Massachusetts Bay Transportation Authority Senior Sales Tax Bonds

Issuer: Massachusetts Bay Transportation Authority		
Assigned	**Rating**	**Outlook**
Senior Sales Tax Bonds, 2024 Series A	AAA	Stable
Senior Sales Tax Bonds, 2024 Series B (Sustainability Bonds)	AAA	Stable
Affirmed	**Rating**	**Outlook**
Senior Sales Tax Bonds	AAA	Stable

Methodology:

U.S. Special Tax Revenue Bond Rating Methodology

ESG Global Rating Methodology

Analytical Contacts:

Peter Scherer, Senior Director
+1 (646) 731-2325
peter.scherer@kbra.com

Douglas Kilcommons, Managing Director
+1 (646) 731-3341
douglas.kilcommons@kbra.com

Rating Summary: The long-term rating reflects: the priority of payment of Massachusetts Bay Transportation Authority (the Authority or MBTA) Senior Sales Tax Bonds from Pledged Revenues, including dedicated gross sales tax receipts; the historic strength and resilience of the underlying pledged revenue base; the Authority's practice of structuring annual debt service requirements below the inflation-adjusted dedicated sales tax Base Revenue Amount (BRA) which exceeds pro forma maximum annual debt service (MADS) and insulates bondholders from volatility in actual sales tax collections; the strong coverage of 5.25x MADS from FY 2023 Pledged Revenues; and, a conservative, two-part additional bonds test (ABT) that includes a requirement for prior year sales tax receipts to cover pro forma Senior Sales Tax MADS by at least 2.0x.

The currently offered Senior Sales Tax Bonds (Bonds) will finance a portion of the Authority's capital program, repay commercial paper notes, refund certain parity Bonds for present value savings, and pay the costs of issuance. KBRA's long-term rating additionally applies to outstanding fixed rate parity Bonds. As of June 1, 2024, approximately $2.620 billion of Senior Sales Tax Bonds are outstanding.

The MBTA is a political subdivision of the Commonwealth of Massachusetts (Commonwealth) created in 1964 to finance and operate a mass transportation system across the greater Boston area. It operates pursuant to Chapter 161A and Section 35T of Chapter 10 of Massachusetts General Laws (collectively, the Enabling Act) and serves a territory encompassing 4.8 million people (~70% of the Commonwealth's population). The MBTA operates: (i) 76 bi-directional track miles of heavy rail routes across 52 stations; (ii) 60 bi-directional track miles of light rail routes across 70 stations; (iii) more than 1,080 buses across 1,280 bi-directional road miles; (iv) a commuter rail network comprised of 80 locomotives, 400 coaches, and 141 stations; and, (v) a range of other services including commuter boats, paratransit, and express buses.

The Senior Sales Tax Revenue Bonds are secured primarily by a pledge of: (i) the greater of the gross receipts of a 1% Commonwealth-wide general sales tax plus $160 million annually (the Dedicated Sales Tax Revenue Amount, or DSTRA), and the statutory inflation-adjusted BRA (the Pledged Sales Tax) and (ii) a lien and charge on certain funds and accounts created under the Sales Tax Bond Trust Agreement (the Agreement), including the Senior Sales Tax Bond Debt Service Fund, Debt Service Reserve Fund and the Authority-held Deficiency and Maintenance Funds. In addition, (iii) Assessment revenues remaining after the satisfaction of obligations under the Assessment Bond Trust Agreement (Residual Assessments) are available to cure shortfalls in the Sales Tax Bond Trust Agreement. Assessment revenues are generated from proceeds of assessments levied upon 176 municipalities in the MBTA service area.

