10-Year Pavement Management Plan

Prepared For:

Town of Winchester

■ ***June 1, 2016***

Lenard Engineering, Inc.
Civil, Environmental & Hydrogeological Consultants

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I. EXECUTIVE SUMMARY

The Town of Winchester (Town) recently embarked an on a pavement management initiative to:

1. Identify appropriate levels of funding for pavement maintenance, rehabilitation, and reconstruction, and

2. Insure that annual pavement management expenditures are spent as wisely and efficiently as possible.

The Town retained Lenard Engineering, Inc. (LEI) to consult on the project. Gravel roads, curbing, and drainage improvements were excluded from the assignment. This report documents our findings and recommendations.

The Town owns and maintains approximately 76 miles of asphalt roads. The average condition of the network may be characterized as "fair". Approximately 53% of the Town's asphalt roads are in poor or failed condition, 17% are in fair condition, and about 29% are in good or excellent condition. LEI estimates the current backlog of work on the Town's asphalt road network at $32 million. Backlog is defined on the present value of construction work required to raise the condition of each asphalt pavement segment to excellent condition. A road network in poor condition will have a large backlog value, while a network in good condition will have a small backlog value.

The Town purchased proprietary transportation asset management software (RoadSoft) for use in its present and future pavement management activities. After rating the condition of roadway pavements, LEI populated the RoadSoft database to create an inventory of Town-owned asphalt pavement. We then used RoadSoft to develop annual budget and improvement recommendations for the Town.

LEI analyzed six annual budget strategies ranging from zero to $4 million per year over a 10-year period. We assumed a 2% rate of inflation in the unit cost of pavement maintenance, rehabilitation, and construction. For each annual budget alternative, we used RoadSoft to determine when and where to invest funds for preventive maintenance, rehabilitation, or reconstruction and to predict the average pavement condition for the system over the 10-year program. We then used the predicted pavement-condition curves for each alternative to compare the impact that various funding levels will have on the average condition of the Town's asphalt pavement network.

Our analysis reveals that the Town must invest at least $1 Million per year on pavement management over the next 10 years to maintain status quo with respect to average pavement condition. At this funding level, the value added by annual improvements will roughly keep up with deterioration across the network. The average condition of the network will not change despite the annual activity, and the Town will not substantially reduce the large backlog of work. We reached the following conclusions for the other budget alternatives developed for this report:

- If the Town ceased all road improvements for 10 years the average pavement condition will decline from "fair" to "poor" over 10 years and the backlog of work will skyrocket to $54 Million.

- At funding levels equal to the FY 2016-2017 budget for road improvements (~$600,000 per year), the average pavement condition remains in the "fair" range but drops slightly over the 10-year study period. Backlog will grow from $32 Million to about $39 Million.

- An investment of $2 Million per year over the next 10 years will gradually improve the average condition of asphalt roads from the bottom to the top of the "fair" range and cut the backlog value to $20 Million at the end of the 10-year period.

- An investment of $3 Million per year over the next 10 years will improve the average condition of asphalt roads from "fair" to "good" and will reduce the backlog value significantly to about $5 Million.

- An investment of $4 Million per year over the next 10 years will improve the average condition of asphalt roads from "fair" to "good" and will reduce the backlog value to a few million dollars.

The presence of water in pavement cracks and in the gravel base beneath asphalt pavement plays a very important role in pavement longevity. Pavements with adequate surface and subsurface drainage will perform better and have a longer service life than inadequately drained pavements. While drainage considerations were not included in this assignment, we can state with confidence that drainage facilities throughout the town are poor in rural areas and fair, at best, in the urban areas. The cost of improving drainage facilities throughout the town could easily rival or exceed the costs associated with pavement management. The Town should develop a drainage improvement strategy and synchronize implementation with planned pavement maintenance, rehabilitation, and reconstruction projects.

II. INTRODUCTION

Effective pavement management efforts involve the following steps:

1. Document existing conditions

2. Predict pavement condition over time, accounting for expected and measured deterioration.

3. Apply appropriate treatments, at the right time and in the right place, to achieve the longest service life at the lowest cost.

4. Keep good records of the types and costs of pavement treatment and of pavement conditions. Over time, comprehensive recordkeeping will allow the Town to improve the accuracy of pavement deterioration predictions and to optimize the type, timing, and location of prescribed treatments.

LEI used the *Pavement Surface Evaluation and Rating* system (PASER) to evaluate the surface condition of existing asphalt pavement. This system calls for a visual pavement rating based on a scale of 1 to 10, with 10 being the best. A rating manual is available to help correlate condition and distress observed in the field with photographic examples of pavements at each PASER rating. The PASER system is relatively inexpensive to implement and the 1-to-10 scale is easily understood by technical personnel, municipal administrators, and the electorate that pays for pavement maintenance and improvements.

In conjunction with this study, the Town purchased RoadSoft, an asset-management software system that may be used for collecting, storing, and analyzing data associated with various transportation assets including, but not limited to pavement. RoadSoft was developed by, and is supported by the Center for Technology & Training at the Michigan Technological University.

RoadSoft serves as a pavement management database that allows the Town to document surface area, condition, and other attributes for each pavement segment in the system. RoadSoft also predicts future pavement conditions for each segment through application of theoretical deterioration curves input by the user. Lastly, RoadSoft may be used to predict future pavement conditions by simultaneously accounting for annual deterioration and programmed improvements that will be constructed by the Town.

LEI commenced work on this assignment in December of 2015. Our work involved the following steps:

1. Rate pavements in the field.

2. Discuss and confirm pavement classifications, pavement deterioration curves, unit construction cost, and assumed rate of inflation with Mr. Jim Rollins, Director of Public Works.

3. Load deterioration curves for various pavement classes into RoadSoft.

4. Load pavement surface type definitions and treatments, rating reset values, and associated unit costs into RoadSoft.

5. Subdivide Winchester's asphalt pavement inventory into separate classes to account for dissimilar rates of deterioration between classes.

6. Use RoadSoft's *Strategy Evaluation & Optimization* tool to develop alternative budget and pavement management strategies for the Town's consideration.

7. Review findings and recommendations with the Director of Public Works and Board of Selectmen.

III. ROADWAY DATA

Following field rating of pavement conditions, LEI populated the RoadSoft database, defined pavement surface sub-types, and estimated pavement deterioration rates for the various pavement surface subtypes. This data must be properly developed and loaded into RoadSoft before the software can be used to develop alternate pavement management strategies. Exhibit 1 contains a spreadsheet that summarizes the RoadSoft database for Winchester's asphalt pavement network. Among other attributes, the database includes information on segment location and length, pavement class, National Functional Classification, typical width, PASER rating, and a cost estimate (referred to as Backlog in the spreadsheet) for the necessary pavement maintenance, rehabilitation, or reconstruction on each segment. The following paragraphs explain the work involved in populating the RoadSoft database in advance of strategy evaluations:

A. PAVEMENT RATING

LEI engineers rated the Town's roadway pavement in December 2015 and January 2016. Exhibit 2 contains cut sheets that describe the various PASER ratings for rural and urban roadways along with the associated treatment recommendation, cost, and PASER reset value if the treatment is implemented. LEI observed, recorded, and rated pavement condition for each segment of asphalt pavement in the town. Segments run from:

- One intersection to another
- Intersection to dead-end or cul-de-sac
- Intersection to end of jurisdiction (e.g. Town line)
- Intersection to end of asphalt pavement

In some areas, pavement condition changed within a segment. In such cases, we divided the segment into sub-segments of like condition and rated the individual sub-segments accordingly. For each segment, the rating engineer observed aging and distress conditions, rated the pavement, recorded notes, and documented curbing type and condition. In order to calibrate their rating practices, the engineers met on several occasions to rate the same road and reconcile any differences between ratings. Exhibit 3 contains a color-coded map of Winchester showing the 2016 PASER ratings for each segment. The following table summarizes current pavement conditions, based on the result of our evaluation:

Condition	PASER Rating	Miles	Percent of System
Excellent	9 - 10	3.025	4.0%
Good	6 - 8	19.161	25.2%
Fair	4 - 5	12.898	17.0%
Poor	2 - 3	38.171	50.3%
Failed	1	2.656	3.5%
	Totals:	75.911	100%

B. NATIONAL FUNCTION CLASS

LEI reviewed the National Functional Classification (NFC) map for Winchester as published by the Connecticut Department of Transportation (latest update December 31, 2013) to determine the NFC for each of the Town's roadways. The flowing table lists roads classified as *Collector* in Winchester:

Rural Minor Collectors:	West Road
	Newfield Road
	South Road
Urban Collectors:	Mountain Road
	West Wakefield Boulevard
	West Lake Street
	East Lake Street
	Lake Street
	Prospect Street
	Hurlbut Street
	Pratt Street
	Bridge Street (from Prospect St. to Main St.)
	Hinsdale Avenue
	Wetmore Avenue
	Holabird Avenue (from North Main St. to Colony Dr.)
	Colony Drive
	Glendale Avenue (from Colony Dr. to Old New Hartford Rd.)
	Old New Hartford Road (from Glendale Ave. to South Main St.)

All other Winchester roadways are classified as *Local* roads. Upon completion of these determinations, we loaded the NFC for each roadway into the RoadSoft database.

C. PAVEMENT CLASSIFICATIONS

Aging and traffic-induced distress leads to pavement deterioration over the course of time. Poorly-constructed roads will deteriorate more quickly than well-constructed roads. As a first step in accounting for the variable quality of roadway construction in Winchester, LEI separated roads into three classes (nomenclature is arbitrary):

Class A: A Class A road is designed and constructed according to modern standards, with a sound base and sufficient pavement to provide a 20-year service life. Prospect Street (full-depth reconstruction circa 2003), Willow Street (with its concrete base) and New Street (constructed in conjunction with S.R. 8 circa 1970) offer examples in this class.

Class B: Class B roadways of less-robust construction than Class A roads but are known or suspected to possess a reasonable base and pavement thickness. LEI assumed that most of the downtown streets fall into this category.

Class C: Class C roads are comprised of rural roads and certain urban streets with informal or inferior construction. This class of road is known or suspected to possess a relatively thin gravel base, built-up layers of asphalt seal coats, and perhaps a thin asphalt overlay. Newfield Road and Grantville Road in the Winchester Center area offer examples of this class of roadway. We assumed that all rural roadways fall into this category.

D. DETERIORATION CURVES

Once the pavement classifications were established, LEI developed deterioration curves for each class and reviewed them with the Director of Public Works. Deterioration curves for the three classes of rural and urban roadways were assumed to be identical. RoadSoft employs these curves to predict future pavement condition in the absence of restorative intervention.

Exhibit 4 contains the deterioration curves used in LEI's alternatives analysis. RoadSoft works only with whole-number PASER rating values; hence, the deterioration curves are actually a series of steps with whole-number ordinates. The steps are intended to fit a more-realistic smooth deterioration curve as best possible.

E. TREATMENT PROTOCOLS AND COSTS

LEI assigned treatment protocols for each PASER rating. We prepared separate treatment protocols for rural and urban settings due to the differences in appropriate means and methods typically utilized in these areas. The cut sheets in Exhibit 2 list the various treatments (preventive maintenance, rehabilitation, or reconstruction) and associated costs that are linked to each PASER rating in rural and urban settings. LEI developed unit costs for various preventive maintenance, rehabilitation, and reconstruction treatments used in the analysis. We based these costs on current State contract bid prices for on-call work, unit price data published by the Connecticut Department of Transportation, and from our own experience with recent similar projects. Our cost estimates for each treatment protocol include reasonable allowances for engineering services and contingency.

Exhibit 5 contains LEI's calculations for the unit cost of each treatment protocol. In general, the intensity and cost of treatment protocols increases as PASER rating decreases. Unit costs increase dramatically as pavement condition deteriorates from "good" (PASER = 6) to "fair"

(PASER = 4). In the rating range between PASER 6 and 4, treatment protocol shifts from low-cost preventive maintenance to high-cost rehabilitation and reconstruction measures.

IV. PAVEMENT MANAGEMENT STRATEGIES

Once the database was populated and surface types and deterioration curves were defined within RoadSoft, LEI analyzed alternative pavement management strategies for the Town. We used the *Strategy Evaluation & Optimization* function in RoadSoft for this purpose.

A. STRATEGY COMPARISON

The RoadSoft *Strategy Evaluation & Optimization* function uses the *Remaining Service Life* (RSL) calculation as the primary way to compare the effectiveness of a set of pavement management strategies. Pavement management strategies that produce level or increasing RSL over time are preferable to strategies that lose ground with respect to RSL.

The RSL is defined as the time it will take for pavement condition to decline to its *Critical Distress Point* (CDP) assuming no maintenance or rehabilitation. Pavement condition reaches the CDP when the PASER rating drops to "4". When pavement condition reaches the CDP, low-cost preventive maintenance measures no longer apply. Instead, the treatment choices are limited to high-cost rehabilitation or reconstruction measures.

B. STRATEGY DEFINITION

RoadSoft allows the user to manually define a pavement management strategy. If this path is chosen, the user sets the annual budget for each year of the analysis, which may vary from year to year. The user also directs set amounts of the annual budget into the available preventative maintenance, rehabilitation, and reconstruction treatment categories. RoadSoft then calculates the average network RSL for each year of the analysis. The resulting average RSL calculation will be dictated by the annual budgets and individual treatment-type restrictions imposed by the user.

RoadSoft also offers an "*Optimize*" tool which automatically develops a strategy to maximize the average RSL of the defined network for a given annual budget. The user may opt to dictate the proportion of annual budget dollars expended on any of the three treatment categories (preventive maintenance, rehabilitation, reconstruction) or allow the "Optimize" tool to calculate the most cost-effective split in annual expenditures for those categories.

LEI assumed that the *Optimize* tool would do a better job at strategic budgeting than would any manually-defined strategy that we might devise. Accordingly LEI used the *Optimize* tool to evaluate alternative annual budget strategies and to find the optimal balance between preventive maintenance, rehabilitation, and reconstruction expenditures for each year of the analysis. User input for each of the five alternatives included the following variables:

1. List of roads included in the analysis (all Town asphalt roads are included for all alternatives)

2. Annual budget:
   - Alternative 1 - $0 per year (Do Nothing)
   - Alternative 2 - $0.6 Million per year (present funding level)
   - Alternative 3 - $1 Million per year
   - Alternative 4 - $2 Million per year
   - Alternative 5 - $3 Million per year
   - Alternative 6 - $4 Million per year

3. Minimum and maximum annual expenditures for each treatment category (preventive maintenance, rehabilitation, and reconstruction)

   Note: *LEI set the minimum annual expenditure for each category at $0 and the maximum at the total annual budget for the alternative. This tactic allows the Optimize tool to allocate investments to available preventive maintenance, rehabilitation, and reconstruction categories in the most expedient manner possible.*

4. Period of analysis (10 Years for all alternatives)

5. Rate of inflation for unit costs (2% for all alternatives)

Exhibit 6 contains the analysis results for the six alternatives studied. For each alternative, RoadSoft generates:

- A vertical bar graph depicting the relative proportion of roadway pavement in good, fair, and poor condition for each year of the 10-year study period

- A line graph showing RSL vs. Year for the 10-year study period

- Table showing RoadSoft-generated pavement management budget strategies. For each year of the program, this table lists budgets for preventive maintenance, rehabilitation, or reconstruction treatments for each class of pavement (A, B, & C) in rural and urban settings (note: this table is omitted for Alternative 1 where the annual budget = $0.00. In this case, all table entries would be zero).

C. STRATEGY EVAULATION RESULTS

The following paragraphs summarize our findings:

Alternative 1 (Annual Budget = $0.00):

If the Town stopped maintaining, rehabilitating, or reconstructing roads for a period of 10 years, pavement condition would decline noticeably. The average pavement condition will decline from PASER=4 (Fair) to PASER=1.8 (Very Poor) over the 10-year period. Pavement management unit cost associated with PASER=2 averages $53 per square yard, thus resulting in a backlog value of approximately $54 Million in year 10.

Alternative 2 (Annual Budget $600,000):

This funding level continues the Town's current investment of $600,000 per year for the 10-year period. Our analysis predicts that the average pavement condition will decline slightly from PASER=4 (Fair) to PASER=3.6 (Fair). The overall number of road miles in poor condition will remain relatively static but a noticeable portion of roads now in good condition fade into fair condition. This funding level will defer the heavy cost of improving the system to the second decade of the program. Pavement management unit costs associated with PASER=3 averages $44 per square yard, while unit cost associated with PASER=4 averages $32 per square yard. Because the overall condition falls between these ratings in year 10, we estimate the backlog value of $39 Million at year 10 using an average unit cost of $38 per square yard.

Alternative 3: (Annual Budget $1,000,000):

At this annual funding level, the Town will increase the network average pavement condition slightly from PASER=4 to PASER=4.3 (both Fair) over the 10-year period. In this scenario, the number of road miles in good condition will improve in the initial years, but will decline to present levels by the end of the 10-year period. Road miles in poor condition will decline by roughly 20% while the number of road miles in fair condition will gradually increase. In our opinion, this alternative represents the minimum level of investment required to maintain the status quo. The backlog value of $32 Million will not change substantially over the 10-year period.

Alternative 4: (Annual Budget $2,000,000):

Under this alternative, the Town can make good headway by substantially decreasing the number of road miles in poor condition. The percentage of road miles in good condition will be relatively consistent throughout the period, but there will be a very large increase in the percentage of road miles in fair condition. The average pavement condition for the network will increase from PASER=4 (Fair minus) to PASER= 5.6 (Fair plus). Pavement management unit costs associated with PASER=5 averages $23.50 per square yard, while unit cost associated with PASER=6 is $6.50 per square yard. The average pavement condition falls between these ratings in year 10. Using a $20 per square yard unit price (skewed toward the high end of the range) we conservatively estimate the backlog value of $20 Million at the end of the 10-year period.

Alternative 5: (Annual Budget $3,000,000):

This annual funding level will allow the Town to increase the average pavement condition for the network from PASER=4 (Fair) to PASER=6.4 (Good). The percentage of road miles in good condition will improve in the early years of the program but will fall back to present levels by the end of the 10-year period. The Town will make excellent progress at reducing the percentage of road miles in poor condition, but there will be a very large increase in the number of road miles in fair condition. Pavement management unit costs associated with PASER=6 is $6.50 per square yard, while unit cost associated with PASER=7 is $0.70 per square yard. The average pavement condition falls between these ratings in year 10. Using a $5 per square yard unit price (skewed toward the high end of the range) we estimate the backlog value of $5 Million at the end of the 10-year period.

Alternative 6: (Annual Budget $4,000,000):

This annual funding level will allow the Town to increase the average pavement condition for the network from PASER=4 (Fair) to PASER=7.3 (Good). The percentage of road miles in good condition will improve significantly in the early years of the program but will fall back somewhat by the end of the 10-year period. The Town will virtually eliminate roads in poor condition but will realize a large increase in the percentage of roadways in fair condition. Backlog will be drastically reduced to just a few million dollars.

Exhibit 7 contains a composite chart showing the network average PASER rating vs. Program Year. This chart graphically compares the year-by-year fate of PASER for each of the six alternatives considered. The black dotted line at the bottom represents Alternative 1 (Annual Budget = $0.00). This line shows the dramatic decline in pavement condition that would result if the Town ceased to expend money on pavement management. The remaining five curves show predicted PASER condition for those alternatives with positive annual budgets.

The chart demonstrates that a $1 Million annual investment in pavement management over the next 10 years will allow the Town to maintain the current average condition of pavement over that period. An investment of at least $2 Million per year over the 10-year period would gradually place the network in solidly fair condition, thus allowing the Town to focus on lower-cost maintenance and rehabilitation in the second ten-year period. Investments of $3 Million to $4 Million per year would place the average condition of the network in good condition. This funding level would significantly reduce the overall cost of maintaining the network in the second decade of the program.

Exhibit 8 summarizes the itemized pavement management budget summaries presented in Exhibit 6. In this summary we show the annual investments in preventive maintenance, rehabilitation, and reconstruction categories for each of the seven alternatives considered. The investment decisions were calculated by the RoadSoft *Optimize* tool.

V. RECOMMENDATIONS

LEI recommends that the Town:

1. Invest at least $1 Million per year in pavement management activities. The investments should be guided by the category targets suggested by RoadSoft and summarized in tables presented in Exhibits 6 and 8. This investment will allow the Town to maintain status quo with respect to pavement condition during the 10 year period.

2. Strongly consider increasing the annual investment in pavement management activities to $2 Million or more. The investments should be guided by the category targets suggested by RoadSoft and summarized in tables presented in Exhibits 6 and 8. An annual funding level of $2 Million or more will be required to improve the overall condition of the network over the 10-year period and will have the added benefit of reducing the backlog value. A reduction in backlog value will help limit the cost of maintenance, rehabilitation, and reconstruction costs in the second decade of the program.

3. Develop a town-wide drainage improvement plan and synchronize implementation with the pavement management plan. The cost of drainage improvements throughout town could easily rival or exceed the costs of pavement management discussed in this report.

4. Update the RoadSoft database annually to add any new roads and to account for new preventive maintenance, rehabilitation, and reconstruction projects.

5. Rate pavement and revisit the pavement management strategies every two years. Biannual pavement ratings will allow the Town to factor updated deterioration curves, unit cost data, and inflation rates into the analyses. These periodic updates will improve the accuracy of deterioration and cost projections over time. In turn, the improved accuracy will lead to improved confidence in the validity and usefulness of the pavement management initiative.

