#### STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

DATE:

November 18, 2019

FROM:

Nancy L. Spaulding PE Project Manager

AT (OFFICE):

Bureau of Turnpikes

SUBJECT:

Turnpike's Replacement and Renewal Program

Annual Report and Status

THRU:

John W. Corcoran, PE

Administrator of Tumpikes

TO: Victoria F. Sheehan, Commissioner

William J. Cass, Assistant Commissioner

Christopher M. Waszczuk, Deputy Commissioner

David M. Rodrigue, Director of Operations

Peter E. Stamnas, Director of Project Development

Marie A. Mullen, Director of Finance

William J. Oldenburg, Asst. Dir. Of Project Development

Mike J. Servetas, Asst. Dir. of Operations

Danielle M. Chandonnet, Administrator of Finance & Contracts

L. Robert Landry, Administrator of Bridge Design

James A, Marshall, Administrator of Highway Design

Steve W. Johnson, Administrator of Bridge Maintenance

William R. Lambert, Administrator of Traffic

Susan M. Klasen, Administrator of TSMO

Dennis E. Herrick, Administrator of Materials & Research

Margaret S. Blacker, Turnpikes Bureau

Eric S. Thibodeau, Materials & Research

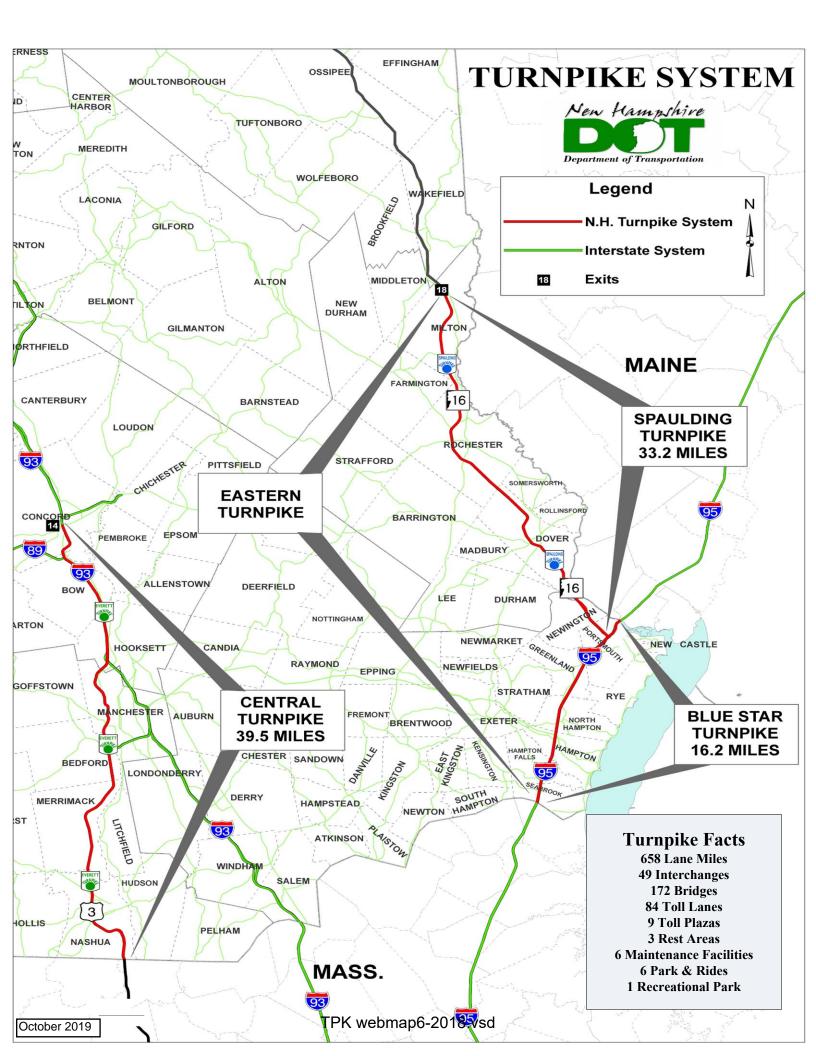
Eileen P. Meany, Office of Public Information