Pledged Sales Tax revenues, which comprised 92.6% of total Pledged Revenues in FY 2023, are administered and collected by the Commonwealth Department of Revenue (DOR) and credited upon receipt, without appropriation, to the MBTA State and Local Contribution Fund. Amounts deposited to the MBTA State and Local Contribution Fund are immediately available upon request of the MBTA General Manager and must be applied to Sales Tax Revenue Bond debt service before becoming available for any other purpose. Assessments are also administered and collected by DOR and credited to the MBTA State and Local Contribution Fund, without appropriation. Residual Assessments, which comprised 7.4% of Pledged Revenues in FY 2023, are available, as needed, to cure shortfalls in the Sales Tax Bond Trust Agreement, including to pay debt service on Senior Sales Tax Revenue Bonds.

The Commonwealth's economic base, throughout which the pledged taxes and assessments are levied, is characterized by stable demographics and strong earnings. Population increased steadily through the 2010s before contracting modestly through the pandemic and returning to positive growth in 2023. Per capita income in 2022 was 130% of the national average. Its economy is broad, demonstrably resilient, and diverse. Massachusetts is home to 17 Fortune 500 companies as of 2023, reflecting its status as a major center of commerce. It is the most populous state in New England

and home to the majority of the Boston-Cambridge-Newton, MA-NH metropolitan statistical area (Boston Metro), which is the 11th most populous urbanized area in the Nation.

Pledged Revenues in FY 2023 of $1.54 billion provided strong coverage of FY 2024 MADS at 5.25x. KBRA notes further that the guaranteed BRA Pledged Sales Tax floor of $1.16 billion in FY 2024 alone provides 3.97x coverage of Senior Lien Sales Tax Bond MADS.

Pledged Revenues in FY 2023 were comprised of $1.42 billion in Pledged Sales Tax revenues and $114.1 million in Residual Assessment revenues relative to MADS[1]. Pledged Revenues increased at a strong 3.4% compound annual growth rate (CAGR) between FY 2001 and FY 2023, significantly faster than the 2.5% consumer price index for all urban areas in the Nation and have experienced a low level of volatility since FY 2001, declining in just one of 22 years, contracting 0.2% in FY 2004. The gross lien nature of the Pledged Sales Tax, as well as the availability of Residual Assessment receipts before becoming available for operations, substantially insulates Sales Tax bondholders from MBTA operations. We note nevertheless that MBTA relied on farebox revenues to support about 37% of operating expenditures in the five years preceding the COVID-19 pandemic and that the reduced ridership environment continues to pressure operations.

The recovery in ridership has been slow with system ridership in March 2024 33.6% below the March 2019 same month pre-pandemic level. MBTA was allocated a total of $1.99 billion in pandemic-related federal assistance. All such funds have been received and are expected to be exhausted to stabilize operations into FY 2025.

The Authority's proposed capital plan for FY 2025 through FY 2029 totals $9.6 billion, approximately half of which is projected to be debt funded with sales tax bonds. Management notes however that actual spending generally falls well short of budgeted levels due to the inherent complexities of developing major capital projects. Even if some or all CIP borrowing were to be funded with Senior Sales Tax Bonds, KBRA anticipates that leverage will remain moderate, constrained by the 2.00x additional bonds test and the need to fund a substantial portion of operations from the pledged revenues.

The Stable Outlook reflects KBRA's expectation that pledged revenues will continue to grow in line with the historic trend, with limited downside volatility reflecting the application of a guaranteed inflation-adjusted sales tax floor as well as the breadth, wealth, and growing economy of the underlying tax base. The Outlook also reflects the expectation that additional borrowing will be comfortably accommodated within the 2.00x additional bonds test and other existing financing programs.

Key Credit Considerations

The rating actions reflect the following key credit considerations:

Credit Positives

- Gross lien sales tax pledge insulates bondholders from MBTA operations.
- Pledged Revenues provide strong coverage of Senior Sales Tax Bond MADS with residual amounts providing a substantial source of recurring financial support for capital and operating needs.
- Pledged Revenue volatility is limited by the base revenue amount, an inflation-adjusted floor for Pledged Sales Tax receipts, which at $1.16 billion for FY 2024 provides coverage of 3.97x Senior Lien Sales Tax Bond MADS.
- Stable demographic trends and favorable socio-economic characteristics of tax base support growth and stability of pledged receipts.

