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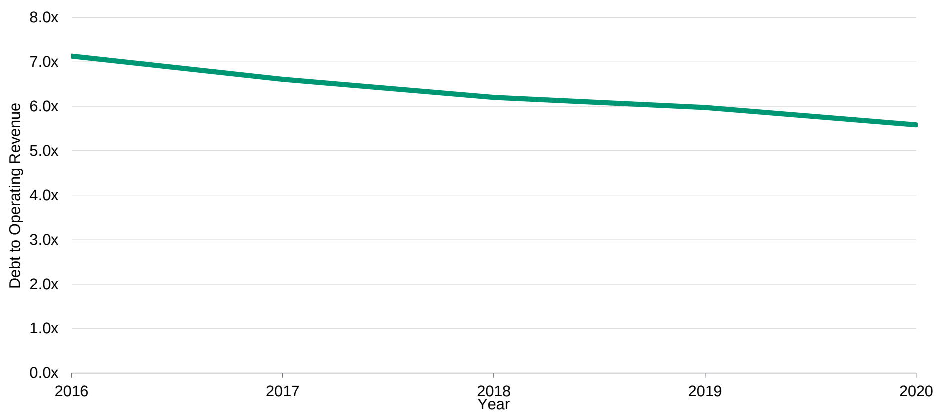
Massachusetts Water Resources Authority

Update to credit analysis

Summary

Massachusetts Water Resources Authority (MWRA, Aa1 stable) benefits from the strong credit profile of its service area that includes the greater Boston (Aaa stable) metro area. The authority's member towns also secure their assessments with a general obligation pledge. The MWRA has a long history of narrow but very stable annual debt service coverage, satisfactory liquidity, and comprehensive planning of long-term capital needs. The authority's conservative and proactive management team help to mitigate a highly leveraged debt position that includes a variable rate component. While the debt burden is high, it has been gradually declining (see exhibit) due to lower capital spending. The unfunded pension liability is low and MWRA is expected to continue its strong funding commitment towards pension and OPEB liabilities. Also contributing to the credit strength is the authority's ability to intercept member municipalities' state aid in the event of non-payment to the MWRA.

Exhibit 1
MWRA's debt burden remains high but continues to decline given lower capital spending
Debt to operating revenue by fiscal year



Source: Moody's Investors Service and MWRA's audited financial statements

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 planning and debt portfolio

- Well funded pension plan

Credit challenges

- Large debt position relative to assets
- Reliance on annual rate increases
- Below-average debt service coverage and liquidity for the rating category

Rating outlook

The stable outlook reflects Moody's expectation that financial operations will remain balanced over the near term with sufficient debt service coverage and liquidity due to manageable annual rate increases. The outlook also incorporates the credit strength of the service area and MWRA's conservative and comprehensive planning of long-term capital needs.

Factors that could lead to an upgrade

- Substantial decline in debt relative to assets
- Strengthening and sustained trend in annual coverage for senior and total debt service

Factors that could lead to a downgrade

- Increase in the debt ratio
- Narrowing of annual debt service coverage
- Failed remarketing leading to accelerated amortization of variable rate debt
- Deterioration of the service area's credit profile

Key indicators

Exhibit 2

Massachusetts Water Resources Authority					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	27 years				
System Size - O&M (in $000s)	$276,963				
Service Area Wealth: MFI % of US median	106.6%				
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					
	2016	2017	2018	2019	2020
Operating Revenue ($000)	$696,973	$716,776	$738,304	$755,336	$778,326
System Size - O&M ($000)	$263,909	$260,108	$260,743	$273,403	$276,963
Net Revenues ($000)	$456,189	$463,291	$485,441	$512,973	$522,840
Net Funded Debt ($000)	$4,969,561	$4,737,465	$4,576,130	$4,510,739	$4,345,805
Annual Debt Service ($000)	$392,596	$400,299	$397,261	$434,678	$466,412
Annual Debt Service Coverage (x)	1.2x	1.2x	1.2x	1.2x	1.1x
Cash on Hand	142 days	142 days	89 days	89 days	93 days
Debt to Operating Revenues (x)	7.1x	6.6x	6.2x	6.0x	5.6x