Exhibit 1

Roadsoft Database

Town of Winchester Asphalt Road Network

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
19	Blue St	Torrington Line	Torrington Jurisdiction	0	0.189	0.189	Asphalt	Rural Class C	2016	1	-24	Local	20	998	2,218	$49.00	$ 108,662
19	Blue St	Torrington Jurisdiction	Wahnee Rd	0.189	1.039	0.85	Asphalt	Rural Class C	2016	1	-24	Local	21	4,488	10,472	$49.00	$ 513,128
19	Blue St	Wahnee Rd	Winchester Rd	1.039	2.031	0.992	Asphalt	Rural Class C	2016	2	-9	Local	21	5,238	12,221	$49.00	$ 598,851
28	Chapel Rd	Platt Hill Rd	Pavement Type Change	0	0.284	0.284	Asphalt	Rural Class C	2016	2	-9	Local	18	1,500	2,999	$49.00	$ 146,953
28	Chapel Rd	Pavement Type Change	Winchester Rd	0.761	1.102	0.341	Asphalt	Rural Class C	2016	3	-4	Local	17	1,800	3,401	$37.00	$ 125,834
517	Cordano Rd	Dead-End	Danbury Qtr Rd	0	0.059	0.059	Asphalt	Rural Class C	2016	2	-9	Local	18	312	623	$49.00	$ 30,529
530	Danbury Qtr Rd	Norfolk Line	Grantville Rd	0	0.629	0.629	Asphalt	Rural Class C	2016	8	7	Local	21	3,321	7,749	$0.30	$ 2,325
530	Danbury Qtr Rd	Grantville Rd	Skinner Rd	0.629	1.181	0.552	Asphalt	Rural Class C	2016	8	7	Local	22	2,915	7,124	$0.30	$ 2,137
530	Danbury Qtr Rd	Skinner Rd	Cordano Rd	1.181	2.156	0.975	Asphalt	Rural Class C	2016	8	7	Local	22	5,148	12,584	$0.30	$ 3,775
530	Danbury Qtr Rd	Cordano Rd	Norfolk Rd	2.156	2.257	0.101	Asphalt	Rural Class C	2016	8	7	Local	22	533	1,304	$0.30	$ 391
481	Dayton Rd	Pavement Type Change	Platt Hill Rd	0.575	0.732	0.157	Asphalt	Rural Class C	2016	2	-9	Local	12	829	1,105	$49.00	$ 54,159
479	Forest Ave	W Wakefield Blvd	Reaching Hill	0	0.442	0.442	Asphalt	Rural Class C	2016	2	-9	Local	20	2,334	5,186	$49.00	$ 254,121
57	Gaylord Rd	Smith Hill Rd	Colebrook Line	0	0.192	0.192	Asphalt	Rural Class C	2016	5	1	Local	16	1,014	1,802	$26.00	$ 46,858
232	Grantville Rd	West Rd	Preston Rd	0	0.788	0.788	Asphalt	Rural Class C	2016	2	-9	Local	20	4,161	9,246	$49.00	$ 453,047
232	Grantville Rd	Preston Rd	Rating Change	0.788	1.5	0.712	Asphalt	Rural Class C	2016	2	-9	Local	20	3,759	8,354	$49.00	$ 409,353
232	Grantville Rd	Rating Change	Danbury Qtr Rd	1.5	3.19	1.69	Asphalt	Rural Class C	2016	6	3	Local	18	8,923	17,846	$6.50	$ 116,002
69	Hannifin Rd	Norfolk Rd	Colebrook Line	0	0.518	0.518	Asphalt	Rural Class C	2016	1	-24	Local	18	2,735	5,470	$49.00	$ 268,034
72	Highview Dr	Dead-End	South Rd	0	0.623	0.623	Asphalt	Rural Class C	2016	2	-9	Local	24	3,289	8,772	$49.00	$ 429,820
84	Huntington Rd	Riverton Rd	Wallens Hill Rd	0	0.526	0.526	Asphalt	Rural Class C	2016	2	-9	Local	21	2,777	6,480	$49.00	$ 317,536
535	Indian Meadow Dr	Dead-End	Marshall St	0	0.203	0.203	Asphalt	Rural Class C	2016	2	-9	Local	26	1,072	3,096	$49.00	$ 151,725
99	Laurel Way	Platt Hill Rd	Winchester Rd	0	0.937	0.937	Asphalt	Rural Class C	2016	2	-9	Local	18	4,947	9,895	$49.00	$ 484,841
105	Losaw Rd	Spencer Hill Rd	End HMA Pavement	0	0.4	0.4	Asphalt	Rural Class C	2016	3	-4	Local	20	2,112	4,693	$37.00	$ 173,653
471	Marshall St	Colebrook Rd	Old Colebrook Rd	0	0.192	0.192	Asphalt	Rural Class C	2016	2	-9	Local	22	1,014	2,478	$49.00	$ 121,426
471	Marshall St	Old Colebrook Rd	Indian Meadow Dr	0.192	1.147	0.955	Asphalt	Rural Class C	2016	2	-9	Local	22	5,042	12,326	$49.00	$ 603,967
471	Marshall St	Indian Meadow Dr	Colebrook Line	1.147	1.476	0.329	Asphalt	Rural Class C	2016	2	-9	Local	22	1,737	4,246	$49.00	$ 208,068
124	Mundry Rd	Dead-End	Wiegold Rd	0	0.173	0.173	Asphalt	Rural Class C	2016	2	-9	Local	18	913	1,827	$49.00	$ 89,517
124	Mundry Rd	Wiegold Rd	Schueman Rd	0.173	0.352	0.179	Asphalt	Rural Class C	2016	2	-9	Local	18	945	1,890	$49.00	$ 92,622
124	Mundry Rd	Schueman Rd	Schueman Rd	0.352	0.366	0.014	Asphalt	Rural Class C	2016	2	-9	Local	20	74	164	$49.00	$ 8,049
124	Mundry Rd	Schueman Rd	Wahnee Rd	0.366	0.835	0.469	Asphalt	Rural Class C	2016	3	-4	Local	20	2,476	5,503	$37.00	$ 203,609
467	Newfield Rd	Torrington Line	Schueman Rd	0	0.242	0.242	Asphalt	Rural Class C	2016	2	-9	MinColl	22	1,278	3,123	$49.00	$ 153,047
467	Newfield Rd	Schueman Rd	Schueman Rd	0.242	0.256	0.014	Asphalt	Rural Class C	2016	2	-9	MinColl	22	74	181	$49.00	$ 8,854
467	Newfield Rd	Schueman Rd	Wahnee Rd	0.256	0.792	0.536	Asphalt	Rural Class C	2016	2	-9	MinColl	22	2,830	6,918	$49.00	$ 338,981
467	Newfield Rd	Wahnee Rd	South Rd	0.792	1.72	0.928	Asphalt	Rural Class C	2016	2	-9	MinColl	21	4,900	11,433	$49.00	$ 560,215
467	Newfield Rd	South Rd	South Rd	1.72	1.723	0.003	Asphalt	Rural Class C	2016	2	-9	MinColl	21	16	37	$49.00	$ 1,811
467	Newfield Rd	South Rd	Winchester Rd	1.723	1.781	0.058	Asphalt	Rural Class C	2016	2	-9	MinColl	21	306	715	$49.00	$ 35,013
472	Old Colebrook Rd	Marshall St	Dead-End	0	0.198	0.198	Asphalt	Rural Class C	2016	2	-9	Local	16.5	1,045	1,917	$49.00	$ 93,915
138	Old North Rd	Wallens Hill Rd	Huntington Rd	0.022	0.711	0.689	Asphalt	Rural Class C	2016	7	5	Local	21	3,638	8,488	$0.70	$ 5,942
148	Peck Rd	Taylor Brook Rd	Mountain Rd	0	0.825	0.825	Asphalt	Rural Class C	2016	3	-4	Local	21	4,356	10,164	$37.00	$ 376,068
152	Pinney St	Norfolk Rd	Colebrook Line	0	0.067	0.067	Asphalt	Rural Class C	2016	8	7	Local	22	354	865	$0.30	$ 259

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
154	Platt Hill Rd	South Rd	Hollow Hill Rd	0	0.157	0.157	Asphalt	Rural Class C	2016	6	3	Local	18	829	1,658	$6.50	$ 10,776
154	Platt Hill Rd	Hollow Hill Rd	Dayton Rd	0.157	0.981	0.824	Asphalt	Rural Class C	2016	6	3	Local	28	4,351	13,536	$6.50	$ 87,981
154	Platt Hill Rd	Dayton Rd	Chapel Rd	0.981	1.103	0.122	Asphalt	Rural Class C	2016	6	3	Local	20	644	1,431	$6.50	$ 9,305
154	Platt Hill Rd	Chapel Rd	Laurel Way	1.103	1.527	0.424	Asphalt	Rural Class C	2016	6	3	Local	20	2,239	4,975	$6.50	$ 32,337
154	Platt Hill Rd	Laurel Way	Sucker Brook Rd	1.527	2.452	0.925	Asphalt	Rural Class C	2016	6	3	Local	21	4,884	11,396	$6.50	$ 74,074
154	Platt Hill Rd	Sucker Brook Rd	Winchester Rd	2.452	2.586	0.134	Asphalt	Rural Class C	2016	6	3	Local	21	708	1,651	$6.50	$ 10,731
480	Reaching Hill	Dayton Rd	Forest Ave	0	0.411	0.411	Asphalt	Rural Class C	2016	2	-9	Local	17	2,170	4,099	$49.00	$ 200,853
169	Rugg Brook Rd	Laurel Way	Old Waterbury Tpke	0	1.543	1.543	Asphalt	Rural Class C	2016	2	-9	Local	20	8,147	18,105	$49.00	$ 887,122
169	Rugg Brook Rd	Old Waterbury Tpke	Norfolk Rd	1.543	2.594	1.051	Asphalt	Rural Class C	2016	2	-9	Local	20	5,549	12,332	$49.00	$ 604,255
173	Schueman Rd	Mundry Rd	End of Island	0	0.016	0.016	Asphalt	Rural Class C	2016	2	-24	Local	12	84	113	$49.00	$ 5,519
173	Schueman Rd	Mundry Island	Newfield Island	0.016	0.305	0.289	Asphalt	Rural Class C	2016	2	-24	Local	17	1,526	2,882	$49.00	$ 141,232
173	Schueman Rd	Theoret. Island at Newfield	Newfield Rd	0.305	0.329	0.024	Asphalt	Rural Class C	2016	2	-24	Local	15	127	211	$49.00	$ 10,349
551	Schueman Rd	Mundry Rd	End of Island	0	0.016	0.016	Asphalt	Rural Class C	2016	2	-24	Local	12	84	113	$49.00	$ 5,519
552	Schueman Rd	Theoret. Island at Newfield	Newfield Rd	0	0.021	0.021	Asphalt	Rural Class C	2016	2	-24	Local	15	111	185	$49.00	$ 9,055
230	Skinner Rd	Danbury Qtr Rd	Dead-End	0	0.707	0.707	Asphalt	Rural Class C	2016	2	-9	Local	15	3,733	6,222	$49.00	$ 304,858
175	Smith Hill Rd	Colebrook River Rd	Ledge Dr	0	0.119	0.119	Asphalt	Rural Class C	2016	8	7	Local	26	628	1,815	$0.30	$ 545
175	Smith Hill Rd	Ledge Dr	Spencer Hill Rd	0.119	1.084	0.965	Asphalt	Rural Class C	2016	8	7	Unk	23	5,095	13,021	$0.30	$ 3,906
175	Smith Hill Rd	Spencer Hill Rd	Gaylord Rd	1.084	1.368	0.284	Asphalt	Rural Class C	2016	8	7	Local	23	1,500	3,832	$0.30	$ 1,150
175	Smith Hill Rd	Gaylord Rd	Colebrook Line	1.368	1.67	0.302	Asphalt	Rural Class C	2016	8	7	Local	24	1,595	4,252	$0.30	$ 1,276
170	South Rd	Torrington Line	Highview Dr	0	0.529	0.529	Asphalt	Rural Class C	2016	2	-9	MinColl	20	2,793	6,207	$49.00	$ 304,140
170	South Rd	Highview Dr	Platt Hill Rd	0.529	0.922	0.393	Asphalt	Rural Class C	2016	3	-4	MinColl	19	2,075	4,381	$37.00	$ 162,084
170	South Rd	Platt Hill Rd	Hollow Hill Rd	0.922	1.226	0.304	Asphalt	Rural Class C	2016	5	1	MinColl	24	1,605	4,280	$26.00	$ 111,288
170	South Rd	Hollow Hill Rd	Newfield Rd	1.226	1.786	0.56	Asphalt	Rural Class C	2016	2	-9	MinColl	20	2,957	6,571	$49.00	$ 321,963
550	South Rd	Newfield Rd	Winchester Rd	0	0.082	0.082	Asphalt	Rural Class C	2016	2	-8	MajColl	20	433	962	$49.00	$ 47,145
176	Spencer Hill Rd	Morningside Ave	Manchester Hts	0.281	0.435	0.154	Asphalt	Rural Class C	2016	3	-4	Unk	24	813	2,168	$37.00	$ 80,228
176	Spencer Hill Rd	Manchester Hts	Pavement Condition Change	0.435	0.845	0.41	Asphalt	Rural Class C	2016	6	3	Local	18	2,165	4,330	$6.50	$ 28,142
176	Spencer Hill Rd	Pavement Condition Change	Losaw Rd	0.845	0.939	0.094	Asphalt	Rural Class C	2016	5	1	Local	18	496	993	$26.00	$ 25,809
176	Spencer Hill Rd	Losaw Rd	Smith Hill Rd	0.939	2.411	1.472	Asphalt	Rural Class C	2016	3	-4	Local	18	7,772	15,544	$37.00	$ 575,140
188	Stonehouse Rd	Winchester Rd	Dead-End	0	0.143	0.143	Asphalt	Rural Class C	2016	1	-24	Local	12	755	1,007	$49.00	$ 49,329
191	Sucker Brook Rd	W Wakefield Blvd	Platt Hill Rd	0	0.955	0.955	Asphalt	Rural Class C	2016	5	1	Local	24	5,042	13,446	$26.00	$ 349,606
195	Taylor Brook Rd	Hollow Hill Rd	Peck Rd	0	0.923	0.923	Asphalt	Rural Class C	2016	6	3	Local	21	4,873	11,371	$6.50	$ 73,914
195	Taylor Brook Rd	Peck Rd	Torrington Line	0.923	1.196	0.273	Asphalt	Rural Class C	2016	3	-4	Local	18	1,441	2,883	$37.00	$ 106,667
208	Wahnee Rd	Blue St	Mundry Rd	0	0.492	0.492	Asphalt	Rural Class C	2016	1	-24	Local	21	2,598	6,061	$49.00	$ 297,011
208	Wahnee Rd	Mundry Rd	Newfield Rd	0.492	0.832	0.34	Asphalt	Rural Class C	2016	2	-8	Local	21	1,795	4,189	$49.00	$ 205,251
468	West Rd	Goshen Line	Grantville Rd	0	1.266	1.266	Asphalt	Rural Class C	2016	2	-9	MinColl	20	6,684	14,854	$49.00	$ 727,866
468	West Rd	Grantville Rd	Winchester Rd	1.266	1.407	0.141	Asphalt	Rural Class C	2016	2	-9	MinColl	20	744	1,654	$49.00	$ 81,066
474	International Way	John Groppo Dr	Dead-End	0	0.16	0.16	Asphalt	Urban Class A	2016	9	13	Local	26	845	2,441	$0.00	$ -
172	John Groppo Dr	Riverton Rd	International Way	0	0.163	0.163	Asphalt	Urban Class A	2016	9	13	Local	29	861	2,773	$0.00	$ -
172	John Groppo Dr	International Way	Dead-End	0.163	0.431	0.268	Asphalt	Urban Class A	2016	9	13	Local	29	1,415	4,560	$0.00	$ -

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

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130	New St	Torrington Rd	Standard Ave	0	0.105	0.105	Asphalt	Urban Class A	2016	2	-16	Local	35	554	2,156	$55.00	$ 118,580
130	New St	Standard Ave	State Hwy 8	0.105	0.263	0.158	Asphalt	Urban Class A	2016	2	-16	Local	35	834	3,244	$55.00	$ 178,435
130	New St	State Hwy 8	State Hwy 8	0.263	0.291	0.028	Asphalt	Urban Class A	2016	2	-16	Local	35	148	575	$55.00	$ 31,621
130	New St	State Hwy 8	Moore Ave	0.291	0.325	0.034	Asphalt	Urban Class A	2016	2	-16	Local	35	180	698	$55.00	$ 38,397
454	Price Rd	Dead-End	Colebrook River Rd	0	0.258	0.258	Asphalt	Urban Class A	2016	4	-3	Local	29	1,362	4,389	$33.00	$ 144,852
156	Prospect St	Winchester Rd	Spring St	0	0.182	0.182	Asphalt	Urban Class A	2016	6	5	MajColl	26	961	2,776	$6.50	$ 18,045
156	Prospect St	Spring St	Birdsall St	0.182	0.371	0.189	Asphalt	Urban Class A	2016	6	5	MajColl	26	998	2,883	$6.50	$ 18,739
156	Prospect St	Birdsall St	Pratt St	0.371	0.444	0.073	Asphalt	Urban Class A	2016	6	5	MajColl	26	385	1,113	$6.50	$ 7,238
449	Saint Onge Rd	Dead-End	Riverton Rd	0	0.046	0.046	Asphalt	Urban Class A	2016	9	13	Local	31	243	837	$0.00	$ -
223	Willow St	Case Ave	Torrington Rd	0.146	0.461	0.315	Asphalt	Urban Class A	2016	6	5	Local	32	1,663	5,914	$6.50	$ 38,438
1	Adams St	Cottage St	Crescent St	0	0.092	0.092	Asphalt	Urban Class B	2016	2	-9	Local	16	486	864	$55.00	$ 47,497
2	Allen St	Wetmore Ave	Dead-End	0	0.09	0.09	Asphalt	Urban Class B	2016	5	1	Local	26	475	1,373	$21.00	$ 28,829
5	Ash Rd	Maloney Ct	Glendale Ave	0	0.072	0.072	Asphalt	Urban Class B	2016	3	-6	Local	23	380	972	$50.00	$ 48,576
8	Baker St	E Mountain Ave	Wallens St	0	0.147	0.147	Asphalt	Urban Class B	2016	5	1	Local	24.5	776	2,113	$21.00	$ 44,370
9	Bank St	Hill St	Oak St	0	0.167	0.167	Asphalt	Urban Class B	2016	5	1	Local	18	882	1,764	$21.00	$ 37,034
12	Beach St	Oak St	Walnut St	0	0.057	0.057	Asphalt	Urban Class B	2016	6	4	Local	26	301	869	$6.50	$ 5,651
12	Beach St	Walnut St	Colebrook River Rd	0.057	0.135	0.078	Asphalt	Urban Class B	2016	6	4	Local	26	412	1,190	$6.50	$ 7,733
15	Benton St	Holabird Ave	Hicks St	0	0.163	0.163	Asphalt	Urban Class B	2016	5	1	Local	20	861	1,913	$21.00	$ 40,163
15	Benton St	Hicks St	Royer St	0.163	0.229	0.066	Asphalt	Urban Class B	2016	5	1	Local	20	348	774	$21.00	$ 16,262
16	Berg St	Waldron St	Stanton Ave	0	0.064	0.064	Asphalt	Urban Class B	2016	4	-1	Local	24	338	901	$33.00	$ 29,737
18	Birdsall St	Hurlbut St	Cherry St	0	0.119	0.119	Asphalt	Urban Class B	2016	3	-5	Local	23	628	1,606	$50.00	$ 80,285
18	Birdsall St	Cherry St	Finn St	0.119	0.182	0.063	Asphalt	Urban Class B	2016	3	-5	Local	23	333	850	$50.00	$ 42,504
18	Birdsall St	Finn St	Upson Ave	0.182	0.246	0.064	Asphalt	Urban Class B	2016	3	-5	Local	23	338	864	$50.00	$ 43,179
18	Birdsall St	Upson Ave	Rockwell St	0.246	0.294	0.048	Asphalt	Urban Class B	2016	3	-5	Local	23	253	648	$50.00	$ 32,384
18	Birdsall St	Rockwell St	Prospect St	0.294	0.357	0.063	Asphalt	Urban Class B	2016	3	-5	Local	23	333	850	$50.00	$ 42,504
21	Bridge St	Lovely St	Lewis St	0	0.067	0.067	Asphalt	Urban Class B	2016	6	4	Local	21	354	825	$6.50	$ 5,365
21	Bridge St	Lewis St	Upson Ave	0.067	0.144	0.077	Asphalt	Urban Class B	2016	6	4	Local	26	407	1,175	$6.50	$ 7,634
21	Bridge St	Upson Ave	Rockwell St	0.144	0.207	0.063	Asphalt	Urban Class B	2016	6	4	Local	28	333	1,035	$6.50	$ 6,727
21	Bridge St	Rockwell St	Maple St	0.207	0.242	0.035	Asphalt	Urban Class B	2016	6	4	Local	30	185	616	$6.50	$ 4,004
21	Bridge St	Maple St	Depot St	0.242	0.271	0.029	Asphalt	Urban Class B	2016	7	6	Local	30	153	510	$0.70	$ 357
21	Bridge St	Depot St	Prospect St	0.271	0.28	0.009	Asphalt	Urban Class B	2016	7	6	Local	30	48	158	$0.70	$ 111
21	Bridge St	Prospect St	Willow St	0.28	0.295	0.015	Asphalt	Urban Class B	2016	9	13	MajColl	47	79	414	$0.00	$ -
21	Bridge St	Willow St	Norfolk Rd	0.295	0.327	0.032	Asphalt	Urban Class B	2016	8	9	MajColl	40	169	751	$0.30	$ 225
22	Brook St	Horne Ave	Walnut St	0	0.025	0.025	Asphalt	Urban Class B	2016	5	1	Local	24	132	352	$21.00	$ 7,392
22	Brook St	Walnut St	Colebrook River Rd	0.025	0.094	0.069	Asphalt	Urban Class B	2016	5	1	Local	24	364	972	$21.00	$ 20,402
23	Brookside Ave	Spencer Hill Rd	Litchfield Ave	0	0.133	0.133	Asphalt	Urban Class B	2016	2	-9	Local	20	702	1,561	$55.00	$ 85,829
25	Case Ave	Willow St	Norfolk Rd	0	0.04	0.04	Asphalt	Urban Class B	2016	5	1	Local	40	211	939	$21.00	$ 19,712
25	Case Ave	Norfolk Rd	Center St	0.04	0.102	0.062	Asphalt	Urban Class B	2016	3	-5	Local	25	327	909	$50.00	$ 45,467
25	Case Ave	Center St	Gay St	0.102	0.168	0.066	Asphalt	Urban Class B	2016	3	-5	Local	26	348	1,007	$50.00	$ 50,336