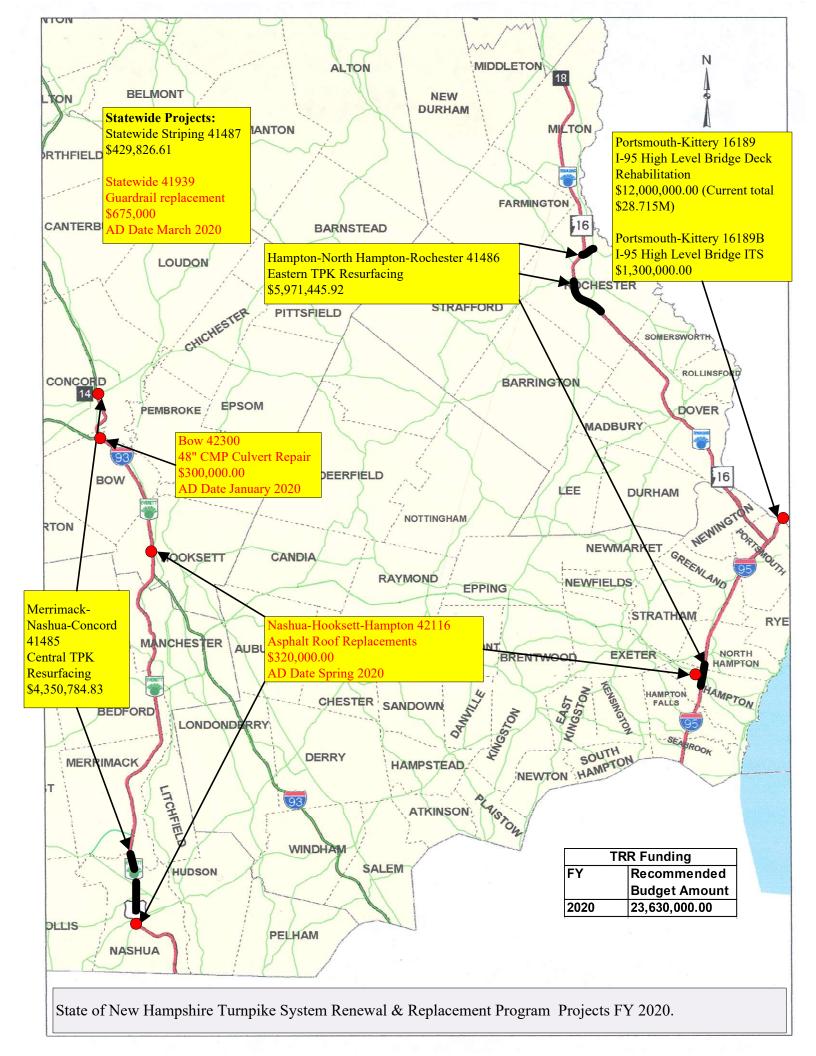
#### MEMORANDUM

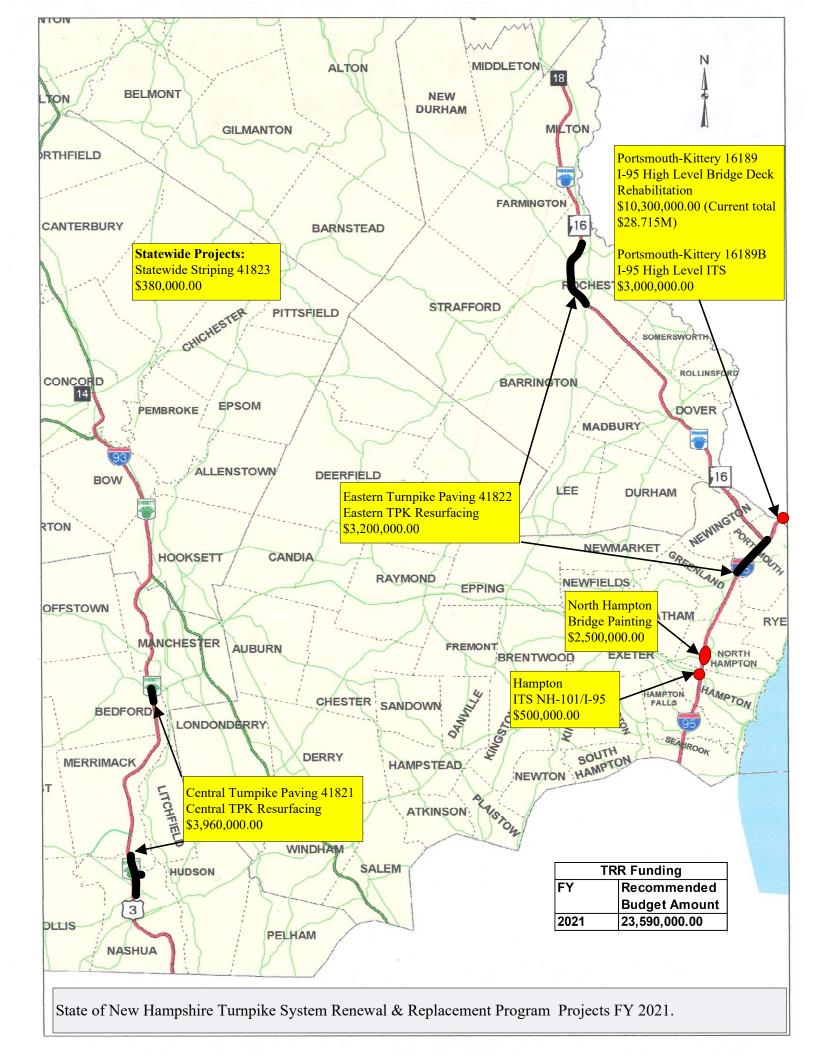
The Bureau of Turnpikes is pleased to present the annual status report for Turnpikes' Renewal and Replacement (R&R) program. The R&R report highlights efforts undertaken for specific Tumpikes assets along with the program's future efforts for Fiscal Year 2021 thru Fiscal Year 2028.

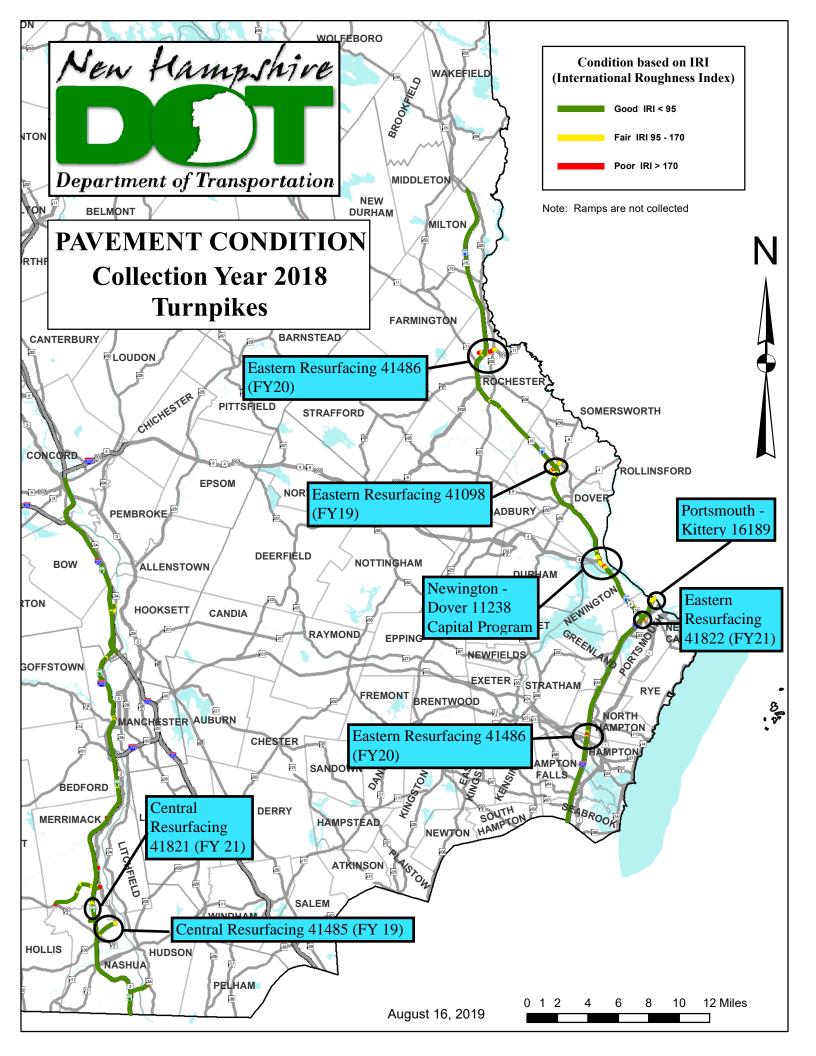
Funding provided under this program supports our efforts to sustain the Turnpikes infrastructure at a level of service necessary to maintain a safe system for the user. Projects presented for future fiscal years prolong the life cycle of critical system infrastructure. Turnpikes infrastructure includes pavement surface, bridges, drainage, signage and guardrail along 89 corridor miles of New Hampshire's Turnpikes. Additionally, the funding supports facilities such as the administration building, toll plazas, maintenance sheds, park n' ride lots and Hilton Park.

