



Highway Division FHWA TAMP Update

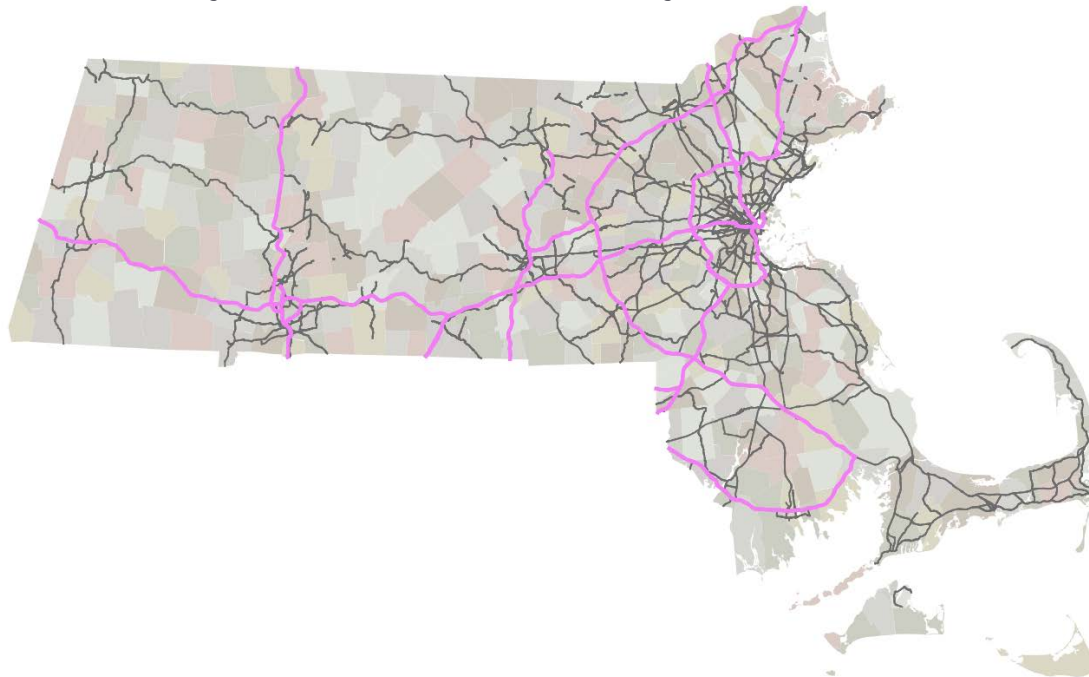
April 18, 2018



Highway Division Initial Transportation Asset Management Plan

A Plan for the National Highway System in Massachusetts

- 14% of state lane mileage is NHS, 60% of vehicle miles travelled (2016)
- NHS consists of the Interstate system & other facilities which contribute to national economy, defense, & mobility



