

**CREDIT OPINION**

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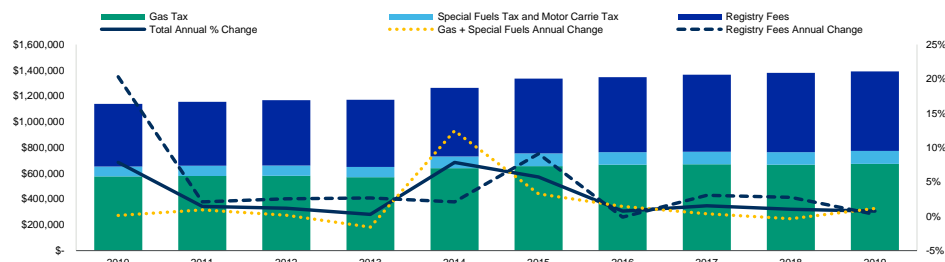
# Massachusetts (Commonwealth of)

## Update to credit analysis for CTF and GANs

### Summary

The credit profiles of [Massachusetts](#)' Commonwealth Transportation Fund (CTF) bonds (Aa1 stable) and Grant Anticipation Notes (GANs; Aa2 stable) are supported by a stable, diverse revenue pledge and strong legal protections that limit future issuances and restrictions on the use of pledged revenue. Pledged revenue for the CTF bonds includes gas taxes and wide array of motor vehicle related fees. The GANs have a subordinate lien on these revenues, in addition to a first lien on federal highway aid reimbursements from the US government.

Exhibit 1



Source: Commonwealth of Massachusetts

### Credit strengths

- » CTF: A strong additional bonds test that requires four times coverage of maximum annual debt service and the commonwealth's covenant not to alter the pledged revenue if it would result in maximum annual debt service coverage of less than four times
- » CTF: Constitutional dedication of the pledged revenue solely for transportation purposes and statutory and indenture provisions that prohibit the commonwealth from using them until debt service on CTF bonds is paid
- » CTF: Strong debt service coverage provided by the pledged gas taxes and motor vehicle-related fees, even after planned future issuance
- » GANs: Strong coverage provided by a pledge of Massachusetts' federal highway reimbursements
- » GANs: Additional coverage provided by a pledge of CTF funds after payment of senior CTF bonds

## Credit challenges

- » CTF: The need for annual legislative appropriation for debt service
- » CTF: Pledged revenue is collected by the commonwealth, via the Department of Revenue and the Registry of Motor Vehicles, before being remitted to the trustee on a monthly basis, which then results in the separation of the pledged revenue
- » CTF: The aggregate limitation on debt secured by the pledged revenue is statutory and could be increased going forward
- » GANs: No limit on additional subordinated bonds in the CTF indenture, although additional debt is limited by additional bonds tests of 2.5x on CTF revenue and 1.5x on federal reimbursements in the GANs indenture
- » GANs: Periodic reauthorization risk inherent in the federal program and uncertainty about the form of future federal highway aid programs

## Rating outlook

The outlook for the Commonwealth of Massachusetts' Commonwealth Transportation Fund bonds is stable. The outlook reflects the strong legal structure of the bonds and healthy debt service coverage.

For the GANs, the outlook is also stable, reflecting the expected levels of federal reimbursements through 2020 as well as the continued steady growth of CTF revenue that will be available in the event of disruption to federal funds.

## Factors that could lead to an upgrade

- » CTF: An upgrade of Massachusetts' general obligation rating
- » CTF: A change in legal structure that permits debt service to be paid without an appropriation, regardless of budget authorization
- » CTF: A change in the flow of funds that diverts the pledged revenue directly to the trustee rather than flowing through the commonwealth first
- » GANs: An upgrade to the CTF rating
- » GANs: Changes in legal structure such as stronger limitations on CTF leverage at the senior and subordinate level

## Factors that could lead to a downgrade

- » CTF: A downgrade to the Massachusetts' general obligation rating
- » CTF: Additional leverage, or decline in the pledged revenue that materially weakens debt service coverage
- » CTF: Non-appropriation of funds for debt service
- » GANs: A downgrade to the CTF rating
- » GANs: A significant decline in federal reimbursements or obligation authority, or overall changes in the federal highway aid program that materially impact the funds that flow to Massachusetts
- » GANs: Large leverage of the CTF or material weakening in the CTF revenue that reduce backup coverage

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## Key indicators

Exhibit 2

### Commonwealth of Massachusetts CTF and GANs

#### Credit Background

Pledged Revenues - CTF CTF funds

Pledged Revenues - GANs Federal highway grants  
Excess CTF funds

#### Legal Structure

Additional Bonds Test - CTF 4.0x CTF revenues

Additional Bonds Test - GANs 2.5x CTF revenues and  
1.5x federal reimbursements

Open or Closed Lien - CTF & GANs Open

Debt Service Reserve Requirement - CTF & GANs None

#### Coverage

MADS coverage - CTF 7.1x

MADS coverage - GANs 14.5x

#### Trend Analysis

|                                     | FY2014  | FY2015  | FY2016  | FY2017  | FY2018  |
|-------------------------------------|---------|---------|---------|---------|---------|
| Total CTF Debt Outstanding (\$mil)  | \$1,754 | \$2,206 | \$2,484 | \$2,752 | \$2,812 |
| Total GANs Debt Outstanding (\$mil) | \$353   | \$700   | \$657   | \$738   | \$748   |
| CTF Pledged Revenue (\$mil)         | \$1,264 | \$1,336 | \$1,345 | \$1,366 | \$1,380 |
| Pledged Revenue % Change            | 7.9%    | 5.7%    | 0.7%    | 1.6%    | 1.0%    |

