

CREDIT OPINION

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Massachusetts Water Resources Authority

Update to credit analysis

Summary

The Massachusetts Water Resources Authority (MWRA, Aa1 stable) benefits from the strong credit profile of its member communities located in and around the greater Boston area. The authority's member communities secure their assessments with a general obligation pledge. Also contributing to the MWRA's credit strength is its ability to intercept member municipalities' state aid in the event of non-payment of assessments.

The authority has a long history of narrow but very stable annual debt service coverage (1.23x in fiscal 2024) and satisfactory liquidity averaging 92 days cash on hand over the last five years (142 days when including the stabilization fund). The debt burden remains elevated at 4.29 based on the fiscal 2024 audit, but has been on the decline over the last ten years, slowly recovering from significant capital investment to address the Boston harbor cleanup over 20 years ago. The debt burden will remain high given future capital plans for asset protection and water supply redundancy.

The authority's financial metrics are below the medians and the debt burden is above the median for Aa rated entities but are mitigated in part by consistent annual rate increases and use of annual debt defeasance that assists in rate management. The MWRA also has a strong management team that budgets conservatively and adheres to comprehensive capital plans and sound debt management.

Credit strengths

- » Strong credit quality and payment history of local government members
- » Ability to intercept members' state aid to cure payment delinquencies
- » Strong management of financial operations, capital plans and debt portfolio
- » Well funded pension plan

Credit challenges

- » Large debt burden
- » Below-average annual debt service coverage and liquidity for the rating category
- » Reliance on annual rate increases

Rating outlook

The stable outlook reflects our expectation that financial operations and metrics will remain balanced over the outlook period due to moderate annual rate increases, continued use of debt defeasances, and strong budget management. The outlook also incorporates the credit

strength of the member communities and MWRA's conservative and comprehensive planning of long-term capital needs.

Factors that could lead to an upgrade

- » Debt to revenue ratio below 2x
- » Consistent total annual debt service coverage of at least 2x
- » Trend of maintaining at least 250 days cash on hand

Factors that could lead to a downgrade

- » Increase in the debt to revenue ratio above 6x
- » Weakening trend in annual debt service coverage and liquidity
- » Deterioration in the service area's economy and members credit profile

Key indicators

Exhibit 1

Massachusetts Water Resources Authority					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	23 years				
System Size - O&M (in \$000s)	\$339,250.00				
Service Area Wealth: MFI % of US median	117.74				
Legal Provisions					
Rate Covenant (x)	1.20				
Debt Service Reserve Requirement	DSRF funded at less than 3-prong test OR springing DSRF (A)				
Management					
Rate Management	Aaa				
Regulatory Compliance and Capital Planning	Aaa				
Financial Strength					
	2020	2021	2022	2023	2024
Operating Revenue (\$000)	\$778,326	\$786,119	\$811,854	\$836,955	\$851,718
System Size - O&M (\$000)	\$276,963	\$294,059	\$294,655	\$304,160	\$339,250
Net Revenues (\$000)	\$522,840	\$493,630	\$498,578	\$608,359	\$551,470
Net Funded Debt (\$000)	\$4,345,805	\$4,271,707	\$4,141,764	\$3,927,867	\$3,649,707
Annual Debt Service (\$000)	\$466,412	\$457,713	\$414,555	\$431,101	\$446,905
Annual Debt Service Coverage (x)	1.1x	1.1x	1.2x	1.4x	1.2x
Cash on Hand	93.38	92.69	95.95	101.20	96.40
Debt to Operating Revenues (x)	5.58	5.43	5.10	4.69	4.29

Sources: Moody's Ratings and Massachusetts Water Resources Authority's audited financial statements

Profile

MWRA is a regional water and sewer enterprise system providing wholesale water and wastewater services to the Boston (Aaa stable) metro-area and water and/or wastewater services to surrounding communities in eastern and central Massachusetts (Aa1 stable).

