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Summary:

Massachusetts; Appropriations; CP; General Obligation; General Obligation Equivalent Security; Joint Criteria; Sales Tax

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Credit Profile			
US\$550.0 mil GO bnds cons loan ser 2019A due 12/01/2048			
Long Term Rating	AA/Stable	New	
US\$325.9 mil GO rfdg bnds ser 2019A due 12/01/2048			
Long Term Rating	AA/Stable	New	
US\$50.0 mil GO bnds cons loan (Federally Taxable) ser 2019B due 12/01/2048			
Long Term Rating	AA/Stable	New	
US\$40.91 mil GO rfdg bnds ser 2019B due 01/01/2021			
Long Term Rating	AA/Stable	New	
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	

Rationale

S&P Global Ratings has assigned its 'AA' rating to the Commonwealth of Massachusetts' \$550 million general obligation (GO) bonds consolidated loan of 2019 series A, \$50 million GO bonds consolidated loan of 2019 series B (federally taxable), and \$325.9 million GO refunding bonds 2019 series A. At the same time, S&P Global Ratings has assigned its 'AA' rating to the commonwealth's \$40.9 million GO refunding bonds, 2019 series B (Delayed Delivery). The outlook is stable.

In addition, S&P Global Ratings has affirmed its 'AA' rating on approximately \$23 billion of parity GO bonds outstanding, and its 'A' rating on Boston Housing Authority housing project bonds (West Broadway Homes IV project), series 2003, supported by a commonwealth annually appropriated state-operating subsidy, subject to the terms of a trust agreement. Finally, S&P Global Ratings has affirmed its 'A-1+' short-term rating on the state's GO-secured commercial paper. The outlook on all long-term ratings is stable.

Factors supporting the 'AA' GO rating include what we view as Massachusetts':

- Deep and diverse economy, which continues to outperform the nation on several economic indicators;
- High income levels, with per capita income at 131% of the nation in 2017;
- Timely monitoring of revenues and expenditures and swift action when needed to make adjustments;
- Strong financial, debt, and budget management policies, including annualized formal debt affordability statements, and multiyear capital investment planning; and
- Good budget stabilization fund (BSF) balance, equal to an estimated 4.5% of expenditures and other uses at fiscal

year-end 2018, and projected at 5.2% at fiscal year-end 2019.

Offsetting factors include high debt, pension, and other postemployment benefit (OPEB) liabilities. Combined debt, unfunded pension, and OPEB to gross state product ranked sixth highest among all the states in fiscal 2017, according to our recent pension commentary "U.S. State Pensions Struggle For Gains Amid Market Shifts And Demographic Headwinds," published Oct. 30, 2018, on RatingsDirect.

In particular, the commonwealth has a low 59.5% combined pension-funded ratio on a Governmental Accounting Standards Board (GASB) basis and has contributed less to its pension funds than the actuarial annual required contribution (ARC) in every fiscal year since 2011; however, Massachusetts has put in place a plan to increase annual pension contributions 8.9% per year to fully amortize unfunded pension liabilities by 2036; furthermore, the \$898 million shortfall against ARC in fiscal 2018, which we view as a structural deficit, is only about 2.0% of estimated budgetary operating expenditures. The commonwealth has budgeted to pay 75% of the ARC in fiscal 2019, about the same level as the 73% paid in fiscal 2018.

We understand new money bond proceeds will be used to fund various capital projects included within the commonwealth's five-year capital improvement plan, while the refunding bonds will refund previously issued debt. The series 2019B refunding bonds will have a delayed delivery date, with delivery of the bonds expected on or about May 3, 2019.

Massachusetts' economy has grown steadily in recent years, outpacing national and regional trends by most measures. State personal income rose 3.3% in 2017, rising to 131% of that of the nation (second only to Connecticut) from 130% the year before. The commonwealth's average annual unemployment rate in 2017 was 3.7% compared with 4.4% for the nation. This steady growth has continued into 2018; IHS Markit reports 4% average monthly private sector job growth over the three months ending July 2018, including a 6.9% annualized gain in June. A major contributor to job growth during this period has been the professional, scientific, and technical services sub-sector, which alone accounted for 20% of overall payroll growth. These well-paying jobs have favorable economic indications, although in part contribute to rising home prices. Massachusetts has an above-average hi-tech employment sector, which IHS Markit estimates at about 10% of state employment, compared to 6.5% for the country as a whole. Despite strong recent growth, IHS Markit forecasts slightly lower state employment growth than the nation in the next few years at 1.4%, 0.9%, and 0.5% in calendar years 2019, 2020, and 2021, respectively, compared with 1.5%, 1.1%, and 0.6% for the nation for those respective years. In our view, Massachusetts' economic fundamentals and key anchors, which center on higher education, technology, finance, and health care, should contribute to continued expansion.