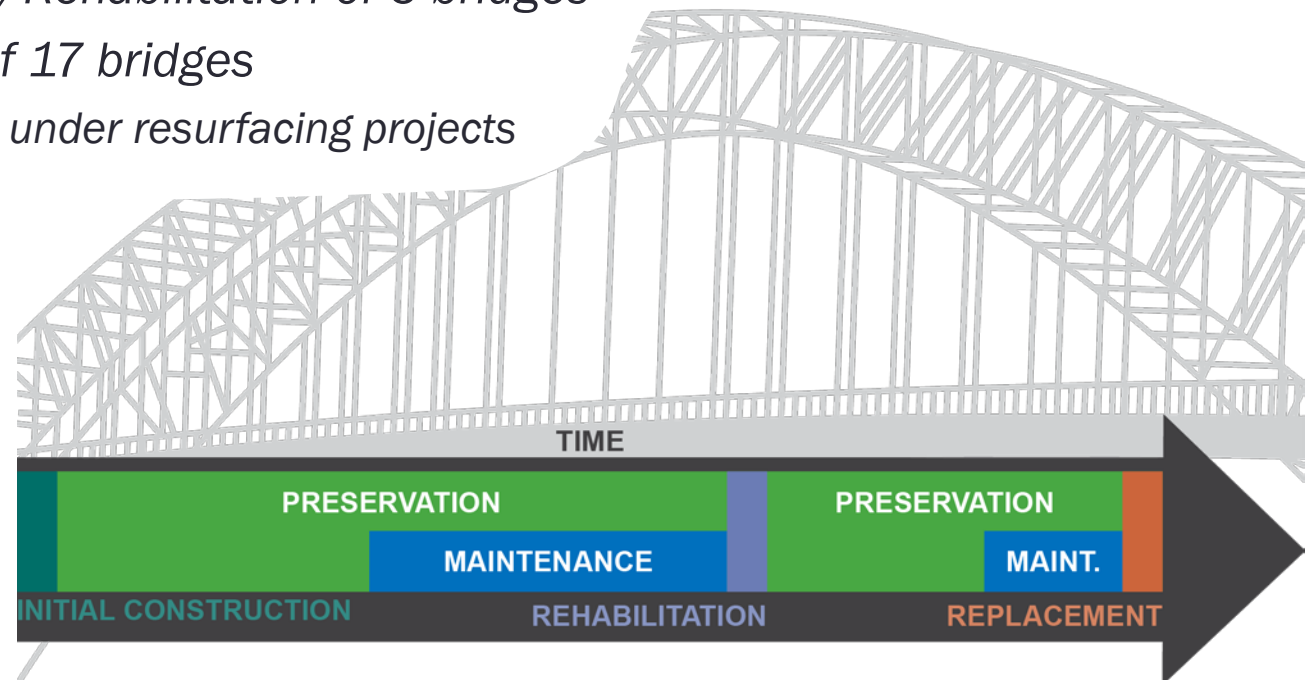
- The Highway Division will file an initial NHS TAMP April 30, and submit a final Plan June 30, 2019



