

CREDIT OPINION

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New Issue

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Massachusetts Water Resources Authority

New Issue - Moody's Assigns Aa1 to MWRA's \$433M Sr. Lien Rev. Bonds Ser. B & C; Outlook Stable

Summary Rating Rationale

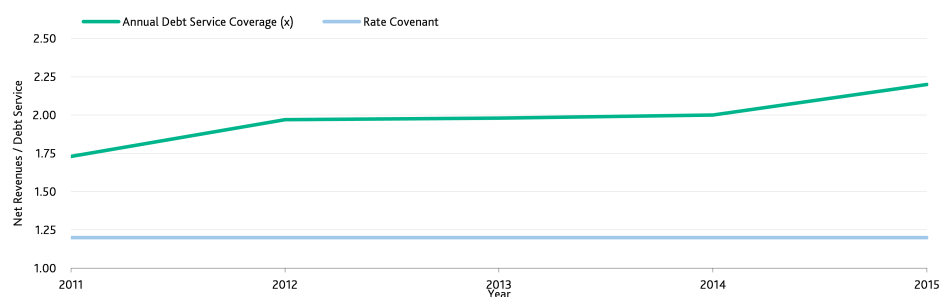
Moody's Investors Service has assigned a Aa1 rating to the Massachusetts Water Resources Authority's (MWRA) \$85 million General Revenue Bonds, 2016 Series B and \$348 million General Revenue Refunding Bonds, 2016 Series C (Green Bonds). Concurrently, we have affirmed the Aa1 rating on the authority's \$3.3 billion of outstanding senior lien general revenue bonds and the Aa2 rating on the authority's \$905.5 million of outstanding subordinate general revenue bonds. The outlook is stable.

The Aa1 rating on senior lien debt reflects the strong credit profile of the authority's service area, stable debt service coverage levels, and comprehensive fiscal policies. The rating also incorporates MWRA's tested ability to intercept member municipalities' state aid in the event of non-payment to the authority. These credit strengths mitigate a highly leveraged position including a sizeable variable rate component.

The Aa2 rating on subordinate lien debt reflects the bonds' secondary position relative to MWRA's senior lien debt and a weaker rate covenant of 1.1 times on combined senior and subordinate debt service. This includes subordinate fixed-rate loans issued by the Massachusetts Clean Water Trust (Aaa stable).

Exhibit 1

Healthy Coverage Highlights Very Stable Financial Position



As of fiscal year end, June 30
 Source: Moody's Investors Service

Credit Strengths

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

Credit Challenges

- » Highly leveraged position
- » Reliance on annual rate increases

Rating Outlook

The stable outlook reflects our expectation that financial operations will remain balanced over the near term with manageable annual rate increases. The outlook also incorporates the conservative and comprehensive planning towards capital needs that remain manageable.

Factors that Could Lead to an Upgrade

- » Substantial decline in the debt ratio
- » Improved coverage for senior and total debt service

Factors that Could Lead to a Downgrade

- » Higher debt ratio with increased exposure to variable rate debt
- » Trend of narrow debt service coverage
- » Acceleration of debt amortization due to failed remarketings
- » Deterioration of service area's composite credit strength

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

Key Indicators

Exhibit 2

Massachusetts Water Resources Authority

System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	31 years				
System Size - O&M (in \$000s)	263,403				
Service Area Wealth: MFI % of US median	129.%				
Legal Provisions					
Rate Covenant (x)	1.20				
Debt Service Reserve Requirement	DSRF funded at less than 3-prong test OR springing DSRF				
Financial Strength					
	2011	2012	2013	2014	2015
Operating Revenue (\$000)	584,354	602,620	623,213	650,957	671,544
O&M (\$000)	254,847	261,510	267,350	273,504	263,403
Long-Term Debt (\$000)	5,800,267	5,879,419	5,876,695	5,697,812	5,601,104
Annual Debt Service Coverage (x)	1.73	1.97	1.98	2.00	2.20
Cash on Hand	167 days	162 days	170 days	168 days	180 days
Debt to Operating Revenues (x)	9.9x	9.8x	9.4x	8.8x	8.3x

