ROAD SURFACE MANAGEMENT SYSTEM ASSESSMENT

For the

TOWN OF LYNDEBOROUGH, NEW HAMPSHIRE

Prepared by:
Nashua Regional Planning Commission
30 Temple Street, Suite 310
Nashua, NH 03060

In Partnership with:

New Hampshire Department of Transportation
University of New Hampshire Technology Transfer Center
Statewide Asset Data Exchange System (SADES)

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1.0 ACKNOWLEDGEMENTS

The Nashua Regional Planning Commission (NRPC) wishes to acknowledge and thank the New Hampshire Statewide Asset Exchange System (SADES) for providing the technology platform, training, and support necessary to complete this project. SADES is a partnership between the University of New Hampshire Technology Transfer Center (UNHT^2) and the New Hampshire Department of Transportation. Since 2014, UNHT^2 has supported all nine NH regional planning commissions in their efforts to provide Road System Management System (RSMS) assessments to their member towns. NRPC has benefited from this program and we take pride in providing RSMS assessments to towns in the Nashua region.

2.0 INTRODUCTION

This Report prepared by the Nashua Regional Planning Commission (NRPC) contains the Road Surface Management System assessment (RSMS) completed for the Town of Lyndeborough by NRPC in 2021. Broadly, a RSMS is a data-driven process for managing roads. The RSMS includes an inventory of the road network and an analysis evaluating and comparing repair strategies. In Section 3.0 of this Report, we describe the full RSMS process and its benefits. In section 4.0, we describe principals of pavement preservation; this section also includes basic concepts for pavement management that are essential to this report.

This RSMS assessment has two project phases: a road inventory (Phase I), and a repair cost scenario comparison (Phase 2). The road inventory includes all town-maintained roads, unpaved and paved. We describe field inventory procedures in Section 5.0 and inventory results in Section 6.0, which includes tables and maps with 2020 road condition. Appendix A contains complete road inventory data with road priority value and road condition value. In our supplementary materials, we include digital spreadsheets and printed copies of data. Additional prints and digital copies of data associated with this Report are available by request from NRPC.

In Phase 2 of this project, we created repair cost scenarios to model pavement condition and repair cost over a 10-year period. Phase 2 applies only to **PAVED** town-maintained roads. We describe our procedure for creating repair cost scenarios in Section 7.0, and in Section 8.0 we describe in detail two scenarios for road maintenance. We define "scenario" as a 10-year period with a fixed annual repair budget and a defined set of repairs. In each scenario, we choose road segments to repair in a given year. We selected road segments and determined the maintenance year by evaluating road condition and priority level. We also received input from the Lyndeborough Highway Department (MHD) on that guided our decision-making process in these scenarios.

We hope this Report will assist the MHD in road maintenance planning. We do **NOT** intended this Report to constrain the decision-making process of MHD in selecting road maintenance. Instead, we hope this Report will serve as a tool for Town officials to assess current and future road condition and as a guide for budgeting the cost of future repairs.

3.0 BENEFITS OF DEVELOPING A ROAD SURFACE MANAGEMENT SYSTEM

A Road Surface Management System (RSMS) assessment will offer immediate benefits to Town of Lyndeborough. Below, we document key benefits of a RSMS. These benefits will remain relevant years into the future. We hope to continue working with the Town of Lyndeborough to keep road data accurate and track the cost of repair. We recommend updating this Report in 5-10 years.

A. ROAD INVENTORY

A complete inventory of a Town-owned roads is critical for effective maintenance and planning. The Town of Lyndeborough owns 53 roads totaling 45.3 miles (20.6 miles paved and 24.6 miles unpaved). 35 Town roads are entirely paved or paved in some section; 38 Town roads are entirely unpaved or unpaved in some section. The Town's road network is both a critical asset and a major financial investment. The detailed road inventory in this Report will provide the Lyndeborough Highway Department (LHD) with information on road condition, location, and structure that will enhance on-going road maintenance and future planning.

Tables and maps in Section 6.0 provide a summary of 2021 road inventory. Appendix A contains a condensed version of the 2021 road inventory with roads divided into sample segments approximately 0.25 miles in length. We list each road segment with their priority value, condition value, and other attributes. Refer to the supplemental materials included with this report for spreadsheet, PDF, and other digital data containing the complete road inventory.

B PRIORITIZING MAINTENANCE NEEDS

Appendix A of this Report contains a list all town-maintained roads with a priority and condition value. This list will be useful for prioritizing immediate maintenance needs. This list will provide an objective method for prioritizing maintenance projects when existing resources are insufficient to cover all repairs.

In Appendix A, we list paved and unpaved roads separately. Table A1 contains the Paved Road Inventory and Table A2 contains the Unpaved Road Inventory. In Table A1, we list paved road segments with seven attributes: street name, Segment ID, Importance Value, Traffic Value, Length, Initial PCI, and Priority. Segment ID is a unique number given to each 0.25-mile sample segment created by dividing roads greater than 0.25 miles into smaller pieces. If a road is 0.25 miles or less, there is one segment ID per road with Segment ID of "1". Importance value is a rating from 1 (low) - 5 (high) for how critical a road segment is. Traffic value is a traffic rating from 1 (low) – 5 (high). Initial PCI (Pavement Condition Index) is the pavement rating or score from 0 (low) – 100 (high). Priority is a computer-generated rating from 0 (low) to 100 (high) ranking paved roads for maintenance preference; this attribute is available only for paved segments.

In Table A2, we list unpaved roads by 0.25-mile segment with six attributes: street name, Segment ID, Importance Value, Traffic Value, Length, Width, and Condition Value. These attributes mirror paved road attributes, except for Condition value, which is a simple aggregate or score from our rating. See Section 5.0 of this document for more information assessing paved and unpaved roads.

C JUSTIFYING MAINTENANCE BUDGET INCREASES

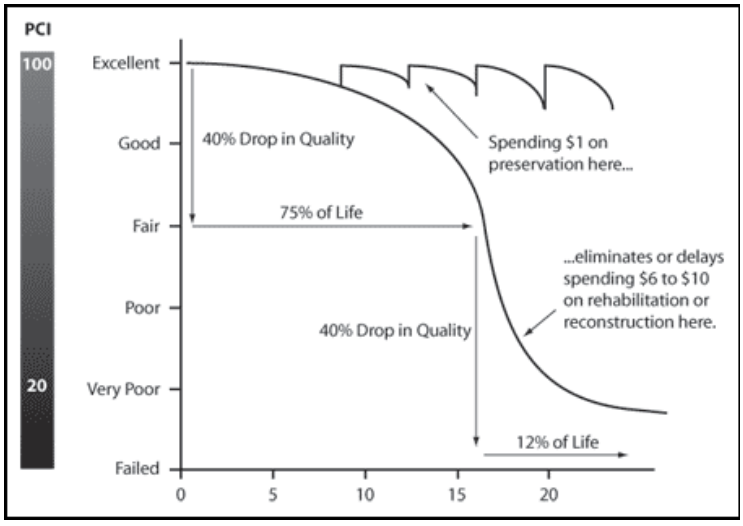
The repair cost scenarios created for this Report will provide Town officials with a data-driven means of communicating road maintenance needs to elected officials and voters. These scenarios, detailed in Section 8.0, describe how an increase in spending corresponds to an increase pavement quality across the Town's road network. These scenarios also communicate the consequences of deferred maintenance, both in terms of initial cost-savings and future pavement conditions.

D MAKING EFFICIENT USE OF THE TOWN'S HIGHWAY BUDGET

After the cost of installation, new pavement initially requires relatively little maintenance and will therefore be of little cost to a town. For about 75% of a pavement's designed lifespan, maintenance costs are generally less than one-fifth of the cost of pavement rehabilitation. However, if pavement enters the rapid deterioration stage in the last quarter of its designed life, maintenance cost will dramatically increase. Because pavement deteriorates at different rates, there is an "art" to good maintenance management in knowing when a road has reached the critical 75% mark. Often if pavement deteriorates to a point of serious visible distress, it is beyond the critical cost point. A RSMS will help town officials track pavement deterioration across their road network. When critical pavement is identified, the RSMS will help town officials select cost effective maintenance strategies.

Figure 1 (below) shows pavement condition index (PCI) plotted over a 20-year period for hypothetical pavement). PCI is a pavement quality rating from 0 (low) – 100 (high). From year zero to 15 (75% of the pavement's life), the maintenance cost is about one-quarter of the maintenance cost once the road has deteriorated beyond the 75% mark. Beyond the 75% mark, pavement deteriorates faster. During the first 75% of the roads lifespan (15 years), there is a 40% drop in quality. This road will drop another 40% in quality again shortly after passing the 75% mark of its service life.

FIGURE 1: PAVEMENT DETERIORATION



4.0 PAVEMENT PRESERVATION AND MAINTENANCE CONCEPTS

RSMS tools offer repair treatment types, organized into the following three general categories:

Preservation **Rehabilitation** **Reconstruction**

Preservation is work to improve or sustain the condition of pavement done when pavement is already in good condition. Preservation work seals the paved surface and prevents water intrusion and some cases improves the quality of the paved surface condition. Preservation work extends pavement life but does not add capacity or structural integrity to a road. In our cost repair budget scenarios (Section 8.0) we use crack seal and chip seal as preservation treatments. Crack seal seals surface-level cracks, making a water-tight surface. Chip seal is a thin layer of asphalt with embedded aggregate that seals paved surface and provides a wearing surface that protects underlying pavement. Preservation work is generally a fraction of rehabilitation and reconstruction work and considerable cost savings are possible .

