

CREDIT OPINION

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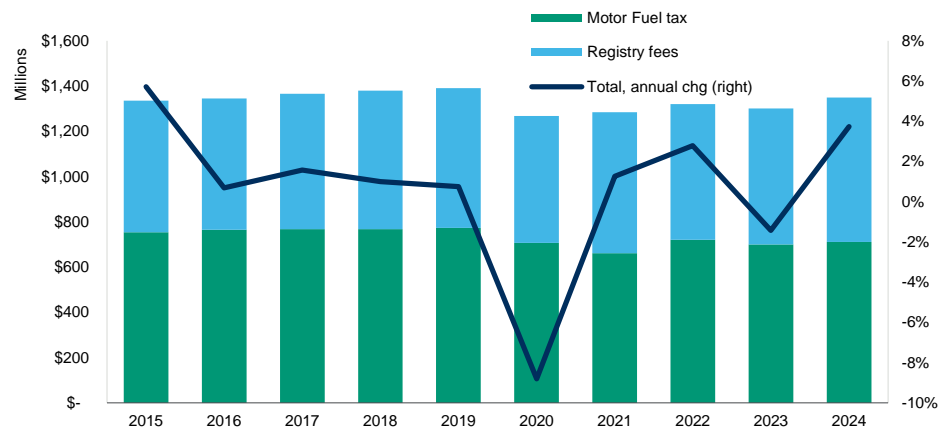
Massachusetts (Commonwealth of)

Update to credit analysis: Commonwealth Transportation Fund

Summary

The Commonwealth Transportation Fund (CTF) bonds issued by the [Commonwealth of Massachusetts](#) carry a rating equal to the state's issuer rating (Aa1, stable). The CTF program's credit is supported by robust legal protections of pledged revenue, very strong debt service coverage from state motor fuel taxes and vehicle registry fees and an additional bonds test requiring 4.0 times debt service coverage. Growth in pledged revenue, as shown in Exhibit 1, has been sluggish; the 10-year CAGR of 0.7% incorporates tepid fee revenue growth and a slight decline in fuel tax collections. Coverage of maximum annual debt service (MADS) by actual fiscal 2024 revenue is 5.1 times including 2024 bond issues, and MADS coverage by 2024 revenue is projected at 4.5 times, factoring in additional CTF debt Massachusetts plans to issue through fiscal 2030. Pledged motor fuel taxes and registry fees are remitted monthly to the bond trustee. Annual legislative appropriation is required for payment, but the revenue cannot be used for other purposes until debt service is provided for, which largely offsets this risk.

Exhibit 1
Growth in pledged revenue has been sluggish, because of stagnant fuel consumption



By fiscal year ending June 30.
Source: Commonwealth of Massachusetts bond offering documents.

Credit strengths

- » A strong additional bonds test that requires 4.0 times coverage of MADS, and the government's covenant to refrain from changes to pledged revenue that would result in MADS coverage falling below that level

- » Constitutional dedication of pledged revenue to transportation purposes and provisions barring pledged revenue use until CTF debt service has been provided for
- » Strong MADS coverage from pledged revenue, even factoring planned future issuance

Credit challenges

- » Need for annual legislative appropriation for debt service
- » Lack of separation of pledged revenue, which is collected by the Department of Revenue and Registry of Motor Vehicles before being remitted on a monthly basis to the bond trustee
- » Vulnerability to stagnant or declining motor fuel tax collections

Rating outlook

Massachusetts' stable outlook, which applies to the CTF rating, is supported by prospects for continued strong financial management, including proactive steps to navigate challenges that emerge in the event of unexpected economic underperformance.

Factors that could lead to an upgrade

- » Upgrade of Massachusetts' issuer rating
- » Change in legal structure allowing debt service payment without appropriation, regardless of budget authorization
- » Revision of legal provisions governing collection of revenue to create direct flow of funds to the bond trustee

Factors that could lead to a downgrade

- » Downgrade of Massachusetts' issuer rating
- » Factors such as unexpected revenue declines that materially weaken debt service coverage
- » Legislative failure to appropriate annual debt service payments

Key indicators

Exhibit 2

CTF program background

Pledged revenue	Taxes on gasoline and special fuels; motor carrier tax; vehicle registration and other fees
Additional bonds test	4.0 x MADS
MADS coverage with 2024 bonds	5.1 x
MADS coverage including future issues	4.5 x

Trend information

	2020	2021	2022	2023	2024
Debt outstanding (millions)	\$ 2,923.92	\$ 2,875.79	\$ 3,146.07	\$ 3,436.24	\$ 3,873.46
Pledged revenue (millions)	\$ 1,268.2	\$ 1,284.3	\$ 1,320.1	\$ 1,301.4	\$ 1,350.0
Annual change in revenue	-8.8%	1.3%	2.8%	-1.4%	3.7%

Debt outstanding amounts are of June 30, except for 2024, which is as of March 31. The 2023 and 2024 debt outstanding figures are unaudited.