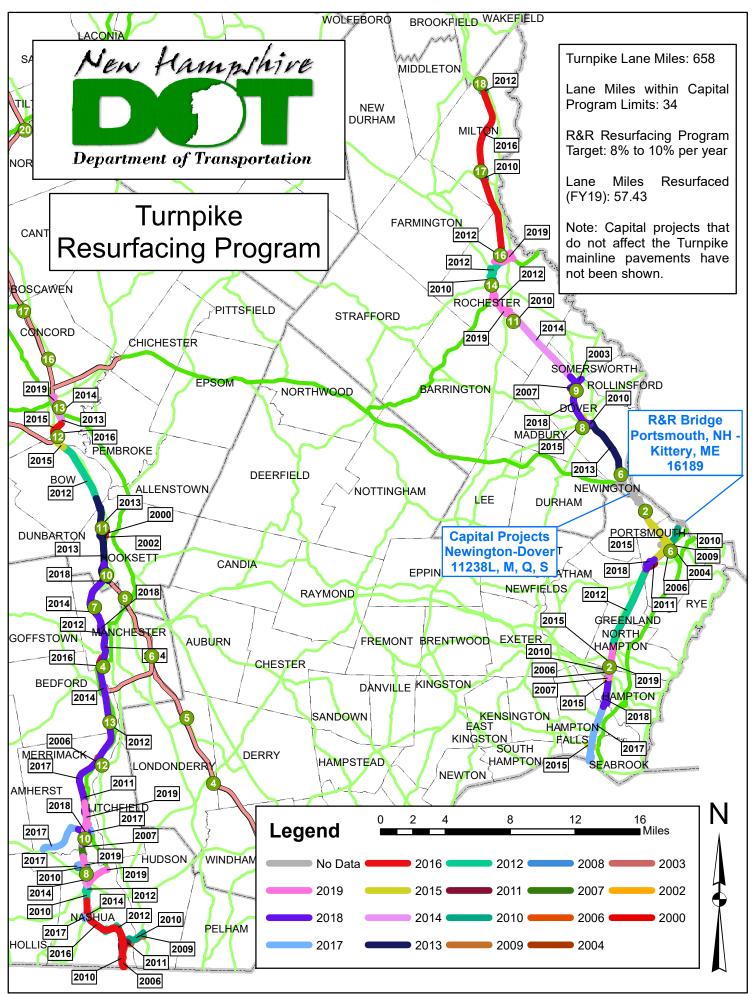
The current year "Replacement and Renewal Program Annual Report and Status Update" document is posted on the Bureau of Turnpikes internet website, under the "Capital Projects" page at http://www.nh.gov/dot/org/operations/turnpikes/capital.htm.



