



\$437,195,000

Massachusetts Department of Transportation
Metropolitan Highway System Revenue Refunding Bonds (Subordinated)
Commonwealth Contract Assistance Secured
\$371,380,000 Variable Rate (Term Rate), 2019 Series A
\$51,230,000 2019 Series B-1
\$14,585,000 2019 Series B-2 (Federally Taxable)

[Overview of Completion of Phase Two: De-Risking the Variable Rate Bond and Swap Portfolios](#)

Finance and Audit Committee Meeting

David W. Pottier, Chief Financial Officer

February 6, 2019

2010 Series A-3 through A-6 Refunding & Swap Termination

- 2019 Series A currently refunded the Subordinated 2010 Series A-3 - A-6 Bonds and suspended the associated UBS swap
 - Issued soft put refunding bonds: \$371,380,000 Revenue Refunding Bonds (Subordinated) Commonwealth Contract Assistance Secured, 2019 Series A with 1/1/2023 Soft Put Date
 - ❖ Refund variable rate bonds: \$371,380,000 Subordinated Variable Rate Demand Obligations 2010 Series A-3, A-4, A-5 and A-6 (“2010 A-3 through A-6 Bonds”)
 - ❖ Partially Terminate on-market portion of \$371,380,000 notional amount of UBS swap associated with 2010 A-3 through A-6 Bonds and suspend (turn off) payments on the swap through the Soft Put Date
 - ❖ Pay 5.0% fixed rate on the 2019 Series A Bonds through the Soft Put Date¹
 - ❖ Will remarket the 2019 Series A Bonds or refund with variable rate bonds on Soft Put Date when swap reactivates and payments on swap restart
 - Novated the 2010 Series A-3 through A-6 swap to Citibank (2/3rd) and Barclays (1/3rd)
 - Negotiated a 5.5% discount on the 2010 A-3 through A-6 partial swap termination
 - Generated savings of \$8.07 million on net present value basis

¹ The 2019 Series A were structured as premium bonds and have a bond yield of 2.14% through 1/1/2023.

2010 Series A-2 Refunding & Swap Termination

- 2019 Series B-1 and B-2 currently refunded the Subordinated 2010 Series A-2 Bonds with traditional fixed-rate bonds and terminated the associated UBS swap
 - Issued fixed rate refunding bonds: \$51,230,000 Revenue Refunding Bonds (Subordinated) Commonwealth Contract Assistance Secured, 2019 Series B-1
 - ❖ Refunded the \$83,100,000 Subordinated Variable Rate Demand Obligations 2010 Series A-2 (“2010 A-2 Bonds”)
 - ❖ Terminated on-market portion of \$83,100,000 notional amount of UBS swap associated with 2010 A-2 Bonds
 - ❖ Eliminated subordinated basis reserve requirement and released \$27.63mm into transaction
 - Issued fixed rate refunding bonds: \$14,585,000 Revenue Refunding Bonds (Subordinated) Commonwealth Contract Assistance Secured, 2019 Series B-2 (Federally Taxable)
 - ❖ Paid off-market¹ portion (\$25.6 million) of \$83,100,000 notional 2010 A-2 Bonds swap termination and \$371,380,000 notional 2010 A-3 through A-6 Bonds partial swap termination
 - Negotiated a 7% discount on 2010 A-2 swap termination
 - Resulted in cost of \$111,870 on net present value basis
 - Aggregate 2019AB transaction generated NPV savings of \$7.9 million

¹ Under applicable IRS rules, the off-market portion of the swap terminations cannot be paid with tax-exempt proceeds.

Transaction Highlights

- Swap termination costs paid for from combined savings on refunding transactions - total NPV savings of \$7.9 million
- Reduction of \$83.1 million in outstanding swap notional amount
- Combined reduction of \$73.7 million in negative mark-to-market (MTM) on swap portfolio's total \$273.35 million MTM (27%) at no cost to MassDOT on net present value basis
- Refunding economics primarily impacted by:
 - Relationship between benchmark tax-exempt MMD rates and taxable LIBOR swap rates
 - Credit spreads on i) fixed rate refunding bonds and ii) variable rate refunded bonds
 - Swap termination discounts negotiated with UBS
- Transaction meets Risk Management (§ 8) and Refunding (§ 14) guidelines of MassDOT's Debt Issuance and Management Policy