Rehabilitation is major repair work to the surface layer of pavement, leaving the existing base. This category of work may include: patching and isolate repairs, shimming and leveling, overlay, milling, or other treatments. Rehabilitation work will extend pavement life and have some structural benefits. Rehabilitation is more expensive than preservation, but less expensive than reconstruction. We use 1.5" and 2" hot mix asphalt (HMA) overlays as a rehabilitation treatment in repair cost budget scenarios (Section 8.0)

Reconstruction is costly work that involves excavation and modification to the road base and the application of new pavement. This level of repair is required if there has been inadequate maintenance, poor drainage, or improper base materials in place. In Section 8.0, we use a full-depth reclamation treatment with a 2" HMA overlay; this is the costliest repair option in our analyses. The Town of Lyndeborough Highway Department would like to reduce and limit the use of road reconstruction in favor of well-planned pavement preservation and rehabilitation work.

5.0 EVALUATION OF EXISTNG ROADWAY CONDITIONS

In Summer of 2021, NRPC conducted field assessments on ALL Town-maintained roads in Lyndeborough (paved and unpaved). We divided each of the 53 Town-maintained roads into 205 segments, each approximately a 0.25 mile in length. We made road sample segments uniform by surface type, meaning that all segments are entirely paved or entirely unpaved. Dividing roads into smaller, sample segments is advantageous because it accounts for changes in pavement quality across a road, and it provides flexibility for when assigning maintenance in Phase II of this Report (Section 7.0 and 8.0).

We used separate field inventory procedures for sampling paved and unpaved roads. For paved roads, we evaluated eight categories of pavement distress for severity level and extent (see Table 2), following a procedure developed by SADES. For unpaved roads, we evaluated eight categories of road defects specific to gravel roads for severity and extent (see Table 3); this procedure was developed by NRPC based on existing conventions.

FIGURE 2: PAVED ROAD FIELD INVENTORY

Longitudinal or Transverse Cracking	Severity (No Defects, Low, Medium, High) Extent (Low, Medium, High)
Alligator Cracking	Severity (No Defects, Low, Medium, High) Extent (Low, Medium, High)
Edge Cracking	Severity (No Defects, Low, Medium, High) Extent (Low, Medium, High)
Patching or Potholes	Extent (No Defects, Low, Medium, High)
Drainage	Condition (Good, Fair, Poor)
Rutting	Severity (No Defects, Low, Medium, High) Extent (Low, Medium, High)
Roughness	Condition (Smooth, Noticeably Uneven, Rough, Very Rough)
Frost Heave Severity	Severity (None, Low, Medium, Severe)

FIGURE 3: UNPAVED ROAD FIELD INVENTORY

Rutting	Severity (Low, Medium, High) Extent (Low, Medium, High)
Loose Aggregate	Severity (Low, Medium, High) Extent (Low, Medium, High)
Corrugations	Severity (Low, Medium, High) Extent (Low, Medium, High)
Potholes	Severity (Low, Medium, High) Extent (Low, Medium, High)
Cross Section	Severity (Good, Fair, Poor)
Roadside Drainage	Severity (Good, Fair, Poor)
Dust	Severity (Good, Fair, Poor)
Exposed Rock	Severity (Good, Fair, Poor)

6.0 2021 ROAD INVENTORY RESULTS

A. PAVED ROAD INVENTORY

Below is a summary of 2021 road inventory results. For paved road segments, we used software to generate a pavement condition index (PCI) value from 0 (low) – 100 (high). We classified segments with PCI or score from 0-69.99 as poor, 70-79.99 as fair, 80-89.99 as good, and 90-100 as excellent.

TABLE 1: 2021 PAVED CONDITIONS

Condition Category	Sum of Length (Miles)	%
Excellent (≥ 90 PCI)	3.20	15.5%
Good (80 - 89 PCI)	12.74	61.7%
Fair (70 - 79 PCI)	3.13	15.2%
Poor (< 70 PCI)	1.56	7.6%
Total	**20.64**	**100.0%**

FIGURE 4: 2021 PAVED CONDITION

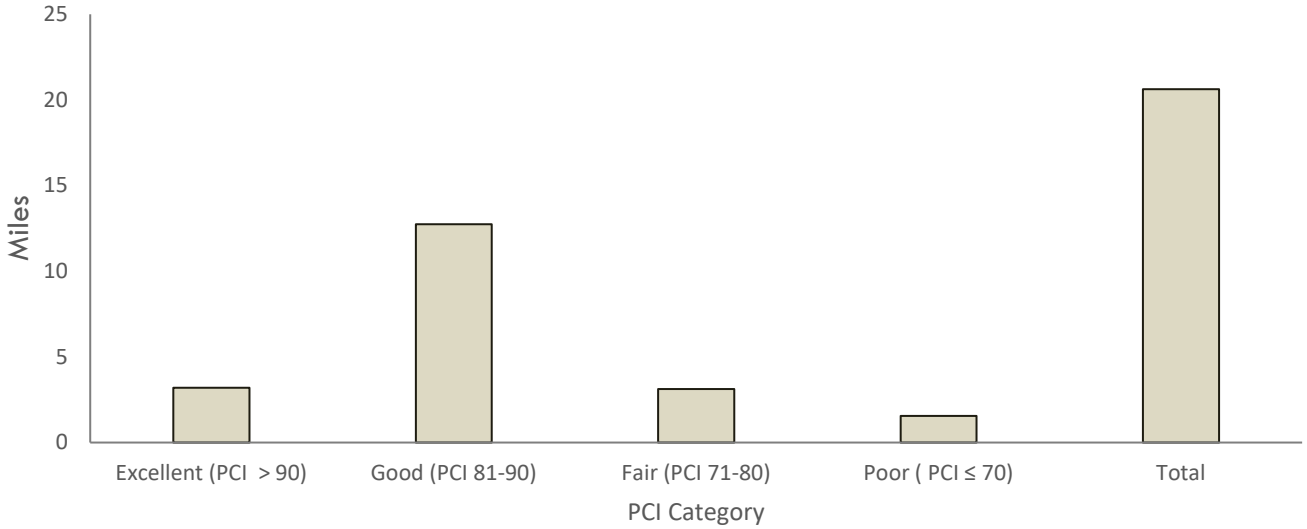
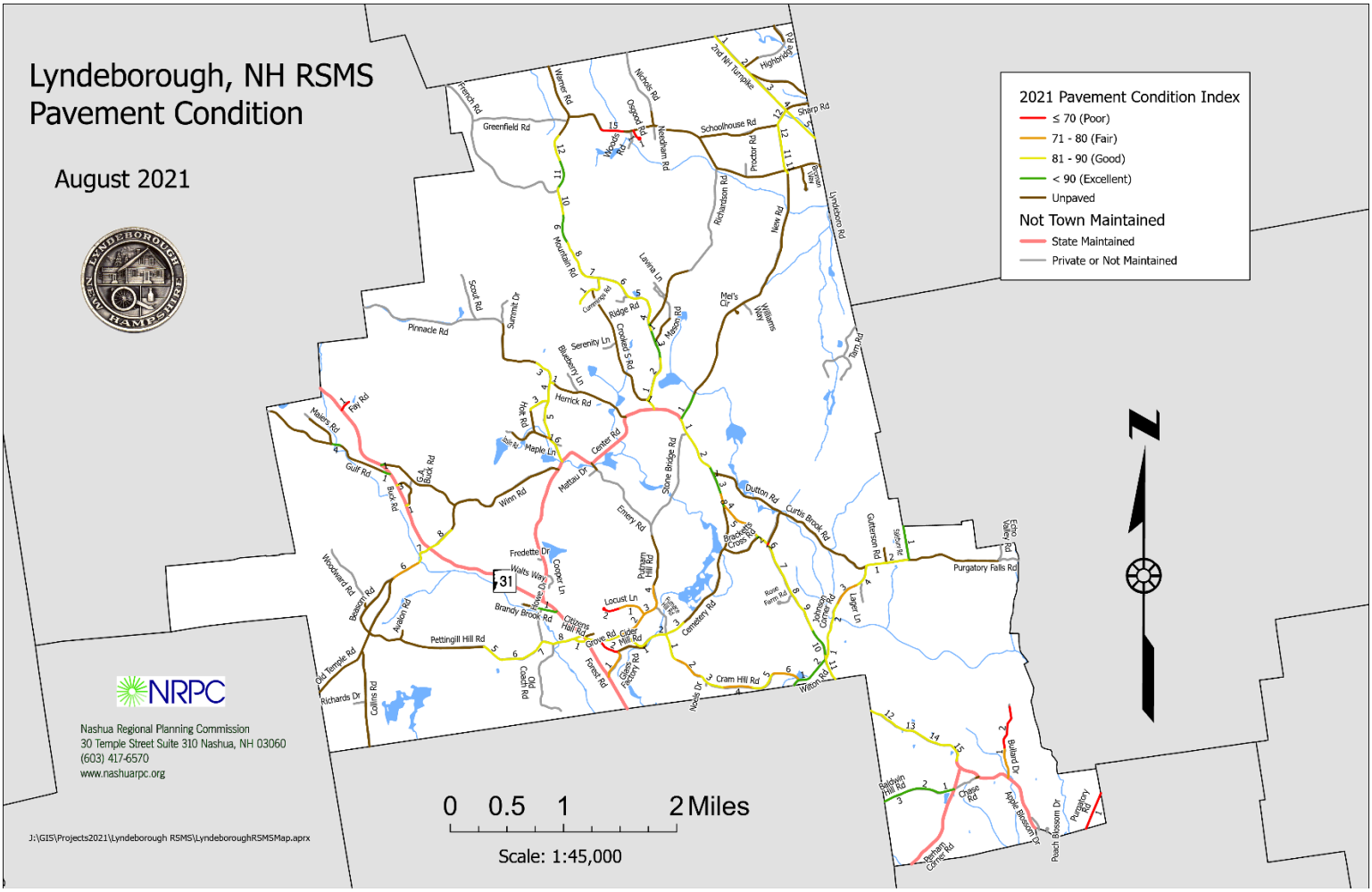


FIGURE 5: 2021 PAVED ROAD INVENTORY MAP



Paved road segments are labeled with Segment ID – See Paved Road Inventory for inventory detail

B. UNPAVED ROAD INVENTORY

For unpaved road segments, we created a simple, unweighted score from 0 (low) – 100 (high). We calculated the road condition score for unpaved roads based on eight defects we evaluated for each road segment (Table 2). We classified segments with a score from 0-69.99 as poor, 70-79.99 as fair, 80-89.99 as good, and 90-100 as excellent.

