MOODY'S RATINGS

SECTOR PROFILE
25 July 2025

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TABLE OF CONTENTS

Summary 1
Revenue continued to grow, helped by independent rate-raising authority and essentiality of services 2
O&M expenses grew sectorwide, driven by inflation and cash funding of capital projects 3
Continued annual net revenue growth highlights sector strength 4
Strong debt service coverage continued to provide a buffer 5
Liquidity remained strong despite growing operating expenses 6
Leverage declined, signaling good borrowing capacity 7
Reported asset condition improved 8
Appendix A: Water, sewer and combined utilities 10
Appendix B: Water utilities by rating category 11
Appendix C: Sewer utilities by rating category 12
Appendix D: Combined utilities by rating category 13

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CLIENT SERVICES

Water & Sewer Utilities - US

Medians - Revenue growth, liquidity and debt service coverage remain strong

Summary

Municipal water and sewer utilities benefited from steady net revenue growth, improved debt service coverage and robust liquidity, according to our medians data for fiscal[1] 2023. Continued strong financial results highlight utilities' ability to raise rates and the essentiality of their services. Even as operating and maintenance expenses increased sectorwide, debt service coverage increased and liquidity remained strong. While median asset life improved, aging assets remain a long-term issue, as do Environmental Protection Agency regulations which will require utilities to continue investing in capital. Data in this report is derived from more than 630 water and sewer utilities we rate; most are enterprises of a city or county. Other water and sewer systems are standalone authorities.

» **Revenue grew in fiscal 2023.** Sectorwide, more than half of water and sewer utilities that we rate had revenue growth of about 5.2% or greater. Preliminary data suggests this trend will continue, with all sectors showing higher revenue in 2024.

» **Operating and maintenance (O&M) costs grew sectorwide.** Water and sewer utilities saw median O&M increases of 9% from the prior year. O&M costs will further increase in 2024 as utilities contend with the expense of addressing aging infrastructure.

» **Net revenue improved significantly.** Net revenue rose by at least 11% for more than half of utilities, which helped systems further improve coverage. Net revenue will continue to grow in 2024, supported by active rate management.

» **Strong, stable debt service coverage provided a buffer against potential shocks.** After remaining flat since fiscal 2021, median coverage increased modestly to 2.4x in fiscal 2023, indicating good capacity to pay debt even under stressed scenarios. Coverage will remain strong even as preliminary 2024 data shows debt increasing sectorwide

» **Liquidity declined but remained strong across all utilities.**After a steady trend of increasing liquidity over the past few years, days cash on hand declined to a still strong 542 days. Liquidity will remain strong in fiscal 2024, though modest declines in cash on hand are likely as healthy revenue growth continues.

» **Leverage fell slightly.** The median debt-to-revenue ratio improved to a modest 2.0, driven by increases in revenue coupled with sectorwide declines in net funded debt. Leverage is likely to increase in 2024 as systems continue to address growing capital needs.

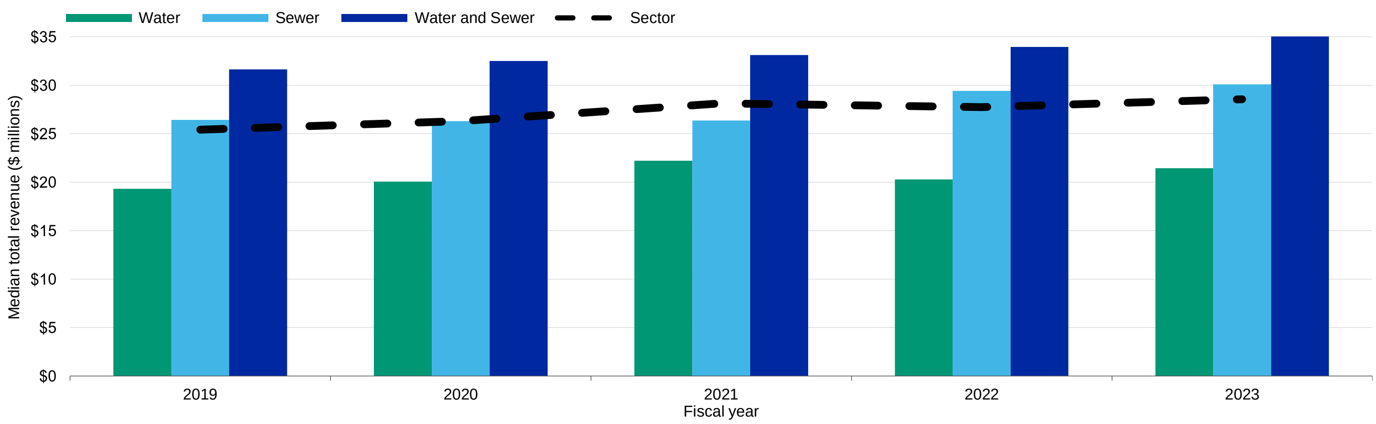
» **Reported asset condition remained stable.**Utilities continued to invest in infrastructure, with median useful life remaining solid at 28 years. Aging assets remain a widespread risk and will eventually require significant investment in replacements.