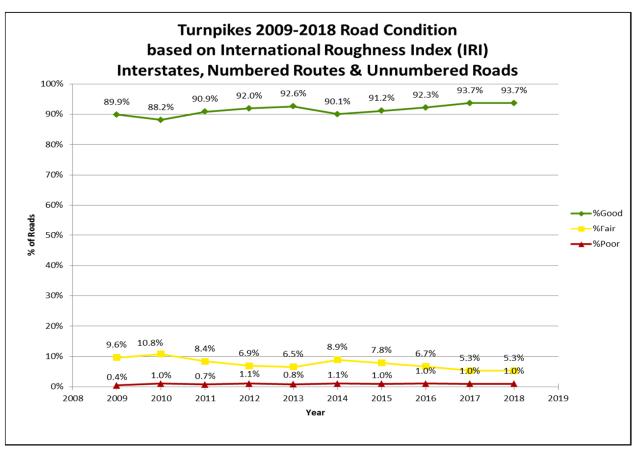


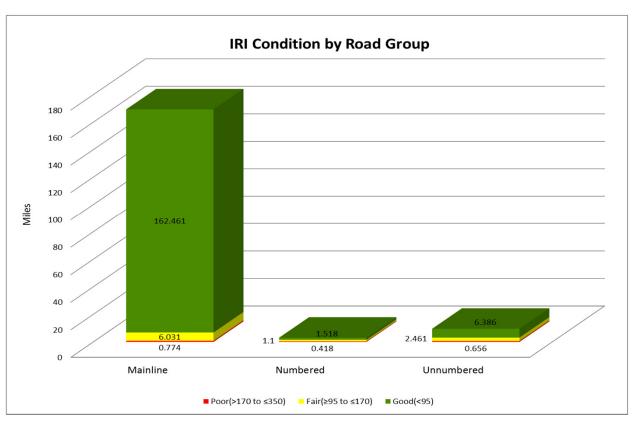


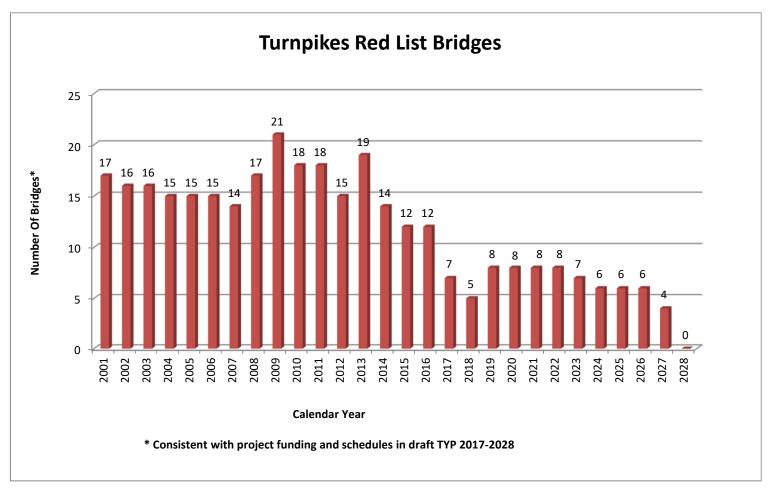


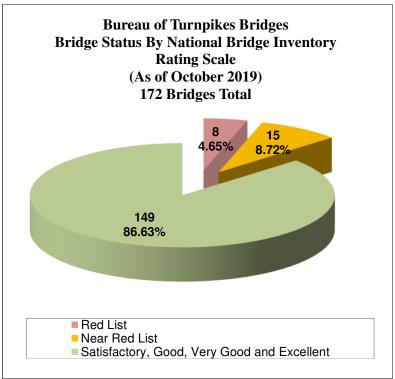


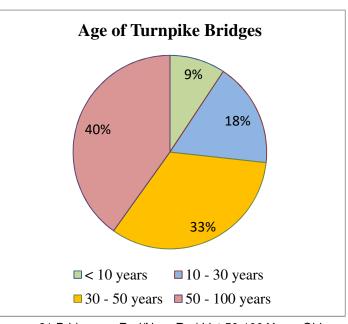
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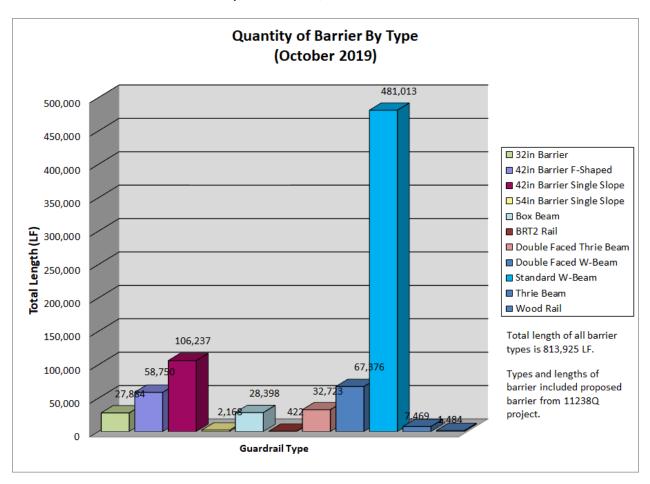




- 1 Bridge on Near Red List 30-50 Years Old
- 1 Bridge on Near Red List 10-30 Years Old