TABLE 2: 2021 UNPAVED CONDITIONS

Condition Category	Total Length (Miles)	%
Excellent (> 90)	15.6	52.84%
Good (80 - 89)	7.2	30.90%
Fair (70 - 79)	1.4	15.01%
Poor (≤ 70)	0.5	1.25%
Total	**24.6**	100.00%

FIGURE 6: 2021 UNPAVED CONDITIONS

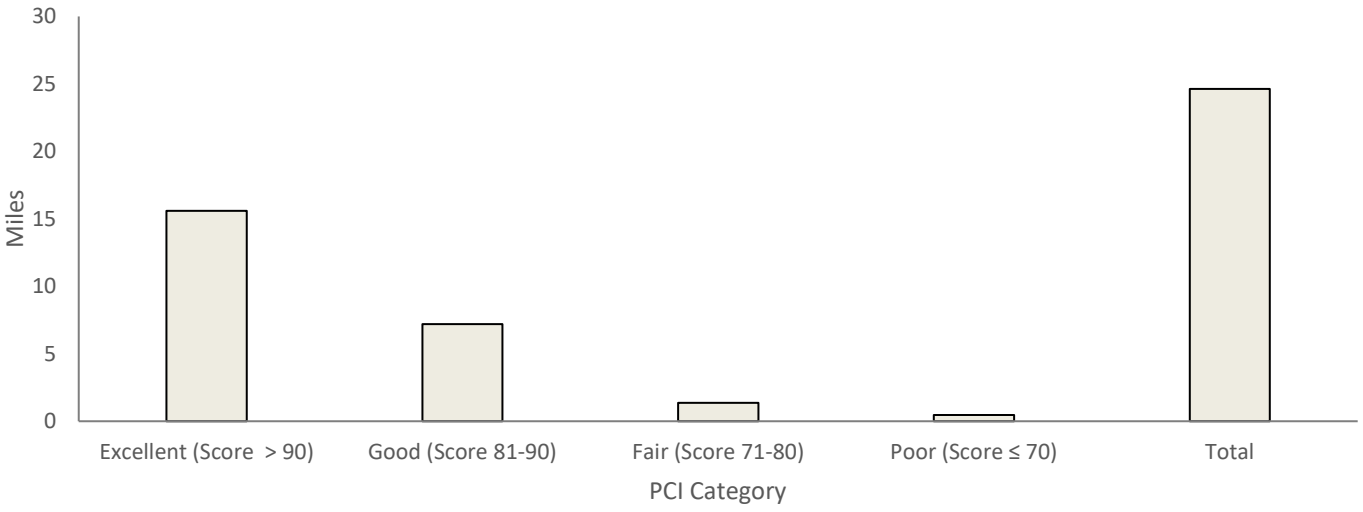
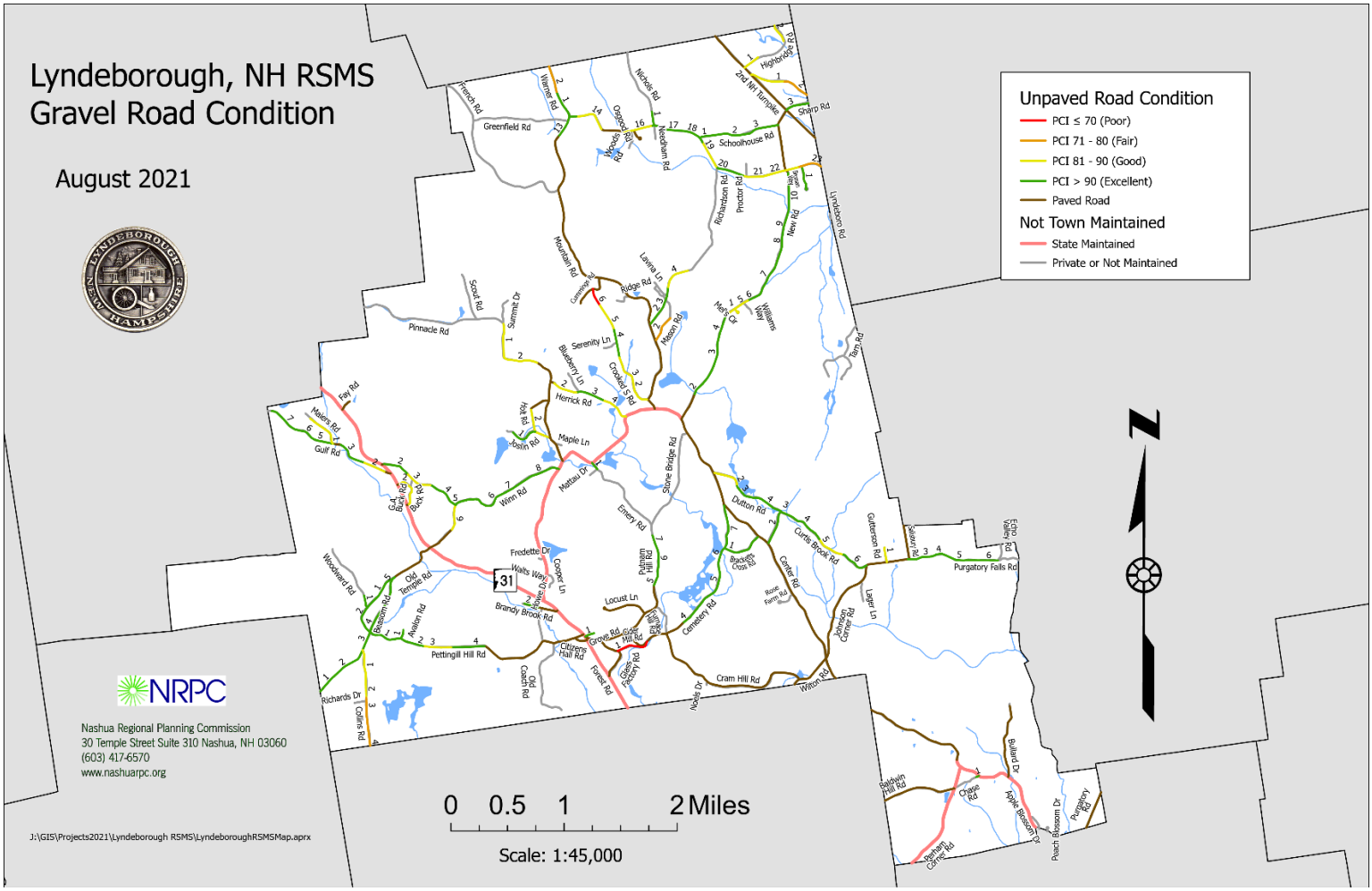


FIGURE 7: 2021 UNPAVED ROAD INVENTORY MAP



Unpaved road segments are labeled with Segment ID – See Unpaved Road Inventory

7.0 PAVEMENT FORECASTING & ANALYSIS

To evaluate pavement condition and repairs over 10 years, we created two cost repair scenarios ("Scenario"). Each scenario starts with the 2021 PCI value for each segment and subtracts 4% annually to model deterioration in pavement quality incurred over one year. Three keys decisions comprise a scenario: 1) which road segments get a repair, 2) repair type, and 3) repair year. When a repair is assigned to a road segment for a particular year, the PCI value for that segment increases according to the specifications below (Table 3). Software tracks the cost of each repair, which we used to create a 10-year budget for each scenario that we will present in Section 8.0.

Repair	Repair Cost	Repair Unit	Price Source	Lifespan (Years)	Increase to PCI (%)
2" HMA Overlay	$8.28	Yard^2	Based on $73.9/ton	10	90
1.5" HMA Overlay plus top coat	$6.21	Yard^2	Based on $73.9/ton	9	85
1.5" HMA Overlay plus top coat	$6.13	Yard^2	Based on $73/ton	9	85
FDR + 2" HMA overlay	$11.98	Yard^2	Based on $3.7/SY plus $8.28/SY (2" overlay at $73.9/ton)	15	100
Crack Seal	$0.40	Yard^2	Price from 2020 estimate	3	60
Chip Seal	$2.60	Yard^2	Price from 2020 estimate	5	70

TABLE 3: PAVEMENT REPAIR TREATMENTS

Scenario 1 represents the Town's current paving practices projected 10 years (2022 – 2031). To create Scenario 1, we used the Town's Highway Paving Plan, which was provided to NRPC for this project. This plan outlines repairs that the Town plans to implement through the year 2027. To determine repairs for the year 2028 – 2031, we evaluated road condition (PCI) and road priority value. We did not use a fixed budget for Scenario 1; instead, we implemented repairs as they were described in the Highway Paving Plan and recorded the calculated cost. Our results from Scenario 1 are summarized in Section 8.0; see Appendix B and supplementary materials included with this report for more detail.

