service Charge – Conservation and Resource Management is self-generated for use on water-related infrastructure and service projects and initiatives. Further, accounts 323.600 Franchise Fee – Sewer, 343.500 Charges for Services - Sewer-Wastewater Utility, and 343.600 Charges for Services - Water-Sewer Combination Utility are categorized as water-related infrastructure and service revenue that is self-generated. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years. As revenues are largely based on population, forecasts rely on population growth rates.

Table 5.4.3 Water-Related Infrastructure & Service Revenues Generated by Local Governments (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22
Counties	$2,436.32	$2,555.42	$2,698.71	$2,860.01	$3,036.89
Municipalities	$3,455.63	$3,608.51	$3,203.06	$3,752.01	$3,956.46
Special Districts	$242.14	$266.46	$269.33	$415.60	$438.82
Total	$6,134.10	$6,430.40	$6,171.11	$7,027.63	$7,432.17
Forecast	**FY 22-23**	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Total	$7,453.16	$7,573.72	$7,689.52	$7,795.86	$7,897.01

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government. Accounts 323.600, 323.500, 343.600 and survey results are applied to Account 343.700. Historical data has been revised from the previous Edition; this table supersedes previous versions.

Table 5.4.4 provides a forecast and details a history of revenues generated by the state and provided to local governments for water-related purposes. Accounts 334.350 State Grant – Sewer/Wastewater, 334.360 State Grant – Stormwater Management, and 335.350 State Shared Revenues – Sewer/Wastewater are categorized as water-related infrastructure and service revenues from the state. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. Data in this table has been significantly revised and supersedes that reported in previous editions. For forecasting purposes, it has been converted to state fiscal years. Projections for this table are based on a 3-year average as it best reflects the nature of the data..

Table 5.4.4 Water-Related Infrastructure & Service Revenues Provided to Local Governments from the State (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22
Counties	$14.23	$13.00	$10.34	$9.61	$14.83
Municipalities	$41.93	$34.50	$51.19	$40.41	$46.24
Special Districts	$1.70	$2.89	$1.87	$4.20	$3.41
Total	$57.86	$50.39	$63.40	$54.22	$64.49
Forecast	**FY 22-23**	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Total	$59.53	$59.32	$60.26	$59.70	$59.76

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government, Accounts 334.350, 334.360, and 335.350.

Table 5.4.5 provides a forecast and details a history of revenues generated by the federal government and provided to local governments for water-related infrastructure and service purposes. Account 331.350 Federal Grant – Sewer/Wastewater is categorized as water-related revenue from the federal government. Note that the historic data is in local fiscal years, which begin October 1 and end September 30. For forecasting purposes, it has been converted to state fiscal years. Due to the jump in municipal funding in LFY 2020-21, forecasts rely on a population growth rate applied to the most recent three-year funding average.

Table 5.4.5 Water-Related Infrastructure & Service Revenues Provided to Local Governments from the Federal Government (in $millions)

History	LFY 17-18	LFY 18-19	LFY 19-20	LFY 20-21	LFY 21-22
Counties	$0.57	$2.28	$0.64	-$0.16*	$0.32
Municipalities	$6.21	$8.58	$10.30	$20.42	$17.55
Special Districts	$1.00	$1.00	$1.25	$1.69	$7.90
Total	$7.79	$11.85	$12.18	$21.96	$25.76
Forecast	**FY 22-23**	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Total	$18.81	$23.18	$25.22	$25.63	$26.01

Source: Annual Financial Report data obtained from the Florida Department of Financial Services, Division of Accounting and Auditing, Bureau of Local Government, Accounts 331.350. Data in this table has been significantly revised and supersedes that reported in previous editions.
*Monroe County reported a negative amount that outweighed other counties' amounts.

5.5 Private Utility Expenditures & Revenues

In addition to publicly owned drinking water and wastewater utilities that report their expenditures and revenues to the Florida Department of Financial Services, some Floridians receive water and wastewater services from privately owned utilities. The Florida Public Service Commission (PSC) has jurisdiction over private drinking water and wastewater utilities in 40 counties, for which the PSC "oversees service territories, regulates rates and earnings, and requires utilities to provide service to all who request it."[50] The PSC's jurisdiction expanded from 38 to 40 counties in 2024, adding Citrus and Columbia Counties to its oversight.