Source: Commonwealth of Massachusetts

## Profile

The [Commonwealth of Massachusetts](#) is the 15th largest state by population, boasting nearly 6.9 million residents in 2017. Its gross domestic product, reaching \$505.8 billion, ranks 11th among the states. Per capita income was 131% of the national average in 2017, the 2nd highest.

## Detailed credit considerations

### Tax base and nature of the pledge

The CTF bonds are secured by a broad mix of transportation related taxes and fees that are collected across the state. Pledged revenue is split fairly evenly between fuel taxes and registry fees; fuel excise taxes accounted for 55.6% of the pledged revenue and motor vehicle fees are 44.4% in fiscal 2019.

The GANs benefit from two sources of pledged revenue: 1) all federal highway reimbursement grants, and 2) net CTF pledged revenue after the payment of debt service on the CTF bonds. The principal credit challenge for all credits backed by federal highway reimbursement grants, including Massachusetts' GANs, is the periodic uncertainty regarding reauthorization of the programs. Favorably, Massachusetts' GANs have a subordinate pledge on CTF revenue that provides an ample source of revenue as a backstop if federal reimbursement grants are not appropriated.

The Federal Aid Highway Program (FAHP) is administered by the US Department of Transportation's Federal Highway Administration (FHWA). The federal highway program was initiated in 1956 and has changed emphasis through various reauthorizations, but is based on reimbursement of state spending on qualified road and transportation programs according to formulas factoring in population and other factors. The source of pledged federal highway aid is the federal Highway Trust Fund (HTF), which receives revenue from dedicated national excise taxes on gasoline and other vehicle taxes. The national scope of the tax base makes it much broader than any state or local government tax base alone. The HTF is the repository of the dedicated taxes and is established under periodic

reauthorizations by Congress. The most recent authorization, "Fixing America's Surface Transportation Act or FAST Act, which expires in 2021, succeeded the "Moving Ahead for Progress in the 21st Century Act or MAP-21, after several temporary extensions.

### Debt service coverage and revenue metrics

We expect that even with increased leverage, pledged revenue can withstand another economic downturn and still maintain healthy coverage for CTF and GAN issuances.

Based on fiscal 2019 CTF receipts of nearly \$1.4 billion and debt service inclusive of the current issuance, coverage of CTF maximum annual debt service (MADS) is 7.1 times. Using the same fiscal 2019 revenue and debt service that includes an additional \$1.5 million of CTF issuance (which is planned to be issued through 2024), coverage remains strong at 5.1 times.

Historical performance of the pledged CTF revenue is stable and we expect continued but more moderate growth going forward. Total fiscal 2019 collections grew by 0.7%; gas tax collections were up by 1.1% with modest registry fee growth of 0.6%. Gas and special fuels tax collections are relatively inelastic, declining twice in the last 10 years. Registry fees only declined once, a modest -0.1%, in fiscal 2016.

Federal highway obligation authority is likely to stabilize around \$650 million annually through 2022, as indicated by the FHWA, though the actual amount of federal highway reimbursements may vary because of the commonwealth's pace of project spending. Based on estimated pledged revenue, using fiscal 2019 net CTF revenue plus projected obligation authority grants, MADS coverage is projected at 14.5 times across all revenue or 9.7 times net CTF revenue or 4.9 times federal highway reimbursements.

### LIQUIDITY

There is no debt service reserve fund for neither CTF bonds nor the GANs. Massachusetts maintains minimal unrestricted liquidity in its CTF fund. As of fiscal 2018 the Commonwealth Transportation Fund had an unrestricted cash balance of just \$19.4 million, with a committed balance of \$51.8 million.

### Debt and legal covenants

CTF bonds are issued under two programs: the Accelerated Bridge Program (ABP), which has approximately \$1.7 billion in outstanding debt and Rail Enhancement Program (REP), which has \$1.1 billion outstanding. The ABP was created in 2010 to fund capital improvements to bridges and related infrastructure. The REP was authorized in 2014 to fund [Massachusetts Bay Transportation Authority](#) (senior sales tax bonds Aa2 stable) and other rail projects. The commonwealth has limited additional authorization under the ABP, with an issuance cap of nearly \$1.9 billion. The REP total authorized issuance cap is \$6.7 billion.

The commonwealth currently has \$748.4 million in outstanding federal Grant Anticipation Notes; proceeds are used to fund the commonwealth's Accelerated Bridge Program. The commonwealth does not expect to issue future GANs, absent new statutory authorization. Part of the proposed new transportation bonding bill contains authorization for \$1.25 billion of new GANs. The bill is being debated during the current legislative session.