Massachusetts was the last state to enact its fiscal 2019 budget in July; however, we do not consider the delay significant from a credit standpoint due to the adoption of a temporary interim budget. The final fiscal 2019 budget projected 2.2% growth in operating funds tax revenue and 2.1% overall growth in total budgeted operating funds revenue and other sources, including federal revenue and transfers in. Actual year-to-date state tax collections for the first five months of fiscal 2019 through November 2018 have come in 8.4% higher than the previous year, or \$423 million, excluding one-time tax settlements and judgments, which were 4.1% ahead of the budget benchmark. The fiscal 2019 budget projected 4% growth in total budgeted operating expenditures and other uses, including transfers out. Currently, the state projects 4.8% expenditure growth. Massachusetts' revised financial projections show an

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essentially breakeven fiscal 2019 operating surplus of \$78.4 million, compared to an originally budgeted slight operating deficit. However, the state projects a \$404.1 million addition to its BSF, due to strong capital gains taxes and consolidated net operating surpluses carried over from fiscal 2018. If the 2019 current state forecast is realized, the BSF would rise to \$2.4 billion at fiscal year-end 2019, or a good 5.2% of budgeted operating funds expenditures and other uses, up from 4.5% at fiscal year-end 2018.

The state originally had budgeted for only a \$66 million transfer to its BSF in fiscal 2018, despite strong projected revenue growth. However, fiscal 2018 tax revenue came in even stronger than anticipated at 104.4% of budgeted levels, particularly capital gains tax, resulting in an actual unaudited \$938.9 million operating surplus in fiscal 2018, or 2.1% of expenditures and other uses, and a transfer of \$513.9 million of excess capital gains tax to its BSF. Before fiscal 2018, however, revenue generally came in below budgeted levels, despite generally positive revenue trends. As a consequence, the state had to make midyear budget adjustments in the three fiscal years 2015-2017 and in essence keep its BSF level after drawdowns in fiscal years 2013 and 2014. The transfer to the BSF in fiscal 2018 brought its balance up to \$2.0 billion at fiscal year-end 2018, or a good 4.5% of fiscal 2018 operating expenditures and other uses, an increase from 3.1% the year before.

Future budgetary pressures in the event of an unexpected economic downturn could potentially include MassHealth expenses, which were rising at a faster rate than revenues before fiscal 2017 and had been one of the main sources of previous midyear budget adjustments. This pressure was mitigated in part by greater scrutiny of Medicaid eligibility, which caused Medicaid enrollment member months to decline 1.8% in fiscal 2018, particularly as adults are moved to the commonwealth's Health Insurance Connector Authority, although enrollment has increased slightly by 1.0% in 2019.

Additional potential long-term stresses include a state pension payment schedule that increases annual pension contributions by 8.9% compounded annually through 2036, a pace we believe likely to exceed revenue growth. Although we recognize that Massachusetts has made budgeting its fixed costs a priority, we also view the growth in these areas as placing increased pressure on the commonwealth's ability to maintain structural balance. We calculate that combined fiscal 2018 operating funds debt service, state pension contributions, and OPEB are projected to total \$5.3 billion, or 12% of estimated operating expenditures and other uses. Medicaid is projected to cost an additional \$15.7 billion in fiscal 2018 (36%), while transfers to the commonwealth's Medical Assistance Trust Fund are projected to be \$582.8million.

On a generally accepted accounting principles (GAAP) basis, Massachusetts ended fiscal 2017 (the most recent audited year) with an available assigned and unassigned general fund balance of \$1.04 billion, plus a BSF balance of \$1.3 billion. This led to a combined balance of \$2.34 billion, which we view as still good at 5.9% of general fund expenditures and transfers out, but down from 6.7% at fiscal year-end June 30, 2016, and 7.5% at fiscal year-end 2015.

By most measures, we believe Massachusetts' debt burden remains high compared with that of other states. At fiscal year-end 2017, we calculate GO debt of \$22.7 billion and total tax-supported debt of \$37.1 billion, producing total tax-backed debt per capita of \$5,411, and 8.2% of personal income. As of Oct. 31, 2018, the commonwealth had \$23.3 billion of GO debt outstanding. Planned debt issuance remains within the parameters of Massachusetts' debt affordability policy and bond cap. A capital and debt affordability committee includes seven voting and eight

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nonvoting members from the legislature and is charged with formally reviewing the capital improvement plan (CIP) and providing an estimate of debt authorization for each year to stay within certain debt parameters. Massachusetts currently anticipates selling about \$2.3 billion of new money capital debt in fiscal 2019 (including the current sale), similar to issuance levels in each of the past two years. We calculate fiscal 2017 total tax-backed debt service at 7.2% of general governmental spending on a GAAP audited basis, a level we view as moderately high.