Revenue continued to grow, helped by independent rate-raising authority and essentiality of services

» Independent rate-setting authority, essentiality of services and fixed charges continued to underpin the strength of utilities' revenue. More than half of utilities we rate had revenue growth of 5.2% or higher in fiscal 2023.

» Following pandemic-related delays in rate adjustments, many utilities implemented larger-than-typical rate increases to account for these deferments and high inflation, which continued into fiscal 2023. Continued rate increases will be necessary to fund significant capital needs, though affordability for ratepayers will remain an issue for the sector.

Exhibit 1
Revenue improved for water, sewer and combined systems in fiscal 2023



Sources: Audited financial statements and Moody's Ratings

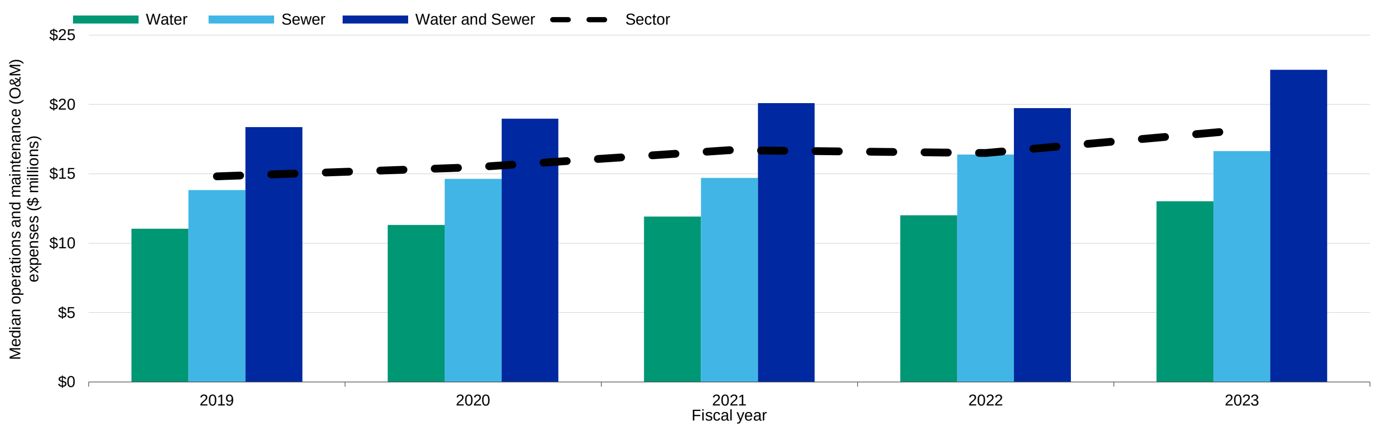
O&M expenses grew sectorwide, driven by inflation and cash funding of capital projects

» Operating and maintenance (O&M) expenses continued to rise after a brief plateau in fiscal 2022. Sectorwide, the median O&M expense increased 10% in fiscal 2023 compared with the prior year. Combined utilities saw growth in O&M costs of 14% while water utilities had an increase of 8.4%. Cost increases were more modest for sewer utilities, at 1.5%.

» Rising costs for construction materials and treatment chemicals driven by steep inflation and supply chain disruptions have led to particularly high costs for repairs and large capital projects for some utilities. Sharp expense increases can strain affordability and hinder capital investment.