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26	Cedar Rd	Maloney Ct	Glendale Ave	0	0.072	0.072	Asphalt	Urban Class B	2016	3	-5	Local	23	380	972	$50.00	$ 48,576
27	Center St	Elm St	Greenwoods Ave	0	0.101	0.101	Asphalt	Urban Class B	2016	6	4	Local	23	533	1,363	$6.50	$ 8,858
27	Center St	Greenwoods Ave	Case Ave	0.101	0.142	0.041	Asphalt	Urban Class B	2016	6	4	Local	23	216	553	$6.50	$ 3,596
488	Central Ave	Palmer Ave	Dead-End	0	0.164	0.164	Asphalt	Urban Class B	2016	5	1	Local	26	866	2,502	$21.00	$ 52,532
29	Charles St	Dead-End	Rockwell St	0	0.054	0.054	Asphalt	Urban Class B	2016	2	-9	Local	20	285	634	$55.00	$ 34,848
29	Charles St	Rockwell St	Maple St	0.054	0.091	0.037	Asphalt	Urban Class B	2016	2	-9	Local	22	195	478	$55.00	$ 26,265
29	Charles St	Maple St	Depot St	0.091	0.117	0.026	Asphalt	Urban Class B	2016	2	-9	Local	22	137	336	$55.00	$ 18,457
30	Cherry St	E Lake St	Ridge St	0	0.07	0.07	Asphalt	Urban Class B	2016	4	-1	Local	22	370	903	$33.00	$ 29,814
30	Cherry St	Ridge St	Birdsall St	0.07	0.174	0.104	Asphalt	Urban Class B	2016	4	-1	Local	25	549	1,525	$33.00	$ 50,336
31	Chestnut St	Norfolk Rd	Gay St	0	0.124	0.124	Asphalt	Urban Class B	2016	3	-5	Local	23	655	1,673	$50.00	$ 83,659
31	Chestnut St	Gay St	Holabird Ave	0.124	0.246	0.122	Asphalt	Urban Class B	2016	3	-5	Local	23	644	1,646	$50.00	$ 82,309
35	Colony Dr	Oakdale Ave	Glendale Ave	0	0.047	0.047	Asphalt	Urban Class B	2016	5	1	Local	25	248	689	$21.00	$ 14,476
35	Colony Dr	Glendale Ave	Maloney Ct	0.047	0.093	0.046	Asphalt	Urban Class B	2016	6	4	MajColl	32	243	864	$6.50	$ 5,613
35	Colony Dr	Maloney Ct	Kittredge Ln	0.093	0.258	0.165	Asphalt	Urban Class B	2016	6	4	MajColl	26	871	2,517	$6.50	$ 16,359
35	Colony Dr	Kittredge Ln	Holabird Ave	0.258	0.627	0.369	Asphalt	Urban Class B	2016	6	4	MajColl	26	1,948	5,628	$6.50	$ 36,585
36	Cook St	Woodland Ave	Winchester Rd	0	0.152	0.152	Asphalt	Urban Class B	2016	5	1	Local	25	803	2,229	$21.00	$ 46,816
39	Cottage St	Wetmore Ave	Adams St	0	0.09	0.09	Asphalt	Urban Class B	2016	3	-5	Local	25	475	1,320	$50.00	$ 66,000
39	Cottage St	Adams St	Lincoln Ave	0.09	0.163	0.073	Asphalt	Urban Class B	2016	3	-5	Local	22	385	942	$50.00	$ 47,109
40	Crescent St	Elm St	Adams St	0	0.126	0.126	Asphalt	Urban Class B	2016	4	-1	Local	23	665	1,700	$33.00	$ 56,105
40	Crescent St	Adams St	Lincoln Ave	0.126	0.203	0.077	Asphalt	Urban Class B	2016	4	-1	Local	23	407	1,039	$33.00	$ 34,287
40	Crescent St	Lincoln Ave	Mountain Ave	0.203	0.239	0.036	Asphalt	Urban Class B	2016	4	-1	Local	23	190	486	$33.00	$ 16,030
528	Crown St	Dead-End	Munro Pl	0	0.081	0.081	Asphalt	Urban Class B	2016	6	4	Local	17	428	808	$6.50	$ 5,251
528	Crown St	Munro Pl	Hinsdale Ave	0.081	0.126	0.045	Asphalt	Urban Class B	2016	9	10	Local	14	238	370	$0.00	$ -
42	Curtice St	Winchester Ave	Williams Ave	0	0.074	0.074	Asphalt	Urban Class B	2016	4	-1	Local	25	391	1,085	$33.00	$ 35,816
45	Depot St	Charles St	Bridge St	0	0.04	0.04	Asphalt	Urban Class B	2016	9	13	Local	27	211	634	$0.00	$ -
46	Division St	Meadow St	Front St	0	0.059	0.059	Asphalt	Urban Class B	2016	6	4	Local	27	312	935	$6.50	$ 6,075
46	Division St	Front St	Norfolk Rd	0.059	0.102	0.043	Asphalt	Urban Class B	2016	6	4	Local	23.5	227	593	$6.50	$ 3,853
494	E Lake St	E Wakefield Blvd	Cherry St	0	0.105	0.105	Asphalt	Urban Class B	2016	6	4	MajColl	26	554	1,602	$6.50	$ 10,410
494	E Lake St	Cherry St	Superior St	0.105	0.411	0.306	Asphalt	Urban Class B	2016	6	4	MajColl	25	1,616	4,488	$6.50	$ 29,172
494	E Lake St	Superior St	Jurisdiction Line	0.411	0.554	0.143	Asphalt	Urban Class B	2016	6	4	MajColl	22	755	1,846	$6.50	$ 11,997
553	E Mountain Ave	Gilbert Ave	Woodruff Ave	0	0.035	0.035	Asphalt	Urban Class B	2016	5	1	Local	19	185	390	$21.00	$ 8,193
554	E Mountain Ave	Stanton Ave	Gilbert Ave	0	0.066	0.066	Asphalt	Urban Class B	2016	5	1	Local	13	348	503	$21.00	$ 10,571
555	E Mountain Ave	Stanton Ave	Baker St	0	0.061	0.061	Asphalt	Urban Class B	2016	5	1	Local	22	322	787	$21.00	$ 16,533
555	E Mountain Ave	Baker St	Florence St	0.061	0.242	0.181	Asphalt	Urban Class B	2016	5	1	Local	22	956	2,336	$21.00	$ 49,058
49	Elm St	Norfolk Rd	Center St	0	0.064	0.064	Asphalt	Urban Class B	2016	4	-1	Local	33	338	1,239	$33.00	$ 40,888
49	Elm St	Center St	High St	0.064	0.098	0.034	Asphalt	Urban Class B	2016	4	-1	Local	37	180	738	$33.00	$ 24,355
49	Elm St	High St	Thibault Ave	0.098	0.117	0.019	Asphalt	Urban Class B	2016	4	-1	Local	35	100	390	$33.00	$ 12,874
49	Elm St	Thibault Ave	Gay St	0.117	0.161	0.044	Asphalt	Urban Class B	2016	4	-1	Local	28	232	723	$33.00	$ 23,852
49	Elm St	Gay St	Perkins St	0.161	0.232	0.071	Asphalt	Urban Class B	2016	4	-1	Local	26	375	1,083	$33.00	$ 35,739

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49	Elm St	Perkins St	Holabird Ave	0.232	0.328	0.096	Asphalt	Urban Class B	2016	4	-1	Local	28	507	1,577	$33.00	$ 52,040
49	Elm St	Holabird Ave	Crescent St	0.328	0.405	0.077	Asphalt	Urban Class B	2016	4	-1	Local	35	407	1,581	$33.00	$ 52,175
50	Fairview Ave	High St	Dead-End	0	0.077	0.077	Asphalt	Urban Class B	2016	4	-1	Local	22	407	994	$33.00	$ 32,796
51	Fehr Ave	Oakdale Ave	Glendale Ave	0	0.047	0.047	Asphalt	Urban Class B	2016	2	-9	Local	21	248	579	$55.00	$ 31,847
52	Finn St	Ridge St	Orchard St	0	0.077	0.077	Asphalt	Urban Class B	2016	3	-5	Local	21	407	949	$50.00	$ 47,432
53	Finn St	Orchard St	Birdsall St	0.077	0.132	0.055	Asphalt	Urban Class B	2016	4	-1	Local	21	290	678	$33.00	$ 22,361
53	Florence St	Holabird Ave	Royer St	0	0.232	0.232	Asphalt	Urban Class B	2016	6	4	Local	20	1,225	2,722	$6.50	$ 17,694
53	Florence St	Royer St	E Mountain Ave	0.232	0.308	0.076	Asphalt	Urban Class B	2016	6	4	Local	30	401	1,338	$6.50	$ 8,694
53	Florence St	E Mountain Ave	Wallens St	0.308	0.455	0.147	Asphalt	Urban Class B	2016	6	4	Local	31	776	2,673	$6.50	$ 17,377
54	Front St	Division St	North St	0	0.124	0.124	Asphalt	Urban Class B	2016	6	4	Local	24	655	1,746	$6.50	$ 11,348
54	Front St	North St	Meadow St	0.124	0.253	0.129	Asphalt	Urban Class B	2016	6	4	Local	24	681	1,816	$6.50	$ 11,806
55	Fruit St	Perkins St	Holabird Ave	0	0.072	0.072	Asphalt	Urban Class B	2016	9	13	Local	30	380	1,267	$0.00	$ -
55	Fruit St	Holabird Ave	Wetmore Ave	0.072	0.17	0.098	Asphalt	Urban Class B	2016	6	4	Local	23	517	1,322	$6.50	$ 8,595
56	Gay St	Elm St	Greenwoods Ave	0	0.077	0.077	Asphalt	Urban Class B	2016	4	-1	Local	29	407	1,310	$33.00	$ 43,231
56	Gay St	Greenwoods Ave	Case Ave	0.077	0.12	0.043	Asphalt	Urban Class B	2016	4	-1	Local	29	227	732	$33.00	$ 24,142
56	Gay St	Case Ave	Chestnut St	0.12	0.236	0.116	Asphalt	Urban Class B	2016	4	-1	Local	29	612	1,974	$33.00	$ 65,127
58	Gibbs St	Horne Ave	Colebrook River Rd	0	0.068	0.068	Asphalt	Urban Class B	2016	7	6	Local	23	359	918	$0.70	$ 642
59	Gilbert Ave	Holabird Ave	E Mountain Ave	0.061	0.366	0.305	Asphalt	Urban Class B	2016	3	-5	Local	23	1,610	4,115	$50.00	$ 205,773
59	Gilbert Ave	E Mountain Ave	E Mountain Ave	0.366	0.367	0.001	Asphalt	Urban Class B	2016	3	-5	Local	19	5	11	$50.00	$ 557
59	Gilbert Ave	E Mountain Ave	Wallens St	0.367	0.512	0.145	Asphalt	Urban Class B	2016	5	1	Local	19	766	1,616	$21.00	$ 33,942
62	Glendale Ave	Old New Hartford Rd	Colony Dr	0	0.101	0.101	Asphalt	Urban Class B	2016	5	1	MajColl	32	533	1,896	$21.00	$ 39,818
62	Glendale Ave	Colony Dr	Fehr Ave	0.101	0.164	0.063	Asphalt	Urban Class B	2016	6	4	Local	31	333	1,146	$6.50	$ 7,447
62	Glendale Ave	Fehr Ave	Ash Rd	0.164	0.231	0.067	Asphalt	Urban Class B	2016	6	4	Local	26	354	1,022	$6.50	$ 6,643
62	Glendale Ave	Ash Rd	Spruce St	0.231	0.291	0.06	Asphalt	Urban Class B	2016	6	3	Local	33	317	1,162	$6.50	$ 7,550
62	Glendale Ave	Spruce St	Cedar Rd	0.291	0.348	0.057	Asphalt	Urban Class B	2016	6	4	Local	27	301	903	$6.50	$ 5,869
62	Glendale Ave	Cedar Rd	Maloney Ct	0.348	0.434	0.086	Asphalt	Urban Class B	2016	5	1	Local	29	454	1,463	$21.00	$ 30,726
62	Glendale Ave	Maloney Ct	Dead-End	0.434	0.553	0.119	Asphalt	Urban Class B	2016	4	-1	Local	29	628	2,025	$33.00	$ 66,811
64	Greenwoods Ave	Center St	Thibault Ave	0	0.033	0.033	Asphalt	Urban Class B	2016	9	13	Local	30	174	581	$0.00	$ -
64	Greenwoods Ave	Thibault Ave	Gay St	0.033	0.072	0.039	Asphalt	Urban Class B	2016	9	13	Local	23	206	526	$0.00	$ -
67	Grove St	Oak St	Walnut St	0	0.058	0.058	Asphalt	Urban Class B	2016	3	-5	Local	19	306	647	$50.00	$ 32,325
67	Grove St	Walnut St	Park Pl E	0.058	0.192	0.134	Asphalt	Urban Class B	2016	3	-5	Local	22	708	1,729	$50.00	$ 86,475
68	Hamill Dr	Dead-End	Holabird Ave	0	0.164	0.164	Asphalt	Urban Class B	2016	6	3	Local	30	866	2,886	$6.50	$ 18,762
70	Hicks St	Benton St	Waldron St	0	0.086	0.086	Asphalt	Urban Class B	2016	5	1	Local	25	454	1,261	$21.00	$ 26,488
71	High St	Norfolk Rd	Hillside Ave	0	0.045	0.045	Asphalt	Urban Class B	2016	4	-1	Local	22	238	581	$33.00	$ 19,166
71	High St	Hillside Ave	Fairview Ave	0.045	0.174	0.129	Asphalt	Urban Class B	2016	4	-1	Local	24	681	1,816	$33.00	$ 59,939
71	High St	Fairview Ave	Union St	0.174	0.184	0.01	Asphalt	Urban Class B	2016	4	-1	Local	30	53	176	$33.00	$ 5,808
71	High St	Union St	Elm St	0.184	0.255	0.071	Asphalt	Urban Class B	2016	4	-1	Local	24	375	1,000	$33.00	$ 32,989
73	Hill St	Mountain Ave	Bank St	0	0.07	0.07	Asphalt	Urban Class B	2016	2	-9	Local	20	370	821	$55.00	$ 45,173
74	Hillside Ave	High St	Rock St	0	0.029	0.029	Asphalt	Urban Class B	2016	7	6	Local	20	153	340	$0.70	$ 238

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
74	Hillside Ave	Rock St	Munro Pl	0.029	0.219	0.19	Asphalt	Urban Class B	2016	7	6	Local	33	1,003	3,678	$0.70	$ 2,575
74	Hillside Ave	Munro Pl	Hinsdale Ave	0.219	0.273	0.054	Asphalt	Urban Class B	2016	7	6	Local	33	285	1,045	$0.70	$ 732
492	Hinsdale Ave	Norfolk Rd	Spencer Hill Rd	0	0.032	0.032	Asphalt	Urban Class B	2016	9	13	MajColl	26	169	488	$0.00	$ -
492	Hinsdale Ave	Spencer Hill Rd	Hillside Ave	0.032	0.113	0.081	Asphalt	Urban Class B	2016	6	4	MajColl	26	428	1,236	$6.50	$ 8,031
492	Hinsdale Ave	Hillside Ave	Williams Ave	0.113	0.176	0.063	Asphalt	Urban Class B	2016	3	-5	MajColl	26	333	961	$50.00	$ 48,048
492	Hinsdale Ave	Williams Ave	Wheeler St	0.176	0.339	0.163	Asphalt	Urban Class B	2016	6	4	MajColl	28	861	2,678	$6.50	$ 17,404
492	Hinsdale Ave	Wheeler St	Crescent St	0.339	0.443	0.104	Asphalt	Urban Class B	2016	6	4	MajColl	28	549	1,708	$6.50	$ 11,104
503	Hinsdale Dr	Hinsdale School Jurisdiction	Williams Ave	0	0.034	0.034	Asphalt	Urban Class B	2016	4	-1	Unk	24	180	479	$33.00	$ 15,798
77	Holabird Ave	Elm St	Condition Change	0	0.057	0.057	Asphalt	Urban Class B	2016	4	11	Local	30	301	1,003	$33.00	$ 33,106
77	Holabird Ave	Condition Change	Fruit St	0.057	0.114	0.057	Asphalt	Urban Class B	2016	9	-2	Local	30	301	1,003	$0.00	$ -
77	Holabird Ave	Fruit St	Chestnut St	0.114	0.193	0.079	Asphalt	Urban Class B	2016	4	-1	Local	30	417	1,390	$33.00	$ 45,883
77	Holabird Ave	Chestnut St	Oak St	0.193	0.277	0.084	Asphalt	Urban Class B	2016	4	-1	Local	30	444	1,478	$33.00	$ 48,787
77	Holabird Ave	Oak St	Walnut St	0.277	0.336	0.059	Asphalt	Urban Class B	2016	4	-1	Local	31	312	1,073	$33.00	$ 35,409
77	Holabird Ave	Walnut St	Colebrook River Rd	0.336	0.471	0.135	Asphalt	Urban Class B	2016	4	-2	Local	30	713	2,376	$33.00	$ 78,408
77	Holabird Ave	Colebrook River Rd	Whiting St	0.471	0.531	0.06	Asphalt	Urban Class B	2016	2	-9	MajColl	34	317	1,197	$55.00	$ 65,824
77	Holabird Ave	Whiting St	Gilbert Ave	0.531	0.592	0.061	Asphalt	Urban Class B	2016	2	-9	MajColl	34	322	1,217	$55.00	$ 66,921
77	Holabird Ave	Gilbert Ave	Stanton Ave	0.592	0.658	0.066	Asphalt	Urban Class B	2016	2	-9	MajColl	33	348	1,278	$55.00	$ 70,277
77	Holabird Ave	Stanton Ave	Colony Dr	0.658	0.662	0.004	Asphalt	Urban Class B	0	2	-9	MajColl	23	21	54	$55.00	$ 2,969
77	Holabird Ave	Colony Dr	Waldron St	0.662	0.707	0.045	Asphalt	Urban Class B	2016	2	-9	Local	23	238	607	$55.00	$ 33,396
77	Holabird Ave	Waldron St	Hamill Dr	0.707	0.771	0.064	Asphalt	Urban Class B	2016	2	-9	Local	23	338	864	$55.00	$ 47,497
77	Holabird Ave	Hamill Dr	Benton St	0.771	0.773	0.002	Asphalt	Urban Class B	2016	2	-9	Local	23	11	27	$55.00	$ 1,484
77	Holabird Ave	Benton St	Florence St	0.773	0.832	0.059	Asphalt	Urban Class B	0	2	-9	Local	23	312	796	$55.00	$ 43,786
81	Horne Ave	Brook St	Gibbs St	0	0.119	0.119	Asphalt	Urban Class B	2016	6	4	Local	30	628	2,094	$6.50	$ 13,614
81	Horne Ave	Gibbs St	Dead-End	0.119	0.187	0.068	Asphalt	Urban Class B	2016	6	4	Local	29	359	1,157	$6.50	$ 7,520
83	Hubbard St	Winchester Rd	John St	0	0.125	0.125	Asphalt	Urban Class B	2016	3	-5	Local	25	660	1,833	$50.00	$ 91,667
83	Hubbard St	John St	Jurisdiction Line	0.125	0.126	0.001	Asphalt	Urban Class B	2016	3	-5	Local	25	5	15	$50.00	$ 733
83	Hubbard St	John St	Dead-End	0.126	0.26	0.134	Asphalt	Urban Class B	2016	3	-5	Local	20	708	1,572	$50.00	$ 78,613
85	Hurlbut St	E Wakefield Blvd	Ridge St	0	0.079	0.079	Asphalt	Urban Class B	2016	6	4	MajColl	35	417	1,622	$6.50	$ 10,544
85	Hurlbut St	Ridge St	Birdsall St	0.079	0.144	0.065	Asphalt	Urban Class B	2016	6	4	MajColl	26	343	991	$6.50	$ 6,445
85	Hurlbut St	Birdsall St	Pratt St	0.144	0.248	0.104	Asphalt	Urban Class B	2016	6	4	MajColl	29	549	1,769	$6.50	$ 11,501
90	John St	Hubbard St	Meadow St	0	0.117	0.117	Asphalt	Urban Class B	2016	6	4	Local	27	618	1,853	$6.50	$ 12,046
549	John St	Hubbard St	Dead-End	0	0.063	0.063	Asphalt	Urban Class B	2016	4	-1	Local	23	333	850	$33.00	$ 28,053
95	Lake St	Jurisdiction Line	Rockwell St	0	0.126	0.126	Asphalt	Urban Class B	2016	3	-5	MajColl	28	665	2,070	$50.00	$ 103,488
95	Lake St	Rockwell St	Winchester Rd	0.126	0.229	0.103	Asphalt	Urban Class B	2016	3	-5	MajColl	28	544	1,692	$50.00	$ 84,597
510	Lanson Dr	Torrington Rd	Bridge	0	0.028	0.028	Asphalt	Urban Class B	2016	2	-9	Local	48	148	788	$55.00	$ 43,366
510	Lanson Dr	Bridge	Pavement Type Change	0.028	0.031	0.003	Asphalt	Urban Class B	2016	2	-9	Local	48	16	84	$55.00	$ 4,646
98	Laurel St	Woodland Ave	Winchester Rd	0	0.113	0.113	Asphalt	Urban Class B	2016	6	4	Local	24	597	1,591	$6.50	$ 10,342
518	Ledge Dr	Dead-End	Smith Hill Rd	0	0.122	0.122	Asphalt	Urban Class B	2016	2	-12	Local	24	644	1,718	$55.00	$ 94,477
101	Lewis St	Bridge St	Pratt St	0	0.119	0.119	Asphalt	Urban Class B	2016	2	-12	Local	25	628	1,745	$55.00	$ 95,993