Source: Commonwealth of Massachusetts offering and disclosure documents

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.

Profile

The Commonwealth of Massachusetts is the 16th-largest state by population, with just over 7 million residents as of July 2023, according to the US Census Bureau. Its gross domestic product, at \$733.9 billion in 2023, ranks 12th among the states. Adjusted per capita income was 118% of the national average in 2022, the second highest.

Detailed credit considerations

Characteristics of the Revenue Base

The pledged revenue constitutes a somewhat broad base, with a mix of taxes on motor fuels collected by the state's Department of Revenue and motor vehicle fees received by the Registry of Motor Vehicles (RMV). Motor fuel taxes consist of a 24 cents per gallon tax on gasoline¹ and an equal levy on special fuels, and a motor carrier tax assessed on fuels used in Massachusetts but bought elsewhere. Fuels account for slightly more than half the pledged revenue – 53% in fiscal 2024. The registry fee component, which accounted for 47% in 2024, includes vehicle registrations, licenses and other RMV revenue.

Total pledged revenue growth in recent years has been stagnant, with a 10-year CAGR through fiscal 2024 of 0.7%. Volatility typically has been modest, although pledged revenue tumbled 8.8% during fiscal 2020, which included the worst effects of the pandemic.

Fuel tax collections are driven by the amount of motor fuel sold as well as the rate levied by the state. The last increase in the tax rate applied to gasoline and special fuels was July 31, 2013, when the levy rose to 24 cents a gallon from 21 cents. No fuel tax increase is currently contemplated. Trends in fuel consumption incorporate economic and demographic factors, as well as broadening ownership of electric vehicles (EVs). The state reports that EVs represented less than 1.5% of its total registered vehicles as of July 2024. While the transition to lower- and zero-emission vehicles is unlikely to pose a serious near-term threat to revenue collections, it will increasingly weigh on pledged revenue growth. Through fiscal 2024, gasoline consumption declined almost 9% compared the state's pre-pandemic (2019) level. Significant declines in revenue from any existing source would likely prompt corrective action, such as addition of other revenue.

Debt Service Coverage

Pledged revenue in fiscal 2024 (through June 30, 2024) provided coverage of 5.35 times coverage of MADS from bonds already outstanding. With the 2024 Commonwealth Transportation Fund bond offerings, which include approximately \$275 million par amount of new debt and \$225 million of refunding bonds, MADS coverage will decline to 5.1 times. Revenue (based on the actual 2024 figure of almost \$1.35 billion) could withstand an 80% decline and still fully cover resulting MADS after the 2024 issues. With an additional \$915 million par amount of debt that the government plans to issue through 2030, MADS coverage by fiscal 2024 revenue is 4.5 times.

Security features and other factors

The pledged funds are deposited monthly to the Commonwealth Transportation Fund by the state Treasurer, after receipt of certifications of the collected amounts from the state Department of Transportation (registry fees) and Department of Revenue (for fuel taxes). In order for these resources to be available for other state transportation purposes (including as a backup source for Grant Anticipation Notes), the state must meet monthly set-aside requirements equal to one-fifth the CTF bonds' next interest payment and one-tenth the next principal payment. This enhances bondholder security and mitigates the exposure to the already minimal risk the legislature would fail to pass the required annual appropriation for debt service payments.