Exhibit 2

Operations and maintenance (O&M) expenses grew sectorwide



Sources: Audited financial statements and Moody's Ratings

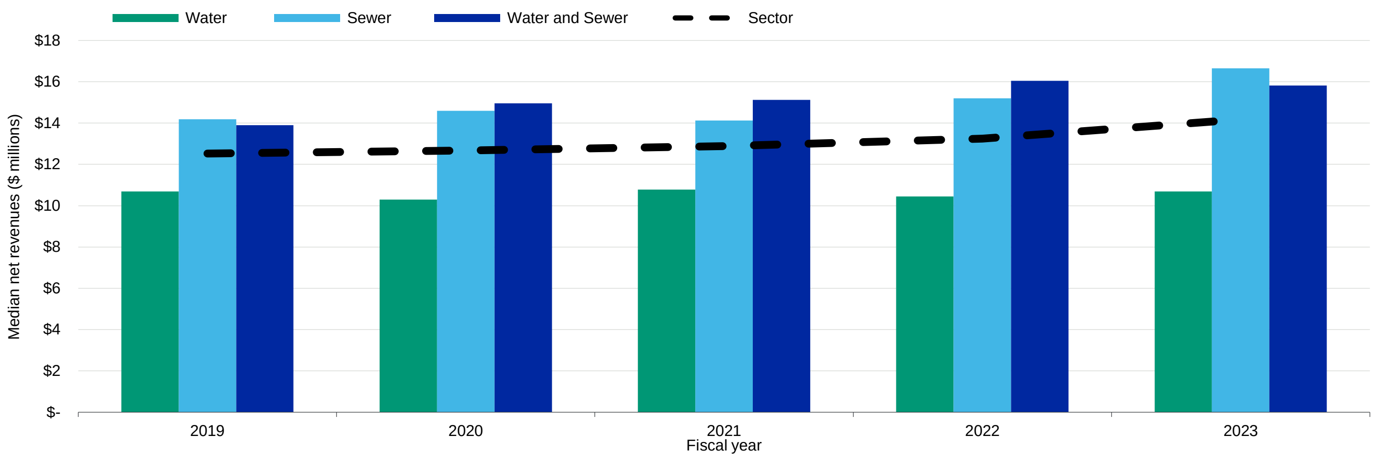
Continued annual net revenue growth highlights sector strength

» Net revenue improved in fiscal 2023 as growth in revenue, supported by rate increases, outpaced growing sectorwide expenses. Across the sector, net revenue rose by at least 11% over the prior year for more than half of utilities, providing additional capacity to cash-finance capital improvements or build liquidity. Median net revenue increased for sewer and water utilities, but declined modestly for combined utilities.

» Net revenue has consistently grown in recent years, highlighting the benefits of the sector's independent rate-raising ability, essentiality of services, and strong multiyear planning for future capital needs. Increased investment income has also contributed to growth in net revenue.

Exhibit 3

Net revenue improved sectorwide as revenue outpaced expenditures



Sources: Audited financial statements and Moody's Ratings

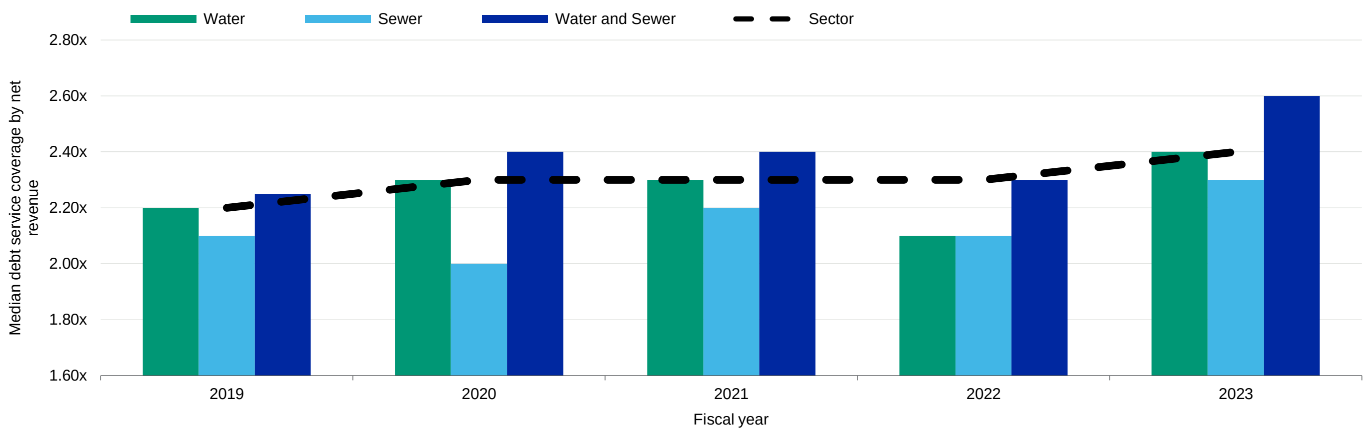
Strong debt service coverage continued to provide a buffer

» Sectorwide debt service coverage – annual net revenue divided by annual debt service – increased modestly to 2.4x. Coverage remained well in excess of standard rate covenants, which are usually between 1.0x and 1.5x annual debt service.