As of June 30 fiscal year-end. Operating revenue = sales and service charges + other operating revenue. Gross revenue = operating revenue + nonoperating revenue + investment income + debt service grant + changes in derivative accounts. Net revenue = Gross revenue – O&M + reconcile pension/OPEB of $8,334. Annual debt service from audit PDF page 16-17.
Source: Moody's Investors Service and MWRA's audited financial statements

Profile

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

Detailed credit considerations

Service area and system characteristics: large regional system with a large number of member communities with strong credit characteristics

MWRA is authorized to provide wholesale water and wastewater services to 62 communities in eastern and central Massachusetts (Aa1 stable), 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, 31% of which come from the Boston Water and Sewer Commission (BWSC, Aa1 stable). Including BWSC, the top five largest customers provide 46.5% of 2022 total assessments. After BWSC, the other top five are the cities of Newton (4.6%, Aaa stable), Quincy (4.4%, Aa3), Cambridge (3.5%, Aaa stable) and Somerville (3.3%, Aa1). Additional credit strengths include: MWRA's ability to intercept most members' monthly state aid payments; the authority's stable membership with lack of alternative sources; independent rate-setting authority; and the essential nature of the services provided.

MWRA derives water it supplies to 54 local entities 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. 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 310 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: satisfactory coverage and liquidity bolstered by history of stable operations and annual rate increases

Financial operations will remain stable over the near term due to continued adoption of regular rate increases as well as successful use of the authority's multi-year defeasance program that are critical to generating annual operating surpluses and debt service coverage.

From fiscal 2017 through 2021, the combined five year average annual rate increase has been 2.6%, down from 3.2% last year. The fiscal 2021 combined rate increase was only 1%; adjusted to help members through the coronavirus pandemic. Based on the fiscal 2022 current expense budget (CEB) and capital improvement plan (CIP), estimated future combined annual rate increases average 3.3% from 2022 through 2026 to offset increased costs for debt service and operations. We expect the authority to continue to approve predictable and sustainable annual rate increases that will result in strong assessment collections and stable operations.

Operations typically generate sizable annual surpluses which are usually used to defease outstanding debt related to future spikes in debt service in order to reduce the need for large rate increases in the future. For example, defeasances in fall of 2020 and spring of 2021 generated budgetary savings of $6.8 million in fiscal 2022 and contributed to maintaining a combined rate increase of 3% instead of 13.1% increase without restructuring, defeasance or reserves.

Fiscal 2020 audited financials reflect net revenue provided for Moody's calculated senior lien coverage of 2.2 times and total debt service coverage of 1.1 times. The five year average senior lien and total debt service coverage ratios are 2 times and 1.2 times, respectively, representing the limited but stable operating results. The authority's debt service coverage, as defined by its bond resolution for 2020 was 2.5 times for senior debt and 1.2 times for total debt service.

Fiscal 2021 year-end results are positive largely due to over $12.7 million in budgetary direct expense savings due to lower than anticipated wages and salaries, lower energy and utilities costs and lower spending on maintenance as a result of timing of project work in part due to challenges from the coronavirus pandemic. MWRA projects senior debt service coverage of 2.1 times and 1.2 times coverage of total debt service.

The fiscal 2022 CEB totals $813 million reflecting an increase of 3% over 2021. The increase was driven by a 3% increase in capital financings, 3% increase in direct expenses and 1.1% decrease in indirect expenses. Direct expense increases are related to salaries and wages while indirect costs are lower due to a decline in the OPEB deposit due to a new actuarial funding requirement. Capital financing expenses represent 61% of total expenses. The budget was balanced with a 3% rate increase and $1.3 million use of rate stabilization reserve funds to help cover the capital cost of the new harbor cable.

MWRA did not receive any direct federal assistance through ARPA. Although $400 milllion of state level funding received through the federal legislation has been allocated for water and sewer infrastructure. The authority has compiled a list of eligible projects and plans to apply for funding through the state's SRF program which may administer the use of those funds.

Liquidity

As of fiscal 2020 year end, unrestricted cash and investments of $70.6 million representing a limited 93 days cash on hand and bringing the five year average down to 111 days. When adding the $43 million balance in the rate stabilization reserve to the liquidity position, the cash position increases to $113.9 million or a more satisfactory 150 days cash on hand and an adjusted five year average of 166 days. The rating category median is more than double this amount. The strong management team and consistent application of operating surpluses towards debt defeasance helps mitigate the narrow liquidity.