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Detailed credit considerations

Service area and system characteristics: large regional system serving members with strong credit profiles

MWRA is authorized to provide wholesale water and wastewater services to 64 communities in eastern and central Massachusetts, serving approximately three million people representing 44% of the commonwealth's population. Incorporated in the long-term rating is the authority's strong collection of member assessments supported by historical receipt of 100% of assessments within the levy year, 30.2% of which come from the [Boston Water and Sewer Commission](#) (BWSC, Aa1 stable). Including BWSC, the top five largest customers provide 46.4% of 2026 total assessments. After BWSC, the other top five are the cities of [Newton](#) (4.7%, Aaa stable), [Quincy](#) (4.4%, Aa3 negative), [Cambridge](#) (3.8%, Aaa stable) and [Somerville](#) (3.4%, Aa1 stable). Additional credit strengths include: MWRA's ability to intercept most members' monthly state aid payments (would cover 70% of fiscal 2026 assessments); the authority's stable membership with lack of alternative sources; independent rate-setting authority; and the essential nature of the services provided.

MWRA provides water supply to 56 local entities. The water is supplied primarily from the Quabbin Reservoir located 65 miles west of Boston and the Wachusett Reservoir located 35 miles west of Boston, which have a combined capacity of 477 billion gallons. Demand consistently falls below the safe yield level of 300 million gallons per day (MGD) and capacity is expected to be sufficient until at least 2060. Demand continues to decline due to ongoing improvements in water use efficiency changes in plumbing fixtures. The authority's withdrawals have averaged 200 MGD for the last five years. Treatment of much of the system's water by ozonation, UV light and chlorination is provided at the system's John J. Carroll Treatment Plant. Transmission and covered storage facilities include the 17.6-mile MetroWest Water Supply Tunnel and the 115 million gallon Norumbega Covered Storage Facility.

Wastewater collection and treatment are provided to 43 communities, with a major treatment facility located on Deer Island in Boston Harbor. The \$3.8 billion Deer Island plant and 9.5-mile effluent outfall tunnel, which were phased into service between 1996 and 2000, allow for average flow of 361 MGD (with peak capacity of 1,270 MGD). Sludge is piped to the authority's pelletization plant in Quincy where it is processed into commercially available fertilizer.

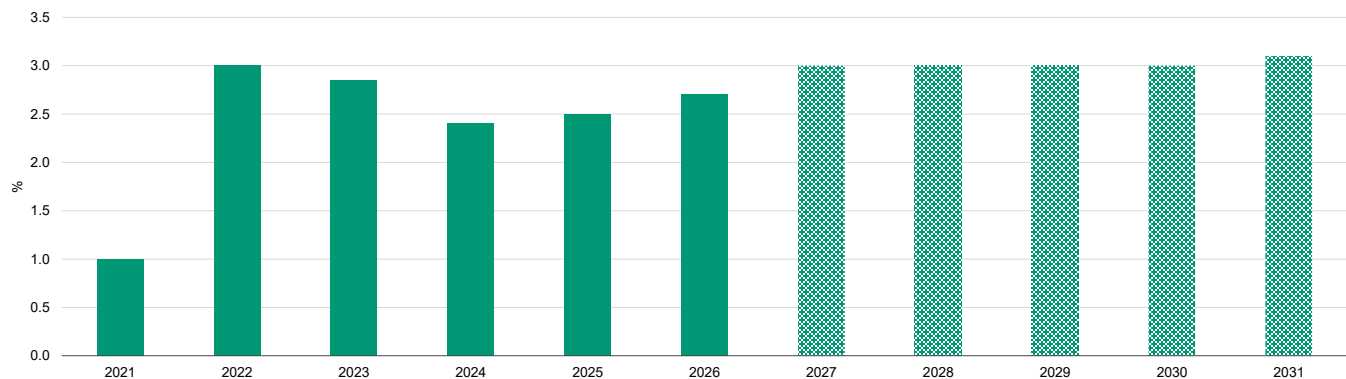
Debt service coverage and liquidity: very stable but limited coverage and liquidity supported by sustainable and consistent rate management