» Water and sewer utilities saw a median increase in coverage to 2.4x and 2.3x, respectively, up from 2.1x coverage in fiscal 2022. Median coverage for combined systems increased to 2.6x from 2.3x in the prior year.

» Very strong debt service coverage and liquidity provide utilities with a substantial ability to withstand shocks. Revenue continues to trend positively, but even under a stress scenario of a 10% decline in revenue the median coverage ratio for water and sewer utilities we rate would remain strong, at 2.2x, in fiscal 2023. This is a material increase from previously reported median coverage under a similar stress scenario.

Exhibit 4
Debt service coverage improved, exceeding 2.3x across the sector



Sources: Audited financial statements and Moody's Ratings

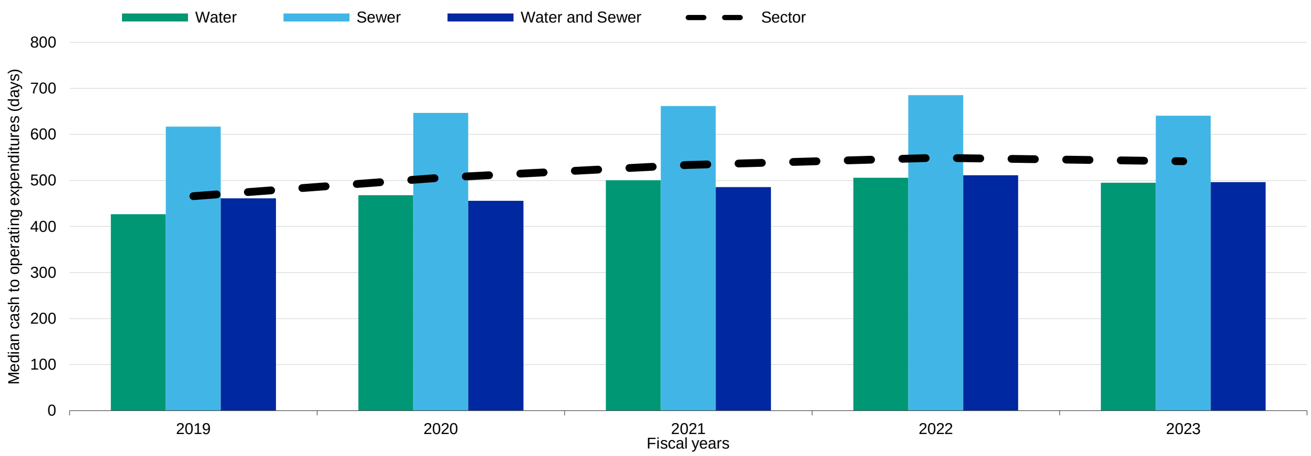
Liquidity remained strong despite growing operating expenses

» Sectorwide, liquidity remains robust – total cash grew by almost 6% for most utilities – providing flexibility to manage potential revenue swings, address unanticipated expenses, or fund certain capital projects.

» Despite increases in cash across the sector, increases in O&M expenses resulted in a modest decline in days cash on hand to a still robust 542 days. Median liquidity declined by 2.3% sectorwide in fiscal 2023. Sewer utilities continued to maintain the highest levels of cash, with liquidity of 641 days.

Exhibit 5

Liquidity remained strong, with the three system types maintaining more than a year of operating cash



Sources: Audited financial statements and Moody's Ratings

Leverage declined, signaling good borrowing capacity

» Net funded debt to revenue declined 4.8% sectorwide to 2.0x in fiscal 2023, driven by growth in revenue coupled with declines in debt. While median debt-to-revenue for water, sewer and combined utilities all declined modestly, available audits for fiscal 2024 indicate this metric may increase as systems contend with infrastructure needs.