The historical data for the following tables was provided to EDR by the Florida Public Service Commission (PSC) from the annual financial reports submitted by private drinking water utilities. Expenditures and revenues from counties outside its jurisdiction were estimated based on per capita utility expenditures within the PSC's jurisdictional counties. Because the expansion to 40 counties is more recent than the last year of financial data, the methodology in this analysis is still based on the PSC's former 38-county jurisdiction. This methodology should provide suitable estimates due to a similar mix of rural and urban counties both in and out of the PSC's jurisdiction. Note that the historic data is in calendar years. For forecasting purposes, it has been converted to state fiscal years. Population growth drives the forecast as utility expenditures are generally expected to follow population growth.[51]

Table 5.5.1 provides a forecast and details a history of water supply expenditures by private drinking water utilities.

Table 5.5.1 Water Supply Expenditures by Private Drinking Water Utilities (in $millions)

History	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023
Total	$38.71	$40.77	$40.65	$42.64	$41.78	$46.33	$44.55	$49.03	$50.50	$49.90
Forecast	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**	**FY 27-28**	**FY 28-29**	**FY 29-30**	**FY 30-31**	**FY 31-32**	**FY 32-33**
Total	$51.21	$51.87	$52.52	$53.14	$53.73	$54.30	$54.84	$55.36	$55.85	$56.31

Source: A historical series was created using data provided by the Florida Public Service Commission. County-level population estimates and statewide population forecast are based on the results from the Florida Demographic Estimating Conference, November 2023 and UF, BEBR, Florida Population Studies, Volume 57, Bulletin 198, January 2024 medium county projections.

[50] Florida Public Service Commission, "2024 Annual Report," page 10 (January 2024), https://www.floridapsc.com/pscfiles/website-files/PDF/Publications/Reports/General/AnnualReports/2024.pdf. (Accessed March 2025.) The 40 counties the PSC has jurisdiction within are: Alachua, Bradford, Brevard, Broward, Charlotte, Citrus, Clay, Columbia, Duval, Escambia, Franklin, Gadsden, Gulf, Hardee, Highlands, Jackson, Lake, Lee, Leon, Levy, Manatee, Marion, Martin, Monroe, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Seminole, St. Johns, St. Lucie, Sumter, Volusia, and Washington. The non-jurisdictional counties are: Baker, Bay, Calhoun, Collier, DeSoto, Dixie, Flagler, Gilchrist, Glades, Hamilton, Hendry, Hernando, Hillsborough, Holmes, Indian River, Jefferson, Lafayette, Liberty, Madison, Miami-Dade, Santa Rosa, Sarasota, Suwannee, Taylor, Union, Wakulla, and Walton. For a map of jurisdictional counties, see https://www.floridapsc.com/pscfiles/website-files//PDF/Utilities/WaterAndWastewater/wawmap.pdf. (Accessed January 2025.)

[51] EDR, Population: 1970-2050, based on the 2023 estimates adopted by the Demographic Estimating Conference, November 2023, available at: https://edr.state.fl.us/Content/population-demographics/data/CountyPopulation_2023.pdf. (Accessed February 2025.)

Table 5.5.2 contains historical data and a forecast of water supply revenues for private drinking water utilities.

Table 5.5.2 Revenues Generated by Private Drinking Water Utilities (in $millions)

History	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023
Total	$54.55	$56.71	$59.98	$61.83	$59.73	$64.29	$68.33	$64.88	$66.21	$70.74
Forecast	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Total	$67.45	$68.33	$69.17	$69.99	$70.78	$71.52	$72.23	$72.91	$73.56	$74.17

Source: A historical series was created using data provided by the Florida Public Service Commission. County-level population estimates and statewide population forecast are based on the results from the Florida Demographic Estimating Conference, November 2023 and UF, BEBR, Florida Population Studies, Volume 57, Bulletin 198, January 2024 medium county projections

Table 5.5.3 provides a forecast and details a history of water quality expenditures by private wastewater utilities. The statewide-extrapolation and forecast methodologies are identical to those used for the water supply estimates for private drinking water utilities.

Table 5.5.3 Water Quality Expenditures by Private Wastewater Utilities (in $millions)

History	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023
Total	$32.72	$33.50	$35.42	$37.08	$39.40	$43.28	$38.22	$41.21	$44.53	$49.71
Forecast	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Total	$44.12	$44.69	$45.24	$45.78	$46.29	$46.78	$47.25	$47.69	$48.11	$48.52

Source: A historical series was created using data provided by the Florida Public Service Commission. County-level population estimates and statewide population forecast are based on the results from the Florida Demographic Estimating Conference, November 2023 and UF, BEBR, Florida Population Studies, Volume 57, Bulletin 198, January 2024 medium county projections.