Financial operations will likely remain stable over the next few years with satisfactory debt service coverage and liquidity consistent with historical trends. Stable finances are primarily driven by regular annual rate increases aided by the use of the authority's multi-year defeasance program. In fiscal 2025 total operating revenues equaled \$903.3 million with 95% of the revenue generated from member assessments, providing a very reliable revenue source. Year-end expenditures for fiscal 2025 reflect a positive variance of over 6% of budget due to lower than anticipated staffing and salaries. Indirect expenses also reflected a positive variance from budget of 4.2% while capital finance was largely on budget.

The authority's fiscal 2025 total annual debt service coverage is projected to be 1.27x and senior lien coverage of 1.87x. This remains in line with the five-year average annual coverage of 1.21 (fiscal 2020-24) for total debt service and 2.13x for the senior lien.

We expect the authority to continue to approve predictable and sustainable annual rate increases that will result in strong assessment collections and stable debt service coverage. The fiscal 2026 rate increase was 2.7% and current projections reflect an average annual increase of 3% through 2031. The current year projection is a decrease from a 3.4% projection last year.

Exhibit 2

Combined rate revenue increases are projected to be 3% annually through 2030**Actual and projected annual combined water and sewer rate changes**

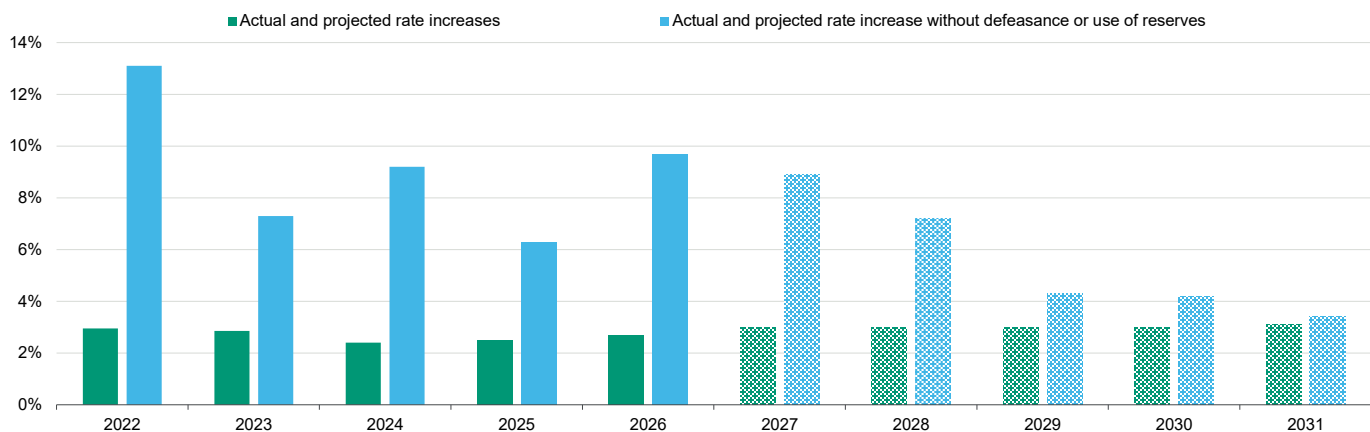
By fiscal year; FY2027-2031 are projections

Source: MWRA's final fiscal 2026 current expense budget

The fiscal 2026 current expense budget reflects an increase in total expenses of 2.1% over the prior year's approved budget. Expenses are driven by fringe benefits, utilities, retirement fund deposit, planned defeasance, and projected borrowing structure. The budget does not include any use of reserves for the fiscal year.

