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## Summary:

# Massachusetts Bay Transportation Authority; Sales Tax

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### Credit Profile

US\$220.0 mil Subordinated sales tax bnds (PTC Project RRIF Loan) ser 2018B-2 due 07/01/2039		
<i>Long Term Rating</i>	AA/Stable	New
US\$162.0 mil Subordinated sales tax bnds (PTC Project TIFIA Loan) ser 2018B-1 due 07/01/2039		
<i>Long Term Rating</i>	AA/Stable	New

## Rationale

S&P Global Ratings has assigned its 'AA' rating to the Massachusetts Bay Transportation Authority's (MBTA) proposed subordinated sales tax bonds 2017 series B, consisting of \$220 million subseries B-1 (positive train control [PTC] project Transportation Infrastructure Finance and Innovation Act [TIFIA] loan), and \$162 million subseries B-2 (PTC project Railroad Rehabilitation and Improvement Financing [RRIF] loan), in connection with a federal loan agreement under the TIFIA and federal RRIF. At the same time, S&P Global Ratings affirmed its 'AA' rating on the authority's \$274 million of prior lien subordinated sales tax bonds series 2017A consisting of subseries A-1 (sustainability bonds) and subseries A-2, and \$271 million subordinated sales tax bond anticipation notes (BANs), series 2017 due Dec. 1, 2021, and its 'AA' rating on the authority's \$3.67 billion senior-lien sales tax bonds outstanding. The outlook on all bonds is stable.

The senior sales tax bonds are secured by a pledge of the greater amount of either a statewide sales tax defined as a 1% statewide sales tax, plus a gross pledge of \$160 million of additional state sales tax per year that MBTA receives for operational funding; or an inflation-adjusted sales tax revenue base amount distributed by the Commonwealth of Massachusetts. The senior sales tax pledge is subordinate to \$196.8 million of prior closed-lien general transportation bond obligations outstanding issued before 2000, to the extent that the MBTA does not certify that its general revenues can cover these prior-lien obligations in its annual budget from general revenues. In addition, pledged to the senior sales tax bonds are surplus assessments on 175 cities and towns, after payment of debt service on separate MBTA assessment bonds that have a first lien on those revenues.

The subordinate sales tax pledge securing the series 2017A subordinate sales tax bonds consists of the same revenue pledged to the senior sales tax bonds, after payment of senior-lien sales tax bond debt service and senior-lien debt service reserve replenishments, if any.

The 2017 series B federal TIFIA and RRIF loans are secured by a sales tax revenue bond third lien after the subordinate series 2017A sales tax bonds. The TIFIA/RRIF loan agreement also specifies that the loan's junior lien changes to parity with senior-lien bondholders in the event MBTA files for bankruptcy or commences bankruptcy-like actions; however, we believe that as a state agency MBTA is not permitted to file for bankruptcy under the federal bankruptcy code.

The MBTA will not draw on the TIFIA and RRIF federal loans until after the MBTA's PTC capital project has been completed, expected by December 2021, although the federal TIFIA/RRIF fixed loan rate is being set currently with the signing of the federal loan agreement. Whether MBTA will ultimately draw on future TIFIA or RRIF loans, or instead issue its own bonds secured by either a subordinate or senior sales tax lien, will depend on future market conditions after PTC project completion. In the meanwhile, the PTC capital project is being funded by short-term subordinate BANs and commercial paper (CP), which will be refinanced later into long-term loans or federal loans.

Our MBTA sales tax bond ratings are based on what we perceive to be the stronger pledge of either the state base revenue amount or pledged MBTA sales tax revenue. Currently, we view the pledge of state-guaranteed base revenue as of stronger credit quality as it is larger than MBTA sales tax revenue and backed by the state's guarantee of all sales tax collected by the state. We do not make a rating distinction between the senior, subordinate, and TIFIA/RRIF liens, as we currently view all liens as linked to the credit quality of the state, which provides the state base revenue securing the bonds. Both senior and subordinate sales tax bonds outstanding will continue to have an open lien permitting additional debt issuance using the same additional bonds test (ABT) coverage multiple, while no additional third lien subordinate sales tax debt on parity with the TIFIA/RRIF loans can be issued beyond the currently authorized amount; as a consequence we expect debt service coverage based on pledged state revenue to remain high and of similar magnitude in the near term for all liens. We believe the lack of a debt service reserve on the subordinate bonds and the TIFIA/RRIF loans is mitigated by strong debt service coverage levels.

