### Road Surface Management System Forecasting Summary



New Boston, NH December 17, 2024



### Pavement Repair Scenarios At-a-Glance:

- Scenario 1: Based on the 2025 New Boston road budget of \$798,000 and strived to preserve/improve PCI of all town-maintained roads.
- Scenario 2: Prioritized roadways that were determined by municipal staff to be critical for New Boston and strived to improve/ maintain those priority roads at a PCI of 85.
- Scenario 3: Based on a reduced town budget of \$648,000 per year over a 10-year period with the goal of preserving/improving PCI of all paved, townmaintained roadways.



YEAR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
PCI before repairs	74.12	70.78	67.60	64.56	61.65	58.88	56.23	53.70	51.28	48.97
PCI after repairs	80.02	81.27	82.52	84.18	84.82	84.71	84.46	85.58	86.35	87.42
Cost	\$783k	\$767k	\$763k	\$763k	\$747k	\$692k	\$632k	\$670k	\$710k	\$718k

# Scenario 1: 2025 Budget \$798,000.

- \$782,350 in year one
- Overall costs: ~\$7.24 million over
   10 years
- PCI improves from 74.12 to 87.42

YEAR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
PCI before repairs	74.12	70.78	67.60	64.56	61.65	58.88	56.23	53.70	51.28	48.97
PCI after repairs	81.90	82.63	83.81	85.25	84.08	84.41	84.64	83.89	82.77	82.39
Cost	\$992k	\$568k	\$650k	\$677k	\$416k	\$653k	\$630k	\$458k	\$413k	\$483k

# Scenario 2: PCI of 85 for Priority Roads.

### **Priority Roads:**

2<sup>nd</sup> NH Turnpike Howe Bridge Road

Bedford Road Meetinghouse Hill Rd

Byam Road Old Coach Road

Cemetery Road Parker Road

Gregg Mill Road Twin Bridge Road

- This scenario would cost approximately \$992,000 in year one, with overall costs totaling approximately \$5.95 million.
- Within the parameters of scenario 2, the ten priority roads would maintain a PCI in the low to mid 80s and remain in satisfactory condition while other paved town-maintained roadways would slowly degrade over time.

YEAR	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
PCI before repairs	74.12	70.78	67.60	64.56	61.65	58.88	56.23	53.70	51.28	48.97
PCI after repairs	81.34	82.04	82.33	83.63	84.11	84.09	84.56	84.64	85.17	85.32
Cost	\$641k	\$637k	\$644k	\$632k	\$642k	\$628k	\$550k	\$579k	\$627k	\$630k

## Scenario 3: Reduced Annual Budget of \$648,000.

- \$640,047 in year one
- Overall costs: ~\$6.21 million over 10 years
- PCI improves from 74.12 to 85.32

### **Example 1:** Gregg Mill Road (2024 PCI = 40)

Order

Length (ft)

1317.5

SRI

L3190155

PCI

Priority

75

Street

Gregg Mill Rd

Repair Option	s - New Boston RSM	S
	SY Cost	PCI Target
Crack Seal (minor)	\$0.40	90-95
Crack Seal (major)	\$0.55	85-90
Isolated Patch & HMA Shim	\$0.98	80-85
Chip Seal	\$2.35	75-80
HMA Shim (1/2") & Chip Seal	\$4.31	70-75
HMA Overlay (1")	\$3.92	60-70
HMA Overlay (1.5")	\$5.80	55-60
Milling/HMA (1.5")	\$7.80	45-55
FDR & HMA (4")	\$17.18	<45
Shoulder Type	Selected Repairs	
None	2026: FDR & HMA (4")	

2027: Crack Seal (Minor)

								2030: Crack Seal ( 2033: Isolated Pate	Major)	
Segment PCI and Repair Cost	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Average PCI Before Repairs	38.20	36.48	34.84	33.27	31.77	30.34	28.98	27.67	26.43	25.24
Average PCI After Repairs	38.20	96.82	96.99	92.62	88.45	93.79	89.57	85.54	93.59	89.38
Total Repair Cost (inflated)	0.00	66,962.34	579.22	0.00	0.00	2,431.58	0.00	0.00	4,762.02	0.00
Crack Sealing										

Length

2

Surface Type

Paved

Width

25

			Life Span		Cost (\$) / Life	PCI			Repair Year									
Repair	Unit Cost (\$)	Units	(months)	Repair Cost (\$)	Improvement	Improvement %	Repaired PCI	\$/Delta PCI	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34
Crack Seal (Major)	0.55	Square Yards	24	\$2,012.85	\$83.87	60	76	\$55.91						<b>✓</b>				
Crack Seal (Minor)	0.40	Lineal Foot	36	\$527.00	\$14.64	60	76	\$14.64			<b>7</b>							