In Scenario 2 is similar to Scenario 1 with one key difference: chip seal. Chip seal is a relatively inexpensive preventative repair that can extend the life of pavement approximately five years. The Highway Paving Plan does not call for chip seal; however, we added chip seal to Scenario 2 so the Town can evaluate its performance in the model and determine whether to use this repair in the future

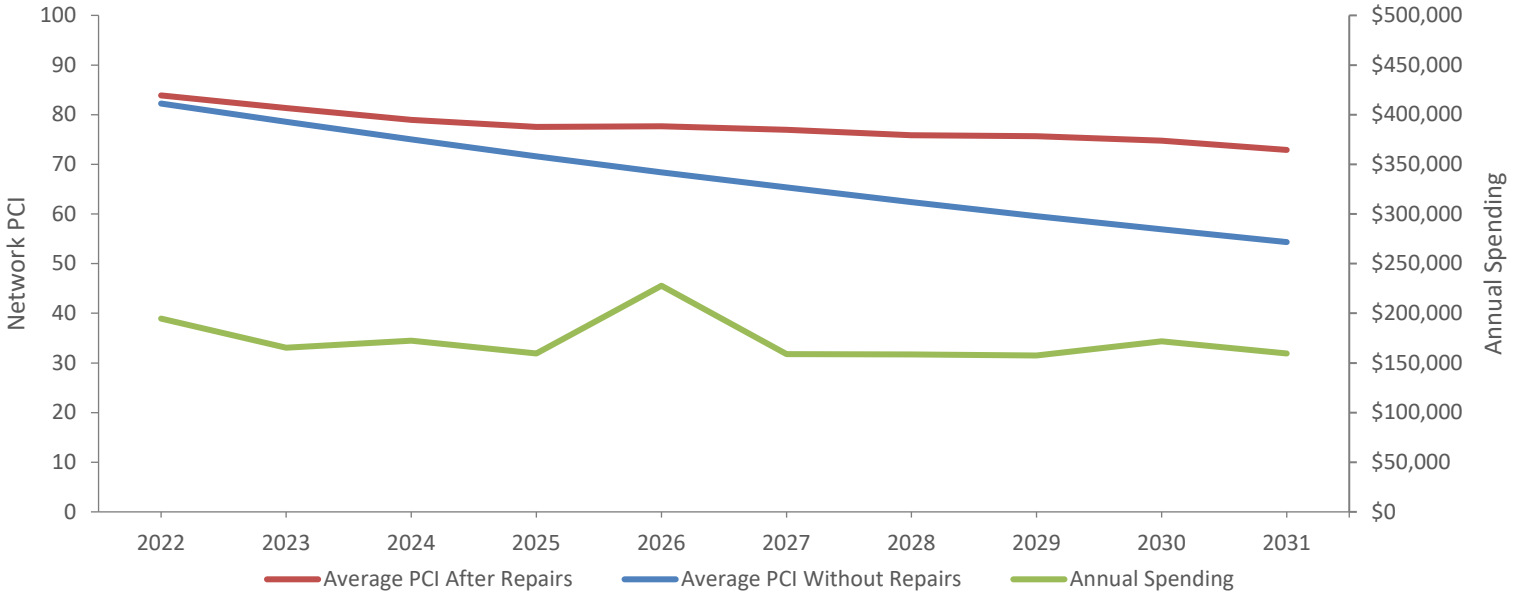
In both scenarios, repair costs include only the cost of pavement repair. Repair costs do not consider other road maintenance costs including drainage (e.g., ditching, culverts, catch basins, underdrain, etc.), shoulders, signage, guardrail, sidewalks, utilities, curbing, and pavement markings.

8.0 SCENARIO FORECASTING RESULTS

A SCENARIO 1: ALL ROADS 2022 – 2031 STANDARD REPAIR TREATMENTS

In this scenario, we assigned repairs to road segments within a 10-year horizon. We used the Town's Highway Paving Plan to determine which roads to repair for years 2022 - 2027. For years 2028 - 2031, we evaluated the pavement condition index (PCI) value and priority values. Annual spending in the Scenario fluctuates because instead of using a fixed annual budget, we instead input repairs from the Highway Paving Plan and recorded the calculated cost. Network PCI (before and after repairs) is summarized below in Figure 8 and Table 4. See Appendix B and our supplementary materials for more detailed results from Scenario 1.

FIGURE 8: NETWORK PCI BY YEAR AND ANNUAL SPENDING FOR SCENARIO 1



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Average PCI After Repairs	83.88	81.31	78.95	77.52	77.66	76.94	75.86	75.64	74.74	72.90
Average PCI Without Repairs	82.24	78.54	75	71.63	68.4	65.33	62.39	59.58	56.9	54.34
Annual Spending	$194,582	$165,484	$172,564	$159,543	$227,741	$158,843	$158,422	$157,497	$171,843	$159,595

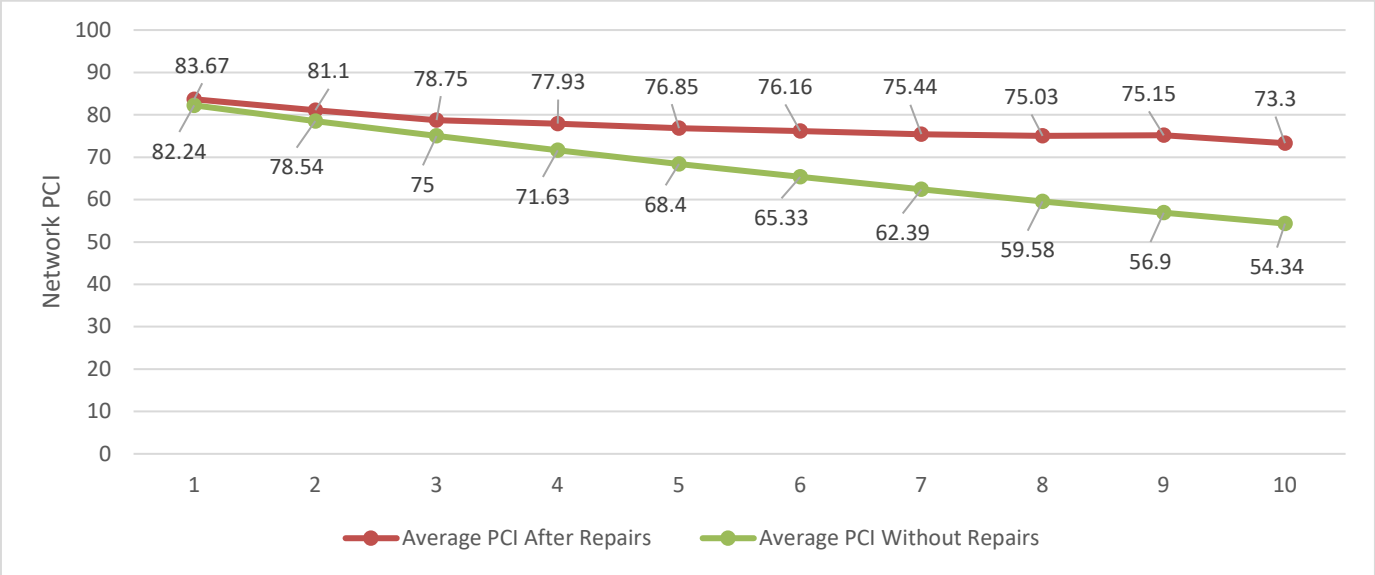
TABLE 4: NETWORK PCI BY YEAR AND ANNUAL SPENDING FOR SCENARIO 1

Over a 10-year period, network PCI will decrease from 86.11, the condition entering 2022, to 72.90 in 2031. Without any repairs, the network PCI will fall to 54.34 after 10 years.

B FORECASTING SCENARIO 2: $173, 000 ANNUAL SPENDING PER YEAR

In this scenario, we assigned repairs to road segments within a 10-year horizon with the goal of creating the best possible pavement conditions using an annual budget of $173,000. This budget represents what the Town spent on pavement maintenance in recent years; $123,000 for annual repairs plus a $50,000 bond item.

FIGURE 8: NETWORK PCI BY YEAR – SCENARIO 2 $173,000



Over a 10-year period, network PCI will decrease slightly from 83.67, the condition entering 2022, to 73.3 in 2030. Without any repairs, the network PCI will fall to 54.34 after 10 years.

See Appendix C for a complete lists of Scenario 2 results:

- Table C1: Annual repair cost (with 4.0% annual inflation).
- Table C2: Network PCI and cost by year.
- Table C3: Annual cost by repair treatment by year.
- Table C4: Repair detail by year.

9.0 SUMMARY

A SCENARIO 1: ALL ROADS 2022 – 2031 STANDARD REPAIR TREATMENTS

We used the Town's Highway Paving Plan and road PCI and Priority values to develop Scenario 1, we set the annual repair budget to $260,000 with the goal of maintaining the current pavement conditions for10 years. To evaluate average pavement condition, we used the network Pavement Condition Index (PCI) value which is the average PCI value of all a paved road segments in the road network. We calculated a network PCI value each year for 10 years (2021 – 2030); and, for comparison, we calculated a network PCI value before and after hypothetical repairs occurred.

Annual repair spending is $260,000 in this scenario, approximately $87,000 more than the Town currently spends. We selected $260,000 because, according to our analysis, spending this amount per year on repairs will keep the network PCI constant 10 years. In plain terms, this means the average pavement condition will remain the same for 10 years if the Town implements this scenario.

Since it is unrealistic to assume that the Town will increase spending levels to this extent, the network PCI will likely fall over the next 10 year. However, many roads in Lyndeborough have low traffic volumes, and deferring maintenance on these roads may make sense- even if it lowers the network PCI. This will allow the Town to prioritize maintenance on roadways with higher traffic volumes and not be constrained by maintaining a network PCI. Also, the following five roads in Lyndeborough have short sections of pavement on roads that otherwise entirely unpaved: Lost Valley Road, Walker Brook Road, Hurricane Hill Road, Church Hill Road, and Reed Road. In our analysis, the condition of these short segments contributes to the network PCI. These short, paved areas will not require intensive pavement maintenance and they may be converted to gravel in the future, lowering maintenance costs.