Credit Challenges

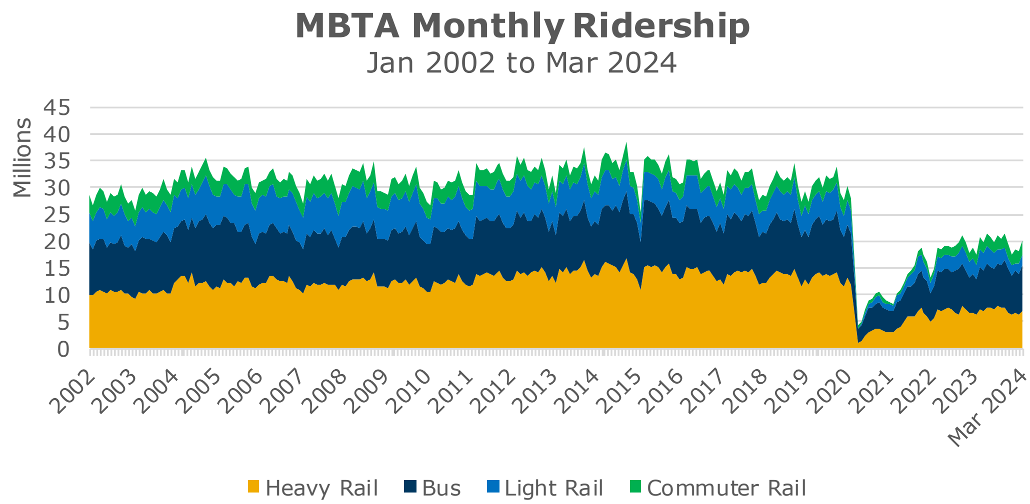
- Pledged Revenues have some sensitivity to economic cycles.

Rating Sensitivities

▪ Not applicable at AAA rating level.	+
▪ A significant decline in debt service coverage due to very large increases in sales tax bond leverage accompanied by significant and prolonged deterioration in the sales tax base.	-

[1] This is conservatively calculated relative to Assessment Bond MADS which occurs in FY 2026. Residual amounts based on actual Assessment Bond debt service in FY 2024 is higher at $127.8 million.

Key Ratios	
Pledged Revenues, FY 2023	$1.538 billion
Growth FY 2001 to FY 2023	3.45% CAGR
CPI Growth FY 2001 to FY 2023	2.47% CAGR
Senior MADS (FY 2024) Coverage from:	
FY 2023 Pledged Revenues	5.25x
FY 2024 Sales Tax BRA Floor Amount Only	3.97x



Source: Federal Transit Administration, National Transit Database Monthly Unlinked Passenger Ride Data

Rating Determinants (RD)	Senior Sales Tax Bonds
1. Legal Framework	AA+
2. Nature of Special Tax Revenues	AAA
3. Economic Base and Demographics	AAA
4. Revenue Analysis	AAA
5. Coverage and Bond Structure	AAA

A discussion of rating determinants not discussed below as well as KBRA's bankruptcy assessment can be found in prior reports, the most recent of which is dated March 5, 2024.

RD 4: Revenue Analysis

Dedicated Revenues in FY 2023 totaled $1.538 billion including $1.424 billion in Pledged Sales Tax receipts (92.6%) and an estimated $114 million in estimated Residual Assessment Revenues (7.4%). Pledged Revenues increased at a strong 3.4% CAGR between FY 2001 and FY 2023 and have experienced a low level of volatility since 2001, declining in just one of 22 years, contracting 0.2% in FY 2004.