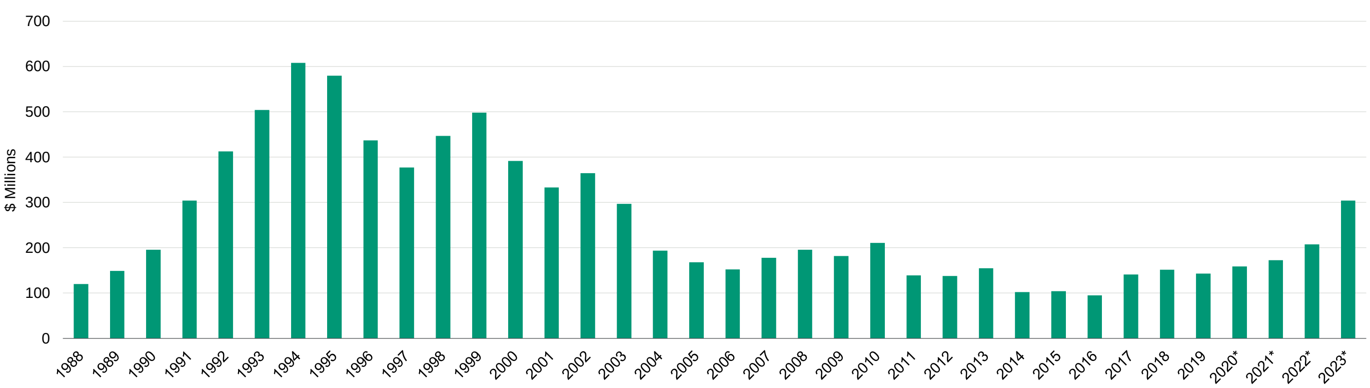
In addition to the rate stabilization reserve, MWRA maintains reserve accounts that are required under the bond resolution and allocated as restricted investments in the audit. As of fiscal 2020 year end, the reserves and balances are: $26.4 million in the bond redemption fund (Debt service revenue redemption fund), $159.5 million in the debt service reserve, $44 million in the operating reserve, $14 million in the insurance reserve and $10.5 million in the renewal and replacement reserve. As of June 30, 2021, reserve balances have not materially changed.

Debt and legal covenants: highly leveraged position with modest covenants, strong debt 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, (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 $156.6 million or equal to 50% of the maximum annual debt service.

In support of significant capital investments, MWRA has issued a substantial amount of debt and remains highly leveraged with a debt ratio of 72% (net debt / net fixed assets plus net working capital) and 5.6 times fiscal 2020 operating revenue. As of November 1, 2021, the authority has $3 billion in senior lien general revenue bonds, $832 million in SRF loans (subordinate), and $533 million in subordinate variable rate revenue bonds outstanding. Additionally, MWRA is authorized to issue up to $250 million in tax-exempt commercial paper and draw on $100 million revolving loan. The 2021 series B bonds will refund $75 million outstanding on the 1999 tax-exempt commercial paper notes. The authority plans to review options for a new short-term borrowing line over the next six months. Although short-term borrowing capacity remains sufficient given its commercial paper line, revolving loan and reserves.

The debt ratio will likely remain high but at a reduced level compared to what it has been historically, given significant completion of compliance related projects and a shift to maintenance and repairs over the last 10 years. As of 2016 the debt ratio was 82%. However, 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 $1.4 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 3
MWRA's capital spending is on the rise after a long trend of annual spending below the $251 million historical average



*based on the fiscal 2022 capital improvement plan and fiscal 2019-2023 spending cap
Source: MWRA

The fiscal 2022 CIP includes planned expenditures of $207.8 million for the year and is part of the fiscal 2019-2023 cap period that totals $986.5 million. The cap period is a base line spending cap period that provides a not to exceed amount as a balanced way to control spending while continuing to invest in the system assets. The first five-year cap was established in 2003. The majority of the waterworks system capital funding will be going toward major redundancy projects including the Metropolitan Tunnel Redundancy Project, while the wastewater funding is almost entirely funding ongoing asset protection.