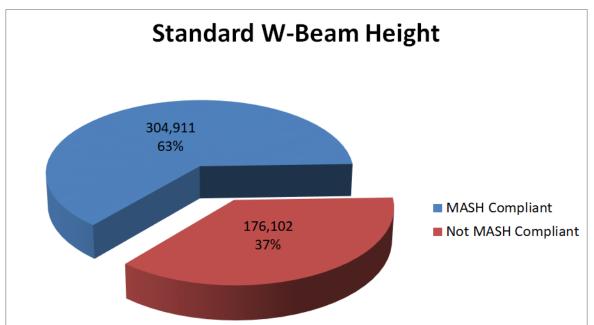
			Turnpikes	Redlist Bridges			Calendar Year																	
TTY/ TOWN	BRIDGE NUMBE R	YEAR BUILT	LOCATION	CONDITION	REMARKS	COMPLETED / TARGET	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 2019	2020	2021	2022 202	23 20	24 20	25 20	)26 20	127 20:
Bedford	189/121	1955	US 3 over FEE TPK	Poor deck and substructure	Capital Project #13527	Jul-13	1	1	1	1	1													
Bow	135/160	1957	I-93 SB over I-89,Turker river	Poor deck and substructure	Capital Project 13742B	Aug-15	1	1	1	1	1	1												
Bow	136/160	1957	I-93 NB over I-89, Turkey river	Poor deck and substructure	Capital Project 13742B	Jul-15	1	1	1	1	1	1												
Concord	163/106	1966	I-93 over NH 9	Deck serious, poor substructure	Capital Project 13742C	Sep-10	1																	
Concord	203/087	1957	NH 3 A over I-93	Poor deck and substructure	Capital Project 13742A	Jun-16	1	1	1	1	1	1	1											
Concord	201/096	1958	FEET (I-93) SB over Hall Street	Poor substructure	Future Capital Project 13742	Nov-25								1	1	1								
Concord	201/097	1958	FEET (I-93) NB over Hall Street	Poor substructure	Future Capital Project 13742	Nov-25								1	1									
Dover	132/102	1957	Sp. Tpk. NB over NH 108 & RR Spur	Large Spalls & rust	R & R FY 2024	FY 2026										1	1	1	1 1	1		1	1	1
Dover	132/101	1957	Sp. Tpk. SB over NH 108 & RR Spur	Abutment Spalled	R & R FY 2024	FY 2026										1	1	1	1 1	1		1	1	1
Dover	105/133	1957	Sp. Tpk. SB over Cocheco River	Rust and Section Loss	R & R FY 2026	FY 2027										1	1	1	1 1	1		1	1	
Dover	106/133	1957	Sp. Tpk. NB over Cocheco River	Section Loss	R & R FY 2026	FY 2027										1	1	1	1 1	1		1	1	
Dover	200/023	1934	Little Bay/General Sullivan	Closed- All Elements Failing	Capital Project 11238	Jun-22	1	1	1	1	1	1	1	1	1	1 1	1	1	1					
Hampton	120/102	1950	I-95 over Taylor River	Red list section loss	Capital Project 13408B	May-18					1	1	1	1	1									
Hooksett	072/136	1978	Access Road over Ramp C	Cracking & spalling	R&R project 29494	Sep-15						1	1											
Manchester	144/066	1957	I-293 over N BR Piscataquog River	Poor deck and substructure	Capital Project14966	Nov-16	1	1	1	1	1	1	1	1										
Manchester	146/064	1957	I-293 over SB Piscataquog River	Poor deck	Capital Project14966	Nov-16	1	1	1	1	1	1	1	1										
Manchester	146/065	1957	I-293 over SB Piscataquog River	Poor deck	Capital Project14966	Nov-16	1	1	1	1	1	1	1	1										
Manchester	149/063	1957	I-293 over Spur D	Poor deck	Capital Project14966	Nov-16	1	1	1	1	1	1	1	1										
Manchester	153/061	1956	I-293 Ramp over I-293	Poor deck	Capital Project14966	Nov-16	1	1	1	1	1	1	1	1										
Manchester	111/066	1957	South Ramp (Ramp K) over FEET	Poor substructure	Bridge Maintenance	Nov-11	1	1	1															
Manchester	099/066	1956	FEET SB Over Black Brook	Section loss	Future Capital Project 16099	Fall 2028					1	1	1	1	1	1 1	1	1	1 1	1		1	1	1
Manchester	099/067	1956	FEET NB Over Black Brook	Section loss	Future Capital Project 16099	Fall 2028					1	1	1	1	1	1 1	1	1	1 1	1		1	1	1
Manchester	107/066	1957	North ramp over FEET	Poor substructure	Bridge Maintenance	Nov-12	1																	
Merrimack	107/131	1954	Baboosic Road over FEET	Poor substructure	Capital Project 13761	FY 2024					1	1	1	1	1	1 1	1	1	1 1					
Merrimack	111/115	1953	Souhegan River	Poor deck and substructure	Capital Project 12105	Jun-11	1	1	1															
Rochester	157/110	1957	Spaulding TPK over NH 125	Deck serious, poor substructure	Capital Project 10620	Jul-11	1	1	1															
Rochester	158/110	1957	Spaulding TPK over NH 125	Deck serious, poor substructure	Capital Project 10620	Oct-09	1																	
Rochester	159/113	1957	Ramp over Wardley Brook	Poor deck and substructure	Capital Project 10620	Oct-13	1	1	1	1	1													
Rochester	128/089	1967	Spaulding Turnpike over US 202A	Deck serious, poor substructure	Capital Project 10620	Oct-13	1	1	1	1	1													
Rochester	139/094	1957	Spaulding Turnpike over US 202	Poor deck, poor substructure	Capital Project 10620H	Oct-13	1	1	1	1	1													
Rochester	117/088	1957	Spaulding Turnpike over Ten Rod Road	Poor deck, poor substructure	Capital Project 10620L	Jan-13	1	1	1	1	1													
Rochester	109/090	1958	NH 11 over Spaulding Turnpike	Poor deck	Capital Project 10620I	Oct-13	1	1	1	1	1													
							21	18	18	15	19	14	12	12	7	5 8	8	8	8 7	6	-	6	6	4 0

#### Status of Turnpike Guardrail/Barrier Infrastructure



	Guardrail Contracts									
Project #	Project Name	Bid Date	Cost of Project	LF Replaced	Cost Per Foot	Туре				
14499	Hooksett-Bow	June 21, 2007	\$ 2,412,670.00	13040	\$ 185	Median Barrier				
14938	Bow	April 3, 2008	\$ 1,825,162.50	9565	\$ 191	Median Barrier				
15305	Statewide	June 12, 2008	\$ 432,071.00	11500	\$ 38	Guardrail				
15383	Bow	April 16, 2009	\$ 1,699,182.00	11000	\$ 154	Median Barrier				
15849	Manchester- Hooksett	April 8, 2010	\$ 2,229,370.00	11400	\$ 196	Median Barrier				
15709	Statewide	May 20, 2010	\$ 1,287,590.33	39650	\$ 32	Guardrail				
16379	Bedford-Manchester	February 16, 2012	\$ 1,577,907.00	7080	\$ 223	Median Barrier				
16447	Bedford	February 14, 2013	\$ 924,897.50	3780	\$ 245	Median Barrier				
23782	Portsmouth	February 13, 2014	\$ 696,482.10	2020	\$ 345	Median Barrier				
23785	Seabrook- Portsmouth	May 8, 2014	\$ 471,446.20	12060	\$ 39	W-Beam & Double Faced W- Beam				
29023	Dover-Bedford	May 19, 2015	\$ 482,069.45	15305	\$ 31	W-Beam & Snow Fence				
	Total		\$ 14,038,848.08	136,400						

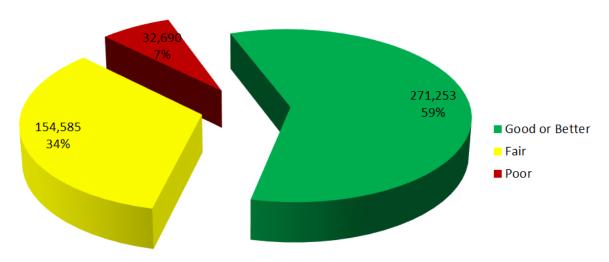
<sup>\*</sup> Note: Additional contracts with guardrail replacement include 13408B Hampton I-95 bridge over the Taylor River and the Spaulding Turnpike expansion projects in Newington-Dover (11238L, 11238M and 11238Q)



W-Beam rail that is not MASH compliant includes roughly 85,244 feet of rail that may be converted by resetting rail height.

Approximately 18,866 feet of standard w-beam guardrail height is currently unknown, and assumed to be not MASH compliant in the above totals. The Bureau of Turnpikes CE-IV Asset Management Engineer will coordinate additional data collection on these segments of guardrail.