Trend in Annual Receipts

Dedicated Sales Tax

Dedicated Sales Tax receipts increased at a 3.4% CAGR between FY 2001 and FY 2023, significantly faster than the 2.5% consumer price index for all urban areas in the Nation (CPI). As previously discussed, the BRA floor is adjusted annually by the percentage change in inflation (as measured by the Boston CPI for the prior year), subject to a floor of 0% and a ceiling of 3%, protecting the BRA floor from moderate levels of inflation. Receipts were based on the BRA floor level each year between FY 2002 to FY 2017 because the BRA exceeded the DSTRA. Receipts in each subsequent year were based on the DSTRA which exceeded the BRA floor in each subsequent year. For planning purposes, MBTA management assumes that Dedicated Sales Tax receipts will increase at a 2.8% CAGR through FY 2056, a conservative assumption relative to the historic growth trend.

Residual Assessments

Total Assessment Receipts increased at a 1.1% CAGR between FY 2001 and FY 2023, a rate of growth somewhat lower than the CPI CAGR at 2.5%. Gross Assessments since FY 2006 have been subject to annual adjustment (as measured by the Boston CPI for the prior year) up to a 2.5% cap, protecting total Assessment Receipts from moderate levels of inflation. Assessments are additionally subject to an absolute floor of $136 million annually. Historic Residual Assessment revenues are estimated below by subtracting forward Assessment Bond MADS ($69.7 million in FY 2026) from total Assessment Receipts in all prior years. Based on this methodology, estimated historic Residual Assessment Receipts have increased in each year since FY 2006.

Figure 1

Historic Dedicated Revenues
FYE June 30 (dollars in millions)

	Dedicated Sales Tax							Residual Assessments					Total Dedicated Revenues	
FYE	Base Revenue Amount (BRA)	Δ YoY	Dedicated Sales Tax Revenue Amount (DSTRA)	Δ YoY	Excess (Deficiency) of DSTRA Over (Under) BRA	Pledged Sales Tax Available for DS	Δ YoY	Assessment Receipts[2]	Δ YoY	Assessment Bond MADS[3]	Estimated Residual Assessment Revenues Available for Senior Sales Tax Bond DS[3]	Δ YoY	Pledged Revenues Available for Senior Sales Tax Bond DS	Δ YoY
	a		b		b - a	Greater of a and b = **c**		d		e	d - e = **f**		c + f = **g**	
2001	$ 645.0		$ 654.6	5.3%	$ 9.6	$ 654.6		$ 144.6		$ 69.7	$ 74.9		$ 729.5	
2002	664.4	3.0%	638.8	-2.4%	(25.6)	664.4	1.5%	142.9	-1.2%	69.7	73.2	-2.3%	737.5	1.1%
2003	684.3	3.0%	639.2	0.1%	(45.1)	684.3	3.0%	141.2	-1.2%	69.7	71.5	-2.3%	755.7	2.5%
2004	684.3	0.0%	642.2	0.5%	(42.1)	684.3	0.0%	139.4	-1.2%	69.7	69.7	-2.4%	754.0	-0.2%
2005	704.8	3.0%	666.2	3.7%	(38.6)	704.8	3.0%	137.7	-1.2%	69.7	68.0	-2.5%	772.8	2.5%
2006	712.6	1.1%	684.0	2.7%	(28.5)	712.6	1.1%	136.0	-1.2%	69.7	66.3	-2.5%	778.9	0.8%
2007	734.0	3.0%	691.8	1.1%	(42.2)	734.0	3.0%	139.4	2.5%	69.7	69.7	5.1%	803.7	3.2%
2008	756.0	3.0%	690.8	-0.1%	(65.2)	756.0	3.0%	142.9	2.5%	69.7	73.2	5.0%	829.2	3.2%
2009	767.1	1.5%	647.8	-6.2%	(119.2)	767.1	1.5%	146.5	2.5%	69.7	76.8	4.9%	843.8	1.8%
2010	767.1	0.0%	637.1	-1.7%	(130.0)	767.1	0.0%	150.1	2.5%	69.7	80.4	4.8%	847.5	0.4%
2011	767.1	0.0%	654.6	2.8%	(112.4)	767.1	0.0%	150.1	0.0%	69.7	80.4	0.0%	847.5	0.0%
2012	779.1	1.6%	670.5	2.4%	(108.6)	779.1	1.6%	152.1	1.3%	69.7	82.4	2.4%	861.5	1.7%
2013	786.9	1.0%	682.0	1.7%	(104.8)	786.9	1.0%	155.9	2.5%	69.7	86.2	4.6%	873.1	1.3%
2014	799.3	1.6%	727.5	6.7%	(71.8)	799.3	1.6%	157.1	0.8%	69.7	87.4	1.4%	886.7	1.6%
2015	970.6	[1]21.4%	924.1	[1]27.0%	(46.5)	970.6	[1]21.4%	160.1	1.9%	69.7	90.4	3.4%	1,061.1	19.7%
2016	986.3	1.6%	958.5	3.7%	(27.8)	986.3	1.6%	162.9	1.7%	69.7	93.2	3.0%	1,079.4	1.7%
2017	992.2	0.6%	976.8	1.9%	(15.4)	992.2	0.6%	164.0	0.7%	69.7	94.3	1.2%	1,086.5	0.7%
2018	1,006.8	1.5%	1,007.9	3.2%	1.1	1,007.9	1.6%	166.5	1.5%	69.7	96.8	2.6%	1,104.7	1.7%
2019	1,032.1	2.5%	1,053.2	4.5%	21.1	1,053.2	4.5%	170.1	2.2%	69.7	100.4	3.8%	1,153.6	4.4%
2020	1,063.0	3.0%	1,077.3	2.3%	14.3	1,077.3	2.3%	174.4	2.5%	69.7	104.7	4.2%	1,182.0	2.5%
2021	1,083.3	1.9%	1,261.4	17.1%	178.1	1,261.4	17.1%	177.9	2.0%	69.7	108.2	3.3%	1,369.6	15.9%
2022	1,095.6	1.1%	1,348.9	6.9%	253.3	1,348.9	6.9%	179.3	0.8%	69.7	109.6	1.3%	1,458.5	6.5%
2023	1,128.5	3.0%	1,424.0	5.6%	295.5	1,424.0	5.6%	183.8	2.5%	69.7	114.1	4.1%	1,538.1	5.5%
2024	1,162.3	3.0%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2025	1,197.2	3.0%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