Operations typically generate sizable annual surpluses which are usually used to defease outstanding debt, and reduce future spikes in debt service in order to limit the need for large rate increases in the future. For example, defeasances generated budgetary savings of \$32.4 million in fiscal 2025 and contributed to maintaining a combined rate increase of 2.5% instead of 6.3% increase without defeasance or use of reserves (see exhibit). Since fiscal 2006 and through the anticipated spring 2025 defeasance, MWRA has defeased \$938.1 million in debt service.

Exhibit 3

Defeasances are a key rate management tool for MWRA

Fiscal 2027-2031 are projections

Source: Massachusetts Water Resources Authority

Liquidity

As of fiscal 2024 year end, unrestricted cash and investments totaled \$89.6 million, representing a limited 96 days cash on hand and bringing the five year average to 92 days. When adding the \$39.0 million balance in the rate stabilization reserve to the liquidity position, the cash position increases to \$128.6 million or a more satisfactory 138 days cash on hand and an adjusted five year average of 142 days. The Aa rating category median is 568 days as of 2023 for rated combined water and sewer enterprises. The strong

management team and consistent application of operating surpluses towards debt defeasance help mitigate the authority's narrow liquidity.

In addition to the rate stabilization reserve, MWRA maintains reserve accounts that are required under the bond resolution and allocated as restricted investments in the audit. As of fiscal 2024 year end, the reserves and respective market value of assets include: \$22.6 million in the bond redemption fund, \$150.8 million in the debt service reserve, \$58.0 million in the operating reserve, \$12.2 million in the insurance reserve and \$10.0 million in the renewal and replacement reserve.

Debt and legal covenants: high debt burden with modest covenants; strong management and capital planning

The General Resolution includes a covenant to set rates that provide coverage of 1.2 times on senior lien debt service and 1.1 times on subordinate debt service. The resolution requires maintenance of a debt service reserve fund equal to the least of (i) 50% of maximum annual Adjusted Debt Service (MADS), (ii) 10% of original par, (iii) 125% of the average annual debt service or (iv) the maximum annual debt service. The reserve balance is currently modeled to equal 50% of MADS.

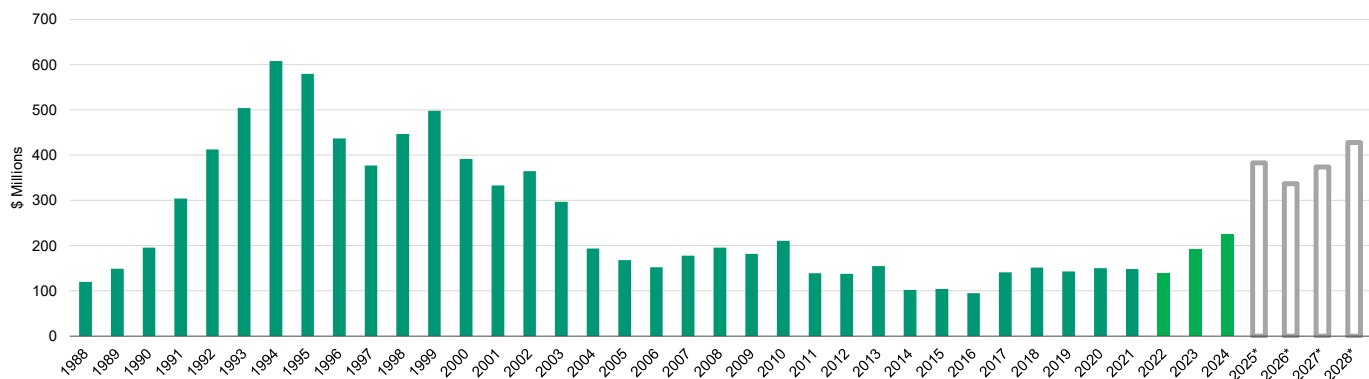
In support of significant capital investments over the last 30 years, MWRA has issued a substantial amount of debt and remains highly leveraged with a debt to operating revenues of 4.29x at the end of fiscal 2024. As of September 1, 2025, the authority has \$2.55 billion in senior lien general revenue bonds, \$760.2 million in SRF loans (subordinate), and \$256.2 million in subordinate variable rate revenue bonds outstanding. Additionally, MWRA is authorized to issue up to \$150 million in tax-exempt commercial paper and draw on \$100 million revolving loan.