Legal security
The bonds are backed by a senior lien pledge of net system revenues under the terms of the authority's general revenue bond resolution. Roughly 97% of MWRA's revenue is provided by a general obligation pledge of the member communities to make timely assessment payments to the authority. In addition, pursuant to a tested state aid intercept program, MWRA can intercept state aid payable to member communities in the event that they fail to make timely payment of assessments.

Debt structure

The debt portfolio is 85% fixed rate including the senior general revenue bonds and SRF state loans. Variable rate debt currently represents 12% and commercial paper represents 4% of total outstanding debt. Variable rate demand bonds (VRDBs) in the amount of $234 million are hedged with interest rate swaps while the balance of $299 million are unhedged. The authority actively manages its capital structure risks including staggering of mandatory tender dates, and diversification of bank and swap counterparties. The potential for debt acceleration is remote given MWRA's good headroom under its covenants and management's careful attention to other terms.

Debt-related derivatives

MWRA has a large and complex interest rate swap portfolio, including five floating-to-fixed swaps. As of November 1, 2021, the entire swap portfolio had a market valuation of negative $73 million to MWRA. Early termination events are triggered if MWRA's underlying senior lien rating falls below Baa3.

One letter of credit supports the remaining unhedged VRDBs and expires in December 2023. The 2012 Series E and G bonds, 2014 Series A and B and 2018 Series A and D were all issued through negotiated direct purchase agreements.

There are five standby bond purchase agreements totaling $276.3 million with five different providers with various expirations in 2022 and 2024. MWRA actively diversifies its variable rate portfolio across providers currently using eight different providers with J.P. Morgan representing the largest share with 26%.

MWRA's has two remaining standby bond purchase agreements that have a bank bond and default rates indexed to Libor, all others have switched to SIFMA. As agreements have been amended, language has been added to address the need to provide for a different rate index after Libor is phased out. In all cases, MWRA could refund the bonds if it determines that there is a more favorable alternative to the index with which Libor is replaced.

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 88.2% based on the January 1, 2021 actuarial valuation using a 6.9% discount rate. The plan's current funding date is 2030. The 2020 Moody's adjusted net pension liability is $443.2 million equal to a low 0.6 times 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 2020 contribution of $10.9 million equaled 121% of the ADC and the same level of funding occurred in 2021. The fiduciary net position equaled 32.9% of the total OPEB liability at the end of fiscal 2020. The Moody's adjusted net OPEB liability based on a 2.7% discount rate equals $184 million or a low 0.2 times operating revenue.

ESG considerations

Environmental

MWRA faces long term climate change risk primarily associated with sea level rise and major weather events, in particular relating to the Deer Island Treatment Plant which is located in Boston Harbor. The authority has taken proactive measures to protect system assets against these risks. Included in the long term planning efforts is the review of potential impacts of climate change. The Deer Island Treatment Plant was designed in 1989 and accounted for a projected two foot sea level rise. The plant is also protected by a large sea wall and in June 2020 awarded a design contract for renovating portions of the wall. To date, the authority has identified approximately 18 coastal wastewater facilities that could be affected by storm surge flooding. In response, short term resiliency projects have been completed or are underway, including the installation of protective walls and stop logs surrounding the facilities. Longer term, design facility rehabilitation plans account for a 2.5 foot surge over the 100-year flood elevation. We believe these efforts to date are prudent and expect the authority to continue to expand its climate mitigation planning in the future and that its strong management team will continue the climate resiliency initiatives across the region.

Additionally, a large portion of the member communities throughout the service area face this long term risk. We will continue to monitor individual members as well as the service area as a whole in assessing climate related risk to the regions water infrastructure.

Social

As an essential service MWRA is subject to federal and state environmental regulation that focuses on the quality of water and satisfactory treatment. We consider the coronavirus pandemic to be a social risk and the authority has been responsive to its member communities during the pandemic through rate relief and loan modifications. MWRA also began a pilot study with Biobot Analytics that tracks wastewater at the Deer Island Treatment Plant for indicators of COVID-19 infection.

Governance

MWRA benefits from a strong senior leadership team with comprehensive policies that address financial, capital and debt management. Management annually updates a ten-year capital plan, and maintains financial projections incorporating long term rate management strategy, use of reserves and debt management including an approach to defeasance of debt. The authority is governed by a diverse, 11-member board of directors, chaired by the Secretary of Energy and Environmental Affairs for the Commonwealth.

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