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

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103	Litchfield Ave	Williams Ave	Brookside Ave	0	0.102	0.102	Asphalt	Urban Class B	2016	8	9	Local	32	539	1,915	$0.30	$ 574
104	Loomis St	Norfolk Rd	Dead-End	0	0.073	0.073	Asphalt	Urban Class B	2016	6	4	Local	24	385	1,028	$6.50	$ 6,681
106	Lovely St	Pratt St	Bridge St	0	0.113	0.113	Asphalt	Urban Class B	2016	3	-5	Local	26	597	1,724	$50.00	$ 86,181
109	Maloney Ct	Colony Dr	Ash Rd	0	0.074	0.074	Asphalt	Urban Class B	2016	5	1	Local	34	391	1,476	$21.00	$ 30,997
109	Maloney Ct	Ash Rd	Spruce St	0.074	0.131	0.057	Asphalt	Urban Class B	2016	5	1	Local	34	301	1,137	$21.00	$ 23,876
109	Maloney Ct	Spruce St	Cedar Rd	0.131	0.188	0.057	Asphalt	Urban Class B	2016	4	-1	Local	34	301	1,137	$33.00	$ 37,520
109	Maloney Ct	Cedar Rd	Glendale Ave	0.188	0.34	0.152	Asphalt	Urban Class B	2016	4	-1	Local	34	803	3,032	$33.00	$ 100,052
111	Manchester Hts	Spencer Hill Rd	Dead-End	0	0.197	0.197	Asphalt	Urban Class B	2016	3	-5	Local	22	1,040	2,543	$50.00	$ 127,131
483	Maple St	Bridge St	Charles St	0	0.04	0.04	Asphalt	Urban Class B	2016	2	-9	Local	17	211	399	$55.00	$ 21,941
483	Maple St	Charles St	Dead-End	0.04	0.448	0.408	Asphalt	Urban Class B	2016	5	1	Local	22	2,154	5,266	$21.00	$ 110,584
114	Meadow St	Winchester Rd	Munroe St	0	0.093	0.093	Asphalt	Urban Class B	2016	6	4	Local	32	491	1,746	$6.50	$ 11,348
114	Meadow St	Munroe St	Division St	0.093	0.17	0.077	Asphalt	Urban Class B	2016	3	-5	Local	31	407	1,400	$50.00	$ 70,019
114	Meadow St	Division St	John St	0.17	0.236	0.066	Asphalt	Urban Class B	2016	6	4	Local	32	348	1,239	$6.50	$ 8,054
114	Meadow St	John St	North St	0.236	0.282	0.046	Asphalt	Urban Class B	2016	6	4	Local	32	243	864	$6.50	$ 5,613
114	Meadow St	North St	Front St	0.282	0.383	0.101	Asphalt	Urban Class B	2016	6	4	Local	31	533	1,837	$6.50	$ 11,940
114	Meadow St	Front St	Norfolk Rd	0.383	0.439	0.056	Asphalt	Urban Class B	2016	6	4	Local	24	296	788	$6.50	$ 5,125
116	Moore Ave	Roberts Ave	New St	0	0.223	0.223	Asphalt	Urban Class B	2016	2	-9	Local	28	1,177	3,663	$55.00	$ 201,473
116	Moore Ave	New St	Torringford St	0.223	0.721	0.498	Asphalt	Urban Class B	2016	4	-1	Local	24	2,629	7,012	$33.00	$ 231,391
120	Morningside Ave	Brookside Ave	Spencer Hill Rd	0	0.09	0.09	Asphalt	Urban Class B	2016	4	-1	Local	17	475	898	$33.00	$ 29,621
121	Mountain Ave	Hill St	Crescent St	0	0.023	0.023	Asphalt	Urban Class B	2016	5	1	Local	19	121	256	$21.00	$ 5,384
121	Mountain Ave	Crescent St	Oak St	0.023	0.192	0.169	Asphalt	Urban Class B	2016	5	1	Local	19	892	1,884	$21.00	$ 39,560
123	Mountain View Ter	Nanni Dr	Dead-End	0	0.231	0.231	Asphalt	Urban Class B	2016	9	13	Local	30	1,220	4,066	$0.00	$ -
125	Munro Pl	Munroe St	Hillside Ave	0	0.099	0.099	Asphalt	Urban Class B	2016	9	13	Local	31	523	1,800	$0.00	$ -
125	Munro Pl	Hillside Ave	Crown St	0.099	0.159	0.06	Asphalt	Urban Class B	2016	4	-1	Local	24	317	845	$33.00	$ 27,878
126	Munroe St	Meadow St	Norfolk Rd	0	0.091	0.091	Asphalt	Urban Class B	2016	6	4	Local	24	480	1,281	$6.50	$ 8,328
128	Nalette Dr	Sunny Ridge Dr	Oakdale Ave	0	0.163	0.163	Asphalt	Urban Class B	2016	7	6	Local	27	861	2,582	$0.70	$ 1,807
478	Nanni Dr	White St	Mountain View Ter	0	0.146	0.146	Asphalt	Urban Class B	2016	9	13	Local	30	771	2,570	$0.00	$ -
478	Nanni Dr	Mountain View Ter	Dead-End	0.146	0.319	0.173	Asphalt	Urban Class B	2016	9	10	Local	30	913	3,045	$0.00	$ -
133	North St	Meadow St	Front St	0	0.058	0.058	Asphalt	Urban Class B	2016	2	-9	Local	19	306	647	$55.00	$ 35,558
135	Oak St	Norfolk Rd	St James Pl	0	0.042	0.042	Asphalt	Urban Class B	2016	4	-1	Local	27	222	665	$33.00	$ 21,954
135	Oak St	St James Pl	Grove St	0.042	0.183	0.141	Asphalt	Urban Class B	2016	4	-1	Local	25	744	2,068	$33.00	$ 68,244
135	Oak St	Grove St	Holabird Ave	0.183	0.242	0.059	Asphalt	Urban Class B	2016	4	-1	Local	25	312	865	$33.00	$ 28,556
135	Oak St	Holabird Ave	Wetmore Ave	0.242	0.341	0.099	Asphalt	Urban Class B	2016	6	4	Local	23	523	1,336	$6.50	$ 8,683
135	Oak St	Wetmore Ave	Mountain Ave	0.341	0.545	0.204	Asphalt	Urban Class B	2016	3	-5	Local	30	1,077	3,590	$50.00	$ 179,520
135	Oak St	Mountain Ave	Bank St	0.545	0.615	0.07	Asphalt	Urban Class B	2016	3	-5	Local	30	370	1,232	$50.00	$ 61,600
135	Oak St	Bank St	Beach St	0.615	0.689	0.074	Asphalt	Urban Class B	2016	3	-5	Local	30	391	1,302	$50.00	$ 65,120
136	Oakdale Ave	Old New Hartford Rd	Colony Dr	0	0.094	0.094	Asphalt	Urban Class B	2016	5	1	Local	32	496	1,765	$21.00	$ 37,059
136	Oakdale Ave	Colony Dr	Fehr Ave	0.094	0.154	0.06	Asphalt	Urban Class B	2016	2	-9	Local	32	317	1,126	$55.00	$ 61,952
136	Oakdale Ave	Fehr Ave	Nalette Dr	0.154	0.442	0.288	Asphalt	Urban Class B	2016	2	-9	Local	25	1,521	4,224	$55.00	$ 232,320

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

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136	Oakdale Ave	Nalette Dr	Dead-End	0.442	0.534	0.092	Asphalt	Urban Class B	2016	2	-9	Local	25	486	1,349	$55.00	$ 74,213
137	Old New Hartford Rd	Norfolk Rd	Glendale Ave	0	0.061	0.061	Asphalt	Urban Class B	2016	5	1	MajColl	25	322	895	$21.00	$ 18,788
137	Old New Hartford Rd	Glendale Ave	Oakdale Ave	0.061	0.104	0.043	Asphalt	Urban Class B	2016	5	1	Local	25	227	631	$21.00	$ 13,244
137	Old New Hartford Rd	Oakdale Ave	Barkhamsted Line	0.104	0.517	0.413	Asphalt	Urban Class B	2016	9	13	Local	26	2,181	6,300	$0.00	$ -
142	Orchard St	Finn St	Rockwell St	0	0.163	0.163	Asphalt	Urban Class B	2016	3	-5	Local	18	861	1,721	$50.00	$ 86,064
144	Palmer Ave	Colony Dr	Central Ave	0	0.045	0.045	Asphalt	Urban Class B	2016	5	1	Local	25	238	660	$21.00	$ 13,860
144	Palmer Ave	Central Ave	Dead-End	0.045	0.069	0.024	Asphalt	Urban Class B	2016	5	1	Local	25	127	352	$21.00	$ 7,392
150	Perkins St	Elm St	Fruit St	0	0.127	0.127	Asphalt	Urban Class B	2016	9	13	Local	30	671	2,235	$0.00	$ -
485	Pratt St	Change Gravel to Asphalt	Batcheller School Driveway	0.255	0.605	0.35	Asphalt	Urban Class B	2016	3	-5	Local	17	1,848	3,491	$50.00	$ 174,533
485	Pratt St	Batcheller School Driveway	Hurlbut St	0.605	0.793	0.188	Asphalt	Urban Class B	2016	3	-5	Local	34	993	3,750	$50.00	$ 187,499
485	Pratt St	Hurlbut St	Lovely St	0.793	0.85	0.057	Asphalt	Urban Class B	2016	4	-1	MajColl	26	301	869	$33.00	$ 28,692
485	Pratt St	Lovely St	Lewis St	0.85	0.91	0.06	Asphalt	Urban Class B	2016	4	-1	MajColl	25.75	317	906	$33.00	$ 29,911
485	Pratt St	Lewis St	Upson Ave	0.91	0.965	0.055	Asphalt	Urban Class B	2016	4	-2	MajColl	25.75	290	831	$33.00	$ 27,419
485	Pratt St	Upson Ave	Rockwell St	0.965	1.017	0.052	Asphalt	Urban Class B	2016	3	-6	MajColl	25.75	275	786	$50.00	$ 39,277
485	Pratt St	Rockwell St	Prospect St	1.017	1.084	0.067	Asphalt	Urban Class B	2016	3	-5	MajColl	25.75	354	1,012	$50.00	$ 50,607
156	Prospect St	Pratt St	Bridge St	0.444	0.522	0.078	Asphalt	Urban Class B	2016	9	13	MajColl	29	412	1,327	$0.00	$ -
157	Ridge St	Hurlbut St	Cherry St	0	0.123	0.123	Asphalt	Urban Class B	2016	3	-5	Local	22	649	1,588	$50.00	$ 79,376
157	Ridge St	Cherry St	Finn St	0.123	0.194	0.071	Asphalt	Urban Class B	2016	2	-9	Local	22	375	916	$55.00	$ 50,401
157	Ridge St	Finn St	Superior St	0.194	0.46	0.266	Asphalt	Urban Class B	2016	2	-9	Local	21	1,404	3,277	$55.00	$ 180,242
160	Roberts Ave	Torringford St	Moore Ave	0	0.133	0.133	Asphalt	Urban Class B	2016	3	-5	Local	20	702	1,561	$50.00	$ 78,027
161	Rock St	Hillside Ave	Wheeler St	0	0.201	0.201	Asphalt	Urban Class B	2016	4	-1	Local	22	1,061	2,594	$33.00	$ 85,610
163	Rockwell St	Lake St	Change of Pavement Condition	0	0.114	0.114	Asphalt	Urban Class B	2016	9	10	Local	23	602	1,538	$0.00	$ -
163	Rockwell St	Change of Pavement Condition	Superior St	0.114	0.228	0.114	Asphalt	Urban Class B	2016	5	1	Local	23	602	1,538	$21.00	$ 32,303
163	Rockwell St	Superior St	Spring St	0.228	0.356	0.128	Asphalt	Urban Class B	2016	5	1	Local	21	676	1,577	$21.00	$ 33,116
163	Rockwell St	Spring St	Orchard St	0.356	0.432	0.076	Asphalt	Urban Class B	2016	5	1	Local	23	401	1,025	$21.00	$ 21,535
163	Rockwell St	Orchard St	Birdsall St	0.432	0.513	0.081	Asphalt	Urban Class B	2016	5	1	Local	23	428	1,093	$21.00	$ 22,952
163	Rockwell St	Birdsall St	Pratt St	0.513	0.579	0.066	Asphalt	Urban Class B	2016	5	1	Local	21	348	813	$21.00	$ 17,076
163	Rockwell St	Pratt St	Bridge St	0.579	0.684	0.105	Asphalt	Urban Class B	2016	4	-1	Local	23	554	1,417	$33.00	$ 46,754
163	Rockwell St	Bridge St	Charles St	0.684	0.723	0.039	Asphalt	Urban Class B	2016	3	-5	Local	23	206	526	$50.00	$ 26,312
163	Rockwell St	Charles St	Dead-End	0.723	0.774	0.051	Asphalt	Urban Class B	2016	3	-5	Local	23	269	688	$50.00	$ 34,408
168	Royer St	Waldron St	Benton St	0	0.091	0.091	Asphalt	Urban Class B	2016	5	1	Local	25	480	1,335	$21.00	$ 28,028
168	Royer St	Benton St	Florence St	0.091	0.158	0.067	Asphalt	Urban Class B	2016	5	1	Local	25	354	983	$21.00	$ 20,636
176	Spencer Hill Rd	Norfolk Rd	Hinsdale Ave	0	0.053	0.053	Asphalt	Urban Class B	2016	5	1	Local	30	280	933	$21.00	$ 19,589
176	Spencer Hill Rd	Hinsdale Ave	Brookside Ave	0.053	0.159	0.106	Asphalt	Urban Class B	2016	3	-5	Local	33	560	2,052	$50.00	$ 102,608
176	Spencer Hill Rd	Brookside Ave	Upland Rd	0.159	0.189	0.03	Asphalt	Urban Class B	2016	3	-5	Local	33	158	581	$50.00	$ 29,040
176	Spencer Hill Rd	Upland Rd	Morningside Ave	0.189	0.281	0.092	Asphalt	Urban Class B	2016	3	-5	Local	33	486	1,781	$50.00	$ 89,056
178	Spring St	Rockwell St	Prospect St	0	0.158	0.158	Asphalt	Urban Class B	2016	2	-9	Local	18	834	1,668	$55.00	$ 91,766
179	Spruce St	Maloney Ct	Glendale Ave	0	0.072	0.072	Asphalt	Urban Class B	2016	3	-5	Local	23	380	972	$50.00	$ 48,576
382	St James Pl	Oak St	Walnut St	0	0.056	0.056	Asphalt	Urban Class B	2016	6	4	Local	24	296	788	$6.50	$ 5,125

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
182	Standard Ave	Dead-End	New St	0	0.374	0.374	Asphalt	Urban Class B	2016	4	-1	Local	27	1,975	5,924	$33.00	$ 195,497
183	Stanton Ave	Holabird Ave	Berg St	0	0.183	0.183	Asphalt	Urban Class B	2016	4	-1	Local	22	966	2,362	$33.00	$ 77,943
183	Stanton Ave	Berg St	E Mountain Ave	0.183	0.3	0.117	Asphalt	Urban Class B	2016	3	-5	Local	27	618	1,853	$50.00	$ 92,664
183	Stanton Ave	E Mountain Ave	E Mountain Ave	0.3	0.306	0.006	Asphalt	Urban Class B	2016	3	-5	Local	30	32	106	$50.00	$ 5,280
183	Stanton Ave	E Mountain Ave	Wallens St	0.306	0.446	0.14	Asphalt	Urban Class B	2016	3	-5	Local	30	739	2,464	$50.00	$ 123,200
190	Strong Ter	Norfolk Rd	Dead-End	0	0.226	0.226	Asphalt	Urban Class B	2016	2	-9	Local	22	1,193	2,917	$55.00	$ 160,430
556	Sunny Ridge Dr	Nalette Dr	Dead-End	0	0.079	0.079	Asphalt	Urban Class B	2016	2	-9	Local	26	417	1,205	$55.00	$ 66,276
557	Sunny Ridge Dr	Nalette Dr	Dead-End	0	0.077	0.077	Asphalt	Urban Class B	2016	2	-9	Local	26	407	1,175	$55.00	$ 64,598
193	Superior St	E Lake St	Laveri Ter	0	0.053	0.053	Asphalt	Urban Class B	2016	9	13	Local	20	280	622	$0.00	$ -
193	Superior St	Laveri Ter	Ridge St	0.053	0.08	0.027	Asphalt	Urban Class B	2016	9	13	Local	20	143	317	$0.00	$ -
193	Superior St	Ridge St	Rockwell St	0.08	0.122	0.042	Asphalt	Urban Class B	2016	4	-1	Local	22	222	542	$33.00	$ 17,889
196	Taylor Rd	Riverton Rd	Old Robertsville Rd	0	0.232	0.232	Asphalt	Urban Class B	2016	4	0	Local	19	1,225	2,586	$33.00	$ 85,339
196	Taylor Rd	Old Robertsville Rd	Barkhamsted Line	0.232	0.286	0.054	Asphalt	Urban Class B	2016	4	0	Local	19	285	602	$33.00	$ 19,863
197	Thibault Ave	Greenwoods Ave	Elm St	0	0.091	0.091	Asphalt	Urban Class B	2016	9	13	Local	20	480	1,068	$0.00	$ -
201	Union St	Norfolk Rd	High St	0	0.108	0.108	Asphalt	Urban Class B	2016	4	-1	Local	23	570	1,457	$33.00	$ 48,090
203	Upland Rd	Spencer Hill Rd	Sharp Bend	0	0.09	0.09	Asphalt	Urban Class B	2016	5	1	Local	19	475	1,003	$21.00	$ 21,067
203	Upland Rd	Sharp Bend	Norfolk Rd	0.09	0.159	0.069	Asphalt	Urban Class B	2016	1	-31	Local	13	364	526	$99.00	$ 52,098
495	Upson Ave	Birdsall St	Pratt St	0	0.066	0.066	Asphalt	Urban Class B	2016	6	4	Local	30	348	1,162	$6.50	$ 7,550
495	Upson Ave	Pratt St	Bridge St	0.066	0.185	0.119	Asphalt	Urban Class B	2016	6	4	Local	30	628	2,094	$6.50	$ 13,614
206	W Lake St	Winchester Rd	W Wakefield Blvd	0	0.14	0.14	Asphalt	Urban Class B	2016	3	-5	MajColl	24	739	1,971	$50.00	$ 98,560
206	W Lake St	W Wakefield Blvd	Woodland Ave	0.14	0.215	0.075	Asphalt	Urban Class B	2016	3	-5	MajColl	25	396	1,100	$50.00	$ 55,000
206	W Lake St	Woodland Ave	Pavement Condition Change	0.215	0.268	0.053	Asphalt	Urban Class B	2016	9	13	MajColl	23	280	715	$0.00	$ -
206	W Lake St	Pavement Condition Change	Jurisdiction Line	0.268	0.32	0.052	Asphalt	Urban Class B	2016	3	-5	MajColl	23	275	702	$50.00	$ 35,083
209	Waldron St	Holabird Ave	Hicks St	0	0.166	0.166	Asphalt	Urban Class B	2016	4	-1	Local	21	876	2,045	$33.00	$ 67,489
209	Waldron St	Hicks St	Berg St	0.166	0.187	0.021	Asphalt	Urban Class B	2016	4	-1	Local	21	111	259	$33.00	$ 8,538
209	Waldron St	Berg St	Royer St	0.187	0.227	0.04	Asphalt	Urban Class B	2016	4	-1	Local	21	211	493	$33.00	$ 16,262
115	Wallens Hill Rd	Old North Rd	Huntington Rd	0.819	1.428	0.609	Asphalt	Urban Class B	2016	2	0	Unk	18	3,216	6,431	$55.00	$ 353,707
115	Wallens Hill Rd	Huntington Rd	Riverton Rd	1.428	1.783	0.355	Asphalt	Urban Class B	2016	3	0	Local	21	1,874	4,374	$50.00	$ 218,680
210	Wallens St	Colebrook River Rd	Woodruff Ave	0	0.066	0.066	Asphalt	Urban Class B	2016	9	13	Local	30	348	1,162	$0.00	$ -
210	Wallens St	Woodruff Ave	White St	0.066	0.096	0.03	Asphalt	Urban Class B	2016	9	13	Local	30	158	528	$0.00	$ -
210	Wallens St	White St	Gilbert Ave	0.096	0.107	0.011	Asphalt	Urban Class B	2016	9	13	Local	30	58	194	$0.00	$ -
210	Wallens St	Gilbert Ave	Stanton Ave	0.107	0.172	0.065	Asphalt	Urban Class B	2016	2	-9	Local	20	343	763	$55.00	$ 41,947
210	Wallens St	Stanton Ave	Baker St	0.172	0.249	0.077	Asphalt	Urban Class B	2016	2	-9	Local	34	407	1,536	$55.00	$ 84,474
210	Wallens St	Baker St	Florence St	0.249	0.429	0.18	Asphalt	Urban Class B	2016	2	-9	Local	34	950	3,590	$55.00	$ 197,472
210	Wallens St	Florence St	Stowe Rd	0.429	0.685	0.256	Asphalt	Urban Class B	2016	2	-9	Local	25	1,352	3,755	$55.00	$ 206,507
211	Walnut St	Norfolk Rd	St James Pl	0	0.035	0.035	Asphalt	Urban Class B	2016	3	-5	Local	27	185	554	$50.00	$ 27,720
211	Walnut St	St James Pl	Grove St	0.035	0.171	0.136	Asphalt	Urban Class B	2016	3	-5	Local	27	718	2,154	$50.00	$ 107,712
211	Walnut St	Grove St	Holabird Ave	0.171	0.229	0.058	Asphalt	Urban Class B	2016	3	-5	Local	24	306	817	$50.00	$ 40,832
211	Walnut St	Holabird Ave	Wetmore Ave	0.229	0.325	0.096	Asphalt	Urban Class B	2016	9	13	Local	24	507	1,352	$0.00	$ -