Highway Division Initial Transportation Asset Management Plan

Life Cycle Management – NHS Bridge

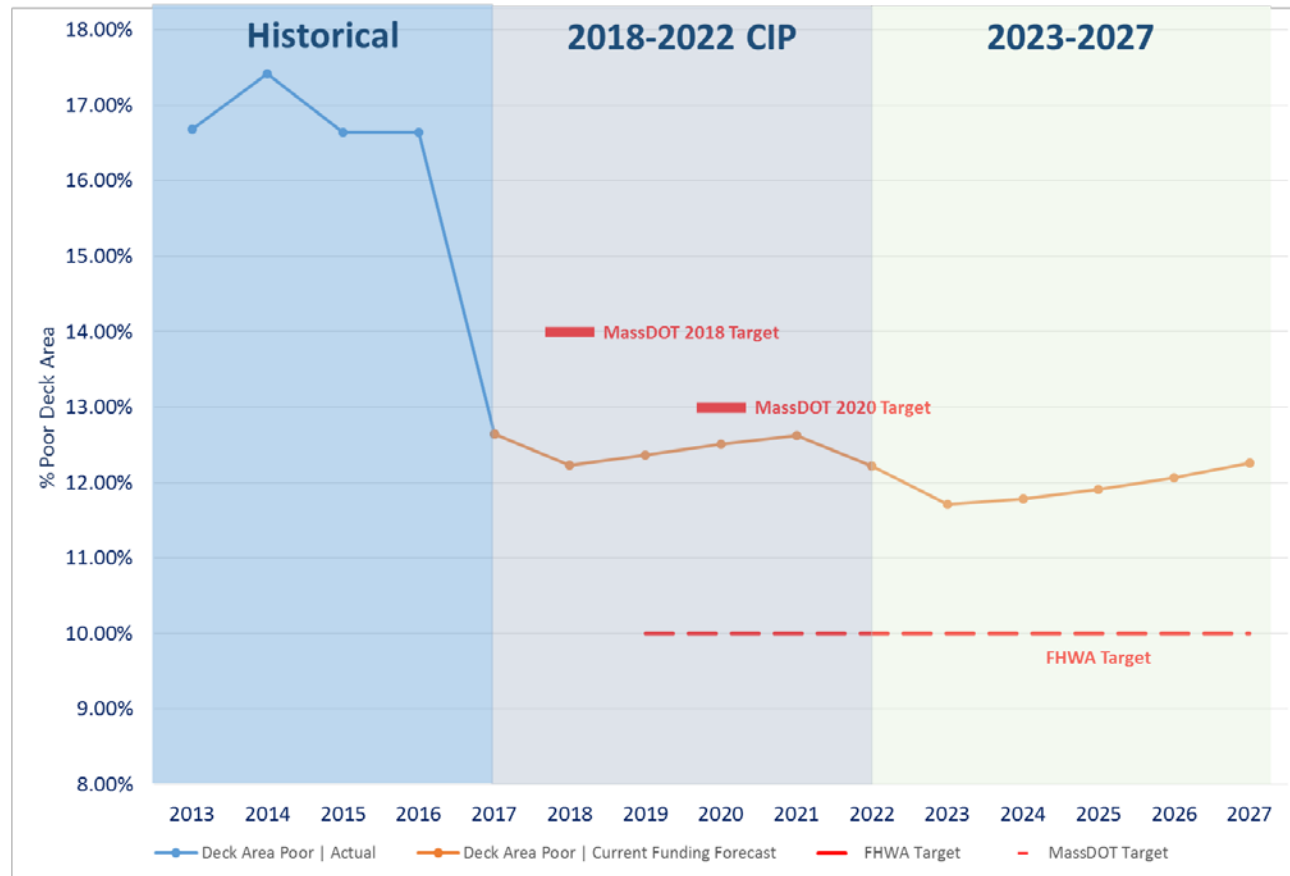
- *FY 2018 bridge program investments support NHS bridge health:*
 - *Maintenance of over 200 bridges*
 - *Preservation of 48 bridges**
 - *Reconstruction/Rehabilitation of 5 bridges*
 - *Replacement of 17 bridges*
- * Includes work under resurfacing projects*