Ultimately, this scenario does not a provide a realistic roadmap for future maintenance because it exceeds the Town's annual repair budget significantly (50%). However, this scenario is a benchmark for comparison with others because the network PCI remains constant after 10 years. Also, data in this Report, specifically repair cost estimations, may be useful for guiding repair budgets. No scenario can supplement or replace local knowledge and expertise, and future repair strategies should be modified for unforeseen events. Regardless, data in this scenario (as well as throughout the report) will be of value for evaluating the cost, impacts, and lifespan of road repairs.

B FORECASTING SCENARIO 2: $173,000 ANNUAL SPENDING PER YEAR

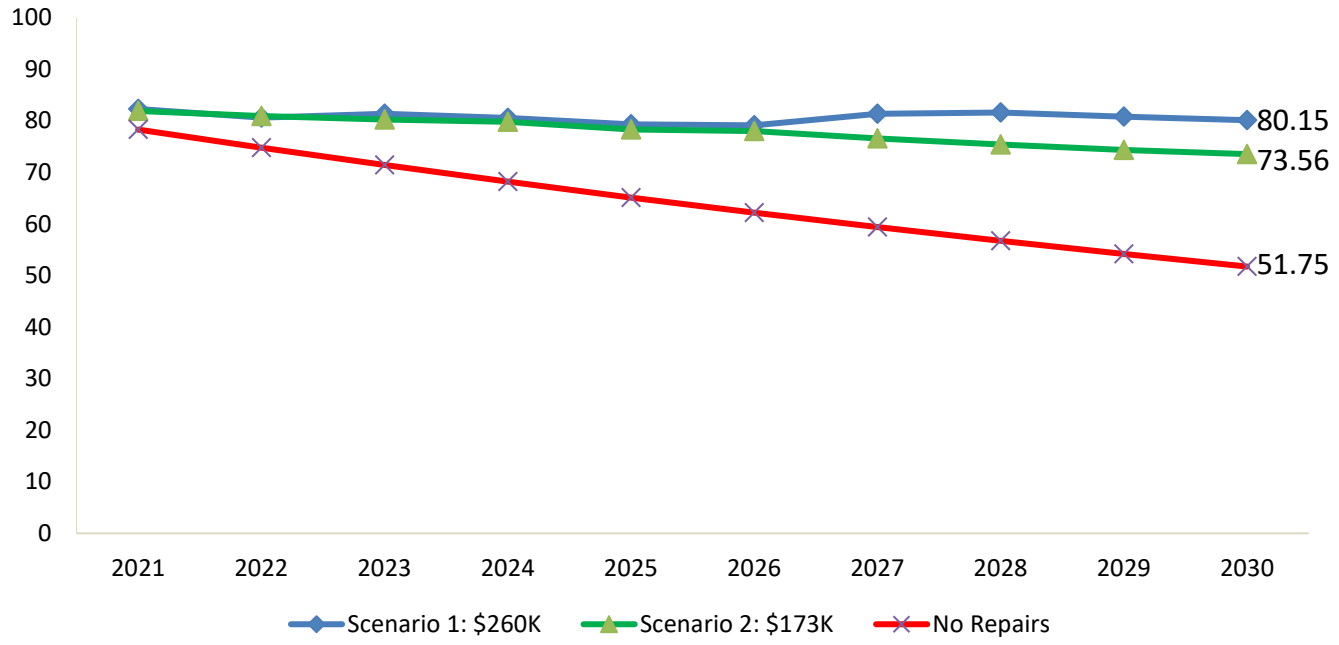
In this scenario, we set the annual repair budget to $150,000, which fluctuates to reflect the $50,000 bond, with the goal of achieving the best possible pavement conditions over 10 years. Like the previous scenario, we used annual network PCI to evaluate the average pavement condition on Town-owned roads. In this scenario, annual pavement repair spending ($150,000) matches the Town's current level. The Town allocates $123,000 annually to repairs with a $50,000 bond item.

Results from this scenario indicate spending at this level will cause network PCI to decrease after 10 years, from 82.32 in 2021 after repairs are applied to 73.56 in 2030, if the town maintains its current spending level. However, as pointed out above, network PCI factors equally the condition of remote roads and roads low traffic values, such as Emerson Lane. Network PCI also factors in the condition of short, paved sections of otherwise gravel roads, such as: Lost Valley Road, Walker Brook Road, Hurricane Hill Road, Church Hill Road, and Reed Road.

If network PCI decreases over 10 years, as projected by this scenario, the impact can be minimized if the most important Town roads and roads with the highest traffic volumes are prioritized for maintenance. For important and high-traffic roads, preventative maintenance techniques, such as chip seal, will extend the life of pavement that is already in good condition and delay the need for more costly repairs. For less important roads with lower traffic volumes, rehabilitative techniques such as shim paving will allow roads to remain serviceable.

Figure 9 (below) displays both cost repair scenarios on a single graph for comparison with a "no maintenance" scenario.

FIGURE 9: PROJECTED NETWORK PCI BY YEAR BY SCENARIO



APPENDIX A: ROAD IVENTORY:

APPENDIX TABLE A1: PAVED ROAD INVENTORY

Street Name	Segment ID	Importance Value (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	PCI 2021	Priority Value
2Nd Nh Tpke	1	4	4	23	1321	90	62.5
2Nd Nh Tpke	2	4	4	23	1322	90	62.5
2Nd Nh Tpke	3	4	4	23	1319	90	62.5
2Nd Nh Tpke	4	4	4	23	1319	90	62.5
2Nd Nh Tpke	5	4	4	23	1388	90	62.5
Baldwin Hill Rd	1	2	2	22	776	100	30
Baldwin Hill Rd	2	2	2	22	1320	95	31.25
Baldwin Hill Rd	3	2	2	22	1320	100	30
Bracketts Cross Rd	2	2	2	20	55	100	30
Brandy Brook Rd	1	1	1	18	924	100	15
Buck Rd	1	1	1	17	94	88	18
Buck Rd	3	1	1	17	107	88	18
Bullard Dr	1	1	1	20	1438	76	21
Bullard Dr	2	1	1	17	2012	65	23.75
Cemetery Rd	1	4	4	21	1323	85	63.75
Cemetery Rd	2	4	4	21	1322	85	63.75
Cemetery Rd	3	4	4	21	747	90	62.5
Cemetery Rd	8	4	4	16	68	100	60
Center Rd	1	5	5	21	1318	90	77.5
Center Rd	2	5	5	21	1320	85	78.75
Center Rd	3	5	5	21	1320	100	75
Center Rd	4	5	5	21	1320	79	80.25
Center Rd	5	5	5	21	1320	72	82
Center Rd	6	5	5	21	1321	87	78.25
Center Rd	7	5	5	21	1320	82	79.5
Center Rd	8	5	5	21	1320	85	78.75
Center Rd	9	5	5	21	1319	81	79.75
Center Rd	10	5	5	21	1319	100	75
Center Rd	11	5	5	21	1280	90	77.5
Center Rd	12	5	5	22	1320	87	78.25
Center Rd	13	5	5	22	1320	85	78.75
Center Rd	14	5	5	22	1320	90	77.5

Street Name	Segment ID	Importance Value (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	PCI 2021	Priority Value
Center Rd	15	5	5	22	1045	90	77.5
Citizens Hall Rd	1	4	3	24	608	90	55.5
Cram Hill Rd	1	3	3	21	1368	84	49
Cram Hill Rd	2	3	3	21	1320	79	50.25
Cram Hill Rd	3	3	3	21	1320	82	49.5
Cram Hill Rd	4	3	3	21	1320	72	52
Cram Hill Rd	5	3	3	21	1320	81	49.75
Cram Hill Rd	6	3	3	21	1320	72	52
Crooked S Rd	1	5	5	15	52	90	77.5
Cummings Rd	1	1	1	16	1766	88	18
Curtis Brook Rd	1	3	3	15	48	63	54.25
Dutton Rd	1	3	3	17	48	95	46.25
Fay Rd	1	1	1	14	521	59	25.25
Glass Factory Rd	1	2	2	17	1319	75	36.25
Glass Factory Rd	2	2	2	17	1119	70	37.5
Gulf Rd	1	4	4	22	308	100	60
Gulf Rd	4	4	4	24	348	100	60
Herrick Rd	1	3	3	17	173	84	49
Holt Rd	1	2	2	21	113	78	35.5
Holt Rd	3	2	2	19	989	90	32.5
Johnson Corner Rd	1	4	4	21	1320	90	62.5
Johnson Corner Rd	2	4	4	20	1320	81	64.75
Johnson Corner Rd	3	4	4	20	1320	79	65.25
Johnson Corner Rd	4	4	4	20	1066	85	63.75
Locust Ln	1	4	2	22	1321	76	52
Locust Ln	2	4	2	19	993	53	57.75
Mason Rd	1	1	1	20	43	100	15
Mountain Rd	1	4	4	20	1318	90	62.5
Mountain Rd	2	4	4	20	1319	90	62.5
Mountain Rd	3	4	4	20	1319	95	61.25
Mountain Rd	4	4	4	20	1318	90	62.5
Mountain Rd	5	4	4	20	1318	89	62.75
Mountain Rd	6	4	4	20	1321	90	62.5
Mountain Rd	7	4	4	21	1322	90	62.5
Mountain Rd	8	4	4	21	1320	90	62.5
Mountain Rd	9	4	4	21	1320	95	61.25