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
211	Walnut St	Wetmore Ave	Beach St	0.325	0.677	0.352	Asphalt	Urban Class B	2016	3	-5	Local	30	1,859	6,195	$50.00	$ 309,760
211	Walnut St	Beach St	Gregory St	0.677	0.749	0.072	Asphalt	Urban Class B	2016	5	1	Local	25	380	1,056	$21.00	$ 22,176
211	Walnut St	Gregory St	Brook St	0.749	0.876	0.127	Asphalt	Urban Class B	2016	5	1	Local	25	671	1,863	$21.00	$ 39,116
214	Wetmore Ave	Crescent St	Fruit St	0	0.114	0.114	Asphalt	Urban Class B	2016	7	6	MajColl	40	602	2,675	$0.70	$ 1,873
214	Wetmore Ave	Fruit St	Cottage St	0.114	0.159	0.045	Asphalt	Urban Class B	2016	7	6	MajColl	31	238	818	$0.70	$ 573
214	Wetmore Ave	Cottage St	Allen St	0.159	0.217	0.058	Asphalt	Urban Class B	2016	7	6	MajColl	31	306	1,055	$0.70	$ 738
214	Wetmore Ave	Allen St	Oak St	0.217	0.275	0.058	Asphalt	Urban Class B	2016	7	6	MajColl	31	306	1,055	$0.70	$ 738
214	Wetmore Ave	Oak St	Walnut St	0.275	0.334	0.059	Asphalt	Urban Class B	2016	7	6	MajColl	31	312	1,073	$0.70	$ 751
214	Wetmore Ave	Walnut St	Colebrook River Rd	0.334	0.457	0.123	Asphalt	Urban Class B	2016	7	6	MajColl	31	649	2,237	$0.70	$ 1,566
215	Wheeler St	Elm St	Rock St	0	0.095	0.095	Asphalt	Urban Class B	2016	6	4	Local	26.5	502	1,477	$6.50	$ 9,600
215	Wheeler St	Rock St	Hinsdale Ave	0.095	0.259	0.164	Asphalt	Urban Class B	2016	6	4	Local	24	866	2,309	$6.50	$ 15,009
218	White St	Wallens St	Nanni Dr	0	0.156	0.156	Asphalt	Urban Class B	2016	6	4	Local	19	824	1,739	$6.50	$ 11,303
218	White St	Nanni Dr	Colebrook River Rd	0.156	0.25	0.094	Asphalt	Urban Class B	2016	5	1	Local	22	496	1,213	$21.00	$ 25,478
219	Whiting St	Norfolk Rd	Holabird Ave	0	0.336	0.336	Asphalt	Urban Class B	2016	2	-9	Local	20	1,774	3,942	$55.00	$ 216,832
493	Williams Ave	Hinsdale Ave	Curtice St	0	0.046	0.046	Asphalt	Urban Class B	2016	7	6	Local	30	243	810	$0.70	$ 567
493	Williams Ave	Curtice St	Hinsdale Dr	0.046	0.075	0.029	Asphalt	Urban Class B	2016	7	6	Local	30	153	510	$0.70	$ 357
493	Williams Ave	Hinsdale Dr	Litchfield Ave	0.075	0.195	0.12	Asphalt	Urban Class B	2016	7	6	Local	30	634	2,112	$0.70	$ 1,478
223	Willow St	Bridge St	Case Ave	0	0.146	0.146	Asphalt	Urban Class B	2016	6	4	Local	34	771	2,912	$6.50	$ 18,929
226	Woodland Ave	W Lake St	Cook St	0	0.053	0.053	Asphalt	Urban Class B	2016	2	-9	Local	30	280	933	$55.00	$ 51,304
226	Woodland Ave	Cook St	Laurel St	0.053	0.108	0.055	Asphalt	Urban Class B	2016	3	-5	Local	30	290	968	$50.00	$ 48,400
226	Woodland Ave	Laurel St	Winchester Rd	0.108	0.223	0.115	Asphalt	Urban Class B	2016	3	-6	Local	30	607	2,024	$50.00	$ 101,200
227	Woodruff Ave	E Mountain Ave	Wallens St	0	0.147	0.147	Asphalt	Urban Class B	2016	5	1	Local	19	776	1,639	$21.00	$ 34,410
24	Carey Ave	Dead-End	E Wakefield Blvd	0	0.234	0.234	Asphalt	Urban Class C	2016	1	-24	Local	17	1,236	2,334	$99.00	$ 231,042
38	Cornelio Ave	Norfolk Rd	Pavement Condition Change	0	0.017	0.017	Asphalt	Urban Class C	2016	8	7	Local	17	90	170	$0.30	$ 51
38	Cornelio Ave	Pavement Condition Change	Dead-End	0.017	0.055	0.038	Asphalt	Urban Class C	2016	2	-8	Local	17	201	379	$55.00	$ 20,844
48	E Wakefield Blvd	Mountain Rd	Perch Rock Tr	0	2.209	2.209	Asphalt	Urban Class C	2016	2	-9	Local	27	11,664	34,991	$55.00	$ 1,924,481
48	E Wakefield Blvd	Perch Rock Tr	Perch Rock Tr	2.209	2.447	0.238	Asphalt	Urban Class C	2016	2	-9	Local	25	1,257	3,491	$55.00	$ 191,987
48	E Wakefield Blvd	Perch Rock Tr	Shore Dr	2.447	2.656	0.209	Asphalt	Urban Class C	2016	4	-1	Local	27	1,104	3,311	$33.00	$ 109,248
48	E Wakefield Blvd	Shore Dr	Shore Dr	2.656	2.748	0.092	Asphalt	Urban Class C	2016	3	-4	Local	28	486	1,511	$50.00	$ 75,563
48	E Wakefield Blvd	Shore Dr	Carey Ave	2.748	2.801	0.053	Asphalt	Urban Class C	2016	3	-4	Local	29	280	902	$50.00	$ 45,085
48	E Wakefield Blvd	Carey Ave	Hurlbut St	2.801	2.904	0.103	Asphalt	Urban Class C	2016	3	-4	Local	29	544	1,752	$50.00	$ 87,619
383	Gillette Rd	Winchester Rd	Winchester Rd	0	0.125	0.125	Asphalt	Urban Class C	2016	1	-24	Local	15	660	1,100	$99.00	$ 108,900
65	Gregory St	Dead-End	Walnut St	0	0.057	0.057	Asphalt	Urban Class C	2016	2	-9	Local	16	301	535	$55.00	$ 29,427
79	Holmes Rd	Lakeview Rd	Morgan Dr	0	0.096	0.096	Asphalt	Urban Class C	2016	2	-9	Local	19	507	1,070	$55.00	$ 58,854
79	Holmes Rd	Morgan Dr	Winchester Rd	0.096	0.207	0.111	Asphalt	Urban Class C	2016	6	3	Local	19	586	1,237	$6.50	$ 8,042
93	Kittredge Ln	Colony Dr	Dead-End	0	0.054	0.054	Asphalt	Urban Class C	2016	9	9	Local	22	285	697	$0.00	$ -
96	Lakeview Rd	Holmes Rd	Morgan Dr	0	0.168	0.168	Asphalt	Urban Class C	2016	7	5	Local	18	887	1,774	$0.70	$ 1,242
119	Morgan Dr	Winchester Rd	Lakeview Rd	0	0.094	0.094	Asphalt	Urban Class C	2016	7	5	Local	21	496	1,158	$0.70	$ 811
119	Morgan Dr	Lakeview Rd	Holmes Rd	0.094	0.183	0.089	Asphalt	Urban Class C	2016	7	5	Local	21	470	1,096	$0.70	$ 768

Town of Winchester - 2016 Backlog of Pavement Maintenance and Rehabilitation

PR Number	Road Name	From Description	To Description	Begin Mile Point	End Mile Point	Length (Miles)	Surface Type	Surface SubType	Eval. Year	PASER Rating	RSL	NFC Abbr.	Width (FT)	Length (FT)	Area (SY)	Unit Cost ($ / SY)	Segment Backlog
470	Mountain Rd	E Wakefield Blvd	Peck Rd	0	0.193	0.193	Asphalt	Urban Class C	2016	9	9	MajColl	24	1,019	2,717	$0.00	$ -
470	Mountain Rd	Peck Rd	Torrington Line	0.193	0.923	0.73	Asphalt	Urban Class C	2016	6	3	MajColl	24	3,854	10,278	$6.50	$ 66,810
139	Old Robertsville Rd	Taylor Rd	Colebrook Line	0	0.727	0.727	Asphalt	Urban Class C	2016	2	-9	Local	16	3,839	6,824	$55.00	$ 375,326
143	Overlook Rd	Dead-End	Winchester Rd	0	0.166	0.166	Asphalt	Urban Class C	2016	2	-9	Local	23	876	2,240	$55.00	$ 123,194
149	Perch Rock Tr	E Wakefield Blvd	E Wakefield Blvd	0	0.329	0.329	Asphalt	Urban Class C	2016	4	-1	Local	22	1,737	4,246	$33.00	$ 140,128
174	Shore Dr	E Wakefield Blvd	E Wakefield Blvd	0	0.37	0.37	Asphalt	Urban Class C	2016	5	1	Local	27	1,954	5,861	$21.00	$ 123,077
189	Stowe Rd #2	Barkhamsted Line	Stowe Rd #1	0	0.08	0.08	Asphalt	Urban Class C	2016	8	7	Local	17	422	798	$0.30	$ 239
189	Stowe Rd #1	Stowe Rd #2	Wallens Hill Rd	0.08	0.347	0.267	Asphalt	Urban Class C	2016	4	-1	Local	17	1,410	2,663	$33.00	$ 87,875
207	W Wakefield Blvd	Mountain Rd	Forest Ave	0	0.649	0.649	Asphalt	Urban Class C	2016	2	-9	MajColl	24	3,427	9,138	$55.00	$ 502,586
207	W Wakefield Blvd	Forest Ave	Sucker Brook Rd	0.649	1.092	0.443	Asphalt	Urban Class C	2016	2	-9	MajColl	20	2,339	5,198	$55.00	$ 285,883
207	W Wakefield Blvd	Sucker Brook Rd	W Lake St	1.092	2.892	1.8	Asphalt	Urban Class C	2016	2	-9	MajColl	23	9,504	24,288	$55.00	$ 1,335,840
115	Wallens Hill Rd	Stowe Rd	Meetinghouse Road	0	0.3	0.3	Asphalt	Urban Class C	2016	4	-1	Local	19	1,584	3,344	$33.00	$ 110,352
115	Wallens Hill Rd	Meetinghouse Road	Old North Rd	0.3	0.819	0.519	Asphalt	Urban Class C	2016	4	-1	Local	30	2,740	9,134	$33.00	$ 301,435
224	Winchester Ave	Curtice St	Dead-End	0	0.036	0.036	Asphalt	Urban Class C	2016	1	-24	Local	15	190	317	$99.00	$ 31,363
						75.911 Miles							Totals:	400,810 Feet	1,017,565 SY		$ 32,392,655 Total Backlog

Calculate Average Pavement Width for Rural Roads:

Rural Street Total Length:	184,251	FT
Rural Street Surface Area:	417,647	SY
Rural Street Surface Area:	3,758,821	SF
Average Width:	20.40	FT

Use 21 FT in System-wide Calculations

Calculate Average Pavement Width for Urban Streets:

Urban Street Total Length:	216,559	FT
Urban Street Surface Area:	599,918	SY
Urban Street Surface Area:	5,399,265	SF
Average Width:	24.93	FT

Use 25 FT in System-wide Calculations

Unit Cost Lookup Table

PASER	Rural Unit Cost ($ / SY)	Urban Unit Cost ($ / SY)
1	$49.00	$99.00
2	$49.00	$55.00
3	$37.00	$50.00
4	$32.00	$33.00
5	$26.00	$21.00
6	$6.50	$6.50
7	$0.70	$0.70
8	$0.30	$0.30
9	$0.00	$0.00
10	$0.00	$0.00

Exhibit 2

PASER Rating Sheets

Lenard Engineering, Inc.

Pavement Maintenance and Rehabilitation Protocols - Rural Roads

Job No.: 15-131

Revised Through: 05/16/16

Client: Town of Winchester

Prepared By: DNB

Project: Pavement Management Plan

Checked By: RH

PASER Rating	Overall Condition	Visible Distress	Treatment Recommendation	Maintenance or Rehabilitation Protocol	Cost Per Square Yard	PASER Resets To:	Class Upgrades To:
10	**Excellent**	None	New construction; no Maintenance Required.	No maintenance	**$ -**	**No Change**	**No Change**
9	**Excellent**	None	Like new; no maintenance required.	No maintenance	**$ -**	**No Change**	**No Change**
8	**Very Good**	No longitudinal cracks except reflection of paving joints. Occasional transverse crack, widely spaced (>= 40'). All cracks sealed or tight (<=1/4")	Little or no maintenance required.	Light crack seal	**$ 0.30**	**No Change**	**8**
7	**Good**	Very slight or no ravelling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced >= 10' apart, little or slight crack ravelling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.	Moderate crack seal	**$ 0.70**	**No Change**	**7**
6	**Good**	Slight ravelling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"-1/2"), some spaced <10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Could extend life with a seal coat.	Seal Coat: *Heavy crack sealing * Surface patching (2%) * Shim (15%) * Seal coat	**$ 6.50**	**10**	No Change
5	**Fair**	Moderate to severe ravelling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight ravelling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching and edge wedging in good condition.	Surface aging. Sound structural condition. Needs seal coat or thin structural overlay (< 2")	Thin Overlay *Heavy crack sealing * Surface Patch (5%) * Shim (40%) * Tack Coat * 1.5" HMA Overlay * Driveway Aprons * Topsoil / Turf Est.	**$ 26.00**	**10**	No Change
4	**Fair**	Severe surface ravelling. Multiple longitudinal and transverse cracking with slight ravelling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (>=2")	Thick Overlay *Heavy crack sealing * Surface Patch (5%) * Shim (40%) * 2" HMA Overlay * Edge backing * Driveway Aprons * Topsoil / Turf Est.	**$ 32.00**	**10**	No Change

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Client: Town of Winchester

Prepared By: DNB

Project: Pavement Management Plan

Checked By: RH

PASER Rating	Overall Condition	Visible Distress	Treatment Recommendation	Maintenance or Rehabilitation Protocol	Cost Per Square Yard	PASER Resets To:	Class Upgrades To:
3	**Poor**	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (<25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching or repair prior to major overlay. Milling and removal of deterioration extends life of overlay.	Thick Mill & Fill (Rural) * Mill (0"-3") * Surface patch (10%) * Full-depth patch (10%) * Tack Coat * 2" HMA Overlay	**$ 37.00**	**10**	**B**
2	**Very Poor**	Alligator cracking (>25% of surface). Severe distortions (>2" deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.	Full-Depth Reclamation * Edge preparation * 12" reclamation * Additional gravel (25%) * Remove excess (25%) * 4" HMA pavement * Driveway Aprons * Edge backing * Topsoil / Turf Est.	**$ 49.00**	**10**	**B**
1	**Failed**	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction	Full-Depth Reconstruction * Remove old pavement * Excavate to subgrade * Prepare subgrade * Construct new base * 4" HMA pavement * Edge backing * Topsoil / Turf Est.	**$ 97.00**	**10**	**A**

Pavement Maintenance and Rehabilitation Protocols - Urban Streets

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PASER Rating	Overall Condition	Visible Distress	Treatment Recommendation	Maintenance or Rehabilitation Protocol	Cost Per Square Yard	PASER Resets To:	Class Upgrades To:
10	**Excellent**	None	New construction; no Maintenance Required.	No maintenance	**$ -**	**No Change**	**No Change**
9	**Excellent**	None	Like new; no maintenance required.	No maintenance	**$ -**	**No Change**	**No Change**
8	**Very Good**	No longitudinal cracks except reflection of paving joints. Occasional transverse crack, widely spaced (>= 40'). All cracks sealed or tight (<=1/4")	Little or no maintenance required.	Light crack sealing	**$ 0.30**	**No Change**	**8**
7	**Good**	Very slight or no ravelling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced >= 10' apart, little or slight crack ravelling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.	Moderate crack seal	**$ 0.70**	**No Change**	**7**
6	**Good**	Slight ravelling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"-1/2"), some spaced <10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Could extend life with a seal coat.	Seal Coat: *Heavy crack sealing * Surface Patching (2%) * Shim (15%) * Seal coat	**$ 6.50**	**10**	No Change
5	**Fair**	Moderate to severe ravelling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight ravelling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching and edge wedging in good condition.	Surface aging. Sound structural condition. Needs seal coat or thin structural overlay (< 2")	Thin Mill & Fill * Surface Patch (5%) * Mill (0"-3") * Tack Coat * 1.5" HMA Overlay	**$ 21.00**	**10**	No Change
4	**Fair**	Severe surface ravelling. Multiple longitudinal and transverse cracking with slight ravelling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (>=2")	Thick Mill & Fill (Urban) * Surface patch (5%) * Mill (3"-6") * Tack Coat * 2" HMA Overlay * Driveway Aprons * Topsoil / Turf Est.	**$ 33.00**	**10**	No Change

Pavement Maintenance and Rehabilitation Protocols - Urban Streets

Job No.: 15-131

Client: Town of Winchester

Project: Pavement Management Plan

Revised Through: 05/16/16

Prepared By: DNB

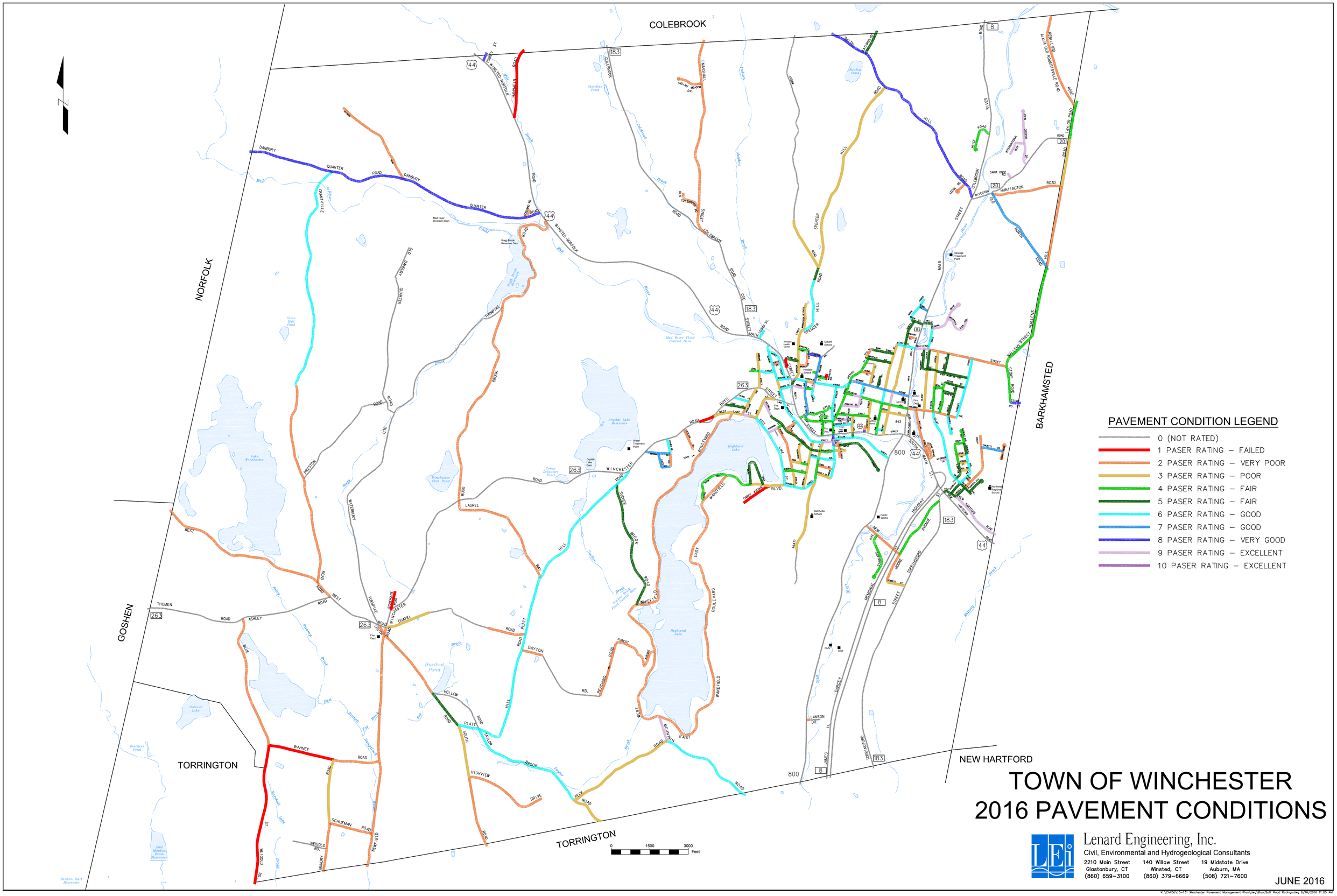
Checked By: RH

PASER Rating	Overall Condition	Visible Distress	Treatment Recommendation	Maintenance or Rehabilitation Protocol	Cost Per Square Yard	PASER Resets To:	Class Upgrades To:
3	**Poor**	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (<25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching or repair prior to major overlay. Milling and removal of deterioration extends life of overlay.	Substantial Mill & Fill * Mill (6") * Surface patch (10%) * Full-depth patch (10%) * Tack coat * 2" HMA Overlay * Driveway Aprons * Topsoil / Turf Est.	**$ 50.00**	**10**	**B**
2	**Very Poor**	Alligator cracking (>25% of surface). Severe distortions (>2" deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.	Peel & Pave * Remove old pavement * Prepare subgrade * Add Processed Agg. Base * 4" HMA pavement * Driveway Aprons * Topsoil / Turf Est.	**$ 55.00**	**10**	**A**
1	**Failed**	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction	Full-Depth Reconstruction * Remove old pavement * Excavate to subgrade * Prepare subgrade * Construct new base * 4" HMA pavement * Tack Coat * Driveway Aprons * Topsoil / Turf Est.	**$ 99.00**	**10**	**A**

Exhibit 3

Pavement Rating Map

Town of Winchester Asphalt Road Network



TOWN OF WINCHESTER
2016 PAVEMENT CONDITIONS

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street, Glastonbury, CT (860) 659-3100
140 Willow Street, Winsted, CT (860) 379-6669
19 Midstate Drive, Auburn, MA (508) 721-7600

JUNE 2016

K:\Civil3d\15-131 Winchester Pavement Management Plan\dwg\RoadSoft Road Ratings.dwg 6/16/2016 11:05 AM

Exhibit 4

Pavement Deterioration Curves

Town of Winchester Asphalt Road Network

Lenard Engineering, Inc.

Estimated Pavement Deterioration Curves - Rural Roads

Job No.: 15-131

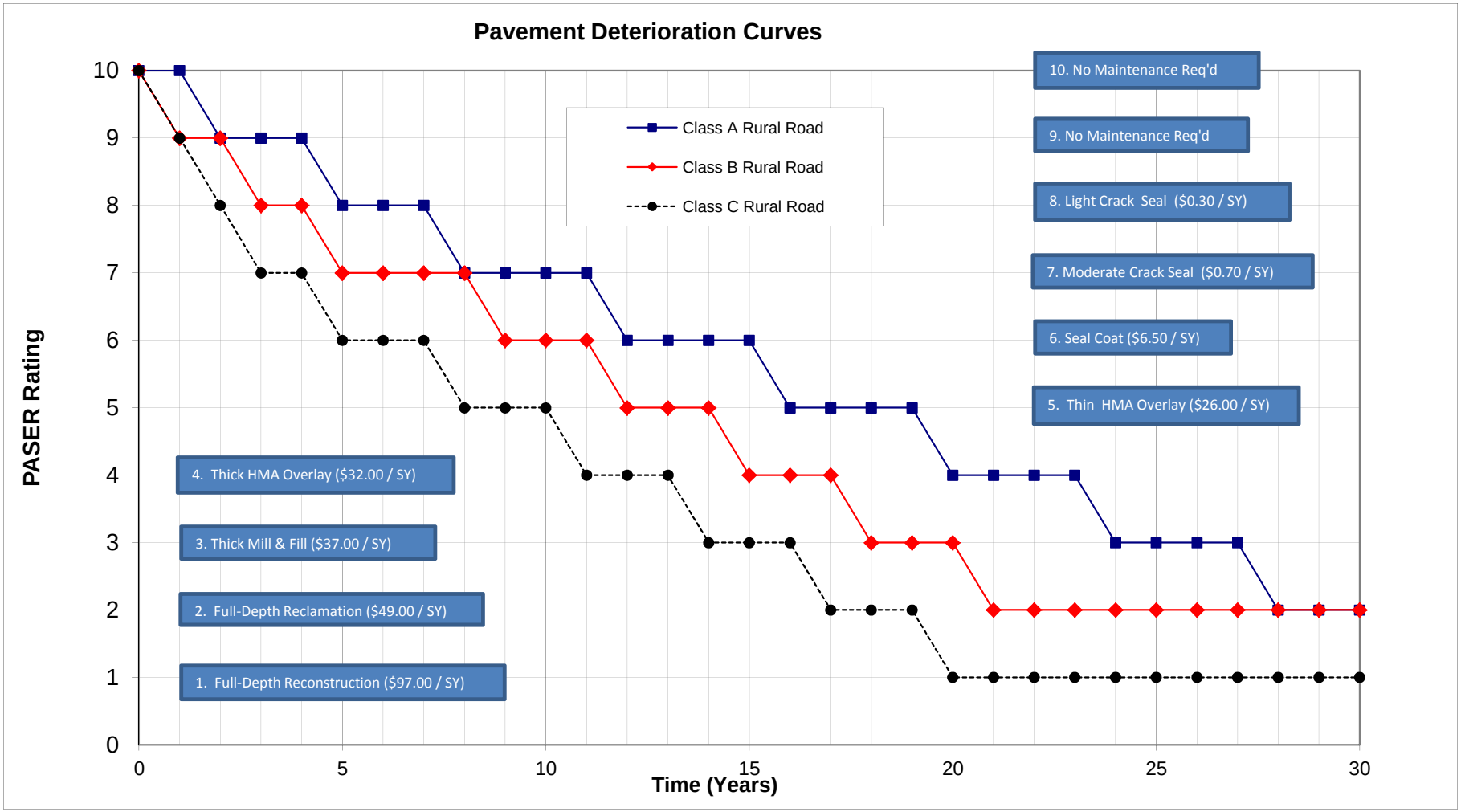
Client: Town of Winchester

Project: Pavement Management Plan

Revised Through: 05/26/16

Prepared By: DNB

Checked By: RH



Lenard Engineering, Inc.