Highway Division Initial Transportation Asset Management Plan

Performance Forecast – NHS Bridge

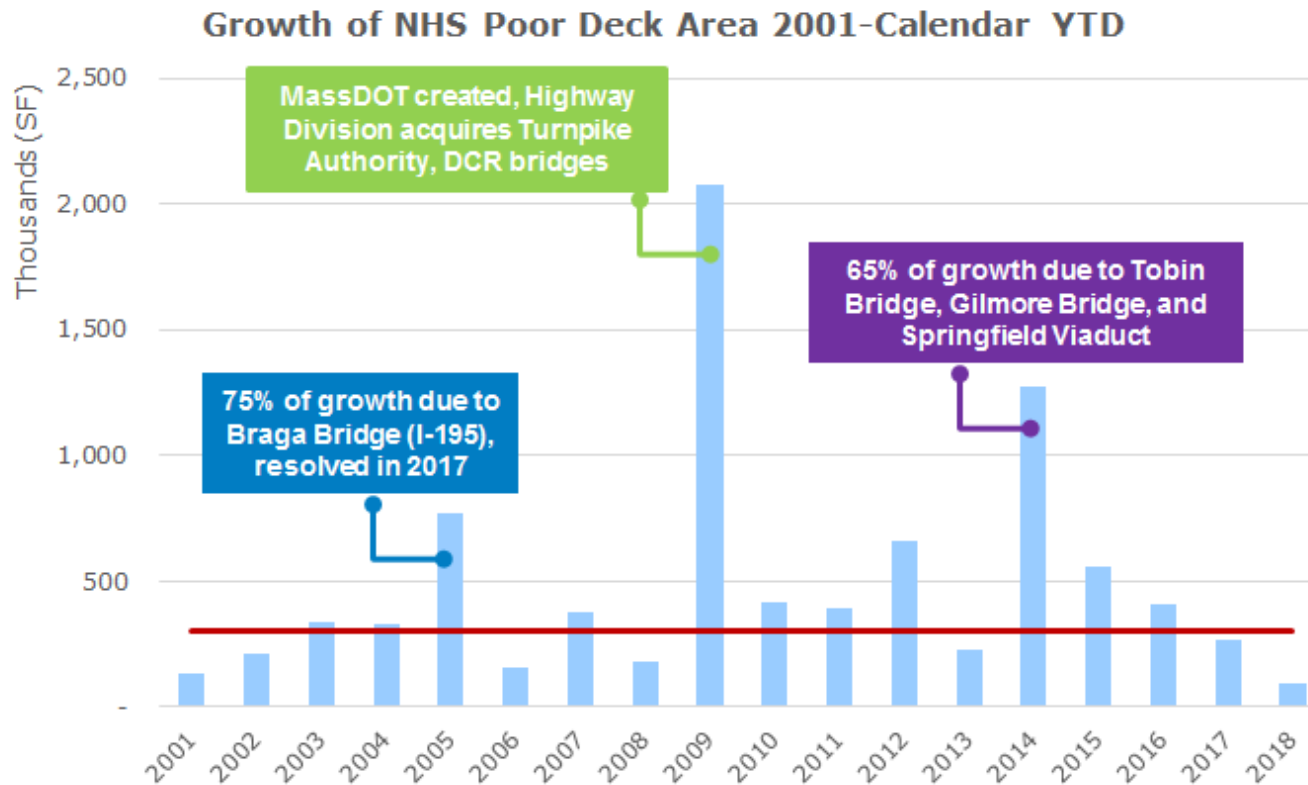


Note: Post CIP Performance forecast assumes bridge program investment will continue at 2018-2022 CIP level