Street Name	Segment ID	Importance Value (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	PCI 2021	Priority Value
Mountain Rd	10	4	4	21	1319	90	62.5
Mountain Rd	11	4	4	21	1320	95	61.25
Mountain Rd	12	4	4	21	1320	90	62.5
Mountain Rd	15	4	4	21	1037	58	70.5
New Rd	1	5	5	23	1320	100	75
New Rd	11	5	5	19	1319	90	77.5
New Rd	12	5	5	19	1793	90	77.5
Old Temple Rd	6	4	4	18	1319	80	65
Old Temple Rd	7	4	4	18	1319	85	63.75
Old Temple Rd	8	4	4	18	1037	90	62.5
Osgood Rd	1	1	1	24	729	62	24.5
Pettingill Hill Rd	5	3	3	19	1081	90	47.5
Pettingill Hill Rd	6	3	3	19	1318	85	48.75
Pettingill Hill Rd	7	3	3	19	1320	89	47.75
Pettingill Hill Rd	8	3	3	19	1507	87	48.25
Pinnacle Rd	3	2	2	24	777	90	32.5
Pinnacle Rd	4	2	2	24	1318	85	33.75
Pinnacle Rd	5	2	2	24	1320	90	32.5
Pinnacle Rd	6	2	2	24	1735	90	32.5
Purgatory Falls Rd	1	3	3	20	971	82	49.5
Purgatory Falls Rd	2	3	3	20	990	84	49
Purgatory Rd	1	3	3	22	1796	65	53.75
Putnam Hill Rd	1	3	3	26	1809	82	49.5
Putnam Hill Rd	2	3	3	22	1318	75	51.25
Putnam Hill Rd	3	3	3	19	791	76	51
Putnam Hill Rd	4	2	2	14	1003	75	36.25
Richardson Rd	1	1	1	14	55	100	15
Salisbury Rd	1	2	2	19	1589	100	30
Wilton Rd	1	3	3	22	1321	95	46.25
Wilton Rd	2	3	3	22	701	95	46.25
Winn Rd	1	4	4	15	112	100	60

APPENDIX TABLE A2: UNPAVED ROAD INVENTORY

Street Name	Segment ID	Importance (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	Score
Avalon Rd	1	1	1	17	423	93
Beasom Rd	1	2	2	18	1,323	94
Beasom Rd	2	2	2	18	1,847	99
Bracketts Cross Rd	1	2	2	20	1,912	99
Brandy Brook Rd	2	1	1	12	672	92
Broman Way	1	1	1	16	1,237	97
Buck Rd	2	1	1	15	1,475	90
Cemetery Rd	4	4	4	20	1,896	91
Cemetery Rd	5	4	4	20	1,319	97
Cemetery Rd	6	4	4	20	1,320	95
Cemetery Rd	7	4	4	16	1,730	92
Chase Rd	1	2	2	21	134	97
Cider Mill Rd	1	2	2	13	1,587	68
Collins Rd	1	3	3	15	1,124	83
Collins Rd	2	3	3	12	1,124	84
Collins Rd	3	3	3	12	1,124	75
Collins Rd	4	3	3	12	1,124	74
Crooked S Rd	2	5	5	14	1,267	86
Crooked S Rd	3	5	5	14	1,321	81
Crooked S Rd	4	5	5	14	1,320	97
Crooked S Rd	5	5	5	14	1,319	82
Crooked S Rd	6	5	5	14	855	65
Curtis Brook Rd	2	3	3	16	1,272	98
Curtis Brook Rd	3	3	3	16	1,319	98
Curtis Brook Rd	4	3	3	16	1,320	93
Curtis Brook Rd	5	3	3	16	1,320	86
Curtis Brook Rd	6	3	3	16	1,415	98
Dutton Rd	2	3	3	15	1,269	90
Dutton Rd	3	3	3	15	1,320	96
Dutton Rd	4	3	3	15	1,214	99
Emery Rd	1	1	1	12	369	93
Grove Rd	1	1	1	12	446	98
Gulf Rd	2	4	4	17	1,020	82
Gulf Rd	3	4	4	17	1,468	93

Street Name	Segment ID	Importance (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	Score
Gulf Rd	5	4	4	17	832	97
Gulf Rd	6	4	4	17	1,367	97
Gulf Rd	7	4	4	17	1,178	96
Gutterson Ln	1	1	1	12	693	85
Herrick Rd	2	3	3	15	1,146	89
Herrick Rd	3	3	3	15	1,319	96
Herrick Rd	4	3	3	15	1,414	84
Highbridge Rd	1	1	1	13	799	89
Highbridge Rd	2	1	1	13	859	87
Holt Rd	2	2	2	13	1,702	82
Joslin Rd	1	1	1	10	1,306	99
Maiers Rd	1	1	1	12	1,668	86
Mason Rd	2	1	1	11	1,259	79
Mels Cir	1	1	1	15	394	87
Mountain Rd	13	4	4	20	1,323	92
Mountain Rd	14	4	4	20	1,603	85
Mountain Rd	16	4	4	20	1,321	82
Mountain Rd	17	4	4	20	1,321	93
Mountain Rd	18	4	4	20	1,320	92
Mountain Rd	19	4	4	16	1,318	85
Mountain Rd	20	4	4	16	1,321	95
Mountain Rd	21	4	4	16	1,318	88
Mountain Rd	22	4	4	16	1,319	81
Mountain Rd	23	4	4	11	1,136	75
New Rd	2	5	5	19	1,320	91
New Rd	3	5	5	19	1,320	91
New Rd	4	5	5	19	1,320	96
New Rd	5	5	5	19	1,322	90
New Rd	6	5	5	19	1,320	93
New Rd	7	5	5	19	1,320	91
New Rd	8	5	5	19	1,320	93
New Rd	9	5	5	19	1,320	97
New Rd	10	5	5	19	1,320	91
Nichols Rd	1	1	1	13	653	99
Old Temple Rd	1	4	4	15	1,320	98
Old Temple Rd	2	4	4	15	1,320	98

Street Name	Segment ID	Importance (1-5)	Traffic Volume (1-5)	Width (ft)	Length (ft)	Score
Old Temple Rd	3	4	4	15	1,319	99
Old Temple Rd	4	4	4	15	1,320	99
Old Temple Rd	5	4	4	15	1,320	99
Old Temple Rd	9	4	4	17	1,198	87
Pettingill Hill Rd	1	3	3	17	1,322	99
Pettingill Hill Rd	2	3	3	17	1,320	95
Pettingill Hill Rd	3	3	3	17	1,319	86
Pettingill Hill Rd	4	3	3	17	1,558	98
Pinnacle Rd	1	1	1	12	1,321	82
Pinnacle Rd	2	1	1	17	1,859	82
Purgatory Falls Rd	3	3	3	21	998	92
Purgatory Falls Rd	4	3	3	21	923	92
Purgatory Falls Rd	5	3	3	16	1,032	97
Purgatory Falls Rd	6	3	3	16	1,354	93
Putnam Hill Rd	5	2	2	13	1,027	98
Putnam Hill Rd	6	2	2	19	965	93
Putnam Hill Rd	7	2	2	19	425	99
Richardson Rd	2	1	1	14	947	97
Richardson Rd	3	1	1	14	989	96
Richardson Rd	4	1	1	14	1,327	84
Schoolhouse Rd	1	2	2	13	1,321	91
Schoolhouse Rd	2	2	2	13	1,319	93
Schoolhouse Rd	3	2	2	13	1,151	98
Sharp Rd	1	1	1	11	1,547	81
Sharp Rd	2	1	1	11	1,320	76
Sharp Rd	3	1	1	11	1,094	94
Warner Rd	1	1	1	19	1,320	97
Warner Rd	2	1	1	19	1,251	79
Winn Rd	2	4	4	15	1,195	97
Winn Rd	3	4	4	15	1,319	82
Winn Rd	4	4	4	15	1,319	91
Winn Rd	5	4	4	15	1,319	92
Winn Rd	6	4	4	15	1,319	91
Winn Rd	7	4	4	15	1,319	97
Winn Rd	8	4	4	15	1,858	98
Woodward Rd	1	1	1	13	592	99

APPENDIX B SCENARIO 1: ALL ROADS 2022-2031 – STANDARD REPAIRS

APPENDIX TABLE B1: ANNUAL REPAIR COST

Year	Cost
2022	$194,582
2023	$165,484
2024	$172,564
2025	$159,543
2026	$227,741
2027	$158,843
2028	$158,422
2029	$157,497
2030	$171,843
2031	$159,595
Total	**$1,726,114**

APPENDIX TABLE B2: NETWORK PCI AND COST BY YEAR

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Average PCI After Repairs	83.88	81.31	78.95	77.52	77.66	76.94	75.86	75.64	74.74	72.90
Average PCI Without Repairs	82.24	78.54	75.00	71.63	68.40	65.33	62.39	59.58	56.90	54.34
Total Miles Treated	2.19	1.50	1.49	2.16	3.33	3.12	2.45	2.49	2.26	1.25
Total Repair Cost	$194,582	$165,484	$172,564	$159,543	$227,741	$158,843	$158,422	$157,497	$171,843	$159,595

APPENDIX TABLE B3: COST BY REPAIR TREATMENT BY YEAR

Repair	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1.5" Overlay #2	$108,645	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" Overlay	$54,983	$0	$0	$91,932	$128,485	$149,491	$52,216	$14,284	$27,228	$0
2" Overlay	$0	$165,484	$172,564	$0	$0	$0	$98,152	$0	$0	$0
Crack Seal	$808	$0	$0	$3,074	$9,471	$9,352	$8,054	$9,448	$9,682	$3,647
FDR and 2"HMA Overlay	$30,145	$0	$0	$64,537	$89,784	$0	$0	$133,765	$134,932	$155,948
Total	**$194,582**	**$165,484**	**$172,564**	**$159,543**	**$227,741**	**$158,843**	**$158,422**	**$157,497**	**$171,843**	**$159,595**