Estimated Pavement Deterioration Curves - Urban Streets

Job No.: 15-131

Client: Town of Winchester

Project: Pavement Management Plan

Revised Through: 05/26/16

Prepared By: DNB

Checked By: RH

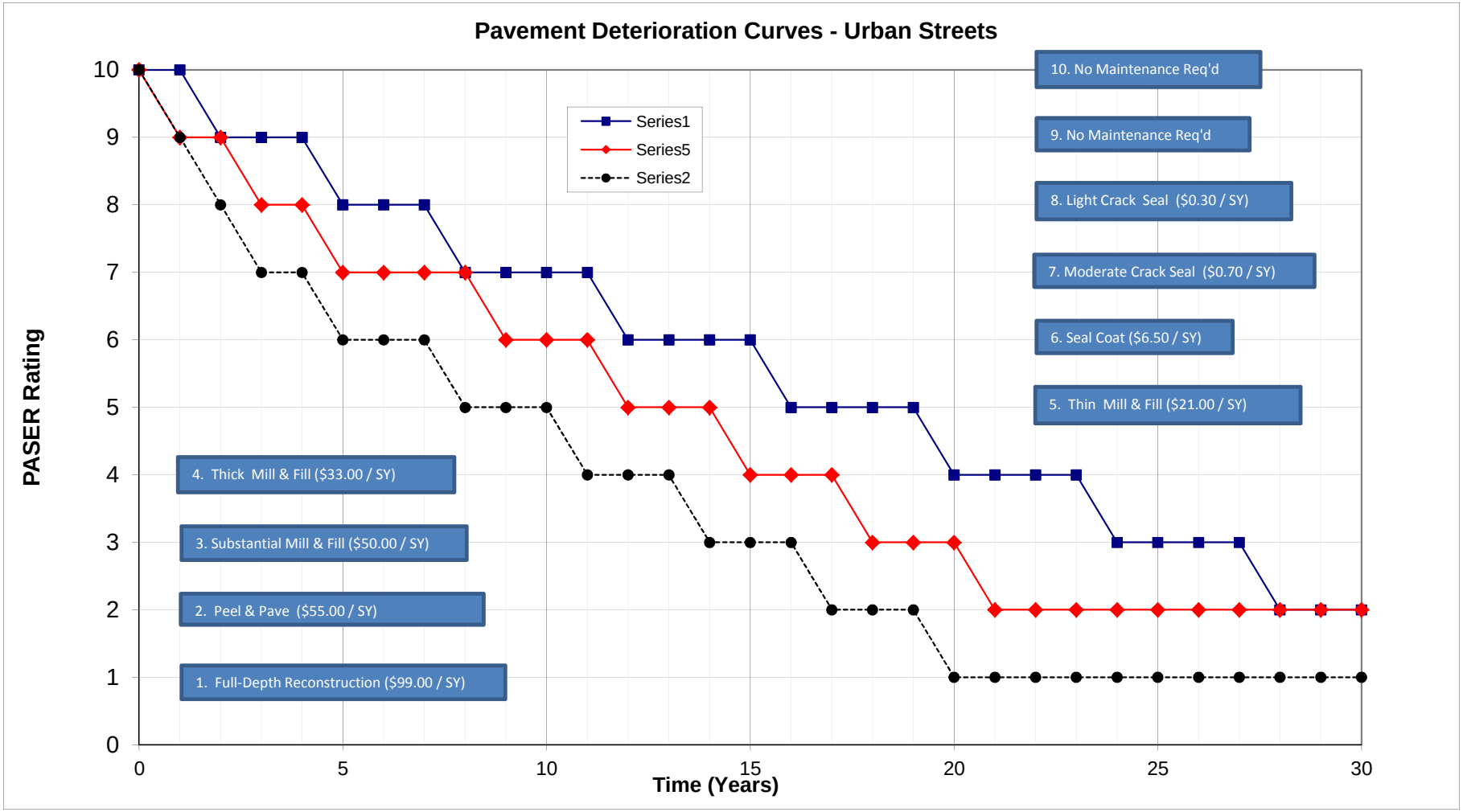


Exhibit 5

Unit Cost Calculations – Pavement Treatments

Town of Winchester Asphalt Road Network

Lenard Engineering, Inc.

Pavement Management Unit Cost Calculation - Rural Roads

Job No.: 15-131

Client: Town of Winchester

Project: Pavement Management Plan

Revised Through: 05/16/16

Prepared By: DNB

Checked By: RH

		PASER RATING									
		10 New	9 Excellent	8 Very Good	7 Good	6 Good	5 Fair	4 Fair	3 Poor	2 Very Poor	1 Failed
Maintenance or Rehabilitation Item	Unit Cost (Per SY)	No Main-tenance Required	No Main-tenance Required	Light Crack Seal	Moderate Crack Seal	Seal Coat	Thin Overlay	Thick Overlay	Thick Mill & Fill (Rural)	Full Depth Recla-mation	Full Depth Recon-struction
Light Crack Seal	$ 0.15			$ 0.15							
Moderate Crack Seal	$ 0.45				$ 0.45						
Heavy Crack Seal	$ 0.65					$ 0.65	$ 0.65	$ 0.65			
Surface Patch (2%)	$ 0.75					$ 0.75					
Surface Patch (5%)	$ 1.85						$ 1.85	$ 1.85			
Surface Patch (10%)	$ 3.65								$ 3.65		
Chip Seal	$ 1.75					$ 1.75					
Micro Milling (0"-2")	$ 2.30										
Mill (0"-3")	$ 2.00								$ 2.00		
Mill (3"-6")	$ 4.00										
Mill (>6")	$ 6.25										
Tack Coat (Smooth Surface)	$ 0.35						$ 0.35	$ 0.35		$ 0.35	$ 0.35
Tack Coat (Milled Surfaces)	$ 0.50								$ 0.50		
Shim (20% Coverage)	$ 1.00					$ 1.00					
Shim (50% Coverage)	$ 2.50						$ 2.50	$ 2.50			
Full Depth Patch (5%)	$ 3.45										
Full Depth Patch (10%)	$ 6.90								$ 6.90		
Overlay (1.5" Nominal)	$ 8.30						$ 8.30				
Overlay (2" Nominal)	$ 10.60							$ 10.60	$ 10.60		
Full-Depth Reclamation	$ 5.65									$ 5.65	
Edge Backing	$ 1.15							$ 1.15		$ 1.15	
Topsoil & Turf Establishment	$ 2.15						$ 2.15	$ 2.15		$ 2.15	$ 2.15
3" HMA (Placed in Two Lifts)	$ 15.90										
4" HMA (Placed in Two Lifts)	$ 21.15									$ 21.15	$ 21.15
Peel Pavement and Prepare Base	$ 10.00										
Remove and Replace Base	$ 38.00										$ 38.00
Driveway Aprons (Rural Roads)	$ 0.75						$ 0.75	$ 0.75		$ 0.75	$ 0.75
Driveway Aprons (Urban Streets)	$ 1.55										
(Subtotal) Unit Price Items:		**$ -**	**$ -**	**$ 0.15**	**$ 0.45**	**$ 4.15**	**$ 16.55**	**$ 20.00**	**$ 23.65**	**$ 31.20**	**$ 62.40**
Lump Sum Items @ 15% of Unit Price Subtotal:		$ -	$ -	$ 0.02	$ 0.07	$ 0.62	$ 2.48	$ 3.00	$ 3.55	$ 4.68	$ 9.36
Construction Cost (Unit Price + LS Items):		**$ -**	**$ -**	**$ 0.17**	**$ 0.52**	**$ 4.77**	**$ 19.03**	**$ 23.00**	**$ 27.20**	**$ 35.88**	**$ 71.76**
Engineering & Contingency @ 35% of Const. Cost:		$ -	$ -	$ 0.06	$ 0.18	$ 1.67	$ 6.66	$ 8.05	$ 9.52	$ 12.56	$ 25.12
Construction Cost + Engineering & Contingency:		**$ -**	**$ -**	**$ 0.23**	**$ 0.70**	**$ 6.44**	**$ 25.69**	**$ 31.05**	**$ 36.72**	**$ 48.44**	**$ 96.88**
Total Program Costs (Rounded for Analysis):		**$ -**	**$ -**	**$ 0.30**	**$ 0.70**	**$ 6.50**	**$ 26.00**	**$ 32.00**	**$ 37.00**	**$ 49.00**	**$ 97.00**

Notes: 1) Lump Sum Items include clearing and grubbing, construction stakeout, maintenance and protection of traffic, and mobilization.

Lenard Engineering, Inc.

Pavement Management Unit Cost Calculation - Urban Streets

Job No.: 15-131

Client: Town of Winchester

Project: Pavement Management Plan

Revised Through: 05/16/16

Prepared By: DNB

Checked By: RH

		PASER RATING									
		10 New	9 Excellent	8 Very Good	7 Good	6 Good	5 Fair	4 Fair	3 Poor	2 Very Poor	1 Failed
Maintenance or Rehabilitation Item	Unit Cost (Per SY)	No Main-tenance Required	No Main-tenance Required	Light Crack Seal	Moderate Crack Seal	Seal Coat	Thin Mill & Fill	Thick Mill & Fill (Urban)	Substan-tial Mill & Fill	Peel & Pave	Full Depth Recon-struction
Light Crack Seal	$ 0.15			$ 0.15							
Moderate Crack Seal	$ 0.45				$ 0.45						
Heavy Crack Seal	$ 0.65					$ 0.65	$ 0.65				
Surface Patch (2%)	$ 0.75					$ 0.75					
Surface Patch (5%)	$ 1.85						$ 1.85	$ 1.85			
Surface Patch (10%)	$ 3.65								$ 3.65		
Chip Seal	$ 1.75					$ 1.75					
Micro Milling (0"-2")	$ 2.30										
Mill (0"-3")	$ 2.00						$ 2.00				
Mill (3"-6")	$ 4.00							$ 4.00			
Mill (>6")	$ 6.25								$ 6.25		
Tack Coat (Smooth Surface)	$ 0.35									$ 0.35	$ 0.35
Tack Coat (Milled Surfaces)	$ 0.50						$ 0.50	$ 0.50	$ 0.50		
Shim (20% Coverage)	$ 1.00					$ 1.00					
Shim (50% Coverage)	$ 2.50										
Full Depth Patch (5%)	$ 3.45										
Full Depth Patch (10%)	$ 6.90								$ 6.90		
Overlay (1.5" Nominal)	$ 8.30						$ 8.30				
Overlay (2" Nominal)	$ 10.60							$ 10.60	$ 10.60		
Full-Depth Reclamation	$ 5.65										
Edge Backing	$ 1.15										
Topsoil & Turf Establishment	$ 2.15							$ 2.15	$ 2.15	$ 2.15	$ 2.15
3" HMA (Placed in Two Lifts)	$ 15.90										
4" HMA (Placed in Two Lifts)	$ 21.15									$ 21.15	$ 21.15
Peel Pavement and Prepare Base	$ 10.00									$ 10.00	
Remove and Replace Base	$ 38.00										$ 38.00
Driveway Aprons (Rural Roads)	$ 0.75										
Driveway Aprons (Urban Streets)	$ 1.55							$ 1.55	$ 1.55	$ 1.55	$ 1.55
(Subtotal) Unit Price Items:		**$ -**	**$ -**	**$ 0.15**	**$ 0.45**	**$ 4.15**	**$ 13.30**	**$ 20.65**	**$ 31.60**	**$ 35.20**	**$ 63.20**
Lump Sum Items @ 15% of Unit Price Subtotal:		$ -	$ -	$ 0.02	$ 0.07	$ 0.62	$ 2.00	$ 3.10	$ 4.74	$ 5.28	$ 9.48
Construction Cost (Unit Price + LS Items):		**$ -**	**$ -**	**$ 0.17**	**$ 0.52**	**$ 4.77**	**$ 15.30**	**$ 23.75**	**$ 36.34**	**$ 40.48**	**$ 72.68**
Engineering & Contingency @ 35% of Const. Cost:		$ -	$ -	$ 0.06	$ 0.18	$ 1.67	$ 5.35	$ 8.31	$ 12.72	$ 14.17	$ 25.44
tal Program Cost (Construction Cost + Soft Costs):		**$ -**	**$ -**	**$ 0.23**	**$ 0.70**	**$ 6.44**	**$ 20.65**	**$ 32.06**	**$ 49.06**	**$ 54.65**	**$ 98.12**
Total Program Costs (Rounded for Analysis):		**$ -**	**$ -**	**$ 0.30**	**$ 0.70**	**$ 6.50**	**$ 21.00**	**$ 33.00**	**$ 50.00**	**$ 55.00**	**$ 99.00**

Notes: 1) Lump Sum Items include clearing and grubbing, construction stakeout, maintenance and protection of traffic, and mobilization.

CRACK SEAL

Based on 2015 Crack Seal program in Goshen, CT

Light Crack Seal	Average Crack Seal	Heavy Crack Seal
$0.15	$0.45	$0.65
Per SY	Per SY	Per SY

CHIP SEAL

Chip seal prices for District 4 - > 50,000 SY Lot Size from DAS Contract # 13PSX0262 (Valid through 12/31/16)

	All States ($ / SY)	Comer ($ / SY)	Empire ($ / SY)	Seymour ($ / SY)	Gorman ($ / SY)	Low Bid ($ / SY)	Average of 3 Low Bids ($ / SY)	Average All Bids ($ / SY)
3/8 Chip	$1.79	$1.45	$1.49	$1.52	$1.46	$1.45	$1.47	$1.54
Polymer	$0.10	$0.10	$0.10	$0.12	$0.10	$0.10	$0.10	$0.10
Pre-Treat	$0.12	$0.12	$0.10	$0.10	$0.10	$0.10	$0.11	$0.11
	$2.01	$1.67	$1.69	$1.74	$1.66	$1.65	$1.67	$1.75

Use for Analysis: **$1.75 Per SY**

MILLING

Prices from DAS Contract # 14PSX0218 for District 4 Towns, Two-Lane Local Road; Range 7,801 to 15,500 SY (Valid Through 11/30/16)

	Blk & Bchr ($ / SY)	Costello ($ / SY)	Garrity ($ / SY)	Rafferty ($ / SY)	S & S ($ / SY)	Low Bid ($ / SY)	Average of 3 Low Bids ($ / SY)	Average of All Bids ($ / SY)
Micro 0"-2"	$1.75	$1.85	$1.89	$1.88	NB	$1.75	$1.83	$1.84
Mill 0"-3"	$1.38	$1.65	$1.69	$1.48	$1.48	$1.38	$1.45	$1.54
Mill 3"-6"	$3.00	$3.30	$3.85	$3.04	$3.48	$3.00	$3.11	$3.33
Mill >6"	$5.00	$4.95	$5.00	$4.88	$5.48	$4.88	$4.94	$5.06
Move 0.5 Mi.	$650.00	$750.00	$700.00	$950.00	$650.00		$666.67	$740.00
Move 1.0 Mi.	$1,250.00	$1,500.00	$1,400.00	$1,900.00	$1,350.00		$1,333.33	$1,480.00

Use for Analysis:			
	Micro-Milling (0" to 2"):	**$2.30**	**per SY**
	Mill (0" to 3"):	**$2.00**	**per SY**
	Mill (3" to 6"):	**$4.00**	**per SY**
	Mill (> 6"):	**$6.25**	**per SY**

Note: Unit price estimates were increased approximately 25% from the average of three low bid price to account for skips & moves.

HMA SHIM COURSE

Prices for HMA Leveling Work in Winchester - From DAS Contract # 15PSX0228 (Valid through March 2017)

	Empire ($ / TON)	Galasso ($ / TON)	Lane ($ / TON)	O&G ($ / TON)	Tilcon ($ / TON)	Waters ($ / TON)	Low Bid ($ / TON)	Average 3-Low Bids ($ / TON)
S0.375	$101.63	$78.50	$69.90	$83.77	$102.38	$97.00	$69.90	$77.39
Class 2	$93.49	$69.75	$72.45	$86.00	$95.84	$97.00	$69.75	$76.07

Use for Analysis: **$80.00 Per Ton**

Estimate Allowance for Shim Course:

Average Depth Inches	Density Factor Tons / SY*Inch	Unit Quantity Tons / SY	Unit Cost $ / Ton	HMA Unit Price $ / SY	Allowance For Tack Coat $ / SY	Total Cost $ / SY	Prorated Over 20% of Roadway $ / SY	Prorated Over 50% of Roadway $ / SY
1.00	0.0575	0.0575	$80.00	$4.60	$0.35	$4.95	$0.99	$2.48

Use for Analysis: **$1.00 Per SY** | **$2.50 Per SY**

HMA PAVEMENT COURSES

Prices for HMA pavement in Winchester for 500 to 2,500 Ton lots - From DAS Contract # 15PSX0228 (Valid through March 2017)

	Empire ($ / TON)	Galasso ($ / TON)	Lane ($ / TON)	O&G ($ / TON)	Tilcon ($ / TON)	Waters ($ / TON)	Low Bid ($ / TON)	Average 3-Low Bids ($ / TON)
S0.375	$101.63	$76.54	$67.75	$89.03	$101.70	$104.50	$67.75	$77.77
Class 2	$93.49	$77.95	$69.00	$91.26	$94.84	$104.50	$77.95	$79.40

Use for Analysis: **$80.00 Per Ton**

Overlays: Average Depth includes a 20% allowance for specification tolerance and irregular surface:

	Average Depth (Inches)	Density Factor (Tons / SY*Inch)	Unit Quantity (Tons / SY)	Unit Cost ($ / Ton)	Unit Price ($ / SY)	**Use For Analysis ($ / SY)**
1.5" Thick Nominal Overlay	1.80	0.0575	0.1035	$80.00	$8.28	**$8.30**
2" Thick Nominal Overlay	2.30	0.0575	0.1323	$80.00	$10.58	**$10.60**

Pavement Courses: Average Depth includes a 15% allowance for specification tolerance and irregular surface:

	Average Depth (Inches)	Density Factor (Tons / SY*Inch)	Unit Quantity (Tons / SY)	Unit Cost ($ / Ton)	Unit Price ($ / SY)	**Use For Analysis ($ / SY)**
3" HMA Pavement (Placed in Two Lifts)	3.45	0.0575	0.1984	$80.00	$15.87	**$15.90**
4" HMA Pavement (Placed in Two Lifts)	4.60	0.0575	0.2645	$80.00	$21.16	**$21.15**

Tack Coat

Prices for Tack Coat in Winchester - From DAS Contract # 15PSX0228 (Valid through March 2017)

	Empire ($ / GAL)	Galasso ($ / GAL)	Lane ($ / GAL)	O&G ($ / GAL)	Tilcon ($ / GAL)	Waters ($ / GAL)	Low Bid ($ / GAL)	Average 3-Low Bids ($ / GAL)
Tack Coat	$5.99	$8.00	$7.25	$7.12	$5.28	$7.50	$5.99	$6.79

Use for Analysis: **$7.00 Per Gallon**

*Application rates taken from ConnDOT Special Provision 0406999A (Rev. 11/01/13)

Designation	Application Rate* GAL / SY	Cost ($ / GAL)	Cost ($ / SY)	**Use For Analysis ($ / SY)**
Non Milled and Partially-Milled Surfaces (low end of range)	0.03	$7.00	$0.21	
Non Milled and Partially-Milled Surfaces (high end of range)	0.05	$7.00	$0.35	**$0.35**
Entirely Milled Surface (low end of range)	0.05	$7.00	$0.35	
Entirely Milled Surface (high end of range)	0.07	$7.00	$0.49	**$0.50**

FULL-DEPTH RECLAMATION

Estimate Cost of Full-Depth Reclamation:

Allowance for Edge Preparation:

Unit Price for Excavation:

Use: $40.00 Per CY ConnDOT English Bid Item List - January 2016; Item # 0202308

Quantity and Cost of Exacavation:

Exacavation Width (FT)	Excavation Depth (FT)	Excavation Volume (CF)	Excavation Volume (CY)	Number of Road Edges	Gross Volume (CY / LF)	Unit Price ($ / CY)	Gross Cost ($ / LF)
2	0.5	1.00	0.0370	2	0.0741	$40.00	$2.96

Allowance for Edge Preparation:

Gross Cost ($ / LF)	Portion of Roadway Requiring Preparation (Percent)	Net Cost ($ / LF)	Roadway Unit Surface Area (SY / LF)	Net Cost ($ / SY)
$2.96	95%	$2.81	2.56	$1.10

Use For Analysis: **$1.10 Per SY**

Notes:

1) Remainder of roadway edge not subject to excavation is occupied by driveway aprons and intersecting roadways.

2) Roadway Unit Surface Area is assumed at 1 FT long x 23 FT wide x SY / 9 SF = 2.56 SY / LF.

Estimate Allowance for Provision of Supplemental Gravel Where Needed:

Assume that supplemental gravel will be required over a portion of the roadway surface area to bolster base thickness

Unit Price for Gravel: $45.80 per CY ConnDOT English Bid Item List - January 2016; Item # 0213100

P= 25% Assumed percentage of roadway surface that will receive supplemental gravel:

Area (SY)	Area (SF)	Gravel Depth (FT)	Unit Gravel Volume (CF / SY)	Portion of Road to Receive Gravel (Percent)	Net Gravel Volume (CF / SY)	Net Gravel Volume (CY / SY)	Gravel Unit Price ($ / CY)	Net Cost ($ / SY)
1.00	9.00	0.333	3.00	25%	0.75	0.0278	$45.80	$1.27

Use for Analysis: $1.30 Per SY

Full-Depth Reclamation:

Bid prices from DAS Contract #14PSX0218 for District 4 towns @ >6" Depth (Valid through 11/30/16):

Allstates	Costello	Garrity	Rafferty	S&S	Tilcon	Low Bid	Ave. 3-Low	Ave. All
$2.55	$6.54	$2.75	$2.06	No Bid	$5.40	$2.06	$2.45	$3.86
Per SY	Per SY	Per SY	Per SY		Per SY	Per SY	Per SY	Per SY

2014 Rafferty invoiced charges to Goshen for 12" reclamation, fine grading and compaction (included cost of several moves):

Street	Invoiced Cost	Area (SY)	Cost Per SY
East Hyderdale Drive	$ 8,635.74	3,432	$ 2.52
Marshepaug Drive:	$ 7,521.04	2,722	$ 2.76
Center Road:	$ 5,228.07	1,951	$ 2.68
Newcomb Road:	$ 10,079.98	4,214	$ 2.39

The 2014 Goshen project was completed under Contract # 14PSX0218 and is representative of a typical, multi-street reclamation project in a District 4 town with relatively small quantities and several moves and skips.

