

CREDIT OPINION

7 May 2026

**Send Your Feedback****Contacts**

Nicholas Lehman +1.781.672.1124
VP-Senior Analyst
nicholas.lehman@moodys.com

Nicole Addalli +1.212.553.4143
VP-Sr Credit Officer
nicole.addalli@moodys.com

CLIENT SERVICES

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

Massachusetts Water Resources Authority

Update to credit analysis

Summary

The Massachusetts Water Resources Authority (MWRA, Aa1 stable - senior lien) 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 (1.26x in fiscal 2025) and satisfactory liquidity averaging 94 days cash on hand over the last five years (133 days when including the stabilization fund). The debt burden remains elevated at 4.05 based on the fiscal 2025 audit, but could gradually increase given the ramp up in projected capital spending. 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 the 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 of 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, MA					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	22 years				
System Size - O&M (in \$000s)	\$364,046.00				
Service Area Wealth: MFI % of US median	116.43				
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					
Regulatory Compliance and Capital Planning					
Financial Strength					
	2021	2022	2023	2024	2025
Operating Revenue (\$000)	\$786,119	\$811,854	\$836,955	\$851,718	\$873,292
System Size - O&M (\$000)	\$294,059	\$294,655	\$304,160	\$339,250	\$364,046
Net Revenues (\$000)	\$493,630	\$498,578	\$608,359	\$551,470	\$551,538
Net Funded Debt (\$000)	\$4,198,199	\$4,076,367	\$3,867,775	\$3,596,700	\$3,537,712
Annual Debt Service (\$000)	\$457,713	\$414,555	\$431,101	\$446,905	\$436,242
Annual Debt Service Coverage (x)	1.1x	1.2x	1.4x	1.2x	1.3x
Cash on Hand	92.69	95.95	101.20	96.40	93.84
Debt to Operating Revenues (x)	5.34	5.02	4.62	4.22	4.05

Source: 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 metro-area and water and/or wastewater services to surrounding communities in eastern and central Massachusetts.

Detailed credit considerations

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Service area and system characteristics: large regional system service 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, 30.1% 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%, A1 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 is authorized to provide 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 financial metrics 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. The charges to member communities for the wholesale water and sewer services have represented more than 95% of the authority's revenues over the last 10 years representing a very reliable revenue source.

The proposed fiscal 2027 current expense budget represents a 2.6% increase in total expenses compared to the 2026 approved budget. Expenses are driven by direct expenses including a 15.6% increase in fringe benefits and 5.1% increase in wages and salaries. The budget also includes indirect expenditure increases for additions to reserves and the retirement fund. The budget is balanced with a rate revenue increase of 3%. There is no budgeted draw on the rate stabilization fund.

The fiscal 2026 final expense budget was \$919.7 million. Operations through March 2026 reflect positive variance in both expenses and revenues. Positive variance from wages and salaries and fringe benefits are contributing to expenses trending \$11 million or 4.7% below budget. On the revenues side, investment income has contributed to a smaller variance of \$3.6 million representing 0.5% above budget.

The authority projects fiscal 2026 senior lien debt service coverage of 2.05x. Based on the fiscal 2025 audited financials, the senior lien and total debt service coverages were 1.89x and 1.26x, respectively. The five year average for total annual debt service equals 1.24x (fiscal 2021-2025).

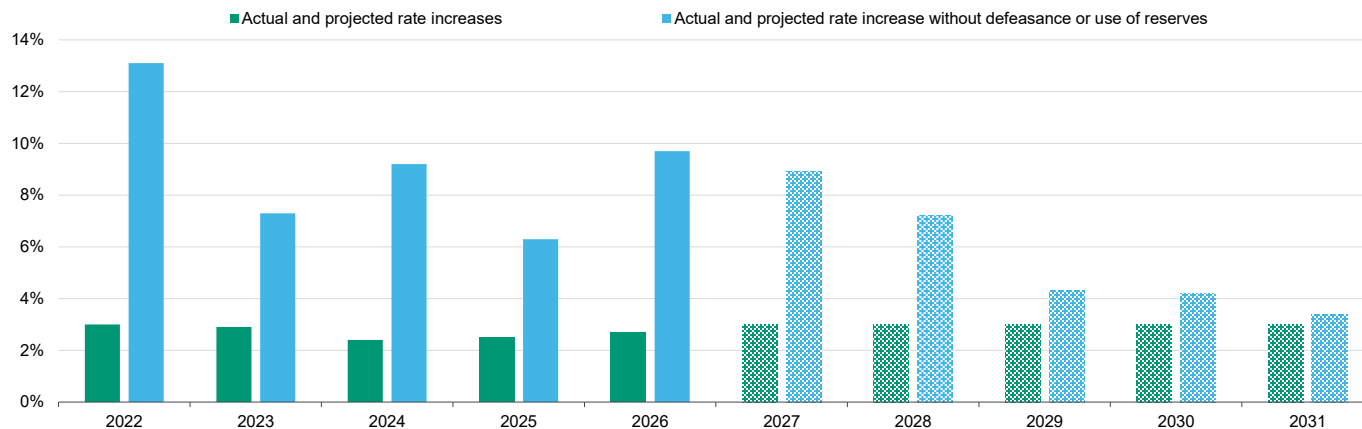
We expect the authority to continue to approve predictable and sustainable annual rate increases that will result in strong assessment collections and stable debt service coverage. The fiscal 2026 rate increase was 2.7% and current projections reflect an average annual increase of 3.1% through 2031.