The upcoming spring 2025 subordinated refunding revenue bonds will include four separate series of variable rate demand bonds; three of which will be supported by standby bond purchase agreements and one through a letter of credit. MWRA will also increase its short-term borrowing capacity by issuing a second commercial paper series, 2025Notes with an available capacity of \$150 million. This will increase its commercial paper capacity to \$300 million plus the outstanding \$100 million revolving loan. The increase is to ensure ample capacity to cover the anticipated increase in capital spending over the medium term.

The debt ratio will likely remain high but at a reduced level compared to what it has been historically. As of 2016 the debt ratio was over 8 times revenue and has gradually declined to around 5 times in 2022. The debt burden is very high compared to the Aa median of 1.8x revenue. After reaching a capital spending low point in 2016 and 2017, the capital improvement plan (CIP) will accelerate over the medium term in part due to a \$2.1 billion water tunnel project (see exhibit) that will provide redundant capacity to facilitate maintenance of service when existing facilities require maintenance or are otherwise not useable.

Exhibit 4

MWRA's capital spending is projected to rise over the medium term driven by asset protection and redundancy projects CIP spending by fiscal year



Source: MWRA's fiscal 2025 capital improvement plan

Debt structure

The debt portfolio after the spring 2025 issuance is projected to be 82% fixed rate including the senior general revenue bonds and SRF state loans. Variable rate debt is projected to represent 10% and commercial paper and the revolving line of credit representing 8% of total outstanding debt. The authority actively manages and diversifies its variable rate portfolio across providers. Post 2025

spring issuance there will be a total of six liquidity providers with Bank of America representing the largest at 34% of the portfolio. The liquidity facility expiration dates are also sufficiently staggered.

Debt-related derivatives

MWRA currently does not have any swap agreements or other debt-related derivatives.

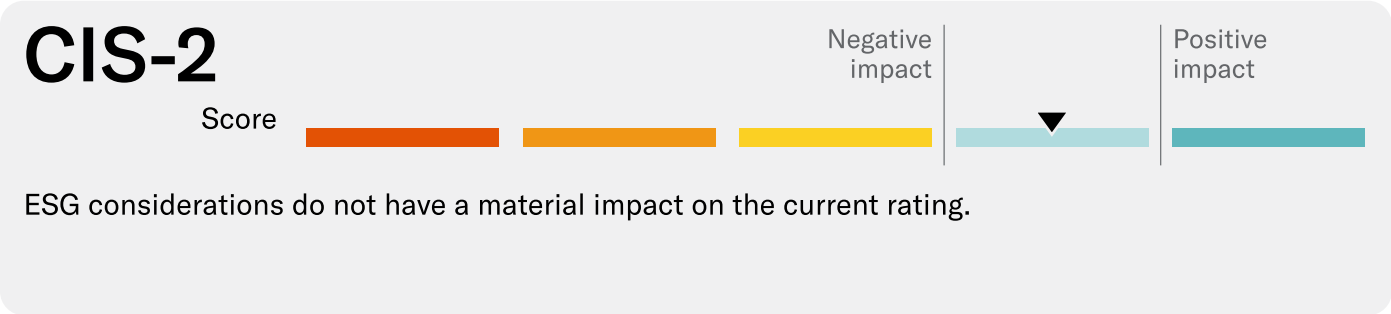
Pensions and OPEB

Retirement liabilities are well managed for the authority. MWRA contributes to the Massachusetts Water Resources Authority Employees' Retirement Plan, a single-employer, defined benefit plan. The plan is well-funded, currently at 87.1% based on the January 1, 2025 actuarial valuation using a 6.9% discount rate. The plan's current funding date is 2030. The 2024 Moody's adjusted net pension liability was \$345.2 million equal to a low 0.41x operating revenue.