Finally, table 5.5.4 contains revenue data and projections for private wastewater utilities.

[See table on next page.]

Table 5.5.4 Revenues Generated by Private Wastewater Utilities (in $millions)

History	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023
Total	$47.81	$50.12	$54.64	$56.71	$58.12	$60.94	$53.00	$64.19	$67.92	$70.70
Forecast	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Total	$67.97	$68.86	$69.71	$70.54	$71.33	$72.08	$72.79	$73.48	$74.13	$74.75

Source: A historical series was created using data provided by the Florida Public Service Commission. County-level population estimates and statewide population forecast are based on the results from the Florida Demographic Estimating Conference, November 2023 and UF, BEBR, Florida Population Studies, Volume 57, Bulletin 198, January 2024 medium county projections.

5.7 Conclusion and Next Steps

Florida's existing drinking water distribution systems contain fewer pipes in need of replacement than originally reported and utilities are taking active steps to further investigate service lines and replace those that might harm Floridians.

The next edition of this report will focus on the Stormwater Management and Wastewater 20-Year Needs Assessments required by s. 403.9301, F.S., and s. 403.9302, F.S., respectively. The report will contain draft templates and an outline of the assessment submission process for local governments and the compilation process for counties. The next needs assessments are due June 30, 2027 and will contain both capital improvement expenditure estimates and O&M forecasts.

Appendix A. Supplemental Tables

Table A.1, Detailed LSL Inventory Submission

Location Information	Unique Service Line ID Location Identifier Sensitive Population? (Yes/No) Disadvantaged Neighborhood? (Yes/No)
System-Owned Portion	**System-Owned Portion Service Line Material Classification** If Non-Lead, Was Material Ever Previously Lead? Service Line Installation Date Service Line Size Basis of Material Classification Was the Service Line Material Field Verified? (Yes/No) Describe the Field Verification Method Enter the Date of Field Verification
	Notes
Customer-Owned Portion	**Customer-Owned Portion Service Line Material Classification** Service Line Installation Date Service Line Size Basis of Material Classification Was the Service Line Material Field Verified? (Yes/No) Describe the Field Verification Method Enter the Date of Field Verification
	Notes
Entire Service Line Material Classification	
Other Potential Sources of Lead	Is there a Lead Connector? Is there Lead Solder in the Service Line? Describe Other Fittings and Equipment Connected to the Service Line that Contain Lead
Additional Information to Assign Tap Monitoring Tiering	Building Type Connected to Service Line Point-of-Entry or Point-of-Use Treatment Present? Does the Interior Building Plumbing Contain Copper Pipes with Lead Solder Installed Before Your State's Lead Ban (Generally 1986 - 1988)? Current LCR Sampling Site?
Lead Service Line Replacement (LSLR)	Date of System-owned LSLR Date of Customer-owned LSLR

Table A.2 contains total residential parcel counts from the 2024 real property assessment rolls, broken down by the decade in which the "Actual Year Built" recorded for that parcel's improvement belongs. As with other date groupings, 1989 has been grouped with the 1990s. This data includes DOR Use Codes 01 through 09. The decade with the highest number of residences built is highlighted teal. In table A.3, percent of total replaces the parcel count.

Table A.2, Residential Parcel Counts by Decade of "Actual Year Built"