APPENDIX TABLE B4: REPAIR DETAIL BY YEAR

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2022	2Nd Nh Tpke	1	Overlays	1.5" HMA Overlay	0.25	$21,528
	2Nd Nh Tpke	2	Overlays	1.5" HMA Overlay	0.25	$21,531
	2Nd Nh Tpke	3	Overlays	1.5" HMA Overlay	0.25	$21,488
	2Nd Nh Tpke	4	Overlays	1.5" HMA Overlay	0.25	$21,490
	2Nd Nh Tpke	5	Overlays	1.5" HMA Overlay	0.26	$22,608
	Mountain Rd	15	Rehabilitate and Rebuild	FDR and 2" HMA	0.20	$30,145
	New Rd	11	Overlays	1.5" HMA Overlay	0.25	$17,989
	New Rd	12	Overlays	1.5" HMA Overlay	0.34	$24,444
	Osgood Rd	1	Crack Sealing	Crack Seal	0.14	$808
	Osgood Rd	1	Overlays	1.5" HMA Overlay	0.14	$12,550
	Total for Year 2022				**2.32**	**$194,582**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2023	Center Rd	1	Overlays	2" HMA Overlay	0.25	$27,543
	Center Rd	2	Overlays	2" HMA Overlay	0.25	$27,590
	Center Rd	3	Overlays	2" HMA Overlay	0.25	$27,582
	Center Rd	4	Overlays	2" HMA Overlay	0.25	$27,582
	Center Rd	5	Overlays	2" HMA Overlay	0.25	$27,579
	Center Rd	6	Overlays	2" HMA Overlay	0.25	$27,609
	Total for Year 2023				**1.50**	**$165,484**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2024	Center Rd	7	Overlays	2" HMA Overlay	0.25	$28,695
	Center Rd	8	Overlays	2" HMA Overlay	0.25	$28,682
	Center Rd	9	Overlays	2" HMA Overlay	0.25	$28,663
	Center Rd	10	Overlays	2" HMA Overlay	0.25	$28,666
	Center Rd	11	Overlays	2" HMA Overlay	0.24	$27,812
	Center Rd	12	Overlays	2" HMA Overlay	0.25	$30,046
	Total for Year 2024				**1.49**	**$172,564**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2025	Citizens Hall Rd	1	Overlays	1.5" HMA Overlay	0.12	$11,784
	Glass Factory Rd	1	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$34,915
	Glass Factory Rd	2	Rehabilitate and Rebuild	FDR and 2" HMA	0.21	$29,622
	New Rd	11	Crack Sealing	Crack Seal	0.25	$1,303
	New Rd	12	Crack Sealing	Crack Seal	0.34	$1,771
	Pettingill Hill Rd	5	Overlays	1.5" HMA Overlay	0.20	$16,578
	Pettingill Hill Rd	6	Overlays	1.5" HMA Overlay	0.25	$20,220
	Pettingill Hill Rd	7	Overlays	1.5" HMA Overlay	0.25	$20,239
	Pettingill Hill Rd	8	Overlays	1.5" HMA Overlay	0.29	$23,110
	Total for Year 2025				**2.16**	**$159,543**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2026	2Nd Nh Tpke	1	Crack Sealing	Crack Seal	0.25	$1,643
	2Nd Nh Tpke	2	Crack Sealing	Crack Seal	0.25	$1,644
	2Nd Nh Tpke	3	Crack Sealing	Crack Seal	0.25	$1,640
	2Nd Nh Tpke	4	Crack Sealing	Crack Seal	0.25	$1,640
	2Nd Nh Tpke	5	Crack Sealing	Crack Seal	0.26	$1,726
	Cram Hill Rd	5	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$44,897
	Cram Hill Rd	6	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$44,888
	Locust Ln	1	Overlays	1.5" HMA Overlay	0.25	$24,394
	Locust Ln	2	Overlays	1.5" HMA Overlay	0.19	$15,840
	Mountain Rd	15	Crack Sealing	Crack Seal	0.20	$1,177
	Putnam Hill Rd	1	Overlays	1.5" HMA Overlay	0.34	$39,492
	Putnam Hill Rd	2	Overlays	1.5" HMA Overlay	0.25	$24,350
	Putnam Hill Rd	3	Overlays	1.5" HMA Overlay	0.15	$12,624
	Putnam Hill Rd	4	Overlays	1.5" HMA Overlay	0.19	$11,786
	Total for Year 2026				**3.33**	**$227,741**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2027	Center Rd	1	Crack Sealing	Crack Seal	0.25	$1,557
	Center Rd	2	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	3	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	4	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	5	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	6	Crack Sealing	Crack Seal	0.25	$1,560
	Johnson Corner Rd	1	Overlays	1.5" HMA Overlay	0.25	$24,195
	Johnson Corner Rd	2	Overlays	1.5" HMA Overlay	0.25	$23,044
	Johnson Corner Rd	3	Overlays	1.5" HMA Overlay	0.25	$23,044
	Johnson Corner Rd	4	Overlays	1.5" HMA Overlay	0.20	$18,614
	Purgatory Falls Rd	1	Overlays	1.5" HMA Overlay	0.18	$16,949
	Purgatory Falls Rd	2	Overlays	1.5" HMA Overlay	0.19	$17,289
	Salisbury Rd	1	Overlays	1.5" HMA Overlay	0.30	$26,356
	Total for Year 2027				**3.12**	**$158,843**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2028	Center Rd	7	Crack Sealing	Crack Seal	0.25	$1,622
	Center Rd	8	Crack Sealing	Crack Seal	0.25	$1,621
	Center Rd	9	Crack Sealing	Crack Seal	0.25	$1,620
	Center Rd	10	Crack Sealing	Crack Seal	0.25	$1,620
	Center Rd	11	Crack Sealing	Crack Seal	0.24	$1,572
	Center Rd	13	Overlays	2" HMA Overlay	0.25	$35,154
	Center Rd	14	Overlays	2" HMA Overlay	0.25	$35,155
	Center Rd	15	Overlays	2" HMA Overlay	0.20	$27,844
	Crooked S Rd	1	Overlays	1.5" HMA Overlay	0.01	$709
	Mountain Rd	1	Overlays	1.5" HMA Overlay	0.25	$23,936
	New Rd	1	Overlays	1.5" HMA Overlay	0.25	$27,570
	Total for Year 2028				**2.45**	**$158,422**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2029	Citizens Hall Rd	1	Crack Sealing	Crack Seal	0.12	$888
	Fay Rd	1	Rehabilitate and Rebuild	FDR and 2" HMA	0.10	$13,285
	Glass Factory Rd	1	Crack Sealing	Crack Seal	0.25	$1,364
	Glass Factory Rd	2	Crack Sealing	Crack Seal	0.21	$1,157
	Gulf Rd	1	Overlays	1.5" HMA Overlay	0.06	$6,392
	Gulf Rd	4	Overlays	1.5" HMA Overlay	0.07	$7,892
	Old Temple Rd	6	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$43,236
	Old Temple Rd	7	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$43,249
	Old Temple Rd	8	Rehabilitate and Rebuild	FDR and 2" HMA	0.20	$33,995
	Pettingill Hill Rd	5	Crack Sealing	Crack Seal	0.20	$1,249
	Pettingill Hill Rd	6	Crack Sealing	Crack Seal	0.25	$1,524
	Pettingill Hill Rd	7	Crack Sealing	Crack Seal	0.25	$1,525
	Pettingill Hill Rd	8	Crack Sealing	Crack Seal	0.29	$1,741
	Total for Year 2029				**2.49**	**$157,497**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2030	Cemetery Rd	1	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$52,623
	Cemetery Rd	2	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$52,591
	Cemetery Rd	3	Rehabilitate and Rebuild	FDR and 2" HMA	0.14	$29,719
	Cram Hill Rd	2	Overlays	1.5" HMA Overlay	0.25	$27,228
	Locust Ln	1	Crack Sealing	Crack Seal	0.25	$1,838
	Locust Ln	2	Crack Sealing	Crack Seal	0.19	$1,194
	Putnam Hill Rd	1	Crack Sealing	Crack Seal	0.34	$2,976
	Putnam Hill Rd	2	Crack Sealing	Crack Seal	0.25	$1,835
	Putnam Hill Rd	3	Crack Sealing	Crack Seal	0.15	$951
	Putnam Hill Rd	4	Crack Sealing	Crack Seal	0.19	$888
	Total for Year 2030				**2.26**	**$171,843**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2031	Cram Hill Rd	5	Crack Sealing	Crack Seal	0.25	$1,824
	Cram Hill Rd	6	Crack Sealing	Crack Seal	0.25	$1,823
	Mountain Rd	2	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$51,998
	Mountain Rd	3	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$51,995
	Mountain Rd	4	Rehabilitate and Rebuild	FDR and 2" HMA	0.25	$51,955
	Total for Year 2031				**1.25**	**$159,595**
	10 Year Total				**22.37**	**$1,726,114**

APPENDIX C SCENARIO 2. ANALYSIS RESULTS (TABLES):

APPENDIX TABLE C1: ANNUAL REPAIR COST

Year	Cost
2022	$119,296
2023	$165,484
2024	$172,564
2025	$141,466
2026	$137,849
2027	$158,843
2028	$138,900
2029	$154,976
2030	$159,855
2031	$159,595
Total	$1,508,828

APPENDIX TABLE C2: NETWORK PCI AND COST BY YEAR

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Average PCI After Repairs	83.67	81.1	78.75	77.93	76.85	76.16	75.44	75.03	75.15	73.3
Average PCI Without Repairs	82.24	78.54	75	71.63	68.4	65.33	62.39	59.58	56.9	54.34
Total Miles Treated	1.51	1.5	1.49	2.5	2.15	3.12	2.41	2.02	3.45	1.25
Total Repair Cost	$119,296	$165,484	$172,564	$141,466	$137,849	$158,843	$138,900	$154,976	$159,855	$159,595