Swap Portfolio De-risking Highlights

Phase One Highlights

- Completed May 10, 2018
- Terminated two swaps with UBS in total notional amount of \$137.855mm
- Eliminated \$33.9mm in negative MTM (10.95%)
- Negotiated 4% discount from UBS = \$1.36mm
- NPV savings = \$2.874mm

Phase Two Highlights - Part 1

- Completed Dec 4, 2018
- Terminated \$100 million notional JP Morgan basis swap
- Eliminated \$2.4mm in negative MTM (0.76%)

Phase Two Highlights - Part 2

- Completed Jan 24, 2019
- Terminated \$83.1mm notional amount with UBS
- Suspended \$371.4mm notional amount with UBS and novate the back end to Citi and Barclays
- Eliminated \$73.7mm in negative MTM (23.8%)
- Negotiated 6.135% discount from UBS = \$4.52mm
- NPV savings = \$7.96 million

Aggregate Highlights

- Swap portfolio reduced to \$579mm notional
- Eliminated \$110mm in negative MTM (35.5%)
- Total NPV savings = \$10.836 million

Phase One + Two: Swap De-Risking and Transaction Summary

Swap ID	Notional	Full MTM	Terminated MTM Amount	MTM Reduction ¹	Transaction NPV Savings
UBS SR A-1	207,665,000	-83,190,000	-	-	-
<u>Phase One Terminations (A-1 & A-7)</u>					
UBS Sub A-1	43,625,000	-10,375,000	-10,375,000	3.351%	879,485
UBS Sub A-7	94,230,000	-23,530,000	-23,530,000	7.600%	1,994,630
<u>Phase Two Termination (JPM Swap)</u>					
JPM Swap	100,000,000	-2,340,000	-2,340,000	0.756%	-
<u>Phase Two Termination (A-2) & Suspension (A-3-A-6)</u>					
UBS Sub A-2	83,100,000	-30,611,000	-30,611,000	9.887%	-111,870
UBS Sub A-3-A-6 ²	371,380,000	-159,547,000	-43,092,905	13.919%	8,074,604
Total ³	900,000,000	-309,593,000	-109,948,905	35.514%	10,836,850
Phase 1 ⁴	137,855,000	-33,905,000	-33,905,000	10.951%	2,874,116
Phase 2 - JPM ⁵	100,000,000	-2,340,000	-2,340,000	0.756%	0
Phase 2 - UBS ⁶	83,100,000	-190,158,000	-73,703,905	23.807%	7,962,734
Terminated	320,955,000	-109,948,905	-109,948,905	35.514%	10,836,850
Remaining	579,045,000	-199,644,095			

¹ MTM reduction percentage based on total MTM value on the swap portfolio.

² Partial termination that suspended payments on swap until 1/1/2023.

³ Rates as of 1/15/2019, settlement date of 1/24/2019, except as noted below.

⁴ Rates as of 5/1/2018, settlement date of 5/10/2018.

⁵ Rates as of 12/4/2018, settlement date of 12/6/2018.

⁶ Rates as of 1/15/2019, settlement date of 1/24/2019.

Transaction Benefits - Aggregate Phases One & Two

- Continued MassDOT's objective of de-risking debt and swap portfolios
- Reduced aggregate notional on swap portfolio from \$900 million to \$579 million
- Only active swap is \$207 million UBS swap on Senior lien¹
- Only two active VRDB series on Senior lien (2010 Senior A-1 and A-2)¹
- Eliminated \$110 million (35.5%) of the swap portfolio's \$309.6 MTM exposure on aggregate portfolio
 - Termination payments funded out of refunding bond proceeds and general fund (JPM swap)
- Negotiated favorable discount with UBS = \$5.881 million in aggregate
- Released \$27.6mm from Basis Reserve, used to downsize refunding bonds
- Replaced variable rate debt with fixed rate debt and eliminated VRDB associated risks¹
 - No bank support required
 - No bank covenants
 - No renewal risk of SBPA or LOC agreements
 - No annual liquidity or remarketing fees
- Eliminated swap associated risks¹
 - No basis risk: variable rates received on swap do not equal variable rates paid on bonds
 - No tax risk : change in tax rules or other factors increases variable rate costs
 - No forced termination risk upon a downgrade (Sub A-2 Swap only)
- Creates additional credit capacity (fewer banks providing support on VRDBs)
- Received favorable feedback from all credit rating agencies on de-risking efforts and achieved an upgrade to A2 from A3 from Moody's on the Senior lien on 12/22/2018