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 \$62.0 million in fiscal 2026 and contributed to maintaining a combined rate increase of 2.7% instead of 9.7% increase without

defeasance or use of reserves (see exhibit). Since fiscal 2006 and through the anticipated fall 2025 defeasance, MWRA has defeased \$962.7 million in debt service.

Exhibit 2

Defeasances are a key rate management tool for MWRA



Fiscal 2027-2031 are projections

Source: Massachusetts Water Resources Authority

Liquidity

As of fiscal 2025 year-end, unrestricted cash and investments totaled \$93.6 million, representing a limited 94 days cash on hand and bringing the five year average to 93 days. When adding the \$39.0 million balance in the rate stabilization reserve to the liquidity position, the cash position increases to \$132.6 million or a more satisfactory 133 days cash on hand and an adjusted five year average of 138 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 2025 year end, the reserves and respective market value of assets include: \$26.1 million in the bond redemption fund, \$173.3 million in the debt service reserve, \$59.2 million in the operating reserve, \$14 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

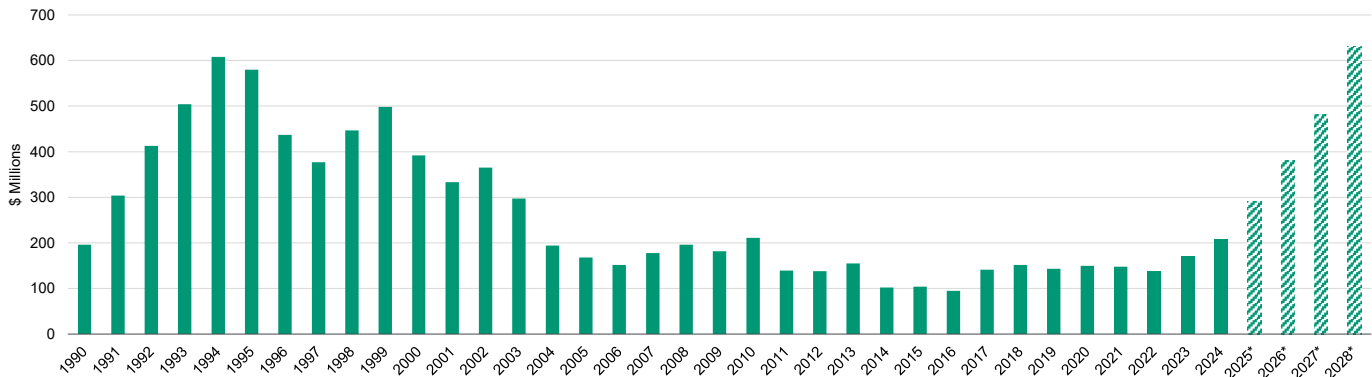
The General Resolution includes a covenant to set rates that provide coverage of 1.2 times on senior lien debt service and 1.1 times on subordinate debt service. The resolution requires maintenance of a debt service reserve fund equal to the least of (i) 50% of maximum annual Adjusted Debt Service (MADS), (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 4.12x at the end of fiscal 2025. As of April 1, 2026, the authority has \$2.5 billion in senior lien general revenue bonds, \$760.2 million in SRF loans (subordinate), and \$287.1 million in subordinate variable rate revenue bonds outstanding. Additionally, MWRA is authorized to issue up to \$300 million in tax-exempt commercial paper and draw on \$100 million revolving loan.

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 3

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



Source: MWRA's fiscal 2026 capital improvement plan

Debt structure

The debt portfolio currently represented by 84% fixed rate including the senior general revenue bonds and SRF state loans. Variable rate debt represents 7.3% and commercial paper and the revolving line of credit representing 8.7% of total outstanding debt. The authority actively manages and diversifies its variable rate portfolio across providers. There are currently a total of seven liquidity providers with JPMorgan representing the largest at 26% 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