County	Pre-1940	1940s	1950s	1960s	1970s	1980s	1989-1999	2000s	2010s	2020s	Total
Alachua	2,707	2,298	4,886	7,337	11,481	13,436	13,350	13,799	5,564	3,911	**78,769**
Baker	97	158	259	382	1,016	924	1,638	1,778	821	521	**7,594**
Bay	1,141	2,819	4,544	4,262	9,629	18,467	13,586	22,426	7,263	9,215	**93,352**
Bradford	244	504	723	864	1,296	1,305	1,609	1,268	444	415	**8,672**
Brevard	1,173	967	15,442	35,897	24,968	53,741	44,231	49,400	16,149	15,899	**257,867**
Broward	2,023	5,414	70,453	100,450	180,069	114,462	111,150	67,743	17,207	7,754	**676,725**
Calhoun	162	207	328	441	466	516	705	488	260	200	**3,773**
Charlotte	224	149	2,614	6,291	14,822	24,093	18,653	22,471	8,869	12,988	**111,174**
Citrus	202	267	1,173	4,120	13,377	17,679	15,888	15,869	3,920	5,056	**77,551**
Clay	203	561	1,471	3,976	9,376	12,290	15,438	21,073	8,525	6,275	**79,188**
Collier	176	137	1,593	6,708	23,118	35,132	52,519	55,164	26,706	15,760	**217,013**
Columbia	531	625	1,023	1,757	2,625	2,893	5,325	4,486	1,592	1,074	**21,931**
DeSoto	375	297	580	784	1,616	1,737	1,581	1,778	466	443	**9,657**
Dixie	43	75	203	722	1,061	1,319	1,603	1,214	331	243	**6,814**
Duval	17,741	18,385	40,352	30,021	27,356	41,495	48,368	62,448	25,258	20,083	**331,507**
Escambia	4,914	5,792	13,548	12,166	17,341	18,081	17,403	17,605	8,708	7,316	**122,874**
Flagler	55	83	252	279	3,058	7,100	10,823	23,083	5,804	8,424	**58,961**
Franklin	573	648	365	548	854	1,317	1,408	1,677	528	651	**8,569**
Gadsden	974	1,325	1,659	1,159	1,640	1,758	2,878	2,570	680	650	**15,293**
Gilchrist	94	97	82	263	727	885	1,405	1,246	545	556	**5,900**
Glades	53	30	135	336	768	934	963	782	271	385	**4,657**
Gulf	1,401	53	192	343	595	1,015	1,257	1,892	1,097	1,349	**9,194**
Hamilton	61	34	76	169	463	418	805	570	295	171	**3,062**
Hardee	539	264	592	574	1,272	652	879	1,014	237	250	**6,273**
Hendry	208	252	304	720	1,662	1,986	2,386	2,699	993	1,969	**13,179**
Hernando	314	269	1,264	2,610	9,849	22,933	16,563	19,065	4,811	5,236	**82,914**
Highlands	885	731	1,891	3,377	8,302	9,818	8,175	6,771	1,292	1,900	**43,142**
Hillsborough	13,427	9,720	34,366	34,713	50,449	69,114	60,983	90,229	52,120	29,752	**444,873**
Holmes	224	221	613	454	871	648	860	502	213	220	**4,826**
Indian River	574	524	3,828	3,673	10,000	14,376	12,471	18,664	7,005	4,731	**75,846**
Jackson	814	990	1,538	1,394	1,969	1,610	2,379	1,800	594	521	**13,609**
Jefferson	310	227	289	245	429	515	875	780	324	303	**4,297**
Lafayette	85	57	89	108	285	301	459	294	130	77	**1,885**
Lake	2,727	1,592	6,481	5,642	12,731	15,241	28,319	39,160	20,843	18,900	**151,636**
Lee	1,325	1,003	6,661	16,196	42,610	56,545	60,148	116,941	37,924	33,880	**373,233**
Leon	1,109	2,274	6,512	7,255	12,632	16,580	19,406	15,148	4,920	2,723	**88,559**
Levy	332	268	420	1,022	2,583	3,239	4,343	3,600	1,235	1,183	**18,225**
Liberty	74	89	182	295	281	314	424	310	181	100	**2,250**
Madison	441	332	425	502	726	581	952	648	338	260	**5,205**
Manatee	2,634	1,884	9,674	11,896	25,674	22,093	21,749	34,132	25,554	19,970	**175,260**
Marion	1,337	1,125	3,451	8,508	17,375	26,708	32,062	41,334	11,340	18,522	**161,762**
Martin	402	330	2,252	3,671	15,825	17,771	13,589	11,332	3,414	2,199	**70,785**