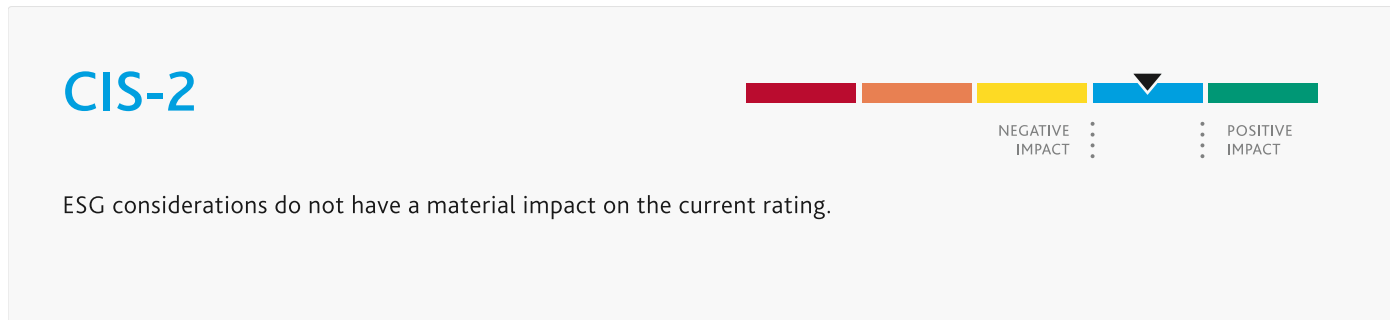
The CTF program finances essential transportation infrastructure needs. The commonwealth issues CTF bonds under two programs: the Accelerated Bridge Program (ABP), which had approximately \$1.5 billion in outstanding debt as of fiscal 2024 and the Rail Enhancement Program (REP), which had approximately \$2.4 billion outstanding as of fiscal 2024.

ESG considerations

Massachusetts (Commonwealth of)'s ESG credit impact score is CIS-2

Exhibit 3

ESG credit impact score

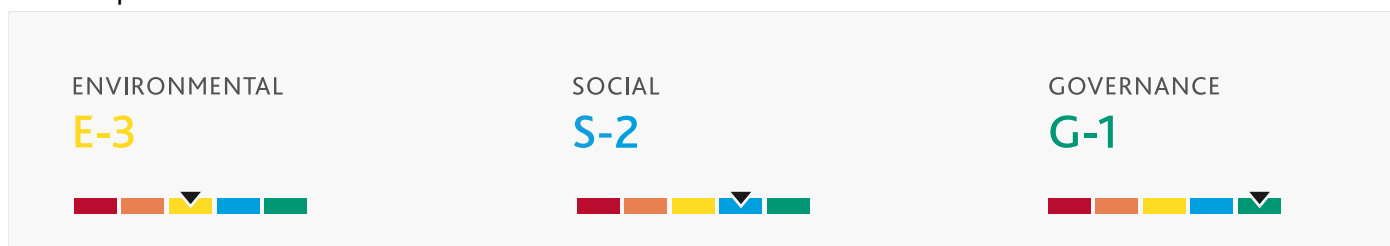


Source: Moody's Ratings

Massachusetts' ESG Credit Impact Score (**CIS-2**) reflects moderately negative exposure to climate risks, neutral-to-low exposure to social risks and a positive governance profile.

Exhibit 4

ESG issuer profile scores



Source: Moody's Ratings

Environmental

Massachusetts' E issuer profile score (**E-3**) factors in exposure to physical climate risks, particularly hurricanes and resulting flooding. Other environmental risks have a neutral to low impact Massachusetts' credit profile. The commonwealth is far along in transitioning its energy generation to renewable sources, and its economy relies largely on industries that are neither carbon-intensive nor dependent on the commonwealth's natural capital. Hurricane risk affects 95% of state GDP, and about half of state GDP is vulnerable to flooding. The vast majority of the commonwealth's economic activity is concentrated along its coastline, particularly in the city of Boston (Aaa stable), which drives up the commonwealth's vulnerability to physical climate risks.

Social

Massachusetts' issuer profile score (**S-2**) incorporates a highly educated workforce, high income levels, and labor force participation significantly higher than the nation, offset by weak demographic metrics that include lagging population growth. The state's median age, 39.6 years, exceeds the US median age, 38.2 years. The state's percentage of working age residents is 39%, approximating the rate of the US, but this portion of the population has been shrinking. The number of prime working age residents, or people 25 to 54 years old, declined by 0.8% between 2000 and 2020, compared with 1.1% growth in working age residents for the US in the period.

Governance

Massachusetts' governance practices are generally very strong, reflected in a **G-1** issuer profile score. These practices include consensus revenue estimating and multiyear financial plans. Delayed budget adoption is common in Massachusetts. Budget delays typically result from a multilayered approval process that requires three separate budgets to be combined into one final document. Interim budgets are put in place to ensure continuing operations and payment of debt service.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Endnotes

¹ A small portion of this tax (0.15%) is allocated to the state's Inland Fisheries and Game Fund.

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