### Standard W-Beam Condition

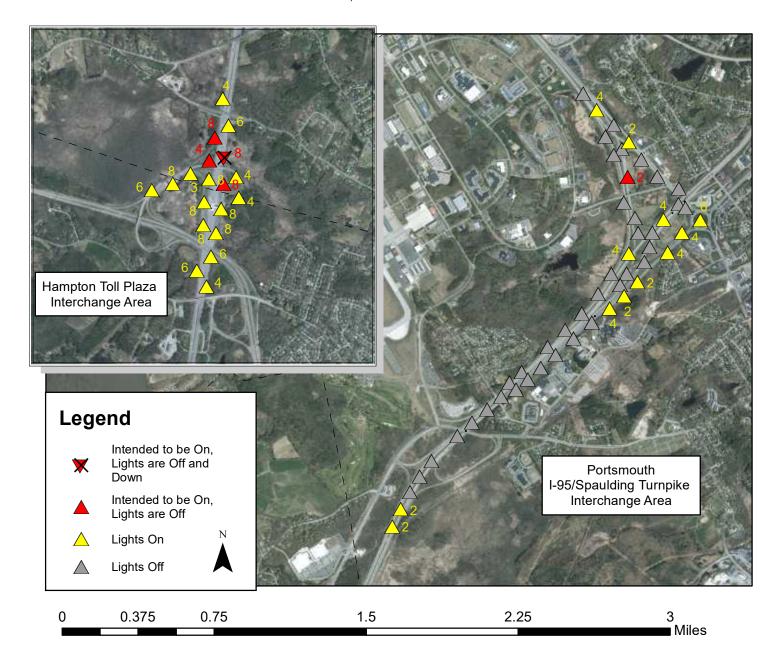


Approximately 22,485 feet of standard w-beam guardrail condition is currently unknown. The Bureau of Turnpikes CE-IV Asset Management Engineer will coordinate the completion of data collection on these segments of guardrail.

# Turnpike High-Mast Lighting Locations and Status (October 2019)

Location	Utility	Total Existing		Intende	d Activity	Actual A	Activity	Difference Between Intended and Actual Tower Activity		
Location	Company	Number of Towers	Number of Bulbs	Number of Towers	Number of Bulbs	Number of Towers	Number of Bulbs	Lights Off with Halo Up	Lights Off with Halo Down	
Hampton Toll Plaza Interchange Area	Unitil	19	119	19	119	15	91	3	1	
Portsmouth I-95/Spaulding Turnpike Interchange Area	Eversource	53	144	14	44	12	40	2	0	
Grand Totals		72	263	33	163	27	131	5	1	

For each tower that is intended to be active, the number of bulbs in each tower is shown below

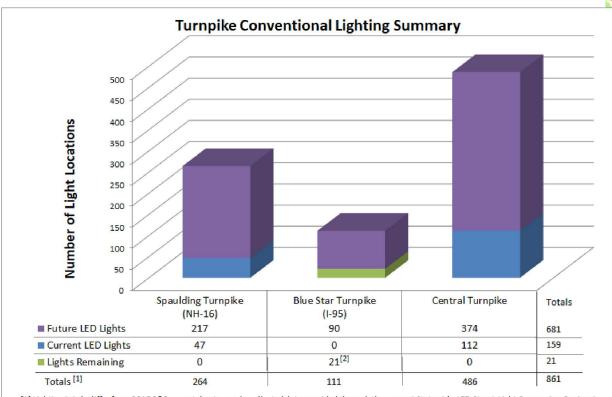


# Turnpike Conventional Lighting Locations

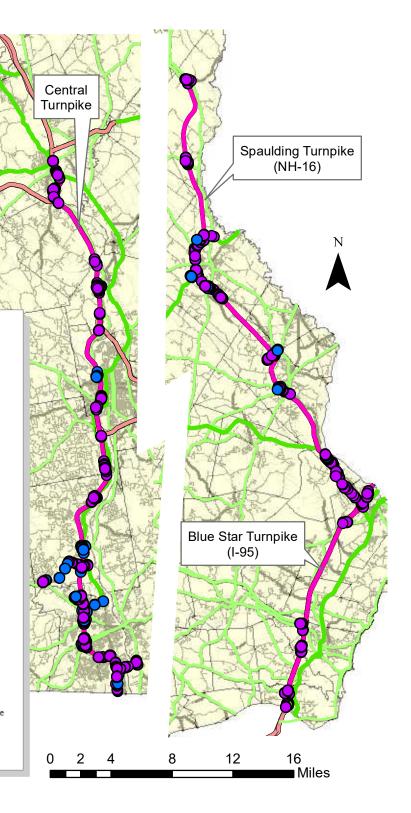
## **Map Legend**

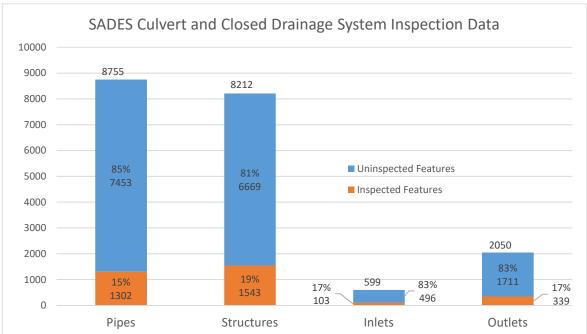
- Future LED Lights
- Current LED Lights
- Lights Remaining

High-mast lighting locations not shown.

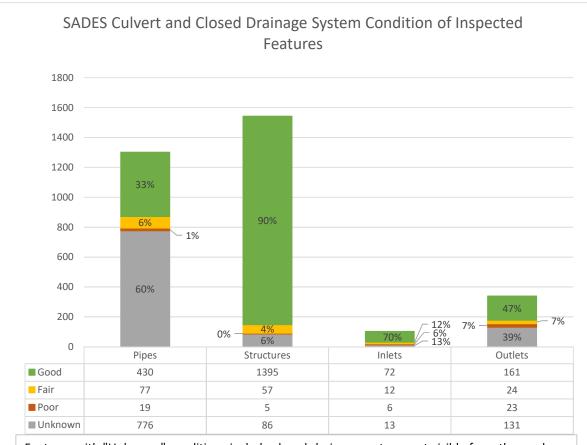


[1] Lighting totals differ from 2018 R&R report due to newly collected data provided through the current Statewide LED Street Light Conversion Contract.
[2] Lights Remaining on I-95 include walkway area lights located at the Seabrook Welcome Center, not under a tariff agreement and not included in the scope of LED conversion work.