Highway Division Initial Transportation Asset Management Plan

Historical Deterioration of Massachusetts NHS Bridges





Highway Division Initial Transportation Asset Management Plan

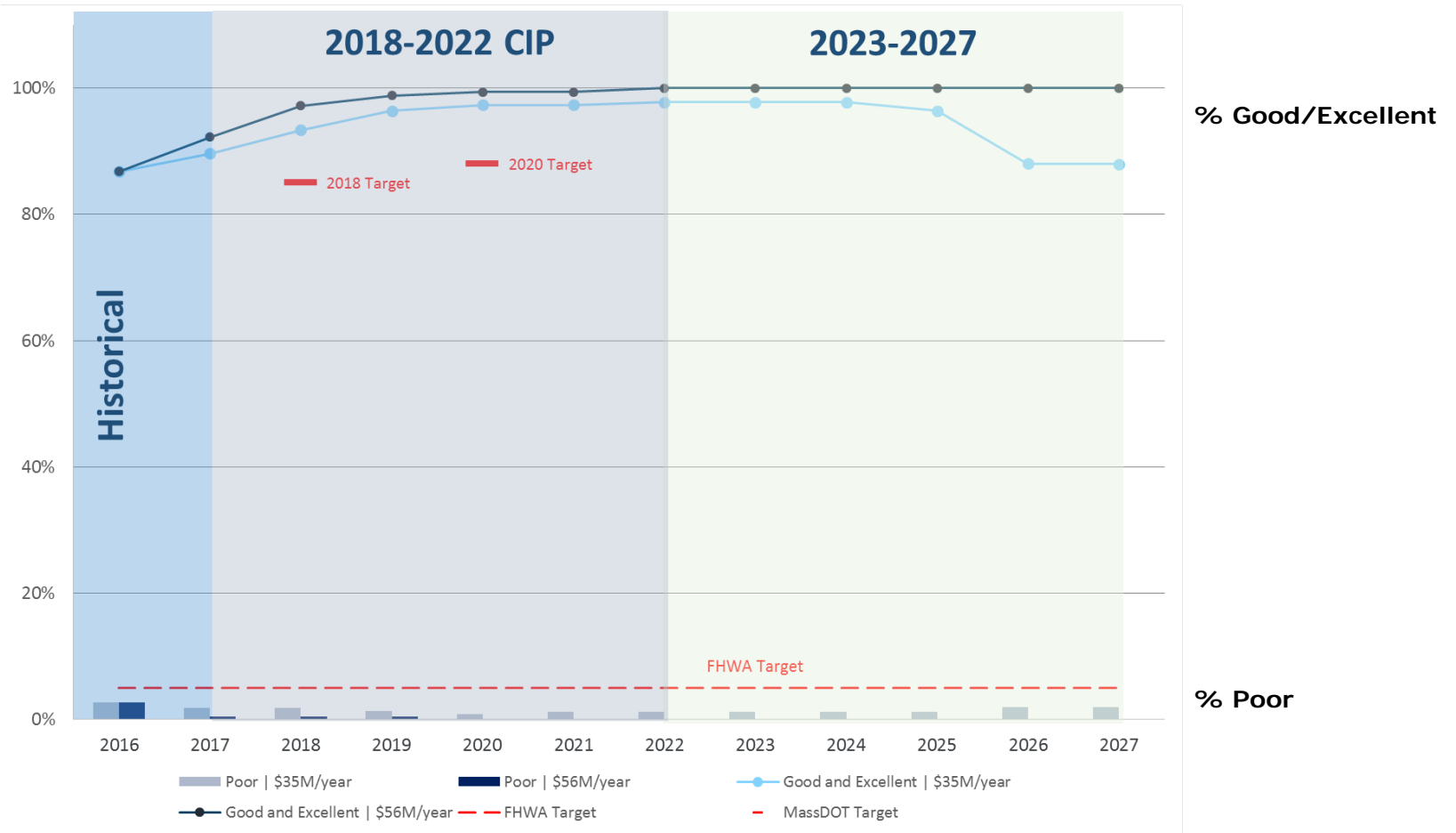
Life Cycle Management - Pavement

Type of Investment	Treatment	Cost per Lane-Mile
Maintenance	Asphalt crack sealing	\$12,000
	Asphalt routing and sealing	\$11,500
Preservation	Micro-surfacing	\$55,000
	Open-graded friction course (OGFC) with leveling	\$220,000
	Paver placed surface treatment	\$110,000
	Rubber chip sealing	\$63,325
	Rubber gap graded overlay	\$180,000
	Hot mix asphalt (HMA) overlay	\$137,000
	Full depth reclamation	\$400,000
Rehabilitation	Functional overlay	\$278,000
	Functional overlay saw and seal	\$300,000
	OGFC with dense binder	\$280,000
	Structural overlay	\$413,000
	Thick overlay saw and seal	\$450,000
	Rubber gap grading with functional overlay	\$330,000
	OGFC with structural overlay	\$395,000
Reconstruction	Reconstruction	\$680,625