County	Pre-1940	1940s	1950s	1960s	1970s	1980s	1989-1999	2000s	2010s	2020s	Total
Miami-Dade	25,482	41,236	114,416	89,967	136,140	107,906	101,379	123,528	47,796	18,801	**806,651**
Monroe	2,170	860	3,012	4,008	8,359	8,721	7,227	4,435	2,640	1,671	**43,103**
Nassau	654	564	1,219	1,247	3,423	4,877	7,808	9,904	7,013	5,655	**42,364**
Okaloosa	317	957	4,537	7,460	11,984	16,963	18,113	16,572	6,999	4,634	**88,536**
Okeechobee	115	85	318	1,075	2,471	2,589	2,981	3,060	692	705	**14,091**
Orange	5,422	6,366	32,956	27,723	36,966	62,914	75,019	90,451	46,317	19,890	**404,024**
Osceola	1,390	552	1,880	1,856	6,391	16,057	27,313	45,138	27,990	23,101	**151,668**
Palm Beach	7,005	5,122	29,254	40,901	113,541	153,091	102,880	94,590	24,748	15,900	**587,032**
Pasco	1,014	1,108	4,299	15,919	46,374	37,179	29,629	50,930	22,299	26,781	**235,532**
Pinellas	13,614	12,004	69,552	54,564	97,077	73,329	32,594	23,527	8,973	4,844	**390,078**
Polk	7,860	4,761	17,683	16,840	29,056	31,513	38,455	57,787	29,184	34,301	**267,440**
Putnam	1,453	840	2,605	3,062	5,752	6,443	6,083	4,753	1,274	1,205	**33,470**
Saint Johns	2,101	718	1,984	1,632	7,092	15,459	17,914	31,049	28,162	20,975	**127,086**
Saint Lucie	835	972	4,700	4,159	13,250	25,493	23,467	41,040	10,876	17,979	**142,771**
Santa Rosa	529	536	2,260	2,826	6,121	9,184	16,513	17,057	11,136	7,975	**74,137**
Sarasota	1,822	1,845	13,487	20,003	43,327	37,489	31,738	42,127	21,005	17,853	**230,696**
Seminole	1,766	747	6,611	9,164	29,327	35,829	29,554	23,745	9,628	5,141	**151,512**
Sumter	458	261	632	1,338	2,339	2,964	8,791	26,212	23,261	11,179	**77,435**
Suwannee	397	322	528	729	1,528	1,992	3,555	2,461	1,080	817	**13,409**
Taylor	510	301	929	806	898	1,298	1,650	1,374	629	387	**8,782**
Union	110	57	108	193	329	294	643	519	247	181	**2,681**
Volusia	4,740	4,424	17,919	17,904	34,967	45,630	34,394	38,161	14,283	14,523	**226,945**
Wakulla	44	114	549	491	1,113	1,573	2,922	3,601	1,352	1,612	**13,371**
Walton	556	517	873	1,167	2,156	4,372	6,799	10,456	9,693	7,425	**44,014**
Washington	255	386	386	503	1,267	1,005	1,729	1,334	494	560	**7,919**
	143,547	**148,732**	**575,482**	**647,667**	**1,204,495**	**1,356,186**	**1,298,758**	**1,559,064**	**672,542**	**526,130**	**8,132,603**

Table A.3, Percent of Residential Parcels by Decade of "Actual Year Built"

County	Pre-1940	1940s	1950s	1960s	1970s	1980s	1989-1999	2000s	2010s	2020s
Alachua	3%	3%	6%	9%	15%	17%	17%	18%	7%	5%
Baker	1%	2%	3%	5%	13%	12%	22%	23%	11%	7%
Bay	1%	3%	5%	5%	10%	20%	15%	24%	8%	10%
Bradford	3%	6%	8%	10%	15%	15%	19%	15%	5%	5%
Brevard	0%	0%	6%	14%	10%	21%	17%	19%	6%	6%
Broward	0%	1%	10%	15%	27%	17%	16%	10%	3%	1%
Calhoun	4%	5%	9%	12%	12%	14%	19%	13%	7%	5%
Charlotte	0%	0%	2%	6%	13%	22%	17%	20%	8%	12%
Citrus	0%	0%	2%	5%	17%	23%	20%	20%	5%	7%
Clay	0%	1%	2%	5%	12%	16%	19%	27%	11%	8%
Collier	0%	0%	1%	3%	11%	16%	24%	25%	12%	7%
Columbia	2%	3%	5%	8%	12%	13%	24%	20%	7%	5%
DeSoto	4%	3%	6%	8%	17%	18%	16%	18%	5%	5%
Dixie	1%	1%	3%	11%	16%	19%	24%	18%	5%	4%
Duval	5%	6%	12%	9%	8%	13%	15%	19%	8%	6%
Escambia	4%	5%	11%	10%	14%	15%	14%	14%	7%	6%
Flagler	0%	0%	0%	0%	5%	12%	18%	39%	10%	14%
Franklin	7%	8%	4%	6%	10%	15%	16%	20%	6%	8%
Gadsden	6%	9%	11%	8%	11%	11%	19%	17%	4%	4%
Gilchrist	2%	2%	1%	4%	12%	15%	24%	21%	9%	9%
Glades	1%	1%	3%	7%	16%	20%	21%	17%	6%	8%

