Debt Affordability Committee

Meeting #3

December 4th, 2017

Objectives and Agenda

1) Review interest rate and revenue assumption

2) Proposed Recommendations (Options)

3) Discussion

Interest Rates: Options

- There are several different indexes or real time trackers of municipal interest rates, with the most prominent including
  - Bond Buyer 20 bond index, tracking 20 bonds with 20 year maturities and average rating of AA – goes back at least 20 years
  - Bloomberg index of AAA rated bonds – goes back 5 years
  - S&P daily updates of yields by maturity and rating
  - FMS municipal bonds daily updates of yield on AA

	10 year maturity	20 year maturity	30 year maturity
Current Assumptions	3.00%	3.80%	4.40%
Average for 2017 MA GO		3.01%	3.12%
20 Bond Buyer Index: 2017		3.67%	
20 bond buyer index: 2015-2017 average		3.51%	
FMS Bonds AA yields accessed 11.6	2.10%	2.75%	2.90%
S&P Municipal GO AA yields, accessed 11.6	2.16%	2.77%	2.90%

Interest Rate: Decision

- Option A: current assumed rates (conservative based on actual GO)

- Option B: consider other indices as alternates to current method; example:

Bond Buyer Index

10 year maturity	20 year minus 50 bps	3.01%
20 year maturity	3 year trailing average Bond Buyer Index	3.51%
30 year maturity	20 year plus 20 bps	3.71%

  - Bond Buyer Index is a 3–year trailing average, adjusted for 10 year and 30 year issuance by approximate average spreads from 20 year rate.
  - Most conservative of alternate interest rate assumptions.
  - Maintain assumption that interest rates increase 0.1%/year for 15 years.

- Option C: less conservative alternate rate assumption *not recommended.*

Revenue Growth Assumptions

- Current aggregate revenue growth projections (3.25%) were based on recent experience, which has been relatively low but positive revenue growth. Conservative assumption keeps increase of debt load in line with revenue and overall budgetary parameters.

- State revenue growth as an aggregate is calculated using different growth rates for income tax, sales tax, corporate income tax, excise tax, departmental revenue, and federal revenue.

- Each assumption is based on external sources if possible; including the 10 year economic projections from outside vendors released by DOR as part of the consensus revenue process.

- Departmental revenue is projected roughly at population growth (1%) in accordance with recent history.

- Federal revenue is associated with the MassHealth growth rate assumption, as MassHealth reimbursement is the source of the majority of federal revenues to the Commonwealth.

Revenue Growth Assumptions: Historical Relationship with Economic Variables

Growth of Key Economic Variables

	FY97-16 CAGR	FY06-16 CAGR	FY07-17 CAGR
Nominal GSP	4.1%	3.5%	
Nominal Wages & Salaries	3.9%	3.4%	
Total Employment	1.1%	1.4%	
Nominal Personal Income	4.4%	3.5%	
Normalized Income Tax	4.5%	3.6%	3.0%
Normalized Sales Tax	2.8%	1.9%	2.0%
Corporate Tax	3.1%	1.8%	0.3%

Correlations

	Income Tax	Sales Tax	Corporate Tax
Nominal GSP	96.3%	92.0%	87.0%
Nominal Wages & Salaries	97.3%	93.1%	87.1%
Total Employment	94.5%	93.9%	81.5%
Nominal Personal Income	96.7%	91.4%	87.7%

Revenue Growth Assumptions: Options

Growth Rate Projections of Selected Economic Variables (*)	FY2018		Average in the next 5 Fys		Average in the next 10 Fys	
	MA	US	MA	US	MA	US
Real Gross Domestic Product	2.6%	2.5%	2.1%	2.2%	2.1%	2.1%
Wage & Salary	4.0%	4.4%	4.7%	4.7%	4.2%	4.3%
Employment	1.3%	1.4%	0.7%	0.9%	0.6%	0.7%
S&P500	N.A.	10.5%	N.A.	3.9%	N.A.	4.7%
Retail Sales	4.2%	3.4%	4.1%	4.1%	4.1%	3.5%
Corporate Profits	N.A.	5.9%	N.A.	5.1%	N.A.	5.2%
Unemployment Rate	4.1%	4.2%	4.1%	4.3%	4.5%	4.7%
Interest Rate(Bank Prime Rate)	N.A.	4.4%	N.A.	6.0%	N.A.	6.3%
Consumer Price Index	1.7%	1.7%	2.6%	2.5%	2.6%	2.4%