Other long-term liabilities are also large, in our opinion. We believe Massachusetts' share of the net pension liability for combined state pensions systems is high at \$37.3 billion as of the Jan. 1, 2017, valuation date on a GASB 67/68 basis, or \$5,438 per capita, and 8.3% of personal income. The aggregate funded ratio improved slightly to 59.5% from 57.3% the year before on a GASB basis, but the three-year average declined to 59% from 62% in 2016. A decline in the commonwealth's actuarial pension-funded ratio compared to the Jan. 1, 2016, actuarial valuation date was primarily due to Massachusetts' decision to lower assumed actuarial returns to a less aggressive 7.50% in 2016 from 7.75%, after previously lowering it to 7.75% from 8.00% in 2015. In addition, the commonwealth's non-GASB January 1, 2018 valuation report reflects another reduction to 7.35%, which increased the total actuarial accrued liability by \$1.52 billion. Massachusetts sets its annual pension contribution based on its own methodology under state statute; it has not fully funded its ARC since fiscal 2011, but currently plans to increase pension contributions 8.9% per year to fully amortize the unfunded liability by 2036.

In our opinion, Massachusetts' unfunded OPEB is also moderately high, at \$19.4 billion as of Jan. 1, 2017, net of \$817.4 million of actuarial assets in an OPEB trust fund, or \$2,834 per capita. Massachusetts has in recent years made payments to an OPEB trust fund, with the increase in unfunded OPEB from \$16.3 billion the year before; this is primarily attributable to use of a more conservative 3.6% actuarial discount rate. In 2018, the commonwealth originally budgeted to transfer 10% of tobacco settlement revenue into its OPEB trust fund, but subsequent legislation after the close of the fiscal year increased the percentage to 30%. The enacted fiscal 2019 budget reverts this back to 10% of tobacco settlement revenue, or approximately \$25.1 million. In fiscal 2018, \$16.1 million of excess capital gains tax was also transferred into the OPEB trust fund.

Based on the analytic factors we evaluate for states, on a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a composite score of '1.9' to Massachusetts, which is consistent with a 'AA' indicative rating.

For more information on the state of Massachusetts, please refer to our most recent full analysis published April 9, 2018.

Outlook

The stable outlook reflects our view that Massachusetts' strong economic growth and proactive management will allow the commonwealth to continue to manage its budgetary pressures, even if potential midyear budget shortfalls develop in future fiscal years. At this point in the economic cycle and at the current rating level, we expect the commonwealth to modestly improve its BSF and maintain good balances to prepare for the next recession. Massachusetts budgeted for essentially breakeven financial operations in fiscal 2019, and we believe the current increase in projected fiscal year-end 2019 reserves is the result of unexpectedly strong revenues above budget. We expect the commonwealth to similarly aim for breakeven operations during our two-year outlook horizon, making midyear budget corrections should revenues turn downward, and to bank a portion of unexpected revenue windfalls in its BSF.

Upside scenario

Should the commonwealth make progress on its pension funding and set aside budget reserves during periods of economic growth as a matter of budgeted policy, and not cap or spend down reserves following unbudgeted revenue growth, as has happened in previous years, we could raise the rating or revise the outlook.

Downside scenario

The rating could see downward pressure if Massachusetts fails to maintain near-structural balance during periods of economic expansion. Among the factors that could further pressure the rating are Medicaid costs outpacing revenue growth, reduced revenues in recessions due to income tax cyclicality because of the above-average presence of high-tech sector employment, the economic impact of federal tax reform on high tax states, and growing state fixed costs in excess of revenue growth that might lead to significant structural imbalance and greatly diminished reserves. Structural balance could specifically be pressured to the extent that Massachusetts fails to adhere to its current plan to increase annual pension contributions by 8.9% per year to amortize unfunded pension liabilities or if this proves insufficient to keep GASB pension-funded ratios from materially declining.