County	Pre-1940	1940s	1950s	1960s	1970s	1980s	1989-1999	2000s	2010s	2020s
Gulf	15%	1%	2%	4%	6%	11%	14%	21%	12%	15%
Hamilton	2%	1%	2%	6%	15%	14%	26%	19%	10%	6%
Hardee	9%	4%	9%	9%	20%	10%	14%	16%	4%	4%
Hendry	2%	2%	2%	5%	13%	15%	18%	20%	8%	15%
Hernando	0%	0%	2%	3%	12%	28%	20%	23%	6%	6%
Highlands	2%	2%	4%	8%	19%	23%	19%	16%	3%	4%
Hillsborough	3%	2%	8%	8%	11%	16%	14%	20%	12%	7%
Holmes	5%	5%	13%	9%	18%	13%	18%	10%	4%	5%
Indian River	1%	1%	5%	5%	13%	19%	16%	25%	9%	6%
Jackson	6%	7%	11%	10%	14%	12%	17%	13%	4%	4%
Jefferson	7%	5%	7%	6%	10%	12%	20%	18%	8%	7%
Lafayette	5%	3%	5%	6%	15%	16%	24%	16%	7%	4%
Lake	2%	1%	4%	4%	8%	10%	19%	26%	14%	12%
Lee	0%	0%	2%	4%	11%	15%	16%	31%	10%	9%
Leon	1%	3%	7%	8%	14%	19%	22%	17%	6%	3%
Levy	2%	1%	2%	6%	14%	18%	24%	20%	7%	6%
Liberty	3%	4%	8%	13%	12%	14%	19%	14%	8%	4%
Madison	8%	6%	8%	10%	14%	11%	18%	12%	6%	5%
Manatee	2%	1%	6%	7%	15%	13%	12%	19%	15%	11%
Marion	1%	1%	2%	5%	11%	17%	20%	26%	7%	11%
Martin	1%	0%	3%	5%	22%	25%	19%	16%	5%	3%
Miami-Dade	3%	5%	14%	11%	17%	13%	13%	15%	6%	2%
Monroe	5%	2%	7%	9%	19%	20%	17%	10%	6%	4%
Nassau	2%	1%	3%	3%	8%	12%	18%	23%	17%	13%
Okaloosa	0%	1%	5%	8%	14%	19%	20%	19%	8%	5%
Okeechobee	1%	1%	2%	8%	18%	18%	21%	22%	5%	5%
Orange	1%	2%	8%	7%	9%	16%	19%	22%	11%	5%
Osceola	1%	0%	1%	1%	4%	11%	18%	30%	18%	15%
Palm Beach	1%	1%	5%	7%	19%	26%	18%	16%	4%	3%
Pasco	0%	0%	2%	7%	20%	16%	13%	22%	9%	11%
Pinellas	3%	3%	18%	14%	25%	19%	8%	6%	2%	1%
Polk	3%	2%	7%	6%	11%	12%	14%	22%	11%	13%
Putnam	4%	3%	8%	9%	17%	19%	18%	14%	4%	4%
Saint Johns	2%	1%	2%	1%	6%	12%	14%	24%	22%	17%
Saint Lucie	1%	1%	3%	3%	9%	18%	16%	29%	8%	13%
Santa Rosa	1%	1%	3%	4%	8%	12%	22%	23%	15%	11%
Sarasota	1%	1%	6%	9%	19%	16%	14%	18%	9%	8%
Seminole	1%	0%	4%	6%	19%	24%	20%	16%	6%	3%
Sumter	1%	0%	1%	2%	3%	4%	11%	34%	30%	14%
Suwannee	3%	2%	4%	5%	11%	15%	27%	18%	8%	6%
Taylor	6%	3%	11%	9%	10%	15%	19%	16%	7%	4%
Union	4%	2%	4%	7%	12%	11%	24%	19%	9%	7%
Volusia	2%	2%	8%	8%	15%	20%	15%	17%	6%	6%
Wakulla	0%	1%	4%	4%	8%	12%	22%	27%	10%	12%
Walton	1%	1%	2%	3%	5%	10%	15%	24%	22%	17%
Washington	3%	5%	5%	6%	16%	13%	22%	17%	6%	7%
Statewide	**2%**	**2%**	**7%**	**8%**	**15%**	**17%**	**16%**	**19%**	**8%**	**6%**

Table A.4 uses data from EDR's detailed inventory dataset. Instead of individual decades, installation dates are grouped. Like the date ranges used above, however, 1989 is grouped with the 1990s as Florida's lead ban went into effect on January 18, 1989.