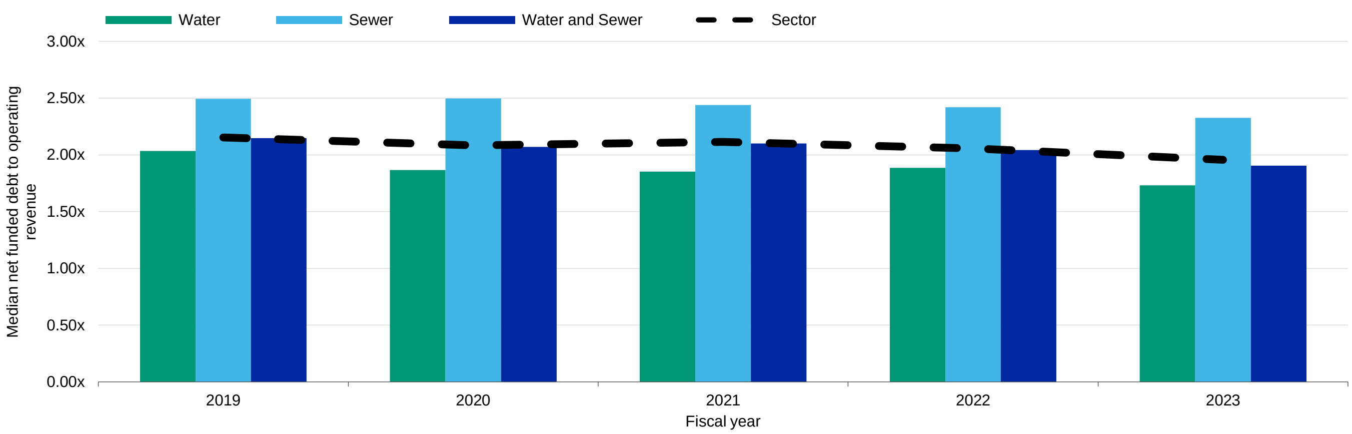
» Careful management of debt provides utilities with good capacity to address their most pressing needs, though projected costs to address aging infrastructure, to remain in compliance with laws and regulations, and to mitigate growing environmental risks are significant.

» Environmental Protection Agency (EPA) regulations that limit the concentration of per- and polyfluoroalkyl substances (PFAS), also known as forever chemicals, and regulations requiring utilities to replace all lead service lines (LSLs) within 10 years will also result in the need to issue debt. While while we expect utilities to carry on with capital plans to ensure compliance with existing state and federal regulations, potential changes in federal requirements may reduce some of these requirements, especially regarding PFAS.

» Continued spending to address wastewater consent decrees will also contribute to increased debt issuance.

Exhibit 6

Leverage remained low in fiscal 2023



Sources: Audited financial statements and Moody's Ratings

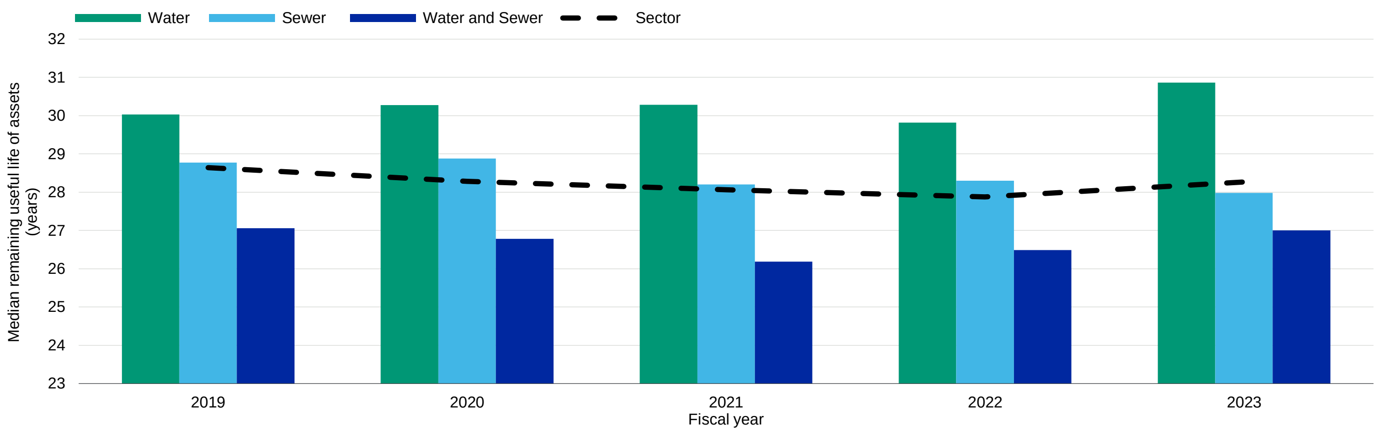
Reported asset condition improved

» Median sectorwide asset condition – net fixed assets divided by depreciation expense – remained healthy at 28.3 years, a slight increase indicating that utilities continue to invest in their systems.

» Continued usage of fully depreciated system components, particularly pipes, is common in the sector, but typically not reflected in a utility's reported capital asset figures. The projected cost to replace aging infrastructure is significant and presents a major credit challenge for the sector.