Ratings Detail (As Of December 20, 2018)		
Massachusetts Bay Transp Auth sr sales tax		
Long Term Rating	AA/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax		
Long Term Rating	AA/A-1+/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax		
Long Term Rating	AA/A-1+/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax		
Long Term Rating	AA/A-1+/Stable	Affirmed
Massachusetts Bay Transp Auth sr sales tax (AGM) (MBIA)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts Bay Transp Auth subord sales tax		
Long Term Rating	AA/Stable	Affirmed
Massachusetts Bay Transp Auth subord sales tax		
Long Term Rating	AA/Stable	Affirmed
Massachusetts Bay Transp Auth subord sales tax		A (C) 1
Long Term Rating	AA/Stable	Affirmed
Massachusetts Bay Transp Auth subord sales tax		A (C
Long Term Rating	AA/Stable	Affirmed
Massachusetts Bay Transp Auth subord sales tax	AA/Stable	Affirmed
Long Term Rating	AA/ Stable	Ammea
Massachusetts CP	A-1+	Affirmed
Short Term Rating	A-11	AIIIIIIICU

Ratings Detail (As Of December 20, 2018) (cor	nt.)	
Massachusetts CP A		
Short Term Rating	A-1+	Affirmed
Massachusetts CP B		
Short Term Rating	A-1+	Affirmed
Massachusetts GO		
Long Term Rating	AA/Stable	Affirmed
Massachusetts GO		
Long Term Rating	AA/Stable	Affirmed
Massachusetts GO		
Long Term Rating	AA/Stable	Affirmed
Massachusetts GO VRDB		
Long Term Rating	AA/A-1/Stable	Affirmed
Massachusetts GO VRDB		
Long Term Rating	AA/A-1+/Stable	Affirmed
Massachusetts GO VRDB		
Long Term Rating	AA/A-1/Stable	Affirmed
Massachusetts GO (wrap of insured) (ASSURED GTY	& AMBAC) (SEC MKT)	
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (wrap of insured) (FGIC & BHAC) (SEC MKT)	
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (AGM) (SEC MKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SEC MKT)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (FGIC)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO (MBIA) (Assured Gty)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed
Massachusetts GO		
Long Term Rating	AA/Stable	Affirmed
Massachusetts GO		
Long Term Rating	AA/Stable	Affirmed

Ratings Detail (As Of December 20, 2018) (cont.)			
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts Bay Transp Auth sr sales tax			
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts GO			
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
The Commonwealth Of Massachusetts General Obligation Bonds Consolidated Loan of 2006 Series A			
Long Term Rating	AA/A-1/Stable	Affirmed	
Boston Hsg Auth, Massachusetts			
Massachusetts			
Boston Hsg Auth (Massachusetts) APPROP			
Long Term Rating	A/Stable	Affirmed	
Massachusetts Bay Transp Auth, Massachusetts			
Massachusetts			
Massachusetts Bay Transp Auth (Massachusetts) GOEQU			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts Bay Transp Auth (Massachusetts) GOEQU Long Term Rating	AA/A-1/Stable	Affirmed	
Massachusetts Bay Transp Auth (Massachusetts) GOEQU		Ammed	
Long Term Rating	AA/A-1/Stable	Affirmed	
Massachusetts Bay Transp Auth (Massachusetts) GOEQU	IV (AGM)		
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts Bay Transp Auth transp sys bnds (Massachusetts)			
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts Bay Transp Auth (Massachusetts)			
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts Dept of Transp, Massachusetts			
Massachusetts			
Massachusetts Dept of Transp (Massachusetts) metro hwy sys rev rfdg bnds subord contract assist secured (Massachusetts) ser 2018A due 01/01/2029			
Long Term Rating	AA/Stable	Affirmed	

Ratings Detail (As Of December 20, 2018) (cont.)			
Massachusetts Dept of Transp (Massachusetts) GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts Dept of Transp (Massachusetts) GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts Dept of Transp (Massachusetts) GO			
Long Term Rating	AA/Stable	Affirmed	
Massachusetts Dept of Transp (Massachusetts) GO VRDI	3		
Long Term Rating	AA/A-1/Stable	Affirmed	
Unenhanced Rating	NR(SPUR)		
Massachusetts Dept of Transp (Massachusetts) JOINTCRIT			
Long Term Rating	AA+/A-1	Affirmed	
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts Dept of Transp (Massachusetts) JOINTCRIT			
Long Term Rating	AA+/A-1	Affirmed	
Unenhanced Rating	AA(SPUR)/Stable	Affirmed	
Massachusetts Development Finance Agency, Mass	sachusetts		
Massachusetts			
Massachusetts Dev Fin Agy (Massachusetts) GO			
Long Term Rating	AA/Stable	Affirmed	
Univ of Massachusetts Bldg Auth, Massachusetts			
Massachusetts			
University of Massachusetts Bldg Auth (Massachusetts) GOEQUIV			
Long Term Rating	AA/A-1/Stable	Affirmed	
Univ of Massachusetts Bldg Auth (Massachusetts) GOEQUIV			
Long Term Rating	AA/A-1+/Stable	Affirmed	
Many issues are enhanced by bond insurance.			

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