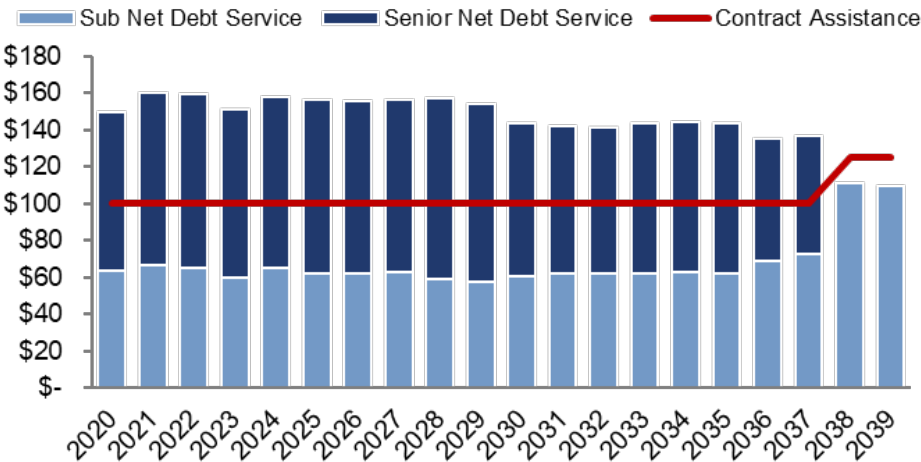
¹ Through 1/1/2023 for the 2010 Sub A-3 through A-6 swap when it is scheduled to reactivate.

Appendix A

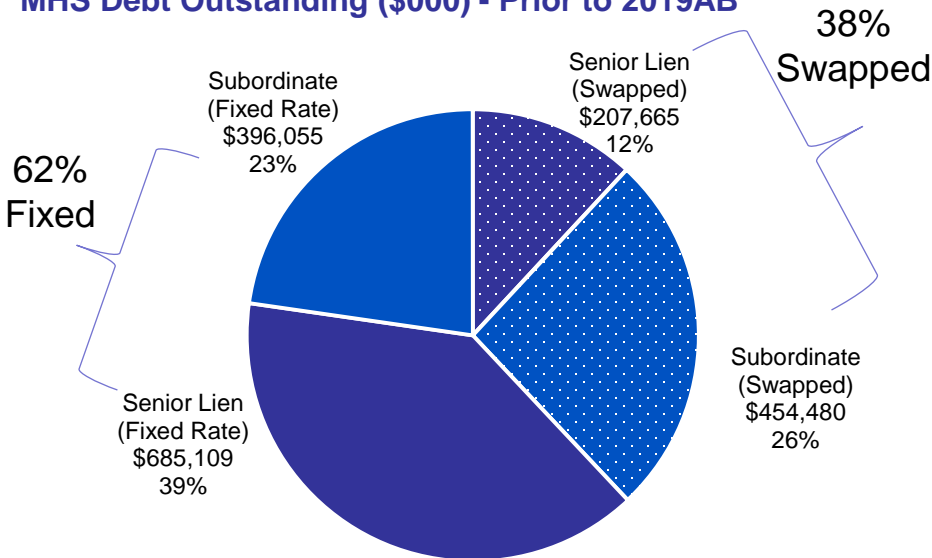
Current MHS Debt Profile - Overall

- There are \$892.77 million of Senior and \$833.25 million Subordinate Lien bonds outstanding (\$850.535 million prior to the 2019AB Subordinated refunding)
- All MHS debt is either fixed rate or swapped to fixed
- Capital structure is relatively level through 2029 (after accounting for DSRF releases) and begins to decline thereafter
- Capital structure fully amortizes by 2039
- Senior DSRF currently totals \$109.6 million
- No Subordinate DSRF requirement (eliminated after 2019AB Subordinated refunding)