Operating revenues include changes in derivative related accounts
As of fiscal year end, June 30

Source: Moody's Investors Service

Recent Developments

As authorized by the 2007 amendments to the general resolution, MWRA released \$113.3 million in reserves in fiscal 2015. As we stated in an [issuer comment](#) dated May 11, 2015, this release does not reduce the credit quality and we find the use of the funds to be prudent. The authority used \$10 million towards the advance funding of its OPEB liability and the balance for early defeasance of outstanding debt. The new debt service reserve requirement equals 50% of maximum annual Adjusted Debt Service.

Detailed Rating Considerations

Service Area and System Characteristics: Large Regional System Providing Essential Service to Member Communities with Strong Credit Characteristics

MWRA provides wholesale water and wastewater services to 56 communities in eastern Massachusetts (Aa1 stable), serving approximately 2.8 million people, or 43% of the commonwealth's population. Incorporated in the long-term ratings are 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 47.6% of total assessments: Cities of Newton (4.8%, Aaa stable), Quincy (4.7%, Aa3), Cambridge (3.5%, Aaa stable) and Somerville (3.4%, Aa2 positive). Additional credit strength is provided by: MWRA's ability to intercept the majority of the 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.

Water supply is provided to 53 communities and is primarily derived from the Quabbin Reservoir, located 65 miles west of Boston (Aaa stable) and the Wachusett Reservoir, located 35 miles west of Boston, with a combined capacity of 477 billion gallons. Demand consistently falls below the safe yield level of 300 million gallons per day and capacity is expected to be sufficient for at least 20 years due to continued improvements in water use efficiency. 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 were phased into service beginning between 1996 and 2000, and allow for average flow of 310 million gallons per day (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: Strong Coverage and Liquidity Bolstered by Long History of Stable Operations

Financial operations will remain stable over the near term due to continued adoption of regular rate increases that are critical to generating annual operating surpluses and ample debt service coverage. From fiscal 2012 through 2016, the combined average annual rate increase has been 3.4%. Future rate increases are expected to rise to an average 3.9% through 2020 given 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.

The authority's debt service coverage, as defined by its bond resolution, allows for the recognition of annual transfers from reserves in net revenues, which MWRA commonly uses. Consequently, coverage as defined by the resolution is generally higher than Moody's net revenue calculation, which does not include reserve transfers. Senior lien coverage, based on Moody's definition of net revenues, was healthy at 2.2 times in fiscal 2015, the highest coverage in at least seven years. Total net revenue debt service coverage was more narrow at 1.16 times. Coverage in fiscal 2015 from pledged revenues, as defined by MWRA's resolution, was strong at 2.12 times and 1.20 times for senior lien and total debt service, respectively. Coverage calculations in 2015 were more in line with each other due in part to the lack of rate stabilization funds being allocated towards revenue and an increase in assessments compared to prior year.

Operations typically generate sizeable annual surpluses which are usually employed to defease outstanding debt related to future spikes in debt service which can mitigate the need for large rate increases in the future. MWRA also maintains healthy reserves for operations, insurance, and renewal and replacement that provide additional operating flexibility.

Fiscal 2016 budgeted expenses increased 5.1% over 2015 actual expenditures driven by a 5.7% increase in capital financings compared to last year's actual results. The budget was balanced with a 3.4% rate increase and no use of rate stabilization reserve funds. As of December 31, 2015, expenditures are trending 4.2% under budget and revenues are up 0.5%.

LIQUIDITY

As of fiscal 2015 year end, unrestricted cash and investments represented a healthy 180 days cash on hand, bringing the five-year average to 169 days. While strong, MWRA has historically maintained a narrower cash position than the rating category median given its strong management and proactive maintenance of using surplus towards debt defeasance.

Debt and Legal Covenants: Strong Covenants Support Highly Leveraged Position Including Variable Rate Exposure

The General Resolution establishes a rate covenant of 1.2 times on senior lien debt service and 1.1 times on subordinate debt service. The debt service reserve fund requirement equals 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.