Highway Division Initial Transportation Asset Management Plan

Performance Forecast – Interstate Pavement

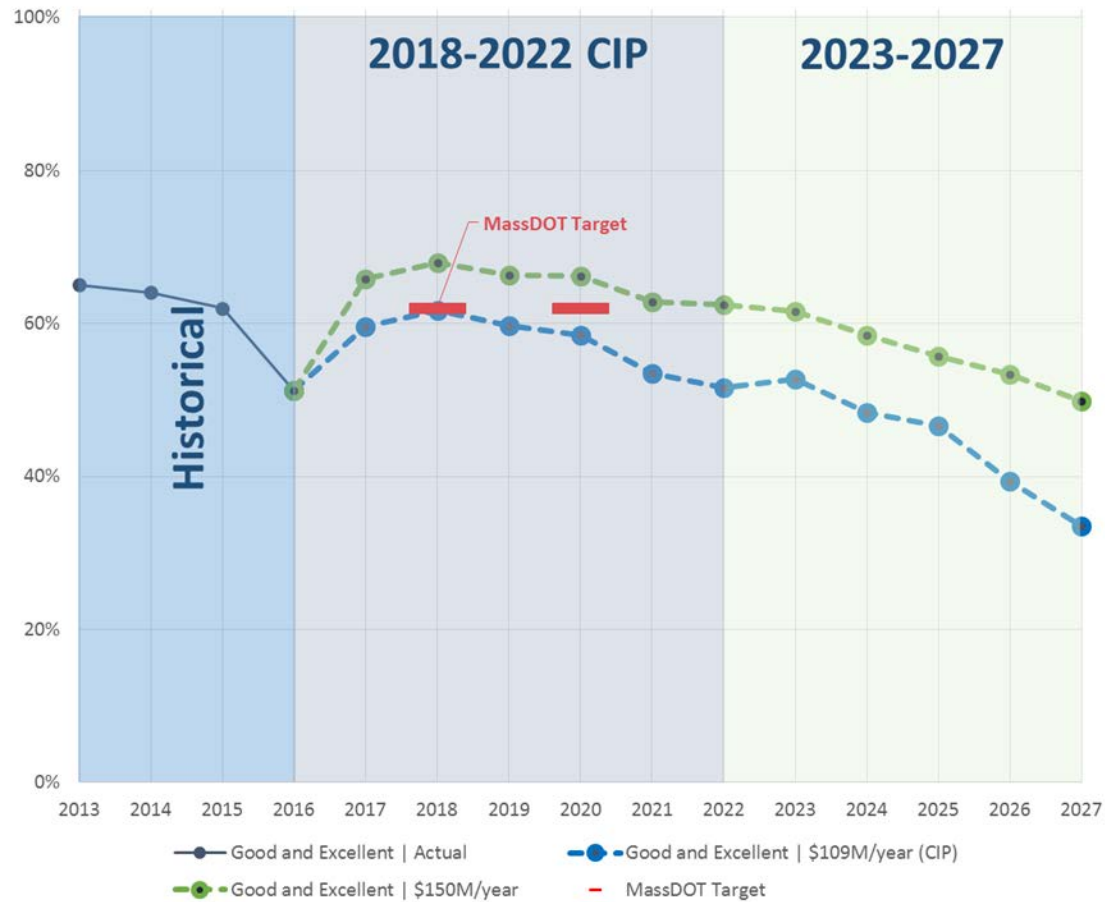


Note: 2018-2022 Interstate program funded at \$56 million/year (construction spending)



Highway Division Initial Transportation Asset Management Plan

Performance Forecast – Non-Interstate NHS Pavement



Note: 2018-2022 Non-Interstate program funded at \$109 million/year



Highway Division Initial Transportation Asset Management Plan

2020 & 2022 Target Setting – NHS Bridge

	<i>2016 Targets</i>		2018 Targets		Long Term	<i>Current Cond.</i>
	<i>2018</i>	<i>2020</i>	2020	2022		
% Good	NA	NA	15	16	TBD	15.22
% Poor	14	13	13	12	TBD	12.37



Highway Division Initial Transportation Asset Management Plan

2020 & 2022 Target Setting - Pavement

		2016 Targets		2018 Targets			Current Cond.
		2018	2020	2020	2022	Long Term	
Interstate	% Good	85	88	88	88	TBD	87.8*
	% Poor	<5	<5	<4	<4	TBD	2.3*
		2018	2020	2020	2022	Long Term	Current Cond.
Non-Interstate**	% Good	62	62	60	62	TBD	51.2*
	% Poor	NA	NA	<20	<20	TBD	19.4*

* Updated Condition Data avail late-April

** 2016 Non-interstate targets on DOT-owned only



Risk Assessment

- The identification and mitigation of potential risk increases the likelihood of achieving a desired outcome
- The final Highway TAMP will include a detailed risk register with accompanying mitigation strategies to accompany the condition and performance outcomes we seek to achieve
- For the initial plan submission we have identified and prioritized a list of risk events at the asset, program and departmental levels
- Work over the next year will define sustainable processes to ensure the Highway Division is hedging against uncertainty in its management of the NHS and throughout its programs