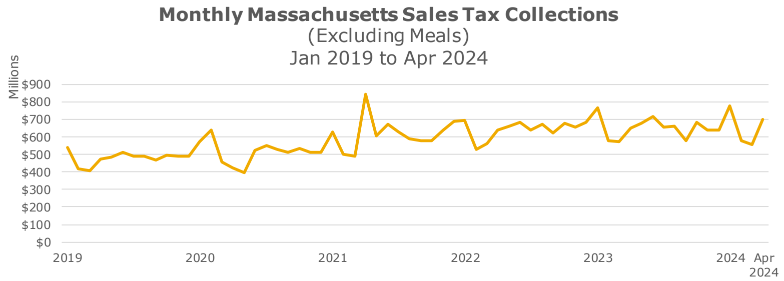
Source: MBTA

(1) The Enabling Act was amended on October 31, 2014 to increase the annual BRA and the DSTRA amount by $160 million, replacing the annual appropriation the MBTA received from FY 2010 to FY 2014.
(2) Subject to floor of $136.027 million.
(3) Historic Residual Assessment revenues are estimated based by subtracting forward Assessment Bond MADS from total Assessment Receipts in all prior years.

Trend in Monthly Sales Receipts

Pledged Sales Tax receipts are subject to a moderate level of month-to-month volatility due to factors including seasonality.