In support of significant capital investments, MWRA has issued a high amount of debt and remains fairly leveraged (79.5% debt ratio and net debt to operating revenues of 8.3 times in fiscal 2015). As of the current issuance, the authority has \$3.4 billion in senior lien general revenue bonds, \$1 billion in SRF loans (subordinate), and \$905 million in subordinate revenue bonds that also represent the authority's variable rate portfolio. Additionally, MWRA is authorized to issue up to \$250 million in tax-exempt commercial paper plus \$100 million revolving loan that is used to manage its capital program. Over the near term, we expect the debt ratio to remain high but at a reduced level compared to prior years, given significant completion of compliance related projects and a shift to maintenance and repairs.

DEBT STRUCTURE

Variable rate debt currently represents 17% of total outstanding debt, down from over 20% in recent years. The variable rate demand bonds in the amount of \$421.5 million are hedged with interest rate swaps while the balance (\$484 million) are unhedged. The authority has completed a multi-stage plan to moderate 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 very careful attention to debt details.

DEBT-RELATED DERIVATIVES

MWRA has a large and complex interest rate swap portfolio, including five floating-to-fixed swaps. As of February 29, 2016, the entire swap portfolio had a market valuation of negative \$145.5 million to MWRA. Early termination events are triggered if MWRA's underlying senior lien rating falls below Baa3.

Two Letters of Credit (LOC) support the remaining unhedged VRDBs and expire in December 2020. The 2012 Series E, F, and G bonds as well as 2014 Series A and B were all issued through negotiated direct purchase agreements with strong diversification of liquidity providers.

PENSIONS AND OPEB

MWRA contributes to the Massachusetts Water Resources Authority Employees' Retirement Plan, a single-employer, defined benefit plan. The plan is well-funded with a small reported unfunded liability of only \$7.6 million as of January 1, 2015, the most recent valuation report. The plan is expected to be fully funded by 2024, well in advance of most enterprise systems as well as the Commonwealth's mandate of 2040.

The authority has also started to make larger contributions towards its OPEB liability, contributing 95% of the annual cost in 2015 as well as additional payments into an OPEB trust. As of June 30, 2015, the UAAL is \$154.4 million.

Management and Governance

MWRA benefits from a strong, seasoned senior leadership team with comprehensive policies that address financial, capital and debt management. A ten-year capital plan is updated annually, as well as financial projections incorporating long-term rate management strategy, use of reserves, and 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.

Legal Security

The bonds are secured by a senior lien pledge of net system revenues. Additional security for roughly two-thirds of MWRA's revenues is provided by a general obligation pledge of the member communities to make timely assessment payments to the authority, as well as a tested state intercept program.

Use of Proceeds

Series B will go towards permanently financing commercial paper/revolving loans, funding the Construction Fund and Debt Service Reserve Fund.

Series C will refund, in part, the authority's 2005 Series B, 2006 Series B, 2007 Series A, 2009 Series A and Series B, 2010 Series A, 2011 Series B and Series C, and 2012 Series A for an estimated net present value savings of \$47.5 million or 11.8% of refunded principal.

Obligor Profile

MWRA is a regional water and sewer enterprise system, providing wholesale water and wastewater services to the Boston (Aaa stable) metro-area and eastern Massachusetts (Aa1 stable).

Methodology

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in December 2014. Please see the Ratings Methodologies page on www.moody.com for a copy of this methodology.

Ratings

Exhibit 3

MASSACHUSETTS WATER RESOURCES AUTHORITY

Issue	Rating
General Revenue Bonds, 2016 Series B	Aa1
Rating Type	Underlying LT
Sale Amount	\$85,055,000

Expected Sale Date	04/04/2016
Rating Description	Revenue: Government Enterprise
General Revenue Refunding Bonds, 2016 Series C (Green Bonds)	Aa1
Rating Type	Underlying LT
Sale Amount	\$348,010,000
Expected Sale Date	04/04/2016
Rating Description	Revenue: Government Enterprise

Source: Moody's Investors Service

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