Exhibit 7

Remaining useful life of assets remained largely stable



Sources: Audited financial statements and Moody's Ratings

Basis for medians

This report conforms to our US Municipal Utility Revenue Debt methodology published in March 2024. As such, the medians presented here are based on the key metrics outlined in the methodology and the associated scorecard. The appendix of this report provides additional metrics broken out by sector and rating category.

We use data from a variety of sources to calculate the medians, some of which have differing reporting schedules. The median family income data (see below) was derived from the 2023 US Census American Community Survey.

Medians for some rating levels, namely Aaa-, Baa-, and Ba-rated issuers (see below), are based on relatively small sample sizes. These medians may therefore be subject to substantial year-over-year variation.

Our ratings reflect our forward-looking opinion derived partly from forecasts of financial performance and qualitative factors, as opposed to strictly historical quantitative data. Our expectation of future performance, combined with the relative importance of certain metrics on individual utility ratings, account for the range of values that can be found within each rating category.

Key ratios

- Net revenue: operating revenue minus operating expenditures net of depreciation
- Debt service coverage: net revenue divided by annual debt service
- Days cash on hand: unrestricted cash and liquid investments multiplied by 365 and divided by operating and maintenance expenses (net of depreciation), expressed in days
- Debt to operating revenue: net long-term debt less debt service reserve funds divided by annual operating revenue
- Asset condition: net fixed assets divided by depreciation expense, expressed in years

Appendix A: Water, sewer and combined utilities

Exhibit 8
Medians for US water utilities
Fiscal 2019-2024

Selected Indicators	2019	2020	2021	2022	2023	2024*
Moody's Median Senior Revenue Rating					Aa3	
Median Family Income (% of US Median)	99%	100%	100%	98%	95%	n/a
Asset Condition: (Remaining Useful Life)	30	30	30	30	31	31
Debt to Operating Revenue	2.0	1.9	1.9	1.9	1.7	2.0
Annual Debt Service Coverage	2.2	2.3	2.3	2.1	2.4	2.4
Days Cash on Hand	426	468	500	506	495	459
System Size: (O&M, $000)	11,041	11,310	11,919	12,011	13,023	21,728
Net Revenue ($000)	10,696	10,292	10,776	10,441	10,684	17,542
Net Funded Debt ($000)	36,450	38,515	40,250	41,343	39,891	66,163
Total Revenue ($000)	19,319	20,045	22,213	20,272	21,431	41,964

*Fiscal 2024 data is preliminary.
Source: Moody's Ratings

Exhibit 9
Medians for US sewer utilities
Fiscal 2019-2024

Selected Indicators	2019	2020	2021	2022	2023	2024*
Moody's Median Senior Revenue Rating					Aa3	
Median Family Income (% of US Median)	100%	101%	101%	100%	100%	n/a
Asset Condition: (Remaining Useful Life)	29	29	28	28	28	28
Debt to Operating Revenue	2.5	2.5	2.4	2.4	2.3	2.4
Annual Debt Service Coverage	2.1	2.0	2.2	2.1	2.3	2.4
Days Cash on Hand	617	647	661	685	641	657
System Size: (O&M, $000)	13,825	14,646	14,714	16,404	16,648	26,949
Net Revenue ($000)	14,179	14,586	14,117	15,199	16,650	26,244
Net Funded Debt ($000)	60,981	63,200	59,662	76,835	72,618	119,060
Total Revenue ($000)	26,408	26,287	26,366	29,421	30,093	44,454

*Fiscal 2024 data is preliminary.
Source: Moody's Ratings

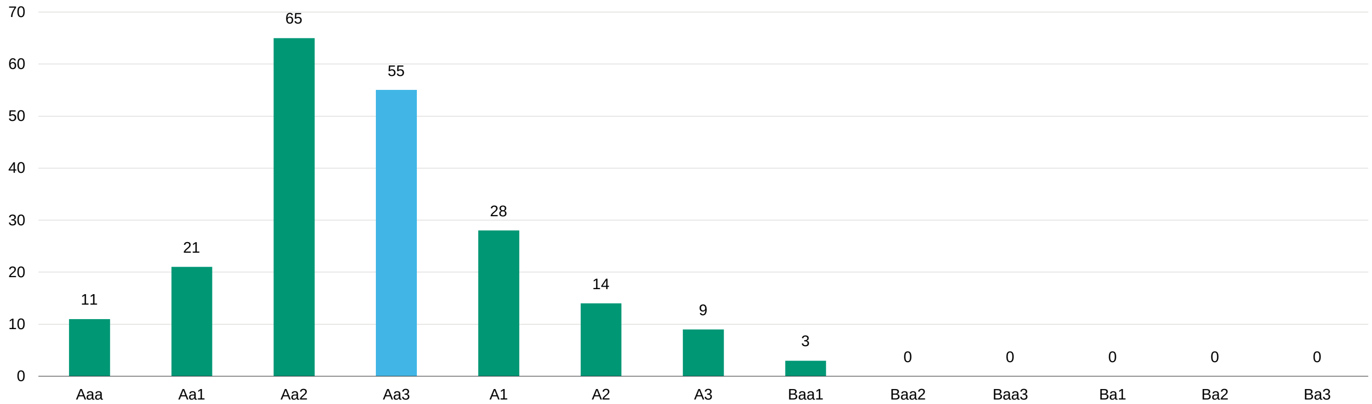
Exhibit 10
Medians for US combined water and sewer utilities
Fiscal 2019-2024