Major areas of turnpikes not yet inspected include: Spaulding Turnpike north of the Rochester Toll Plaza to Exit 18 I-293 and FEET South of the Hooksett Toll Plaza to Massachusetts State Line Industrial Dr, Continental Blvd, Henri Burque Hwy, and Circumferential Hwy



			TYP 2019-2028 Budget Limit	14,270,000
			FY 2019	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost (Bold)
February 6, 2018	Manchester-Merrimack	41097	Central Turnpike Resurfacing: I-293 mm 6.7 to 7.8 & 8.2 to 12.0 (Only 11.4 NB), Merrimack Exit 10 and 11 Ramps, Manchester Exit 5 & 6 ramps, MCC emergency access	4,786,663
February 6, 2018	Dover-Portsmouth	41098	Eastern Turnpike Resurfacing: NH 16 NB&SB mm 9.2 to mm 12.7; NH 16 Exit 9 Ramps; I-95 Exit 3 Ramps; Indian Brook Dr.	3,129,060
May 7, 2018	LED Lighting Conversion	41722	Conversion of Street lighting to LED	366,105
Spring 2020	Portsmouth-Kittery	16189B	I-95 ITS	35,000
November 2018	Portsmouth-Kittery	16189	I-95 High Level Bridge Deck Rehabilitation (\$28.715M TYP total)	5,700,000
			FY 2019 Project Total	14,016,828

Available from Existing Budget Amount 253,172

vailable after "appropriation and encumbrance carry forward" into July 2018 (FY 2019) R&R Program
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1,173,502

			TYP 2019-2028 Budget Limit	23,630,000
			FY 2020	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost
				(Bold)
January 15, 2019	Statewide Striping	41487	Striping along all Turnpike facilities	397,304
February 5, 2019	Merrimack-Nashua-Concord	41485	Central Turnpike Resurfacing Nashua MM 7.3 (7.7 SB) to MM 8.2,	4,248,125
			Merrimack MM 9.1 to MM 11.6 (10.9 SB); Nashua Henri Burque	
			Highway, Exit 14 Concord (NB Off and SB On only), Merrimack Shed	
February 5, 2019	Hampton-Portsmouth-Rochester	41486	Eastern Turnpike Resurfacing I-95 NB/SB mm 5.4 to mm 6.9 Hampton Toll Interchange Exit 2; Spaulding SB MM 19.4 - 17.6; Spaulding Exits	5,550,000
			13, 12 & 11; Route 202 bypass	
Winter 2020	Statewide Guardrail	41939	Guardrail replacement along Turnpike facilities (Statewide)	675,000
Spring 2020	Portsmouth-Kittery	16189B	I-95 ITS	1,300,000
November 2018	Portsmouth-Kittery	16189	I-95 High Level Bridge Deck Rehabilitation	12,000,000
Fall 2019	Nashua-Hooksett-Hampton	42116	Asphalt roof replacements for salt barns	320,000
May 7, 2019	Bow	42300	Repair of a 48" CMP culvert at MM 35.2 under I-93/I-89 CD road	300,000
		•	FY 2020 Project Total	24,170,429

Available from Budget Amount (540,429)

			TYP 2019-2028 Budget Limi	t 24,348,672
			FY 2021	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost
				(Bold)
January 2020	Statewide Striping	41823	Striping along all Turnpike facilities	410,000
February 2020	Central Turnpike Resurfaciing	41821	FEET mm 5.0 to 7.7; Exit 8 Nashua; I-293 SB mm 4.9 to 4.0	3,960,000
February 2020	Eastern Turnpike Resurfacing	41822	I-95 mm 11.6 to 14.2, Spaulding mm 20.4 to 23.0 NB/SB crackseal	3,200,000
Spring 2020	Bridge Painting	TBD	Bridges 079/079 & 081/093 over I95	2,250,000
Spring 2020	Portsmouth-Kittery	16189B	I-95 ITS	3,000,000
November 2018	Portsmouth-Kittery	16189	I-95 High Level Bridge Deck Rehabilitation	10,300,000
November 2018	North Hampton	TBD	ITS (NH101 Ext 12W/I95)	500,000
			FY 2021 Project Total	23,620,000

Available from Budget Amount 728,672

			TYP 2021-2030 Budget Limit	13,900,000							
FY 2022											
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost (Bold)							
February 2021	Central Turnpike Resurfacing	42263	FEET mm 11.6 to 19 NB/10.9 to 19 SB, Exits 1 & 2 in Nashua	4,400,000							
February 2021	Eastern Turnpike Redurfacing	42264	I-95 mm 6.6 to 11.6, Exit 3 NB Off in Portsmouth, Portsmouth Circle, Spaulding mm 17.6 to 20.4 NB	4,400,000							
February 2021	Statewide Striping	42265	Striping along all Turnpike facilities	410,000							
March 2021	Tpk Guardrail Replacement	42266	Tpk Guardrail Replacement - Hooksett Median Barrier, Spaulding pier protection	1,000,000							
October 2021	Turnpike Drainage	40042	Statewide Turnpike Drainage Repair - Dover Exit 9, Nashua Exit 1, Rochester US202	650,000							
Winter 2022	Tpk Bridge Rehabilitation	TBD	North Hampton #078/070 (I95 Exit 2 Ramp Bridge)	2,300,000							
Spring 2020	Portsmouth-Kittery	16189B	I-95 ITS	1,500,000							
November 2018	Portsmouth-Kittery	16189	I-95 High Level Bridge Deck Rehabilitation	715,000							
			FY 2022 Project Total	15,375,000							

Available from Budget Amount (1,475,000)