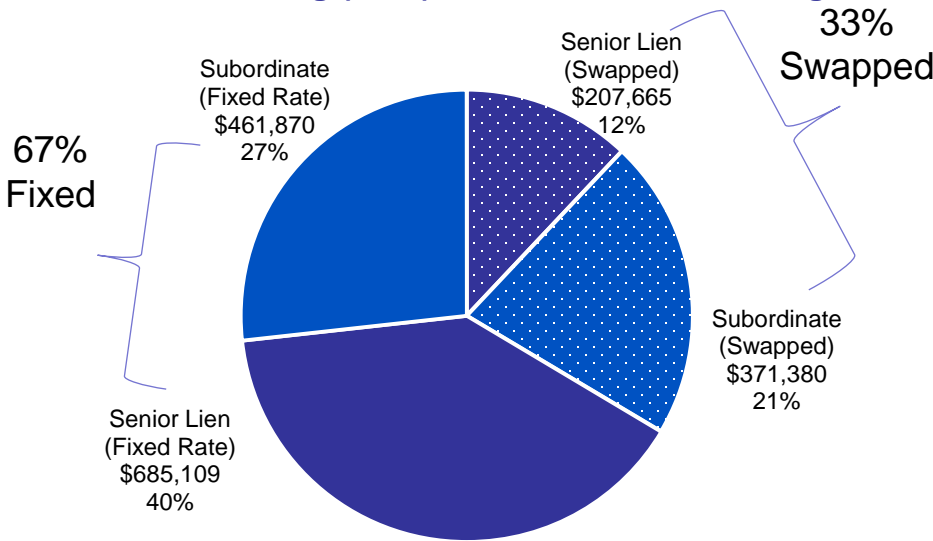
MHS Outstanding Net Debt Service by Lien¹ (\$mm)



MHS Debt Outstanding (\$000) - Prior to 2019AB



MHS Debt Outstanding (\$000) - After 2019AB Refunding²

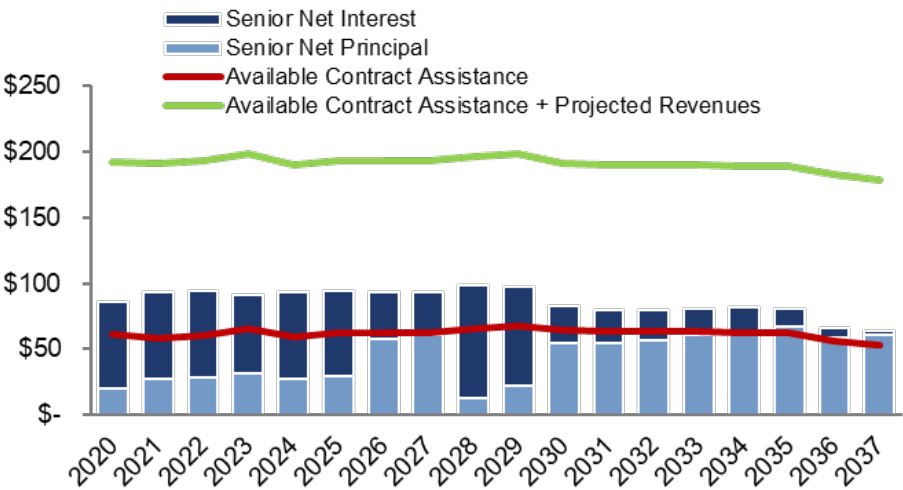


1 Debt service is net of the earnings on the Debt Service Fund Forward Delivery Agreement, assumed Debt Service Reserve Fund earnings of 1.50% and corpus releases in 2023, 2029, 2036 and 2037 for the Senior Lien.
 2 After the 2019AB Subordinated refunding, the \$371.380 million Subordinated portion shown as swapped pays a fixed rate through 1/1/2023.