Use for Analysis: $2.75 Per SY

Estimate Allowance for Removal of Excess Reclaimed Material:

Assume that excess reclaimed material will have to be excavated over a portion of the roadway surface, primarily for grade control.

Unit Price for Excavation: $20.00 per CY ConnDOT English Bid Item List - January 2016; Item # 0202351

P = 25% Assumed percentage of roadway surface subject to removal of excess material

Area (SY)	Area (SF)	Excavation Depth (FT)	Unit Gravel Volume (CF / SY)	Portion of Road Subject to Excavation (Percent)	Net Excavation Volume (CF / SY)	Net Excavation Volume (CY / SY)	Gravel Unit Price ($ / CY)	Net Cost ($ / SY)
1.00	9.00	0.25	2.25	25%	0.56	0.0208	$20.00	$0.42

Use for Analysis: **$0.50 Per SY**

Summary:

Edge Preparation:	$1.10	
Supplemental Gravel Where Needed:	$1.30	
Full-Depth Reclamation:	$2.75	
Removal of Excess Material Where Needed:	$0.50	
Total:	**$5.65**	**Per SY**

FULL-DEPTH RECONSTRUCTION

Estimate the cost of Full-Depth Reconstruction (Excluding HMA Lifts)

Unit Price Estimates

Removal of B.C. Pavement:	$4.80	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0202522
Remove Unsuitable Mat'l:	$40.00	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0202308
Prepare Subgrade:	$2.20	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0209001
Gravel Subbase:	$38.80	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0212000
Processed Aggregate Base:	$51.00	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0304002

Quantity Estimates for Volumetric Components

	Length (FT)	Width (FT)	Depth (FT)	Volume (CF / SY)	Volume (CY / SY)
Remove Unsuitable Mat'l:	3	3	1.3333	12.00	0.4444

	Length (FT)	Width (FT)	Depth (FT)	Volume (CF / SY)	Volume (CY / SY)
Gravel Subbase:	3	3	1.00	9.00	0.3333

	Length (FT)	Width (FT)	Depth (FT)	Volume (CF / SY)	Volume (CY / SY)
Processed Aggregate Base:	3	3	0.3333	3.00	0.1111

Estimate Unit Price for Full-Depth Reconstruction (Excluding HMA Lifts)

	Quantity	Unit	Unit Price	Extension
Removal of B.C. Pavement:	1	SY	$4.80	$4.80
Remove Usuitable Mat'l:	0.4444	CY/SY	$40.00	$17.78
Prepare Subgrade:	1	SY	$2.20	$2.20
Gravel Subbase:	0.3333	CY/SY	$38.80	$12.93
Processed Aggregate Base:	0.1111	CY/SY	$51.00	$5.67
			Total:	$37.71

Use for Analysis: **$38.00 Per SY**

EDGE BACKING FOR RURAL OVERLAY AND RECLAMATION PROJECTS

Estimate Allowance for Backing of Roadway Edges with Processed Aggregate:

Unit Price for Processed Aggregate Backing:

Unit Price = $51.00 Per CY — ConnDOT English Bid Item List - January 2016; Item # 0305002

Quantity and Cost of Processed Aggregate Backing:

Backing Width (FT)	Backing Depth (FT)	Backing Volume (CF)	Backing Volume (CY)	Number of Road Edges	Gross Volume (CY / LF)	Unit Price ($ / CY)	Gross Cost ($ / LF)
2	0.4	0.8	0.0296	2	0.0593	$51.00	$3.02

Allowance for Processed Aggregate Backing:

Gross Cost ($ / LF)	Portion of Roadway Requiring Backing (Percent)	Net Cost ($ / LF)	Roadway Unit Surface Area (SY / LF)	Net Cost ($ / SY)
$3.02	95%	$2.87	2.56	$1.12

Use For Analysis: **$1.15 Per SY**

Notes:

1) Remainder of roadway length not backed with processed aggregate is occupied by driveway aprons and intersecting roadways.

2) Roadway Unit Surface Area Assumed at 1 FT Long x 23 FT Wide x SY / 9 SF = 2.56 SY / LF.

TOPSOIL / TURF ESTABLISHMENT FOR RURAL OVERLAY AND RECLAMATION PROJECTS

Estimate Allowance for Roadside Topsoil and Turf Establishment:

Unit Prices for Topsoil and Turf Establishment:

Unit Price for Topsoil:	$7.00	per SY	ConnDOT English Bid Item List - January 2016; Item # 0944000
Unit Price for Turf Est.:	$1.60	per SY	ConnDOT English Bid Item List - January 2016; Item # 0950005
Total:	$8.60	Per SY	

Quantity and Cost of Topsoil and Turf Establishment:

TS & TE Width (FT)	TS & TE Area (SF)	TS & TE Area (SY)	Number of Road Edges	Gross Area (SY / LF)	Unit Price ($ / SY)	Gross Cost ($ / LF)
3	3.00	0.3333	2	0.6667	$8.60	$5.73

Allowance for Topsoil and Turf Establishment::

Gross Cost ($ / LF)	Portion of Roadway Requiring TS & TE (Percent)	Net Cost ($ / LF)	Roadway Unit Surface Area (SY / LF)	Net Cost ($ / SY)
$5.73	95%	$5.45	2.56	$2.13

Use For Analysis: **$2.15 Per SY**

Notes:

1) Remainder of roadway length not stabilized with topsoil and turf establishment is occupied by driveway aprons and intersecting roadways.

2) Roadway Unit Surface Area is assumed at 1 FT long x 23 FT wide x SY / 9 SF = 2.56 SY / LF.

DRIVEWAY APRONS

Estimate Allowance for Driveway Aprons:

Unit Prices:

Micro-Milling:

Prices from DAS Contract # 14PSX0218 for District 4 Towns, Two-Lane Local Road; Range 1 SY to 1,200 SY (Valid Through 11/30/16)

Blk & Bchr ($ / SY)	Costello ($ / SY)	Garrity ($ / SY)	Rafferty ($ / SY)	S & S ($ / SY)	Low Bid ($ / SY)	Average of 3 Low Bids ($ / SY)	Average of All Bids ($ / SY)
$10.00	$7.15	$11.00	No Bid	No Bid	$7.15	$9.38	$9.38

Use for Analysis: **$10.00 Per SY**

Tack Coat

Prices for Tack Coat in Winchester - From DAS Contract # 15PSX0228 (Valid through March 2017)

Empire ($ / GAL)	Galasso ($ / GAL)	Lane ($ / GAL)	O&G ($ / GAL)	Tilcon ($ / GAL)	Waters ($ / GAL)	Low Bid ($ / GAL)	Average 3-Low Bids ($ / GAL)
$5.99	$8.00	$7.25	$7.12	$5.28	$7.50	$5.99	$6.79

Use for Analysis: **$7.00 Per Gallon**

Handwork:

Prices for HMA Handwork in Winchester - From DAS Contract # 15PSX0228 (Valid through March 2017)

	Empire ($ / TON)	Galasso ($ / TON)	Lane ($ / TON)	O&G ($ / TON)	Tilcon ($ / TON)	Waters ($ / TON)	Low Bid ($ / TON)	Average 3-Low Bids ($ / TON)
S0.375	$245.07	$155.00	$150.00	$161.95	$176.95	$167.00	$150.00	$155.65
Class 2	$239.98	$155.00	$150.00	$164.18	$171.46	$167.00	$150.00	$156.39

Use for Analysis: **$155.00** **Per Ton**

Allowance for Urban Driveway Aprons:

Estimate quantities and cost for one driveway apron:

	Length (FT)	Width (FT)	Area (SF)	Area (SY)
Micro-Milling Quantity (assume 3' wide along back edge of apron):	14	3	42	4.67

Tack Coat (assume trapezoidal shaped apron):

Width at Back of Apron (FT)	Width Along Gutter (FT)	Apron Length (FT)	Apron Area (SF)	Apron Area (SY)	Tack Coat Application Rate (GAL / SY)	Tack Coat Quantity (GAL)
12	18	6	90	10	0.05	0.5

HMA Handwork: (use area from tack coat calculation above)

Apron Area (SY)	Density Factor (Tons / SY*Inch)	Pavement Thickness (Inches)	HMA Quantity (Tons)
10	0.0575	2	1.15

Estimate the cost of one driveway apron:

	Quantity	Unit	Unit Price	Extension
Micro Milling:	4.67	SY	$10.00	$46.67
Tack Coat:	0.5	GAL	$7.00	$3.50
Paving (Handwork):	1.15	TONS	$155.00	$178.25
			Total:	$228.42

Estimate driveway apron cost allowance as a function of roadway pavement surface area:

Ratio of pavement surface area to number of driveways (from separate calculation by LEI): 150 SY of Road Pavement / Driveway

Cost Allowance = $228.42 per Driveway Apron / 150 SY of Roadway Pavement = $1.52 per SY

Use for Analysis: **$1.55** **per SY**

Allowance for Rural Driveway Aprons:

Estimate quantities and cost for one driveway apron:

	Width (FT)	Length (FT)	Area (SF)	Area (SY)
Micro-Milling Quantity (assume 3' wide along full width of apron:	14	3	42	4.67

Tack Coat (assume trapezoidal shaped apron):

Width at Back of Apron (FT)	Width Along Gutter (FT)	Apron Length (FT)	Apron Area (SF)	Apron Area (SY)	Tack Coat Application Rate (GAL / SY)	Tack Coat Quantity (GAL)
12	24	8	144	16	0.05	0.8

HMA Handwork: (use area from tack coat calculation above)

Area (SY)	Density Factor (Tons / SY*Inch)	Pavement Thickness (Inches)	HMA Quantity (Tons)
16	0.0575	2	1.84

Estimate the cost of one driveway apron:

	Quantity	Unit	Unit Price	Extension
Micro Milling:	4.67	SY	$10.00	$46.67
Tack Coat:	0.8	GAL	$7.00	$5.60
Paving (Handwork):	1.84	TONS	$155.00	$285.20
			Total:	$337.47

Estimate driveway apron cost allowance as a function of roadway pavement surface area:

Ratio of pavement surface area to number of driveways (from separate calculation by LEI): 450 SY of Road Pavement / Driveway

Cost Allowance = $337.47 per Driveway Apron / 450 SY of Roadway Pavement = $0.75 per SY

Use for Analysis: $0.75 per SY

SURFACE PATCH

Estimate the cost of surface patching. Base estimate on a representative 30 SY patch.

Unit Price Estimates

Saw Cut:	$2.00 per LF	ConnDOT English Bid Item List - January 2016; Item # 0202529
Removal of B.C. Pavement:	$4.80 Per SY	ConnDOT English Bid Item List - January 2016; Item # 0202522

HMA patch (Handwork):	$155.00	Per Ton	From Driveway Apron calculations above

Quantity Estimate for Representative 30 SY Patch:

	Length (FT)	Width (FT)	Perimeter (FT)
Saw Cut:	10	27	74

	Length (FT)	Width (FT)	Area (SF)	Area (SY)
Removal of B.C. Pavement:	10	27	270	30

	Area (SY)	Density Factor (Tons/SY*Inch)	Assumed HMA Depth (Inches)	HMA Quantity (Tons)
HMA patch (Handwork):	30	0.0575	3	5.175

Estimated Cost of Representative 30 SY Surface Patch:

	Quantity	Unit	Unit Price	Extension
Saw Cut:	74.00	LF	$2.00	$148.00
Removal of B.C. Pavement:	30	SY	$4.80	$144.00
HMA patch (Handwork):	5.18	TONS	$155.00	$802.13
			Total:	$1,094.13

Estimate Allowance for Surface Patch:

Total Cost 30 SY Patch	Patch Area (SY)	Unit Cost ($ / SY)	Prorated Over 2% of Roadway ($ / SY)	Prorated Over 5% of Roadway ($ / SY)	Prorated Over 10% of Roadway ($ / SY)
$1,094.13	30	$36.47	$0.73	$1.82	$3.65
		Use for Analysis:	**$0.75**	**$1.85**	**$3.65**
			Per SY	**Per SY**	**Per SY**

FULL DEPTH PATCH

Estimate the cost of surface patching. Base estimate on a representative 30 SY patch.

Unit Price Estimates

Saw Cut:	$2.00	per LF	ConnDOT English Bid Item List - January 2016; Item # 0202529
Removal of B.C. Pavement:	$4.80	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0202522
Remove Unsuitable Mat'l:	$40.00	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0202308
Prepare Subgrade:	$2.20	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0209001
Processed Aggregate Base:	$51.00	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0212302
HMA patch (Handwork):	$155.00	Per Ton	From Driveway Apron calculations above

Quantity Estimate for Representative 30 SY Patch:

	Length (FT)	Width (FT)	Perimeter (FT)
Saw Cut:	10	27	74

	Length (FT)	Width (FT)	Area (SF)	Area (SY)
Removal of B.C. Pavement:	10	27	270	30

	Length (FT)	Width (FT)	Depth (FT)	Volume (CF)	Volume (CY)
Remove Unsuitable Mat'l:	10	27	1	270	10

	Area (SY)	
Prepare Subgrade:	30	(Same area as Removal of B.C. Pavement)

	Volume (CY)	
Processed Aggregate Base:	10	(Same volume as Removal of Unsuitable Material)

	Area (SY)	Density Factor (Tons/SY*Inch)	Assumed HMA Depth (Inches)	HMA Quantity (Tons)
HMA patch (Handwork):	30	0.0575	3	5.175

Estimated Cost of Representative 30 SY Surface Patch:

	Quantity	Unit	Unit Price	Extension
Saw Cut:	74.00	LF	$2.00	$148.00
Removal of B.C. Pavement:	30	SY	$4.80	$144.00
Remove Unsuitable Mat'l:	10	CY	$40.00	$400.00
Prepare Subgrade:	30	SY	$2.20	$66.00
Processed Aggregate Base:	10	CY	$51.00	$510.00
HMA patch (Handwork):	5.18	TONS	$155.00	$802.13
			Total:	$2,070.13

Estimated Allowance for Full-Depth Patch:

Total Cost 30 SY Patch	Patch Area (SY)	Unit Cost ($ / SY)	Prorated Over 5% of Roadway ($ / SY)	Prorated Over 10% of Roadway ($ / SY)
$2,070.13	30	$69.00	$3.45	$6.90
		Use for Analysis:	**$3.45 Per SY**	**$6.90 Per SY**

PEEL & PREPARE

Estimate the cost of peeling all pavement, prepare subgrade, and add supplemental processed aggregate, for use in "Peel & Pave Calculation.

Unit Price Estimates

Saw Cut:	$0.00	per LF	Assume cost of saw cutting is included in unit price of HMA removal
Removal of B.C. Pavement:	$4.80	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0202522
Prepare Subgrade:	$2.20	Per SY	ConnDOT English Bid Item List - January 2016; Item # 0209001
Processed Aggregate Base:	$51.00	Per CY	ConnDOT English Bid Item List - January 2016; Item # 0304002

Quantity Estimate for Volumetric Components:

	Area (SY)	Area (SF)	Depth (Inches)	Volume (CF / SY)	Volume (CY / SY)
Processed Aggregate Base:	1	9	2	1.5	0.0556

Estimate Unit Price of "Peel & Prepare"

	Quantity	Unit	Unit Price	Extension
Saw Cut:	0.00	LF	$0.00	$0.00
Removal of B.C. Pavement:	1	SY	$4.80	$4.80
Prepare Subgrade:	1	SY	$2.20	$2.20
Processed Aggregate Base:	0.0556	CY/SY	$51.00	$2.83
			Total:	$9.83