The authority also makes strong contributions toward its OPEB liability which it funds on a pay-as-you-go basis plus additional contributions into an OPEB trust. The fiduciary net position equaled 46.5% of the total OPEB liability at the end of fiscal 2024.

ESG considerations

Exhibit 5
ESG credit impact score



Source: Moody's Ratings

Massachusetts Water Resources Authority's ESG credit impact score of **CIS-2** indicates that ESG considerations have a limited impact on its credit rating. This reflects elevated exposure to environmental risks and social risks, and positive governance considerations.

Exhibit 6
ESG issuer profile scores



Source: Moody's Ratings

Environmental

The authority's credit exposure to environmental risks is moderately negative (**E-3**), reflecting elevated exposure to water management risk. Wastewater and combined water and wastewater utilities have moderately negative exposure to water management considerations given the risk of potential regulatory violations associated with wastewater disposal. Wastewater operations face risks of increased operating costs or capital requirements to address violations. The MWRA is not in violation of any regulations. The authority also has heightened exposure to physical climate risks given the location of its treatment plant and other important infrastructure on Deer Island in the Massachusetts Bay and along the coastline. The authority has limited exposure to carbon transition, natural capital and waste and pollution.

Social

The authority's credit exposure to social risks is moderately negative (**S-3**). Water utilities have exposure to responsible production risk, which we view as moderately negative across the sector. Testing results reported to the Environmental Protection Agency indicate that most utilities provide clean and safe drinking water. However, water utilities are at risk of health violations resulting from catastrophic events, changes in source water quality, failures in treatment or transmission processes or revised regulations. MWRA does not have any health violations. The authority has limited risks associated with demographic and social trends, customer relations, human capital, and health and safety considerations.

Governance

MWRA's governance considerations are positive (**G-1**). The authority benefits from strong financial strategy and risk management considerations, and positive management credibility and track record considerations. MWRA has low exposure to organizational structure and compliance and reporting. Exposure to risks associated with board structure, policies and procedures is also limited given broad representation from member communities on the 11-person board.

Rating methodology and scorecard factors

The US Municipal Utility Revenue Debt Methodology includes a scorecard, which summarizes the rating factors generally most important to utility credit profiles. Because the scorecard is a summary, and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rating assigned.

Exhibit 7

Massachusetts Water Resources Authority (600017073)

Rating Factors	Input	Weight	Score
System Characteristics (30%)			
Asset Condition (Years of Annual Depreciation)	23.12459357	10%	A
System Size (O&M in Millions of Dollars)	\$339,250	7.5%	Aaa
Service Area Wealth (Median Family Income as % of US)	118%	12.5%	Aa
Financial Strength (40%)			
Annual Debt Service Coverage (x)	1.233975901	15%	Baa
Days Cash on Hand	96.3976566	15%	A
Debt to Operating Revenue (x)	4.285111974	10%	A
Management (20%)			
Rate Management	Aaa	10%	Aaa
Regulatory Compliance and Capital Planning	Aaa	10%	Aaa
Legal Provisions (10%)			
Rate Covenant (x)	1.2	5%	A
Debt Service Reserve Requirement	A	5%	A
Notching Factors			Up/Down
Additional service area economic strength or diversity			Up
Structural Enhancements/Complexities			Up
Credit event/trend not yet reflected in existing data sets			Down
Scorecard-Indicated Outcome			Aa1
Assigned Rating			Aa1

Data is based on most recent fiscal year available. Debt may include pro forma data for new debt issued or proposed to be issued after the close of the fiscal year.

Sources: Moody's Ratings and Massachusetts Water Resources Authority's audited financial statements

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