Table A.4, Service Line Installation Dates, System- & Customer-Owned Portions

Lead Service Lines		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	11						11
	1940-1969		24					24
	1970-1988			3			61	64
	1989-1999						1	1
	2000 & After					1		1
	(blank)						32	32
	Total	11	24	3		1	94	133

Likely Lead		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940						371	371
	1940-1969						1,015	1,015
	1970-1988						995	995
	1989-1999						2	2
	2000 & After	2	67	465				534
	(blank)	70	1,702	6,238			181	8,191
	Total	72	1,769	6,703			2,564	11,108

GRR Service Lines		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	104						104
	1940-1969	3	716	11			3	733
	1970-1988	3	12	1,112			6	1,133
	1989-1999				24	1	2	27
	2000 & After					113	619	732
	(blank)	1	1	2		1	4,329	4,334
	Total	111	729	1,125	24	115	4,959	7,063

Non-Lead with Lead Equipment		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	111						111
	1940-1969		256					256
	1970-1988			3,439	227		166	3,832
	1989-1999			1	2,789	9	10	2,809
	2000 & After			1	11	7,212	4	7,228
	(blank)			15	43		89	147
	Total	111	256	3,456	3,070	7,221	269	14,383

Unknown with Lead Equipment		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	8						**8**
	1940-1969		5					**5**
	1970-1988			2			387	**389**
	1989-1999				1		50	**51**
	2000 & After					1	15	**16**
	(blank)						7	**7**
	Total	**8**	**5**	**2**	**1**	**1**	**459**	**476**

Requiring Replacement (Total)		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	234					371	**605**
	1940-1969	3	1,001	11			1,018	**2,033**
	1970-1988	3	12	4,556	227		1,615	**6,413**
	1989-1999			1	2,814	10	65	**2,890**
	2000 & After	2	67	466	11	7,327	638	**8,511**
	(blank)	71	1,703	6,255	43	1	4,638	**12,711**
	Total	**313**	**2,783**	**11,289**	**3,095**	**7,338**	**8,345**	**33,163**

Non-Lead		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	7,156		1		214	117	**7,488**
	1940-1969	57	41,913	2,612	306	870	8,908	**54,666**
	1970-1988	185	2,056	193,859	14,968	6,397	89,443	**306,908**
	1989-1999	189	694	2,137	246,073	21,821	44,846	**315,760**
	2000 & After	472	1,509	8,251	15,018	532,242	73,204	**630,696**
	(blank)	189	1,032	27,723	44,480	55,510	263,236	**392,170**
	Total	**8,248**	**47,204**	**234,583**	**320,845**	**617,054**	**479,754**	**1,707,688**

Unknown Material		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	6,334					1,275	**7,609**
	1940-1969	366	52,824	5,622	1,215	1,316	5,166	**66,509**
	1970-1988	189	8,027	78,484	12,605	3,508	43,279	**146,092**
	1989-1999	176	5,597	3,364	19,941	86	8,868	**38,032**
	2000 & After	212	12,392	6,731	332	40,779	42,927	**103,373**
	(blank)	312	10,181	11,977	8,769	12,331	209,363	**252,933**
	Total	**7,589**	**89,021**	**106,178**	**42,862**	**58,020**	**310,878**	**614,548**

Total		Customer-Owned Portion						
	Installation Range	Pre-1940	1940-1969	1970-1988	1989-1999	Post-2000	(blank)	Total
System-Owned Portion	Pre-1940	13,724		1		214	1,763	**15,702**
	1940-1969	426	95,738	8,245	1,521	2,186	15,092	**123,208**
	1970-1988	377	10,095	276,899	27,800	9,905	134,337	**459,413**
	1989-1999	365	6,291	5,502	268,828	21,917	53,779	**356,682**
	2000 & After	686	13,968	15,448	15,361	580,348	116,769	**742,580**
	(blank)	572	12,916	45,955	53,292	67,842	477,237	**657,814**
	Total	**16,150**	**139,008**	**352,050**	**366,802**	**682,412**	**798,977**	**2,355,399**