The 'AA' rating reflects the strength of the State of Massachusetts (AA/Stable GO rating) to provide pledged sales tax revenue, in that the state base revenue amount, which is currently higher in amount than the pledged sales tax revenue, is payable from total state sales taxes, and is not subject to state appropriation. The potential dependence on state base revenue, in our view, creates an indirect link to state credit quality.

Other rating factors include:

- A large and diverse statewide economy of 6.8 million people generating the pledged sales tax;
- Strong 2.24x coverage of maximum annual debt service (MADS) on combined senior, subordinate, and TIFIA/RRIF sales tax liens by fiscal 2018 pledged state base revenue, assuming unhedged variable-rate debt carries about a 7% interest rate and the BANs are refunded by proposed future subordinate sales tax bonds. MBTA projects future annual debt service coverage on combined senior, subordinate, and TIFIA/RRIF sales tax revenue bonds will always remain at least 2.00x or greater, using the fiscal 2018 state base revenue amount, even after anticipated additional debt issuance in 2019 and 2021 and the CP and BANs have been refunded
- MADS coverage of all three liens is also strong by pledged MBTA sales tax revenue at 2.17x, using the most recent fiscal 2017 pledged sales tax revenue alone.
- Coverage of senior-lien MADS alone is slightly higher at 2.36x by the fiscal 2018 base revenue amount, while second-lien MADS coverage of combined senior-lien and subordinate-lien sales tax debt is the same 2.24x as for the third lien TIFIA/RRIF combined MADS, because MADS on outstanding debt will occur before fiscal 2023, when TIFIA/RRIF annual debt service begins;
- Nondiversion and nonimpairment covenants that prevent reduction of the pledged sales tax rate or diversion of pledged revenues, while pledged sales tax and state base sales tax revenue is not subject to annual appropriation; and
- Pledged revenues that pay debt service on a gross basis before payment of MBTA operations, so that collection of pledged revenues is not dependent on the MBTA providing transportation services.

Offsetting factors include a currently modest exposure to unhedged variable-rate debt, which comprises about 9% of MBTA total debt (\$426 million), as well as the potential for substantial additional bonding to meet MBTA's large capital needs, which we believe could lower coverage closer to the 1.5x ABT based on sales tax revenues. The current five-year capital improvement plan (CIP) is 14% higher than it was a year ago, and involves significantly more bonding, with about \$1.3 billion of additional sales tax bonds projected to be sold over the next five years, although matched with significant scheduled debt paydown.

MBTA is currently operating under a state oversight board, following various operational issues in the winter of 2015. It estimates a fiscal 2018-2022 CIP of \$7.4 billion, up 14% from its five-year CIP projection last year of \$6.8 billion. This figure does not include complete funding of the authority's \$2.3 billion green line rail extension, which will also receive funding from federal and local sources. The MBTA expects approximately \$1.3 billion of its five-year CIP will be funded with revenue bonds, \$1.2 billion from state rail enhancement bonds, \$750 million from additional state assistance, and \$3.9 billion from federal assistance, including these federal TIFIA and RRIF loans. Although current debt service coverage is strong, we believe coverage could potentially drift downward again closer to the ABT, as occurred before the 2015 addition of the extra \$160 million pledge to the bonds of state sales tax on a gross basis that is used for MBTA operations, in light of the large capital plan, and the potential for cost overruns or expanded borrowing.

Before a commonwealth enabling act in 2000, MBTA issued general revenue bonds backed by the commonwealth, and Massachusetts backfilled MBTA operating deficits after a time lag. Sales tax bonds issued since July 1, 2000, have been backed by a lien on the 1% statewide sales tax (which excludes sales tax on meals) plus the recent addition of \$160 million per year of state sales tax, subordinate to the prior-lien bonds issued before 2000, with excess sales tax revenues funding subordinate debt service and MBTA general operations.