Selected Indicators	2019	2020	2021	2022	2023	2024*
Moody's Median Senior Revenue Rating					Aa3	
Median Family Income (% of US Median)	93%	93%	92%	93%	93%	n/a
Asset Condition: (Remaining Useful Life)	27	27	26	26	27	11
Debt to Operating Revenue	2.1	2.1	2.1	2.0	1.9	1.9
Annual Debt Service Coverage	2.3	2.4	2.4	2.3	2.6	2.8
Days Cash on Hand	461	456	486	511	496	527
System Size: (O&M, $000)	18,382	18,975	20,100	19,733	22,499	8,808
Net Revenue ($000)	13,902	14,961	15,129	16,041	15,811	29,934
Net Funded Debt ($000)	59,636	57,415	56,805	58,364	59,855	72,405
Total Revenue ($000)	31,619	32,498	33,103	33,946	35,242	43,755

*Fiscal 2024 data is preliminary.
Source: Moody's Ratings

Appendix B: Water utilities by rating category

Exhibit 11
Rating distribution for US water utilities
Fiscal 2023



Blue highlighted bar represented median water utility rating.
Source: Moody's Ratings

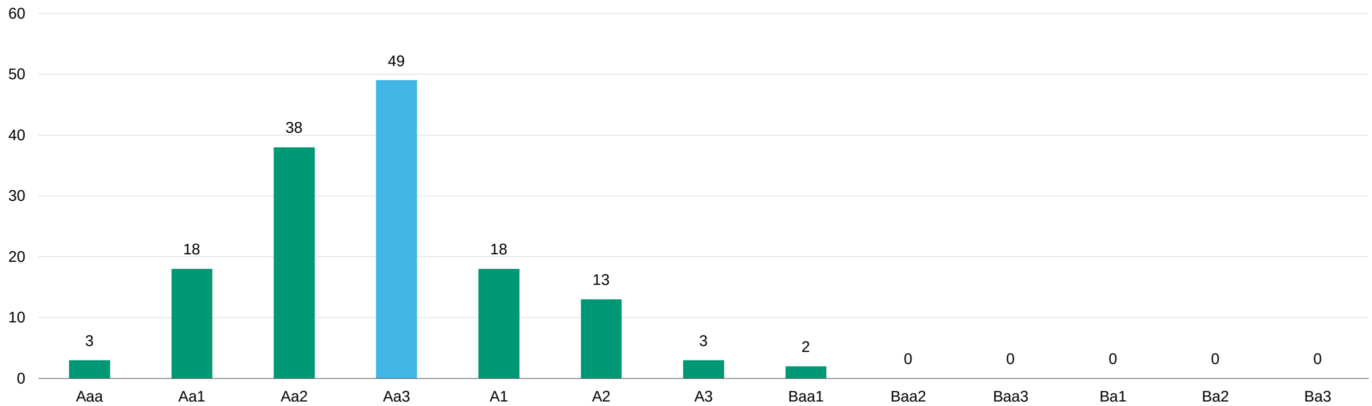
Exhibit 12
Medians for US water utilities by rating category
Fiscal 2023

Selected Indicators	Aaa	Aa	A	Baa	Ba
Count	11	141	51	3	0
Median Family Income (% of US Median)	123%	102%	82%	47%	NA
Asset Condition: (Remaining Useful Life)	37	31	25	30	NA
Debt to Operating Revenue	1.9	1.7	1.6	1.1	NA
Annual Debt Service Coverage	3.0	2.4	2.0	2.1	NA
Days Cash on Hand	416	509	468	391	NA
System Size: (O&M, $000)	107,622	20,603	4,618	3,458	NA
Net Revenue ($000)	109,034	14,145	3,345	888	NA
Net Funded Debt ($000)	354,565	57,326	12,384	2,705	NA
Total Revenue ($000)	208,417	32,553	7,587	2,571	NA