(*) Averages of Forecasts made by Moody's Analytics and IHS Markit.
For 5 year average, IHS' projections cover only FY19-FY22 due to unavailable data beyond FY22.
For 10 year averages, only Moody's projections are used
N.A. Not available

Revenue Source	Logic	Current Assumption	Moody's & IHS Average Projected Growth	10 year trailing FY07-FY17
Income Tax	Wage and Salary Growth	3.25%	4.2%	3.0%
Sales Tax	wage and salary growth - 1 %		3.2%	2.0%
Corporate	corporate profit growth rate - 1%		4.2%	0.3%
Excise & Other	10 year employment growth %		0.6%	2.1%
Departmental Revenue	population (assumes no change in fees)		1.0%	6.4%
Federal Revenue	tied to MassHealth growth		5%; 4% after FY20	5.8%

Option Considerations: Context

- All scenarios use the interest and revenue assumptions detailed in the preceding pages.

- All scenarios assume level bond cap from FY19-23, with 3% growth thereafter.

- All scenarios assume the same amount of special obligation debt to complete the Rail Enhancement Program and the remaining Accelerated Bridge Program authorization.

- Under all scenarios, funds available for “discretionary” spending fall as a share of budget as pension costs, MassHealth, and OPEB increase faster than projected long-term revenue growth.

- Debt service, while difficult to change by large amounts in a single year, is the fixed obligation most under the Commonwealth’s control going forward.

- Given the ratings outlook, increasing burden from other fixed obligations, and pressure on the operating budget, the state must carefully weigh benefits of capital spending against costs and loss of flexibility.

Option 1: No increase to bond cap

- **Bond Cap remains at $2.260 B**

- Debt service remains level from FY17 (actual) to FY19 at 6.1% of revenues.

- Without further bond cap increases, debt service would remain below 7% of budgeted revenues through the 5 year plan, maxing out at 6.7% in FY21 before falling to 6.4% in FY23. Assuming 3% annual bond cap growth from a bond cap of $2.26 B in FY23, debt service would represent 5.8% of budgeted revenue by FY33.

- Discretionary share of the operating budget would fall from 37.2% in FY18 to 32.2% in FY23 and 24.9% in FY33.

- Bond cap funded capital budget would total $11.3 B over FY19-23.

Option 2: $80 M increase to bond cap

- **Bond Cap increases by $80 M (3.5%) to $2.340 B**
  - Tied to estimated all-sources revenue growth of 3.47% (using revenue assumptions described above)

- Debt service remains level from FY17 (actual) to FY19 at 6.1% of revenues.

- Without further bond cap increases, debt service would remain below 7% of budgeted revenues through the 5 year plan, maxing out at 6.7% in FY21 before falling to 6.5% in FY23. Assuming 3% annual bond cap growth from a bond cap of $2.34 B in FY23, debt service would represent 5.9% of budgeted revenue by FY33.

- Discretionary share of the budget would fall from 37.2% in FY18 to 32.2% in FY23 and 24.8% in FY33.

- Bond cap funded capital budget would total $11.7 B over FY19-23

Option 3: Maximum ($125 M) increase to bond cap

- **Bond Cap increases by $125 M (5.6%) to $2.385 B**
  - Exceeds estimated all-sources revenue growth of 3.47% (using alternate revenue assumptions described above)

- Debt service increases 6.1% to 6.2% from FY17-FY19

- Without further bond cap increases, debt service would remain below 7% of budgeted revenues through the 5 year plan, maxing out at 6.7% in FY21 before falling to 6.5% in FY23. Assuming 3% annual bond cap growth from a bond cap of $2.385 B in FY23, debt service would represent 6.0% of budgeted revenue by FY33.

- Discretionary share of the budget would fall from 37.2% in FY18 to 32.2% in FY23 and 24.7% in FY33.

- Bond cap funded capital budget would total $11.925 B over FY19-23

Comparison Chart

Measure	Option 1: +$0	Option 2: +$80 M	Option 3: +125 M
Issuance F19-23	$11.300 B	$11.700 B	$11.925 B
Debt Service/Revenue FY23	6.4%	6.5%	6.5%
Debt Service/Revenue FY33	5.8%	5.9%	6.0%
% budget for discretionary FY23	32.2%	32.2%	32.2%
% budget for discretionary FY33	24.9%	24.8%	24.7%