Current MHS Debt Profile - Senior and Subordinate Liens

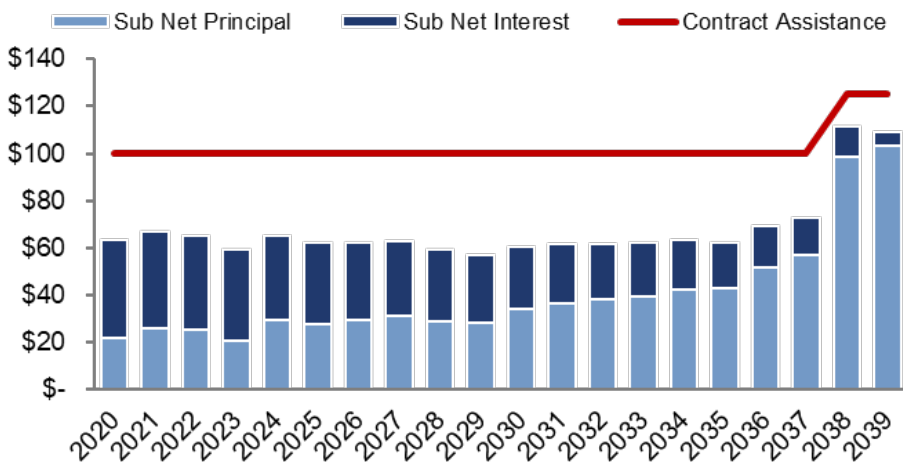
- The Senior Lien is partially covered by a \$25 million pledge of Commonwealth Contract Assistance plus the excess Commonwealth Contract Assistance transferred from the Subordinate Lien
- Capital structure fully amortizes by 2037
- Senior DSRF currently totals \$109.6 million
- Projected revenues cover additional net debt service requirements on the Senior Lien

MHS Net Debt Service - Senior Lien¹ (\$mm)



- Commonwealth Contract Assistance is pledged to Subordinate Lien and covers 100% debt service in every year
- Subordinate Lien debt service is expected to remain well below Dedicated Contract Assistance every year
- Capital structure fully amortizes by 2039
- Subordinate DSRF eliminated (after 2019AB Sub. refunding)

MHS Net Debt Service - Subordinate Lien¹ (\$mm)



¹ Debt service is net of the earnings on the Debt Service Fund Forward Delivery Agreement, assumed Debt Service Reserve Fund earnings of 1.50% and corpus releases in 2023, 2029, 2036 and 2037 for the Senior Lien.

MHS Outstanding VRDB Debt and Swap Portfolios

■ Current Outstanding Swap Portfolio¹

Outstanding Swaps as of 1/30/2019											
			Current Pay			Current Receive	Current Net	Effective	Maturity		
#	Counterpar	Notional	Pay	Rate (%) ¹	Receive	Rate (%)	Rate (%)	Date	Date	Hedged Bonds	MTM
1	UBS AG	207,665,000	4.750%	4.750%	68% of 1M LIBOR	1.706%	3.044%	07/01/08	01/01/37	2010 SR A-1 & A-2	-84,055,000
2	Citibank	247,587,000	4.750%	4.750%	68% of 1M LIBOR	n/a	n/a	01/01/23	01/01/39	2010 SUB. A-3- A-6	-78,356,667
3	Barclays	123,793,000	4.750%	4.750%	68% of 1M LIBOR	n/a	n/a	01/01/23	01/01/39	2010 SUB. A-3- A-6	-39,178,333
Total		579,045,000									-201,590,000

■ Current Outstanding MHS Variable Rate Debt Portfolio^{1,2}

Detailed Summary of Variable Rate Debt as of 1/30/2019										
Series	Par Amount	Bond Maturity	Mode	Provider	Expiration	Remaining Term	Current Rate	Support Costs/ DP Spread	All-in Variable Rate	Total Synthetic Fixed Rate
<u>Metropolitan Highway System (Senior)</u>										
2010 Series A-1	\$ 100,000,000	1/1/37	VRDB LOC	Citibank	5/27/19	0.48	1.45%	0.42%	1.87%	4.91%
2010 Series A-2	107,665,000	1/1/37	VRDB LOC	Barclays	5/27/20	1.49	1.44%	0.46%	1.90%	4.94%
<u>Metropolitan Highway System (Subordinated)</u>										
2019 Series A	\$ 371,380,000	1/1/39	Term	n/a	n/a	n/a	5.00%	0.00%	5.00%	5.00%
Total	\$ 579,045,000									

¹ Based on January 30, 2019 rates, subject to change.

² The 2019 Series A Subordinated bonds are in term rate mode and pay a 5% fixed rate through 1/1/2023. The 5% rate represents a premium-bond structure and the yield through 1/1/2023 is 2.14%.