**Patching** Repair Year Cost (\$) / Life PCI Life Span Improvement % Repaired PCI '25 '33 Unit Cost (\$) Units (months) Repair Cost (\$) Improvement \$/Delta PCI '27 '28 '29 '31 65 \$91.96 Isolated Patch and HMA Shim 0.98 Square Yards 36 \$3,586.53 \$99.63 79 ✓

Rehabilitate and Rebuild Repair Year PCI Life Span Cost (\$) / Life \$/Delta PCI '26 '27 '31 '32 '33 Unit Cost (\$) Units (months) Repair Cost (\$) Improvement Improvement % Repaired PCI Repair 0.00 0 \$0.00 \$0.00 40 \$0.00 Revert to Gravel Each FDR & HMA (4") Square Yards 17.18 168 \$62,874.03 \$374.25 95 97 \$1,103.05

### **Example 2:** Old Coach Road (2024 PCI = 91)

Double Chip Seal

3.90

Square Yards

\$13,730.18

\$163.45

Priority	PCI	Street	SR	I	Order	Length (ft)	Width	Length Su	rface Type	Shoulder Type			Selec	cted Repa	nirs						
62.25	91	Old Coach Rd	L3 <sup>-</sup>	190096	6	1320.21	24	2 Pa	ved	None			2028: 2032:	: Crack Se : Isolated : Chip Sea : Crack Se	Patch and	d HMA Shi	\ Shim				
Segment PCI and Repair Cost			20	25	2026	2027		2028 2029		2030	2031	2032		032	2033			2	034		
Average PCI Be	fore Repai	rs	86	.91	82.99	79.26	75.69	72.29		69.03	65.93		6:	2.96		60.13		57.42			
Average PCI Afte	er Repairs		94	.76	90.50	86.43	93.89	89.66		85.63	81.77		9	3.43		89.22		9	4.08		
Total Repair Cos	st (inflated)		1,9	998.26	0.00	0.00	3,913.42	0.00		0.00	0.00		1	0,644.30		0.00		2	653.20		
Crack Sealing																					
					Life Span		Cost (\$) / Life	PCI								Repair Year					
Repair			Unit Cost (\$)	Units	(months)	Repair Cost (\$)	Improvement	Improvement	% Repaired PC	\$/Delta PCI	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	
Crack Seal (Maj	jor)		0.55	Square Yards	24	\$1,936.31	\$80.68	60	96.4	\$358.58	✓									<b>✓</b>	
Crack Seal (Min	or)		0.40	Lineal Foot	36	\$528.08	\$14.67	60	96.4	\$97.79											
Patching					Life Span		Cost (\$) / Life	PCI							Re	pair Year					
Repair			Unit Cost (\$)	Units	(months)	Repair Cost (\$)	Improvement	Improvement	% Repaired PC	\$/Delta PCI	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	
Isolated Patch ar	nd HMA SI	nim	0.98	Square Yards	36	\$3,450.15	\$95.84	65	96.85	\$589.77				<b>✓</b>							
Pavement Pro	eservati	on/Maintenance	9												Pa	pair Year					
Bonair			Unit Cost (6)	Unite	Life Span	Popair Cost (\$)	Cost (\$) / Life	PCI	Populated BC	¢/Dolta BC!	'25	'26	'27	100		'30	'31	'32	'33	12.4	
Repair			Unit Cost (\$)	Units	(months)	Repair Cost (\$)	Improvement	Improvement				-26		'28	'29					'34	
Chip Seal			2.35	Square Yards	60	\$8,273.32	\$137.89	70	97.3	\$1,313.22								<b>~</b>			

70

97.3

\$2,179.39

**Repair Options - New Boston RSMS** 

Crack Seal (minor)

Crack Seal (major)

HMA Overlay (1")

HMA Overlay (1.5")

Milling/HMA (1.5")

FDR & HMA (4")

Chip Seal

Isolated Patch & HMA Shim

HMA Shim (1/2") & Chip Seal

**SY Cost** 

\$0.40

\$0.55

\$0.98

\$2.35

\$4.31

\$3.92

\$5.80

\$7.80

\$17.18

**PCI Target** 

90-95

85-90

80-85

75-80

70-75

60-70

55-60

45-55

<45