The CTF bonds benefit from an additional bonds test (ABT) that requires the pledged revenue to equal four times maximum annual debt service on outstanding bonds, as well as the planned issuance, in any 12 of the prior 18 months before issuance. A strong non-impairment covenant allows the commonwealth to reduce the pledged revenue tax rates or base but only if that action would continue to result in at least four times coverage of maximum annual debt service. Inclusion of the BAB subsidies, received as part of the 2010 issue, somewhat dilutes those protections but not materially; they are still strong relative to similar credits and the ability to issue new bonds under the BAB program has expired.

GAN bondholders benefit from strong legal protections that insulate them from annual appropriation risk for federal revenue and overleverage of both pledged revenue streams. The federal highway revenue that are pledged to the GANs are not subject to annual state appropriation for debt service payments, protecting the credit somewhat from the non-payment in the event of late budgets, which is a perennial issue for Massachusetts. This does not mitigate federal reauthorization risk, though, including congressional reauthorization of the federal Highway Trust Fund, the continuation of the Federal Aid Highway Program and federal budget risk in the case of federal budget cuts or deficits. Recognizing this fact, the federal revenue are deposited with the trustee one year in advance, providing the state with time to deal with significant changes to the federal revenue structure, if they occur. Bondholders are protected from excessive leverage by an additional bonds test that requires 1.5 times of MADS by federal reimbursements, and 2.5 times coverage

by excess CTF revenue. The trust agreement allows the commonwealth to change the rates for pledged revenue, but only if the rate change will result in 4 times MADS coverage on currently outstanding CTF debt.

#### DEBT STRUCTURE

Debt service on the CTF bonds and GANs is level, with maximum annual debt service projected in fiscal 2022 for CTF bonds and GANs.

#### DEBT-RELATED DERIVATIVES

All of the commonwealth's CTF and GAN debt is fixed rate and it does not have any derivative products outstanding.

#### PENSIONS AND OPEB

A key credit issue for Massachusetts is its large unfunded pension burden, which [ranked sixth-highest in the nation](#), along with associated elevated fixed costs that are high despite being well below the amount necessary to prevent current liabilities from growing. Favorably, the commonwealth's growing economy has provided a solid base to keep pace with its long-term liabilities.

Based on the commonwealth's fiscal 2018 pension data, Massachusetts' adjusted net pension liability (ANPL) was \$81.2 billion or 228% of revenue. The 50-state median ANPL to revenue is 92%, with the commonwealth ranking sixth highest in the nation. In 2008 the state created a trust fund to account for its other post-employment benefit (OPEB) plan. As of June 30, 2018 the plan had \$1.2 million in assets, resulting in an unfunded liability of \$14.9 billion.

### Environmental, Social and Governance considerations

#### Environmental

The US states sector overall has low exposure to environmental risks because of states' large and diverse economies, revenue-raising ability and federal government support for disaster recovery costs via FEMA. Massachusetts' environmental considerations, however, are material for all of its debt, as the vast majority of Massachusetts' economic activity is along its coastline, resulting in elevated exposure to climate change. Recognizing that it has above-average climate risks, the commonwealth is leading climate change preparedness, resiliency and mitigation efforts for itself and its local governments.

#### Social

Social issues, such as demographics, labor force, income and education, are key influencers of all state economies, governance stability and financial and leverage trends. The commonwealth benefits from an educated workforce and high income levels. This contributes to the state's attractiveness to businesses looking to relocate or expand, especially in the greater Boston region, which helps boost the state's economy. For more information on social factors, please see our Economy section.

#### Governance

Governance is a material consideration for the sector and all of the state's ratings. The CTF and GAN credits both have strong governance ties to the commonwealth. Debt service for the CTF bonds is subject to annual appropriation, with revenue collected by the commonwealth before being transferred on a monthly basis to the trustee. These governance connections result in the CTF rating being capped at Massachusetts' general obligation rating.

Net CTF pledged revenue for the GANs are also subject to annual appropriation by the commonwealth, and are collected by the commonwealth before being deposited with the trustee. Because of this arrangement, and in the event of a lack of authorization for the federal revenue, the GANs would also be subject to the same governance ties as the CTF bonds.

We continue note the strong legal framework supporting the CTF pledge. The Massachusetts constitution limits the use of transportation-related revenue to transportation purposes, which could be interpreted broadly in certain circumstances. Additionally, the authorizing statute under which the bonds are issued, the Special Obligation Act, permits the state treasurer to enter into a trust agreement and to pledge the CTF revenue and all right and title to them to bondholders, a pledge the act says is perfected.

Immediately after receiving the monthly transfer of CTF funds from the state treasurer, the trustee is required to make a deposit into the Debt Service Fund equal to one-fifth interest and one-tenth principal. Once the revenue are on account with the trustee, that account is subject to the pledge created by the master trust and cannot be used for any other purpose until debt service on the CTF bonds has been paid. If no debt service appropriation is made, the trustee is prohibited from releasing any CTF revenue, precluding their use for any other purpose and giving Massachusetts strong incentive to appropriate for debt service.

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