In addition, the commonwealth created a formula for a base amount of pledged sales tax revenue, should pledged sales tax revenue decline, or not increase as fast as inflation. This base amount was raised by an extra \$160.0 million in fiscal 2015 to \$970.6 million, and subsequently increases annually by the rate of the Boston CPI up to 3% per year, or lower to the extent that the rate the CPI increases is less than 3% but more than the rate of increase in sales tax (in which case the base amount increase is the rate of increase in sales tax). If neither the CPI nor the sales tax increase in a given year, the base amount is held flat for that year. The base amount has increased to \$1.007 billion, to be due in fiscal 2018, compared with \$756 million in 2008. The commonwealth collected pledged sales tax of \$977 million in fiscal 2017, compared with \$992 million under the 2017 base amount. MBTA also receives other commonwealth money and federal revenues that are not pledged to the sales tax bonds. We understand that both the pledged dedicated sales tax amount and the base amount do not need a legislative appropriation.

The senior-lien bonds will have a debt service reserve funded at one-half the lesser of sales tax bond MADS, 125% of average annual debt service, or 10% of the original par amount of the bonds, while the subordinate bonds and the TIFIA/RRIF loans will not have a debt service reserve. In view of prospects that coverage will remain high for both liens, we do not believe lack of a debt service reserve is a significant credit differentiator between the senior and subordinate bonds.

The 1% plus \$160 million per year pledged sales tax are part of the commonwealth's overall 6.25% sales tax rate. State

sales tax revenue declined in the last recession, with a cumulative decline of 7.9% in fiscal years 2008-2010. However, as Massachusetts' economy recovered, sales tax has since risen, increasing 5% in fiscal 2015. In the long term, however, sales tax has not increased as fast as Massachusetts' base revenue amount, including the commonwealth's extra \$160 million per year of sales tax to both pledged sales tax and the base revenue amount in fiscal 2015.

Combined MADS coverage from all liens on general transportation revenue bonds, senior and subordinate sales tax bonds, and TIFIA/RRIF loan debt service is strong, in our opinion, at what we calculate as 2.17x by historical fiscal 2017 pledged actual sales tax revenues, and 2.24x by the 2018 certified state-guaranteed base revenue amount, assuming an interest rate of about 7% on unhedged variable-rate debt. Coverage on senior sales tax revenue bond MADS alone of \$427 million in 2019 will be 2.36x. Combined prior general transportation revenue, senior, and subordinate sales tax bond and loan MADS after issuance of the federal loans is projected to be \$450 million in fiscal 2019, assuming no other additional bonds are sold and assuming a 7% interest rate on unhedged variable-rate debt and a synthetic swap interest rate for debt hedged with interest rate swap agreements, and also assuming CP and BANs are refunded with future long-term debt. It does not include federal interest subsidies on Build America Bonds or debt service reserve interest earnings. Assuming future bond sales in 2019 and 2021, MBTA projects combined MADS would rise to \$504 million in 2024, which would still be covered 2.0x by the 2018 state-guaranteed base revenue amount.

MBTA has \$264.1 million of unhedged sales tax variable-rate demand obligations and \$405.5 million of unhedged BANs and CP all secured by sales tax revenue, which will comprise about 14% of total sales tax-secured debt.

MBTA has three interest rate swap agreements associated with \$180 million of variable-rate sales tax-secured bonds and sales tax-secured CP. The authority is not required to begin posting collateral for any of its swap agreements in the event of negative swap valuations until the sales tax rating on the MBTA falls below 'A'. Immediate swap termination events with notice do not go into effect unless the rating on the MBTA or Massachusetts falls below 'BBB-', although certain swap termination events with notice can occur if the sales tax rating falls below 'A-'. Any swap termination payments would be subordinate to payment of sales tax bond debt service. We believe that termination events are unlikely at current rating levels.