			TYP 2021-2030 Budget Lim	it 14,400,000						
FY 2023										
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost						
				(Bold)						
February 2022	Central Turnpike Resurfacing	TBD	I-93 mm 36.7 to mm 38.5 NB/SB, Exits 6/7 in Nashua & Exit 13 in	4,000,000						
			Concord							
February 2022	Eastern Turnpike Resurfacing	TBD	I-95 mm 14.2-16.1 NB/SB, Exits 6/7 in Portsmouth, Exits 14/15 in	5,900,000						
			Rochester & Exits 17/18 in Milton							
February 2022	Statewide Striping	TBD	Striping along all Turnpike facilities	410,000						
May 2022	Statewide Bridge Painting	TBD	No Hampton 089/123 & 099/144 over I95	1,135,000						
March 2022	Statewide Signing	TBD	Statewide Signing Improvements	500,000						
Spring 2022	ITS	TBD	ITS	500,000						
Winter 2022	Tpk Bridge Rehabilitation	TBD	North Hampton #078/070 (I95 Exit 2 Ramp Bridge)	2,000,000						
			FY 2023 Project Total	14,445,000						

Available from Budget Amount (45,000)

			TYP 2021-2030 Budget Limit	13,300,000
			FY 2024	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost (Bold)
February 2023	Central Turnpike Resurfacing	TBD	Bow I 93 mm 31 to 35 NB & SB	4,000,000
February 2023	Eastern Turnpike Resurfacing	TBD	Spaulding mm 5.6 to 9.3 NB/5.6 to 12.7 SB & Exit 7 in Dover	4,000,000
February 2023	Statewide Striping	TBD	Striping along all Turnpike facilities	410,000
March 2023	Turnpike Drainage	TBD	Inlet/Outlet Reconstruction and Sliplining at several locations - Nashua	500,000
March 2023	Statewide Guardrail	TBD	Tpk Guardrail Replacement - Circumferential Hwy	500,000
	Hampton/Portsmouth	TBD	High Mast Lighting Hampton/Portsmouth	900,000
	Statewide	TBD	Toll Plaza Rehab	900,000
Winter 2024	Tpk Bridge Rehabilitation	41824	Dover - Cocheco River Bridge 105&106/133	1,100,000
		•	FY 2024 Project Total	12,310,000

Available from Budget Amount 990,000

			TYP 2021-2030 Budget Limi	t 13,600,000
			FY 2025	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost
February 2024	Central Turnpike Resurfacing	TBD	Central Turnpike Resurfacing.	4,000,000
February 2024	Eastern Turnpike Resurfacing	TBD	Eastern Turnpike Resurfacing	4,000,000
February 2024	Statewide Striping	TBD	Striping along all Turnpike facilities	420,000
May 2024	Statewide Bridge Painting	TBD	Select Bridge Painting as needed	1,135,000
Spring 2024	ITS	TBD	ITS	500,000
Winter 2024	Tpk Bridge Rehabilitation	42872	Dover NH 108 Bridge 132/101&102	1,250,000
Summer 2024	Tpk Bridge Rehabilitation	41824	Dover - Cocheco River Bridge 105&106/133	3,500,000
•	_	•	FY 2025 Project Total	14,805,000

Available from Budget Amount (1,205,000)

			TYP 2021-2030 Budget Li	mit 13,800,000
			FY 2026	
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost (Bold)
February 2025	Central Turnpike Resurfacing	TBD	Central Turnpike Resurfacing.	4,000,000
February 2025	Eastern Turnpike Resurfacing	TBD	Eastern Turnpike Resurfacing	4,000,000
February 2025	Statewide Striping	TBD	Striping along all Turnpike facilities	420,000
March 2025	Turnpike Drainage	TBD	Inlet/Outlet Reconstruction and Sliplining at several locations	500,000
March 2025	Statewide Guardrail	TBD	Tpk Guardrail Replacement	500,000
Summer 2024	Tpk Bridge Rehabilitation	42872	Dover NH 108 Bridge 132/101&102	3,400,000
Winter 2024	Tpk Bridge Rehabilitation	41824	Dover - Cocheco River Bridge 105&106/133	3,000,000
·	_		FY 2026 Project Total	15,820,000

Available from Budget Amount (2,020,000)

			TYP 2021-2030 Budget Limit	14,100,000		
FY 2027						
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost		
				(Bold)		
February 2026	Central Turnpike Resurfacing	TBD	Central Turnpike Resurfacing.	4,000,000		
February 2026	Eastern Turnpike Resurfacing	TBD	Eastern Turnpike Resurfacing	4,000,000		
February 2026	Statewide Striping	TBD	Striping along all Turnpike facilities	430,000		
May 2026	Statewide Bridge Painting	TBD	Select Bridge Painting as needed	2,270,000		
Spring 2026	ITS	TBD	ITS	500,000		
Summer 2024	Tpk Bridge Rehabilitation	42872	Dover NH 108 Bridge 132/101&102	3,650,000		
			FY 2027 Project Total	14,850,000		

Available from Budget Amount (750,000)

			TYP 2021-2030 Budget Limi	t 14,400,000		
FY 2028						
Ad Date	Project Name	Project No	Project Description	Estimate or Bid Cost		
				(Bold)		
February 2027	Central Turnpike Resurfacing	TBD	Central Turnpike Resurfacing.	4,000,000		
February 2027	Eastern Turnpike Resurfacing	TBD	Eastern Turnpike Resurfacing	4,000,000		
February 2027	Statewide Striping	TBD	Striping along all Turnpike facilities	420,000		
March 2027	Turnpike Drainage	TBD	Inlet/Outlet Reconstruction and Sliplining at several locations	500,000		
March 2027	Statewide Guardrail	TBD	Tpk Guardrail Replacement	500,000		
March 2027	Statewide Signing	TBD	Statewide Signing Improvements	450,000		
Summer 2024	Tpk Bridge Rehabilitation	42872	Dover NH 108 Bridge 132/101&102	2,700,000		
			FY 2027 Project Total	12,570,000		

Available from Budget Amount

1,830,000