Figure 2



Source: MBTA

Absence of Concentration in Taxable Base

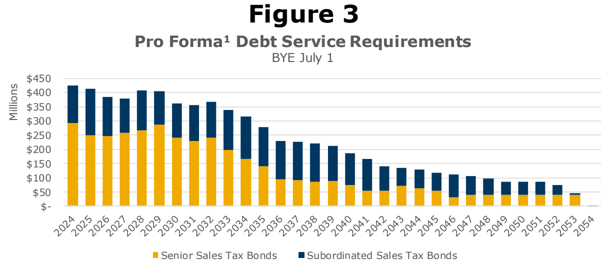
The Pledged Sales Tax is levied across a wide range of retail transactions throughout the Commonwealth. This taxable base is broad and diverse with no concerning industry or company level concentrations.

Pledged Residual Assessment revenues are derived from ad valorem taxes levied upon 176 local governments in and around the MBTA service area. In FY 2024, the City of Boston accounted for the largest portion of the total annual assessment at 50.6%, followed by City of Cambridge at 6.0%, and the City of Newton at 3.4% reflecting significant municipality level concentration.

RD 5: Coverage and Bond Structure

Dedicated Revenues provide strong coverage of sales tax revenue bond debt service requirements. The level of outstanding indebtedness reflects moderate leverage. Debt is structured in a conservative manner with debt service requirements generally declining annually. The Authority's capital plan calls for substantial additional borrowing projected to result in escalating debt service requirements going forward, but KBRA anticipates that leverage will remain moderate given the conservative additional bonds test as well as the Authority's reliance on sales taxes to support operations.

Figure 3



Source: MBTA
[1] Includes estimated impact of currently offered Bonds.

Outstanding Debt

MBTA has $5.426 billion in debt outstanding, of which $4.798 billion is secured by sales taxes. More than 95% of outstanding sales tax debt is fixed rate.

Figure 4

MBTA Debt Outstanding as of June 1, 2024 (dollars in millions)	
Sales Tax Bonds:	
Senior Bonds	$ 2,620
Commerical Paper Notes[(1)]	155
Subordinated Bonds	1,272
US DOT RRIF Loan[(2),(3)]	751
Total Sales Tax Obligations	4,798
Assessment Bonds	540
General Transportation System (GTS) Bonds	88
Total Debt	**5,426**

Source: ACFR

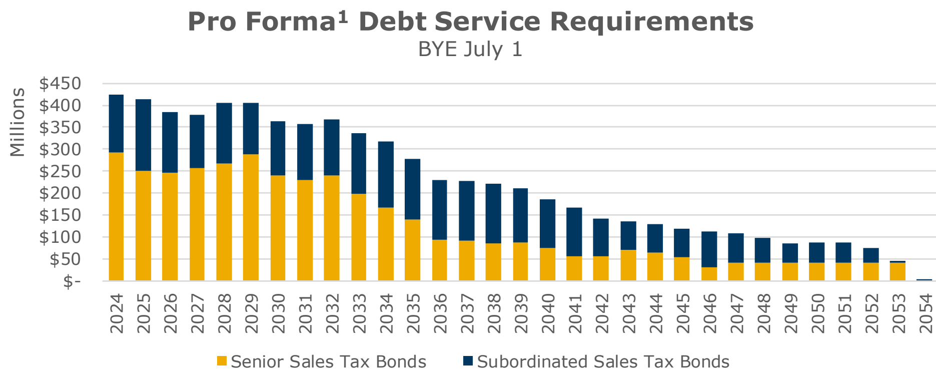
(1) Facility is authorized for borrowing of up to $400 million. Priority of payment is at parity with Senior Sales Tax Bonds.
(2) Loans provide for the drawdown of up to $851.15 million.
(3) Payable on a subordinate basis to Subordinated Sales Tax Bonds, unless there is a default on the USDOT Loan, in which case, paid on a parity basis with Senior Sales Tax Bonds.

Debt Service Requirements

Senior Sales Tax Bond debt service reaches a peak of $292.8 million in FY 2024, and generally descends thereafter. Debt service inclusive of Subordinated Sales Tax Bonds is also descending.