In March 2017, the MBTA entered into a \$232.1 million senior sales tax bond direct placement with State Street Public Lending Corp. We have reviewed the direct placement and do not believe it poses a significant contingent risk; there are no events of default leading to a bond acceleration within 180 days.

The ABT is the same for both senior sales tax bonds and subordinate sales tax bonds, the only difference being that the definition of debt service for the subordinate sales tax bond ABT includes combined annual debt service of both senior and subordinated debt. This, in essence, requires all bonds to meet the subordinate ABT. The ABT requires either 1.0x coverage of combined prior general transportation bonds and combined senior and subordinate sales tax bond MADS by the base revenue amount, or 2.0x coverage by historical sales tax revenues, net of prior general transportation bond debt service; and 1.5x coverage of sales tax revenue bond debt service and all prior general transportation debt obligations on a combined basis by historical sales tax revenue. The third-lien TIFIA/RRIF lien is closed to new debt after the current authorization of federal loan amounts have been fully drawn on.

MBTA expects to issue about \$1.3 billion of additional sales tax debt over the next five years, up from \$600 million of additional bonds that were expected in last year's five-year CIP. We believe potential exists for additional capital needs to bring the system up to a state of good repair and for potential cost escalations on rail line extensions that could raise future bonding needs.

(For more information on Massachusetts and its economy, please refer to the most recent state GO analysis published July 13, 2017, on RatingsDirect. For more information on the MBTA and historical sales taxes, please refer to the MBTA full analysis published Sept. 14, 2017.)

## Outlook

The stable outlook reflects our view of MBTA's ability to issue future additional parity bonds under its senior- and subordinate-lien ABTs based on the size of state base revenue, which is larger than directly pledged sales taxes, and the credit quality of the state base revenue as reflected in the Massachusetts GO rating. Should we lower our GO rating or revise our outlook on the commonwealth, we could potentially lower our ratings on the MBTA sales tax bonds and the TIFIA/RRIF loans. However, should we revise our outlook on Massachusetts to positive, or if we believe the creditworthiness of MBTA's direct sales tax pledge strengthens enough so that it is higher than the pledge of the state base amount, we could potentially revise our outlook on the senior and subordinate sales tax bonds to positive. Although future refundings on senior sales tax bonds into subordinate-lien debt could raise the debt service coverage differential between senior and subordinate debt, we would be unlikely to raise the senior-lien bond rating or revise the outlook alone, as the senior bonds will have the same ABT as the subordinate-lien bonds and the credit quality of the pledged base revenue amount is linked to the state GO rating.

Our outlook also assumes consistently strong debt service coverage over our two-year outlook horizon, despite capital pressures. Significant additional debt leverage that lowered debt service coverage closer to the 1.5x sales tax coverage test portion of the ABT, or a debt structure that included a significant amount of variable-rate or short-term debt in a rising interest rate environment could also result in our lowering the rating or revising the outlook to negative.

### Ratings Detail (As Of November 13, 2017)

Massachusetts Bay Transp Auth sr sales tax		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax (AGM) (MBIA)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax (MBIA) (National)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts Bay Transp Auth subordinated sales tax bnds ser 2017A-2 due 07/01/2046		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts Bay Transp Auth subordinated sales tax bnds (sustainability bonds) ser 2017A-1 due 07/01/2046		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts Bay Transp Auth Subordinate Sales Tax BANs ser 2017 due 12/01/2021		
<i>Long Term Rating</i>	AA/Stable	Affirmed

**Ratings Detail (As Of November 13, 2017) (cont.)**

Massachusetts Bay Transp Auth SALESTAX

*Long Term Rating*

AA/A-1+/Stable

Affirmed

Many issues are enhanced by bond insurance.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at [www.standardandpoors.com](http://www.standardandpoors.com) for further information. Complete ratings information is available to subscribers of RatingsDirect at [www.capitaliq.com](http://www.capitaliq.com). All ratings affected by this rating action can be found on the S&P Global Ratings' public website at [www.standardandpoors.com](http://www.standardandpoors.com). Use the Ratings search box located in the left column.

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