Source: Moody's Ratings

Appendix C: Sewer utilities by rating category

Exhibit 13
Rating distribution for US sewer utilities
Fiscal 2023



Blue highlighted bar represented median water utility rating.
Source: Moody's Ratings

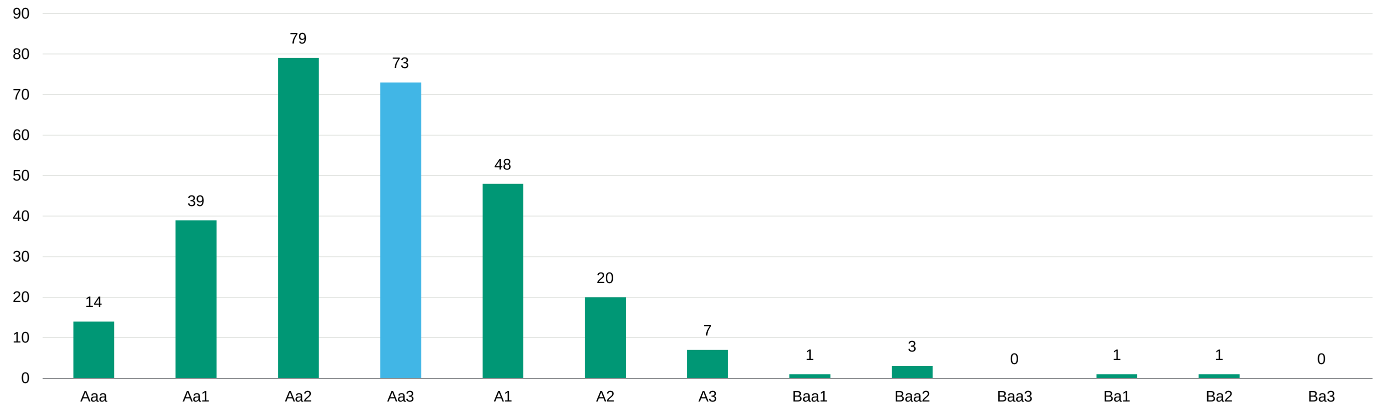
Exhibit 14
Medians for US sewer utilities by rating category
Fiscal 2023

Selected Indicators	Aaa	Aa	A	Baa	Ba
Count	3	105	34	2	0
Median Family Income (% of US Median)	133%	104%	83%	92%	NA
Asset Condition: (Remaining Useful Life)	27	29	26	28	NA
Debt to Operating Revenue	2.4	2.2	2.5	7.1	NA
Annual Debt Service Coverage	3.2	2.3	1.9	1.8	NA
Days Cash on Hand	1600	667	570	342	NA
System Size: (O&M, $000)	120,991	21,116	8,705	133,785	NA
Net Revenue ($000)	151,820	21,644	4,864	211,429	NA
Net Funded Debt ($000)	645,018	89,237	18,812	2,197,817	NA
Total Revenue ($000)	242,725	36,561	13,160	321,590	NA

Source: Moody's Ratings

Appendix D: Combined utilities by rating category

Exhibit 15
Rating distribution for US combined water and sewer utilities
Fiscal 2023



Blue highlighted bar represented median water utility rating.
Source: Moody's Ratings

Exhibit 16
Medians for US combined water and sewer utilities by rating category
Fiscal 2023

Selected Indicators	Aaa	Aa	A	Baa	Ba
Count	14	191	75	4	2
Median Family Income (% of US Median)	113%	96%	84%	72%	89%
Asset Condition: (Remaining Useful Life)	25	28	26	26	28
Debt to Operating Revenue	1.6	1.8	2.6	6.0	7.1
Annual Debt Service Coverage	4.0	2.8	1.8	1.4	1.0
Days Cash on Hand	883	568	289	137	394
System Size: (O&M, $000)	121,407	28,775	9,795	34,097	785
Net Revenue ($000)	99,407	21,344	5,223	34,564	859
Net Funded Debt ($000)	336,884	72,783	34,022	302,613	11,525
Total Revenue ($000)	216,858	42,644	15,341	63,333	1,578

Source: Moody's Ratings

Endnotes

1 There are various year ends. Reference to years refers to the fiscal year of the issuers included in the calculation of the medians.

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Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454