Additional borrowing in support of the Authority's $9.6 billion FY 2025-FY 2029 Capital Investment Plan (CIP), approximately half of which will be bond financed. If all projects and borrowing contemplated in the CIP and the Authority's long-term capital planning projections are implemented, Authority debt service requirements would increase gradually, though substantially through the Authority's planning horizon. Management notes however that actual spending generally falls well short of the budgeted levels due to the inherent complexities of developing major capital projects. Nonetheless, debt capacity projections provided by the Authority at the time of last year's bond sale indicate that approximately $590 million in total Senior and/or Subordinated Sales Tax Bonds could be issued each year through FY 2056, with combined lien MADS coverage remaining at or above 2.60x each year. Such projections were based on a conservative assumption of 2.8% annual increases in sales tax receipts, which KBRA views favorably.

Figure 5



Source: MBTA

1 Includes estimated impact of currently offered Bonds.

Historic Coverage

Pledged revenues provide ample MADS coverage of pro forma Senior Sales Tax Bond MADS, inclusive of the currently offered bonds.

Figure 6

Historic Revenues Available for Senior Sales Tax Revenue Bond Debt Service and MADS Coverage
FYE June 30 (dollars in millions)

FYE	MBTA Sales Tax Receipts	Base Revenue Amount	Sales Tax Available for Senior Sales Tax Bond DS	Assessment Receipts	Assessment Bond MADS	Residual Assessment Revenues Available for Senior Sales Tax Bond DS	Pledged Revenues Available for Senior Sales Tax Bond DS	MADS for Senior Sales Tax Bonds[1]	Coverage Ratio for Senior Sales Tax Bonds
	a	b	Greater of a and b = **c**	d	e	d - e = **f**	c + f = **g**	h	h / g
2018	$ 1,007.9	$ 1,006.8	$ 1,007.9	$ 166.5	$ 69.7	$ 96.8	$ 1,104.7	$ 292.8	**3.77x**
2019	1,053.2	1,032.1	1,053.2	170.1	69.7	100.4	1,153.6	292.8	**3.94x**
2020	1,077.3	1,063.0	1,077.3	174.4	69.7	104.7	1,182.0	292.8	**4.04x**
2021	1,261.4	1,083.3	1,261.4	177.9	69.7	108.2	1,369.6	292.8	**4.68x**
2022	1,348.9	1,095.6	1,348.9	179.3	69.7	109.6	1,458.5	292.8	**4.98x**
2023	1,424.0	1,128.5	1,424.0	183.8	69.7	114.1	1,538.1	292.8	**5.25x**

Source: MBTA

(1) MADS occurs in FY 2024.

Maximum Annual Debt Service Coverage is Ample

Senior Sales Tax Revenue Bond debt service achieves MADS of $292.8 million in FY 2024, upon which pledged FY 2023 receipts provides ample coverage of 5.25x.

ESG Management

KBRA typically analyzes Environmental, Social, and Governance (ESG) factors through the lens of how issuers plan for and manage relevant ESG risks and opportunities. More information on KBRA's approach to ESG risk management in public finance ratings can be found here. Over the medium-term, public finance issuers will likely need to prioritize ESG risk management and disclosure with the likelihood of expansions in ESG-related regulation and rising investor focus on ESG issues.

KBRA analyzes many sector- and issuer-specific ESG issues but our analysis is often anchored around three core topics: climate change, with particular focus on greenhouse gas emissions; stakeholder preferences; and cybersecurity. Under environmental, as the effects of climate change evolve and become more severe, issuers are increasingly facing an emerging array of challenges and potential opportunities that can influence financial assets, operations, and capital planning. Under social, the effects of stakeholder preferences on ESG issues can impact the demand for an issuer's product and services, the strength of its global reputation and branding, its relationship with employees, consumers, regulators, and lawmakers, and, importantly, its cost of and access to capital. Under governance, as issuers continue to become more reliant on technology, cybersecurity planning and information management are necessary for most issuers, regardless of size and industry.

KBRA's assessment of ESG management can be found in prior reports, the most recent of which is dated March 5, 2024.