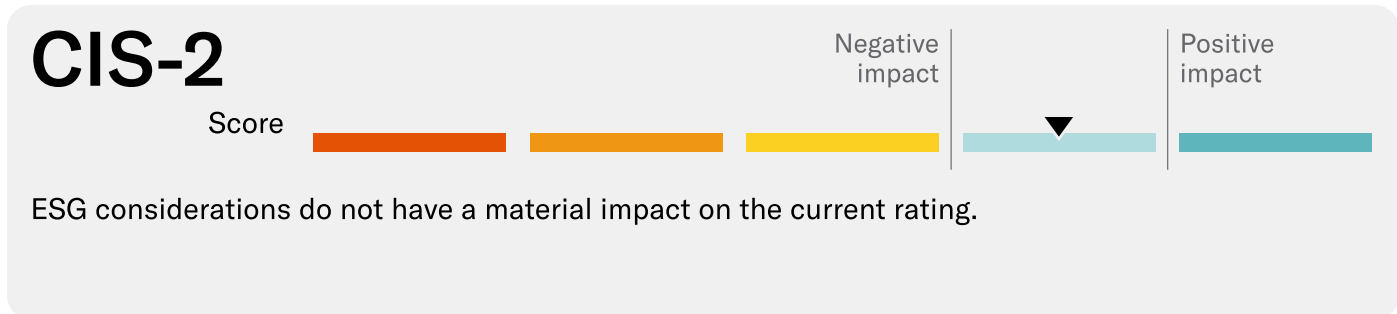
Retirement liabilities are well managed for the authority. MWRA contributes to the Massachusetts Water Resources Authority Employees' Retirement Plan, a single-employer, defined benefit plan. The plan is well-funded, currently at 87.1% based on the January 1, 2025 actuarial valuation using a 6.9% discount rate. The plan's current funding date is 2030. The 2025 Moody's adjusted net pension liability equals \$279.1 million equal to a low 0.32x 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 50.09% of the total OPEB liability at the end of fiscal 2025.

ESG considerations

Exhibit 4

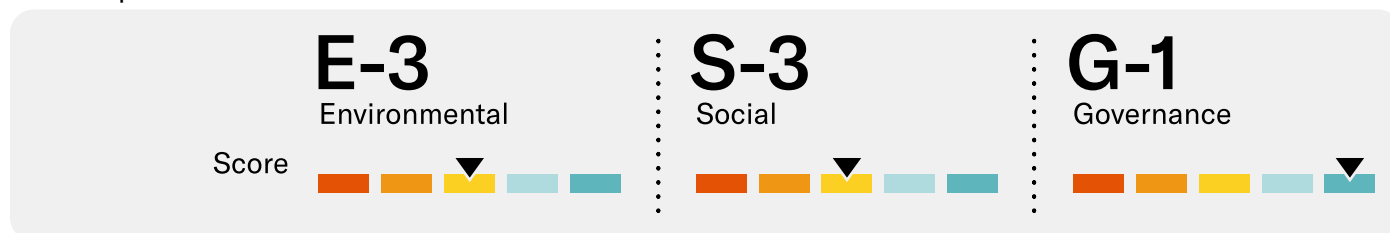
ESG credit impact score



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 5
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 6

Massachusetts Water Resources Authority (600017073)

Rating Factors	Input	Weight	Score
System Characteristics (30%)			
Asset Condition (Years of Annual Depreciation)	22.28024178	10%	A
System Size (O&M in Thousands of Dollars)	\$364,046	7.5%	Aaa
Service Area Wealth (Median Family Income as % of US)	116%	12.5%	Aa
Financial Strength (40%)			
Annual Debt Service Coverage (x)	1.26	15%	A
Days Cash on Hand	93.84	15%	A
Debt to Operating Revenue (x)	4.05	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.

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.

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

© 2026 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved. CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE LEGAL, COMPLIANCE, INVESTMENT, FINANCIAL OR OTHER PROFESSIONAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating or assessment is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating or assessment process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating or assessment assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and all MCO entities that issue ratings under the "Moody's Ratings" brand name ("Moody's Ratings"), also maintain policies and procedures to address the independence of Moody's Ratings' credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at ir.moody.com under the heading "Investor Relations — Corporate Governance — Charter and Governance Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V. I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., Moody's Local PA Calificadora de Riesgo S.A., Moody's Local CR Calificadora de Riesgo S.A., Moody's Local ES S.A. de CV Clasificadora de Riesgo, Moody's Local RD Sociedad Calificadora de Riesgo S.R.L. and Moody's Local GT S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions and Net Zero Assessments (as defined in Moody's Ratings Rating Symbols and Definitions): Please note that neither a Second Party Opinion ("SPO") nor a Net Zero Assessment ("NZA") is a "credit rating". The issuance of SPOs and NZAs is not a regulated activity in many jurisdictions, including Singapore. EU: In the European Union, each of Moody's Deutschland GmbH and Moody's France SAS provide services as an external reviewer in accordance with the applicable requirements of the EU Green Bond Regulation. JAPAN: In Japan, development and provision of SPOs and NZAs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used

within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

REPORT NUMBER 1483527

CLIENT SERVICES

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