APPENDIX TABLE C3: COST BY REPAIR TREATMENT BY YEAR

Repair	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1.5" Overlay #2	$21,488	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.5" Overlay	$54,983	$0	$0	$91,932	$40,234	$149,491	$24,645	$14,284	$27,228	$0
2" Overlay	$0	$165,484	$172,564	$0	$0	$0	$98,152	$0	$0	$0
Chip Seal	$11,872	$0	$0	$49,535	$0	$0	$8,048	$0	$129,594	$0
Crack Seal	$808	$0	$0	$0	$7,831	$9,352	$8,054	$6,927	$3,032	$3,647
FDR + 2" Pave	$30,145	$0	$0	$0	$89,784	$0	$0	$133,765	$0	$155,948
Total	**$119,296**	**$165,484**	**$172,564**	**$141,466**	**$137,849**	**$158,843**	**$138,900**	**$154,976**	**$159,855**	**$159,595**

APPENDIX TABLE C4: REPAIR DETAIL BY YEAR

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2022	2Nd Nh Tpke	3	Overlays	1.5" Overlay #2	0.25	$21,488
	Mountain Rd	15	Rehabilitate and Rebuild	FDR + 2" Pave	0.20	$30,145
	New Rd	11	Overlays	1.5" Overlay	0.25	$17,989
	New Rd	12	Overlays	1.5" Overlay	0.34	$24,444
	Osgood Rd	1	Crack Sealing	Crack Seal	0.14	$808
	Osgood Rd	1	Overlays	1.5" Overlay	0.14	$12,550
	Purgatory Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.34	$11,872
	Total for Year 2022				**1.65**	**$119,296**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2023	Center Rd	1	Overlays	2" Overlay	0.25	$27,543
	Center Rd	2	Overlays	2" Overlay	0.25	$27,590
	Center Rd	3	Overlays	2" Overlay	0.25	$27,582
	Center Rd	4	Overlays	2" Overlay	0.25	$27,582
	Center Rd	5	Overlays	2" Overlay	0.25	$27,579
	Center Rd	6	Overlays	2" Overlay	0.25	$27,609
	Total for Year 2023				**1.50**	**$165,484**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2024	Center Rd	7	Overlays	2" Overlay	0.25	$28,695
	Center Rd	8	Overlays	2" Overlay	0.25	$28,682
	Center Rd	9	Overlays	2" Overlay	0.25	$28,663
	Center Rd	10	Overlays	2" Overlay	0.25	$28,666
	Center Rd	11	Overlays	2" Overlay	0.24	$27,812
	Center Rd	12	Overlays	2" Overlay	0.25	$30,046
	Total For Year 2024				**1.49**	**$172,564**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2025	Citizens Hall Rd	1	Overlays	1.5" Overlay	0.12	$11,784
	Glass Factory Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.25	$7,578
	Glass Factory Rd	2	Pavement Preservation/Maintenance	Chip Seal	0.21	$6,429
	Pettingill Hill Rd	5	Overlays	1.5" Overlay	0.20	$16,578
	Pettingill Hill Rd	6	Overlays	1.5" Overlay	0.25	$20,220
	Pettingill Hill Rd	7	Overlays	1.5" Overlay	0.25	$20,239
	Pettingill Hill Rd	8	Overlays	1.5" Overlay	0.29	$23,110
	Putnam Hill Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.34	$15,899
	Putnam Hill Rd	2	Pavement Preservation/Maintenance	Chip Seal	0.25	$9,803
	Putnam Hill Rd	3	Pavement Preservation/Maintenance	Chip Seal	0.15	$5,082
	Putnam Hill Rd	4	Pavement Preservation/Maintenance	Chip Seal	0.19	$4,745
	Total For Year 2025				**2.50**	**$141,466**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2026	2nd Nh Tpke	1	Crack Sealing	Crack Seal	0.25	$1,643
	2nd Nh Tpke	2	Crack Sealing	Crack Seal	0.25	$1,644
	2nd Nh Tpke	4	Crack Sealing	Crack Seal	0.25	$1,640
	2nd Nh Tpke	5	Crack Sealing	Crack Seal	0.26	$1,726
	Cram Hill Rd	5	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$44,897
	Cram Hill Rd	6	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$44,888
	Locust Ln	1	Overlays	1.5" Overlay	0.25	$24,394
	Locust Ln	2	Overlays	1.5" Overlay	0.19	$15,840
	Mountain Rd	15	Crack Sealing	Crack Seal	0.20	$1,177
	Total For Year 2026				**2.15**	**$137,849**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2027	Center Rd	1	Crack Sealing	Crack Seal	0.25	$1,557
	Center Rd	2	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	3	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	4	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	5	Crack Sealing	Crack Seal	0.25	$1,559
	Center Rd	6	Crack Sealing	Crack Seal	0.25	$1,560
	Johnson Corner Rd	1	Overlays	1.5" Overlay	0.25	$24,195
	Johnson Corner Rd	2	Overlays	1.5" Overlay	0.25	$23,044
	Johnson Corner Rd	3	Overlays	1.5" Overlay	0.25	$23,044
	Johnson Corner Rd	4	Overlays	1.5" Overlay	0.20	$18,614
	Purgatory Falls Rd	1	Overlays	1.5" Overlay	0.18	$16,949
	Purgatory Falls Rd	2	Overlays	1.5" Overlay	0.19	$17,289
	Salisbury Rd	1	Overlays	1.5" Overlay	0.30	$26,356
	Total For Year 2027				**3.12**	**$158,843**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2028	Center Rd	7	Crack Sealing	Crack Seal	0.25	$1,622
	Center Rd	8	Crack Sealing	Crack Seal	0.25	$1,621
	Center Rd	9	Crack Sealing	Crack Seal	0.25	$1,620
	Center Rd	10	Crack Sealing	Crack Seal	0.25	$1,620
	Center Rd	11	Crack Sealing	Crack Seal	0.24	$1,572
	Center Rd	13	Overlays	2" Overlay	0.25	$35,154
	Center Rd	14	Overlays	2" Overlay	0.25	$35,155
	Center Rd	15	Overlays	2" Overlay	0.20	$27,844
	Crooked S Rd	1	Overlays	1.5" Overlay	0.01	$709
	Holt Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.02	$903
	Holt Rd	3	Pavement Preservation/Maintenance	Chip Seal	0.19	$7,145
	Mountain Rd	1	Overlays	1.5" Overlay	0.25	$23,936
	Total For Year 2028				**2.41**	**$138,900**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2029	Citizens Hall Rd	1	Crack Sealing	Crack Seal	0.12	$888
	Fay Rd	1	Rehabilitate And Rebuild	FDR + 2" Pave	0.10	$13,285
	Gulf Rd	1	Overlays	1.5" Overlay	0.06	$6,392
	Gulf Rd	4	Overlays	1.5" Overlay	0.07	$7,892
	Old Temple Rd	6	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$43,236
	Old Temple Rd	7	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$43,249
	Old Temple Rd	8	Rehabilitate And Rebuild	FDR + 2" Pave	0.20	$33,995
	Pettingill Hill Rd	5	Crack Sealing	Crack Seal	0.20	$1,249
	Pettingill Hill Rd	6	Crack Sealing	Crack Seal	0.25	$1,524
	Pettingill Hill Rd	7	Crack Sealing	Crack Seal	0.25	$1,525
	Pettingill Hill Rd	8	Crack Sealing	Crack Seal	0.29	$1,741
	Total For Year 2029				**2.02**	**$154,976**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2030	2nd Nh Tpke	1	Pavement Preservation/Maintenance	Chip Seal	0.25	$12,496
	2nd Nh Tpke	2	Pavement Preservation/Maintenance	Chip Seal	0.25	$12,498
	2nd Nh Tpke	3	Pavement Preservation/Maintenance	Chip Seal	0.25	$12,473
	2nd Nh Tpke	4	Pavement Preservation/Maintenance	Chip Seal	0.25	$12,474
	2nd Nh Tpke	5	Pavement Preservation/Maintenance	Chip Seal	0.26	$13,124
	Cemetery Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.25	$11,421
	Cemetery Rd	2	Pavement Preservation/Maintenance	Chip Seal	0.25	$11,414
	Cemetery Rd	3	Pavement Preservation/Maintenance	Chip Seal	0.14	$6,450
	Cemetery Rd	8	Pavement Preservation/Maintenance	Chip Seal	0.01	$446
	Cram Hill Rd	2	Overlays	1.5" Overlay	0.25	$27,228
	Locust Ln	1	Crack Sealing	Crack Seal	0.25	$1,838
	Locust Ln	2	Crack Sealing	Crack Seal	0.19	$1,194
	New Rd	1	Pavement Preservation/Maintenance	Chip Seal	0.25	$12,485
	New Rd	11	Pavement Preservation/Maintenance	Chip Seal	0.25	$10,308
	New Rd	12	Pavement Preservation/Maintenance	Chip Seal	0.34	$14,006
	Total For Year 2030				**3.45**	**$159,855**

Year	Street	Order ID	Repair Category	Repair	Miles Treated	Cost
2031	Cram Hill Rd	5	Crack Sealing	Crack Seal	0.25	$1,824
	Cram Hill Rd	6	Crack Sealing	Crack Seal	0.25	$1,823
	Mountain Rd	2	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$51,998
	Mountain Rd	3	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$51,995
	Mountain Rd	4	Rehabilitate And Rebuild	FDR + 2" Pave	0.25	$51,955
	Total For Year 2031				**1.25**	**$159,595**