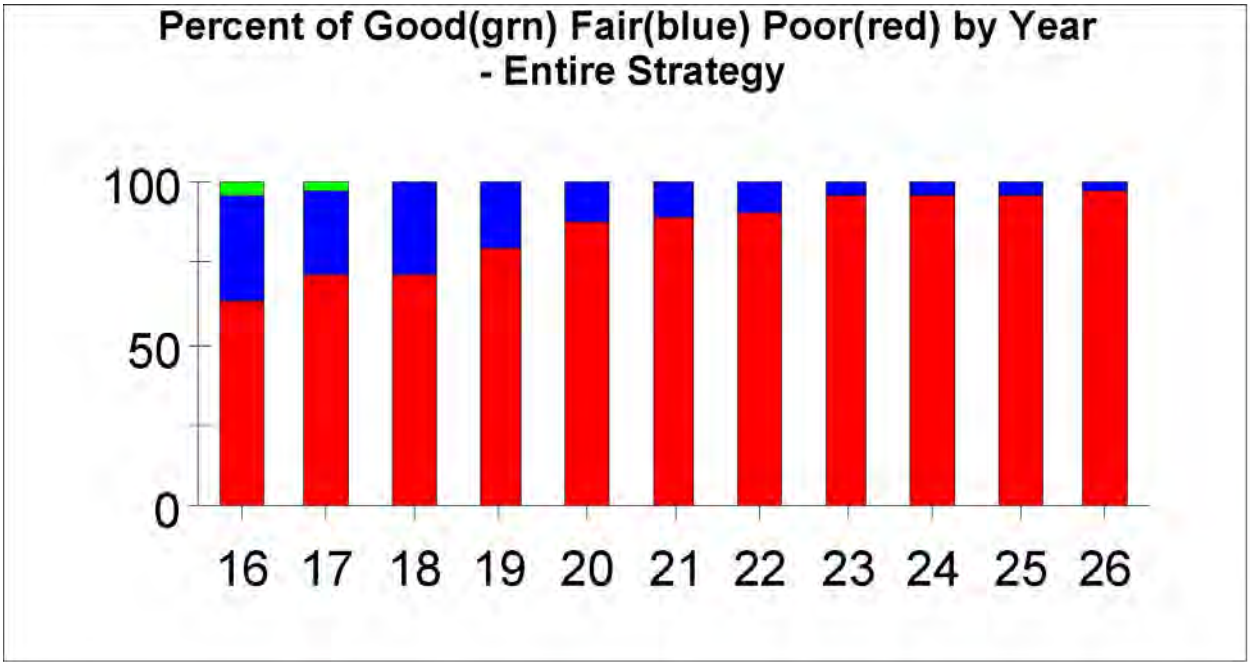
Use for Analysis: **$10.00 Per SY**

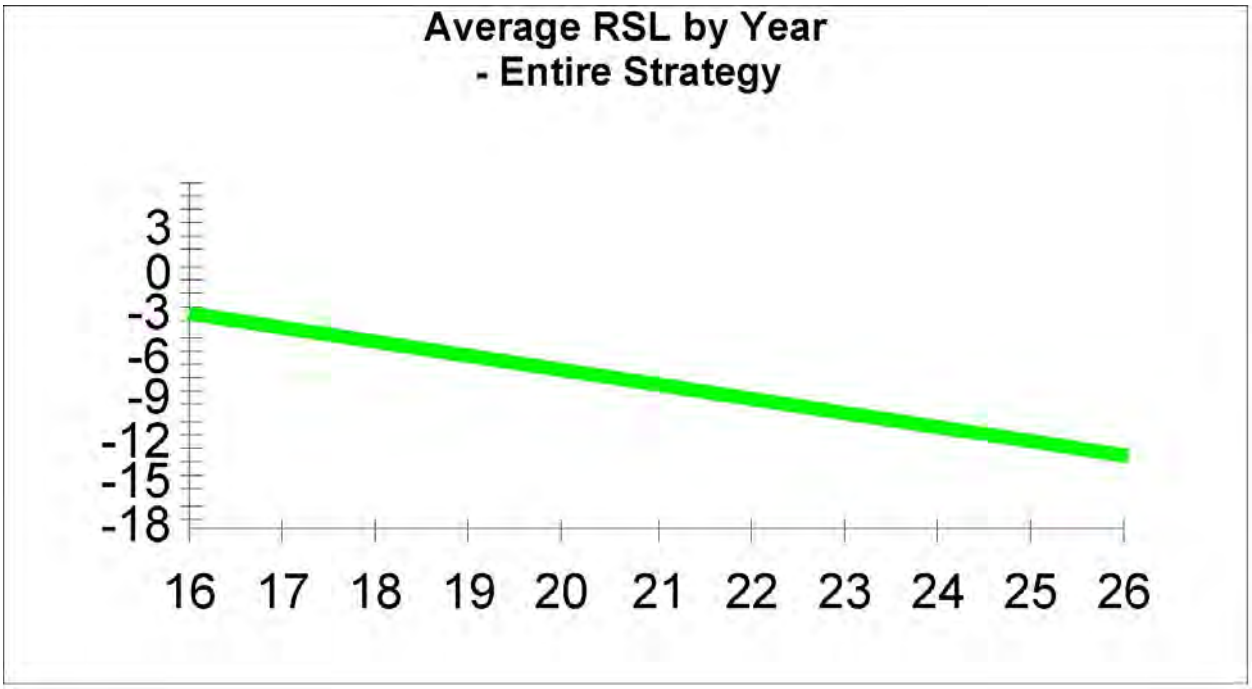
Exhibit 6

Strategy Evaluation Results
Alternatives 1 through 6

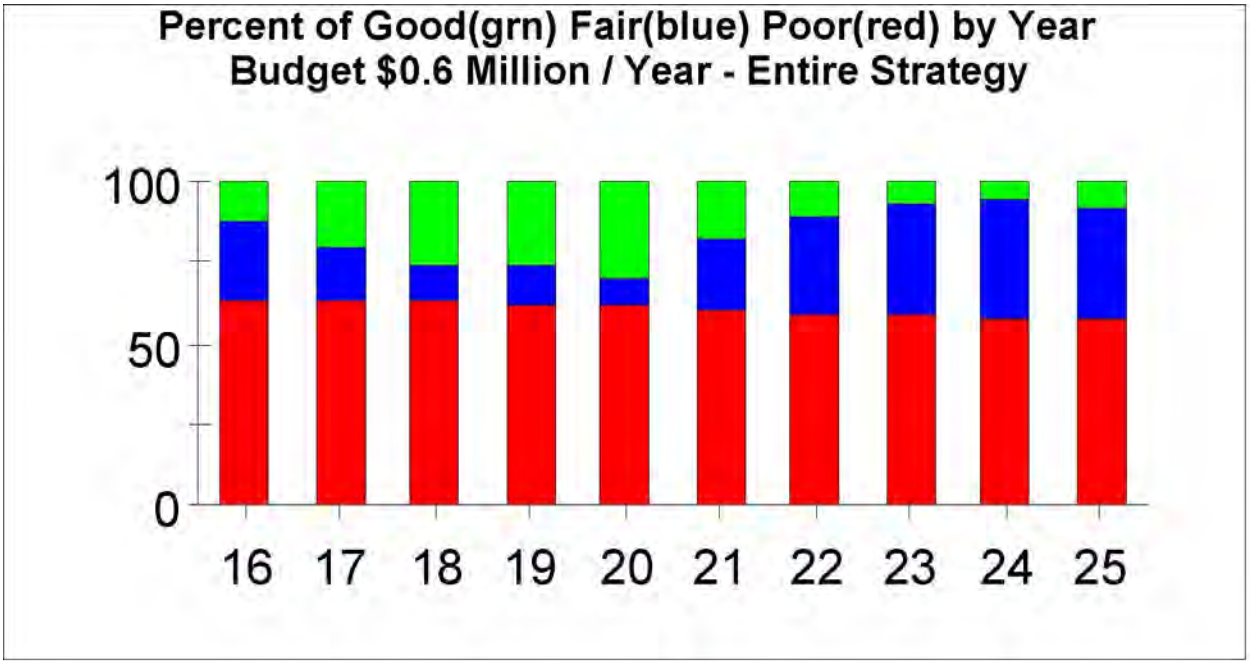
Town of Winchester Asphalt Road Network

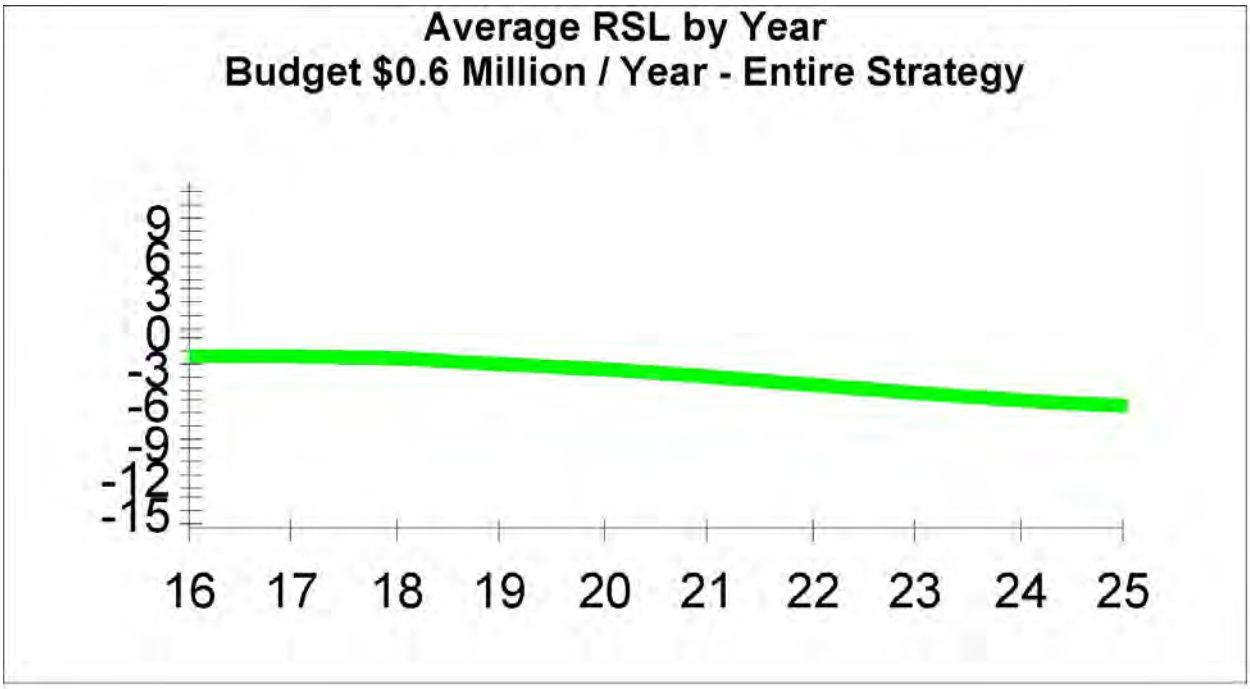
Alternative 1 – Do Nothing; Annual Budget = $0.00





Alternative 2: Annual Budget = $600,000 / Year

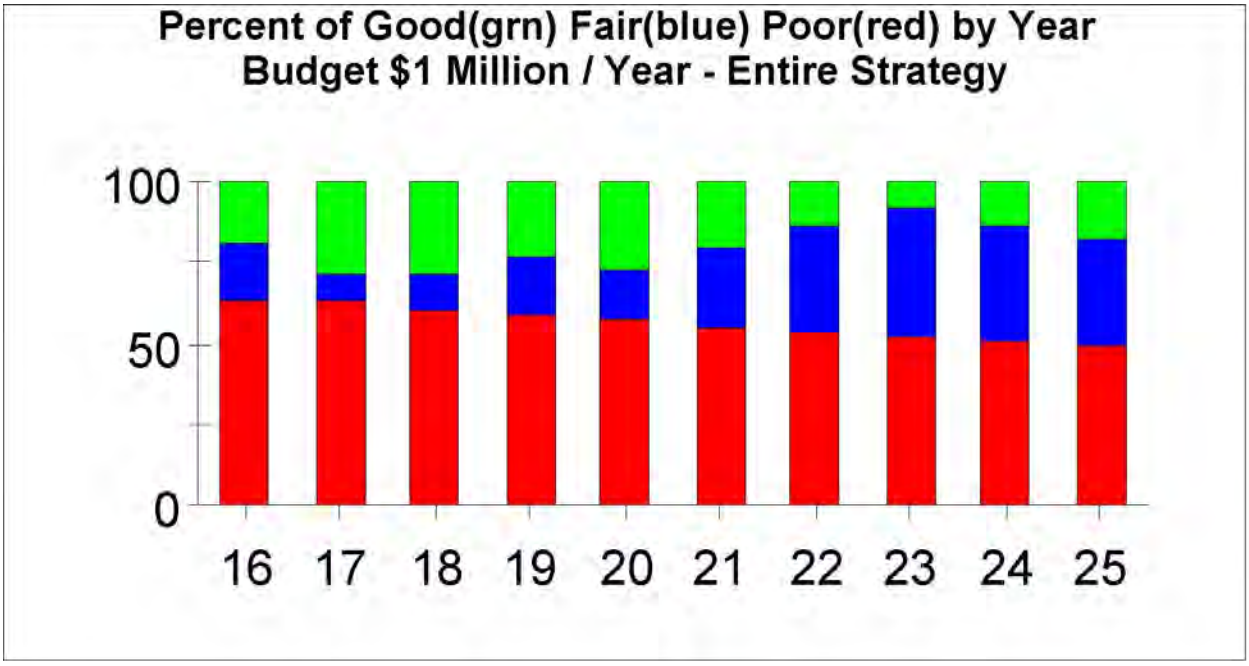


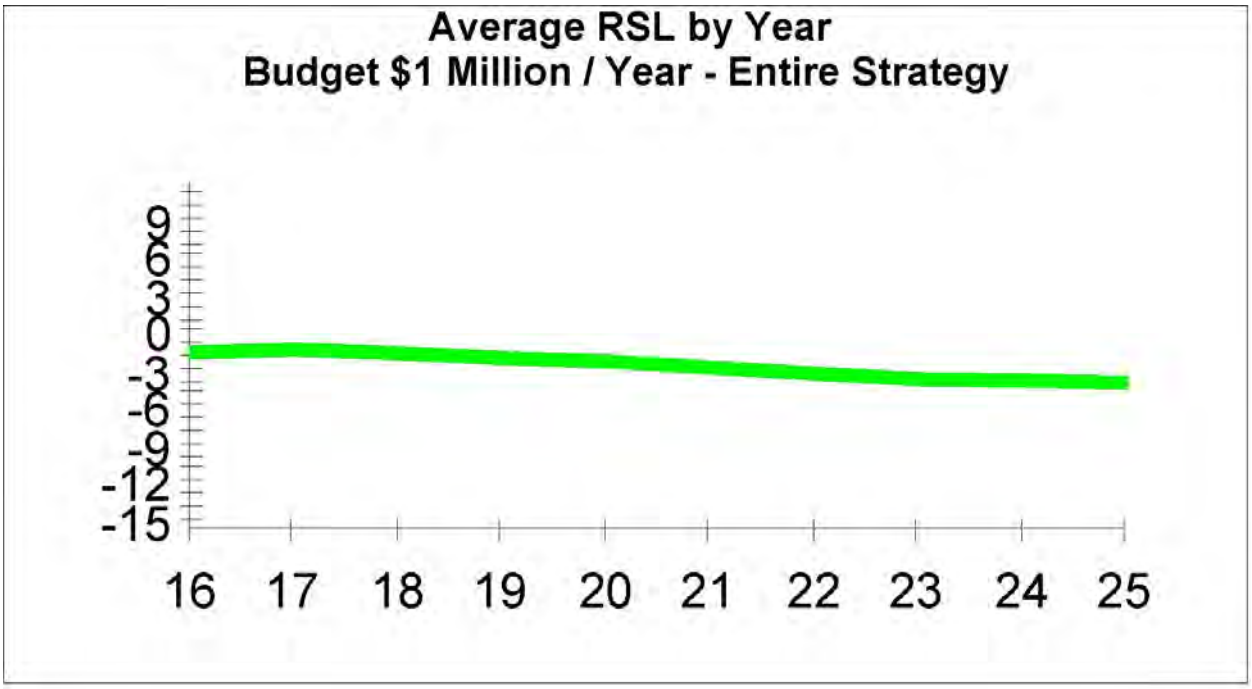


Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2016	RC	2.895	20.780	45.741	4.16	29.93	65.89	69.415	$0	$0	$115,896	$115,896
2016	UA	2.792	0.000	1.166	70.54	0.00	29.45	3.958	$0	$0	$72,358	$72,358
2016	UB	12.256	13.802	30.055	21.84	24.59	53.56	56.113	$0	$0	$411,745	$411,745
2016	UC	0.494	3.318	17.380	2.33	15.65	82.01	21.192	$0	$0	$0	$0
2016	**Total**	**18.437**	**37.900**	**94.342**	**12.23**	**25.15**	**62.61**	**150.678**	**$0**	**$0**	**$599,998**	**$599,998**
2017	RC	5.107	18.371	45.937	7.35	26.46	66.17	69.415	$0	$0	$90,364	$90,364
2017	UA	2.792	0.000	1.166	70.54	0.00	29.45	3.958	$0	$0	$0	$0
2017	UB	22.738	3.320	30.055	40.52	5.91	53.56	56.113	$0	$0	$509,635	$509,635
2017	UC	0.000	3.072	18.120	0.00	14.49	85.50	21.192	$0	$0	$0	$0
2017	**Total**	**30.637**	**24.763**	**95.278**	**20.33**	**16.43**	**63.23**	**150.678**	**$0**	**$0**	**$599,999**	**$599,999**
2018	RC	15.647	7.988	45.780	22.54	11.50	65.95	69.415	$49,209	$0	$432,548	$481,757
2018	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2018	UB	19.120	6.938	30.055	34.07	12.36	53.56	56.113	$0	$0	$0	$0
2018	UC	2.384	0.688	18.120	11.24	3.24	85.50	21.192	$0	$0	$118,228	$118,228
2018	**Total**	**38.669**	**16.888**	**95.121**	**25.66**	**11.20**	**63.12**	**150.678**	**$49,209**	**$0**	**$550,776**	**$599,985**
2019	RC	14.249	10.883	44.284	20.52	15.67	63.79	69.415	$479,191	$0	$0	$479,191
2019	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2019	UB	21.508	4.550	30.055	38.32	8.10	53.56	56.113	$0	$0	$120,795	$120,795
2019	UC	2.384	0.688	18.120	11.24	3.24	85.50	21.192	$0	$0	$0	$0
2019	**Total**	**39.659**	**17.395**	**93.625**	**26.32**	**11.54**	**62.13**	**150.678**	**$479,191**	**$0**	**$120,795**	**$599,986**
2020	RC	20.770	5.107	43.538	29.92	7.35	62.72	69.415	$243,799	$0	$346,205	$590,004
2020	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2020	UB	21.508	4.550	30.055	38.32	8.10	53.56	56.113	$0	$0	$0	$0
2020	UC	2.578	0.494	18.120	12.16	2.33	85.50	21.192	$0	$0	$10,010	$10,010
2020	**Total**	**46.374**	**11.425**	**92.879**	**30.77**	**7.58**	**61.64**	**150.678**	**$243,799**	**$0**	**$356,214**	**$600,014**
2021	RC	12.031	15.647	41.737	17.33	22.54	60.12	69.415	$599,994	$0	$0	$599,994
2021	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2021	UB	12.870	13.188	30.055	22.93	23.50	53.56	56.113	$0	$0	$0	$0
2021	UC	0.194	2.878	18.120	0.91	13.58	85.50	21.192	$0	$0	$0	$0
2021	**Total**	**26.613**	**32.987**	**91.078**	**17.66**	**21.89**	**60.44**	**150.678**	**$599,994**	**$0**	**$0**	**$599,994**
2022	RC	12.179	17.143	40.092	17.54	24.69	57.75	69.415	$559,102	$0	$0	$559,102
2022	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2022	UB	2.656	23.402	30.055	4.73	41.70	53.56	56.113	$0	$0	$14,386	$14,386
2022	UC	0.688	2.384	18.120	3.24	11.24	85.50	21.192	$0	$0	$26,518	$26,518
2022	**Total**	**17.041**	**44.203**	**89.433**	**11.30**	**29.33**	**59.35**	**150.678**	**$559,102**	**$0**	**$40,904**	**$600,006**
2023	RC	5.071	25.877	38.467	7.30	37.27	55.41	69.415	$563,627	$0	$0	$563,627
2023	UA	0.759	2.033	1.166	19.17	51.36	29.45	3.958	$0	$0	$0	$0
2023	UB	3.320	22.738	30.055	5.91	40.52	53.56	56.113	$0	$0	$36,357	$36,357
2023	UC	0.494	2.578	18.120	2.33	12.16	85.50	21.192	$0	$0	$0	$0
2023	**Total**	**9.644**	**53.226**	**87.808**	**6.40**	**35.32**	**58.27**	**150.678**	**$563,627**	**$0**	**$36,357**	**$599,984**
2024	RC	7.478	24.783	37.154	10.77	35.70	53.52	69.415	$464,206	$0	$135,790	$599,996
2024	UA	0.000	2.792	1.166	0.00	70.54	29.45	3.958	$0	$0	$0	$0
2024	UB	0.932	25.126	30.055	1.66	44.77	53.56	56.113	$0	$0	$0	$0

Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2024	UC	0.494	2.578	18.120	2.33	12.16	85.50	21.192	$0	$0	$0	$0
2024	**Total**	**8.904**	**55.279**	**86.495**	**5.90**	**36.68**	**57.40**	**150.678**	**$464,206**	**$0**	**$135,790**	**$599,996**
2025	RC	8.844	24.216	36.356	12.74	34.88	52.37	69.415	$288,004	$0	$105,876	$393,880
2025	UA	0.000	2.792	1.166	0.00	70.54	29.45	3.958	$0	$0	$0	$0
2025	UB	4.550	21.508	30.055	8.10	38.32	53.56	56.113	$0	$0	$206,103	$206,103
2025	UC	0.000	3.072	18.120	0.00	14.49	85.50	21.192	$0	$0	$0	$0
2025	**Total**	**13.394**	**51.588**	**85.697**	**8.88**	**34.23**	**56.87**	**150.678**	**$288,004**	**$0**	**$311,980**	**$599,984**

Alternative 3: Annual Budget = $1,000,000 / Year

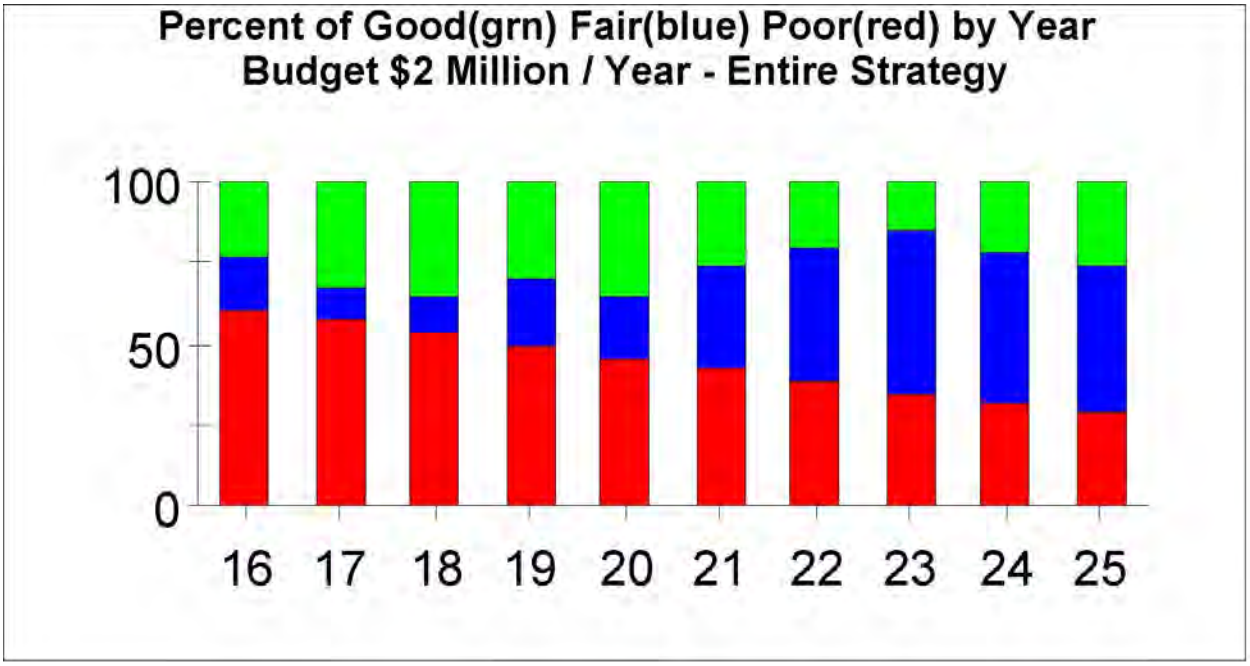


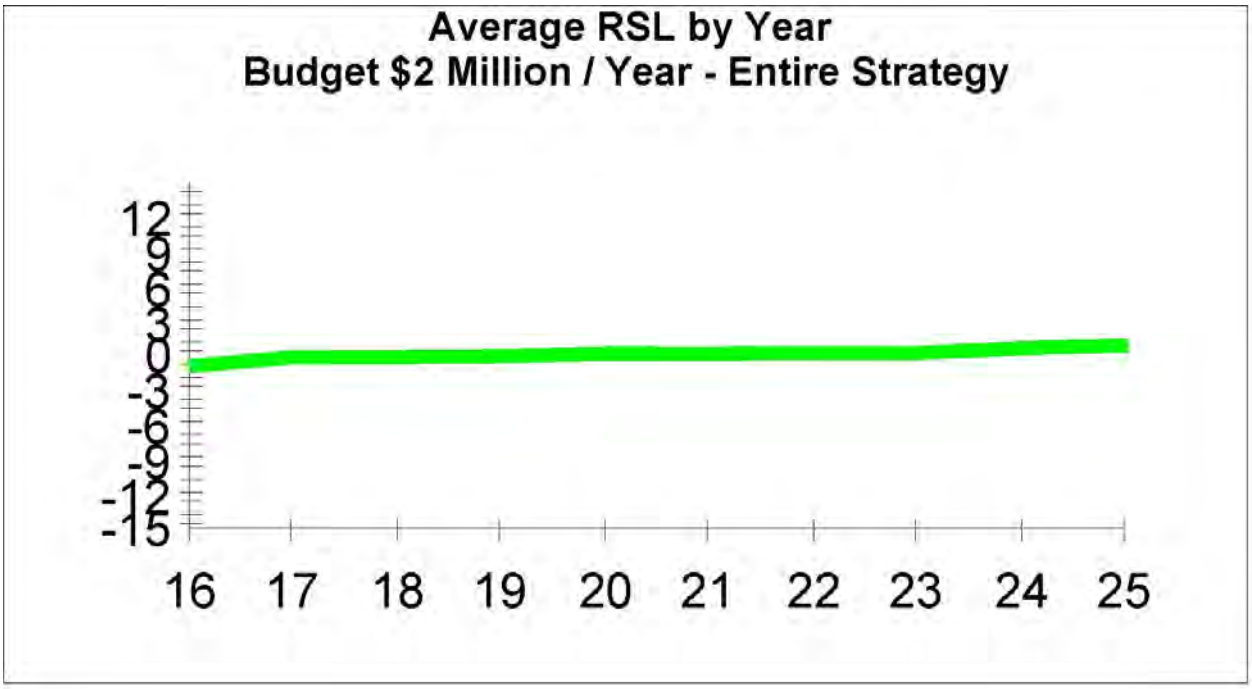


Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2016	RC	12.885	10.790	45.741	18.56	15.54	65.89	69.415	$0	$0	$515,895	$515,895
2016	UA	2.792	0.000	1.166	70.54	0.00	29.45	3.958	$0	$0	$72,358	$72,358
2016	UB	12.256	13.802	30.055	21.84	24.59	53.56	56.113	$0	$0	$411,745	$411,745
2016	UC	0.494	3.318	17.380	2.33	15.65	82.01	21.192	$0	$0	$0	$0
2016	**Total**	**28.427**	**27.910**	**94.342**	**18.86**	**18.52**	**62.61**	**150.678**	**$0**	**$0**	**$999,998**	**$999,998**
2017	RC	15.446	9.366	44.603	22.25	13.49	64.25	69.415	$350,456	$0	$58,137	$408,593
2017	UA	2.792	0.000	1.166	70.54	0.00	29.45	3.958	$0	$0	$0	$0
2017	UB	22.738	3.320	30.055	40.52	5.91	53.56	56.113	$0	$0	$509,635	$509,635
2017	UC	1.682	1.390	18.120	7.93	6.55	85.50	21.192	$0	$0	$81,779	$81,779
2017	**Total**	**42.658**	**14.076**	**93.944**	**28.31**	**9.34**	**62.34**	**150.678**	**$350,456**	**$0**	**$649,551**	**$1,000,007**
2018	RC	19.715	7.988	41.712	28.40	11.50	60.09	69.415	$907,779	$0	$57,404	$965,183
2018	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2018	UB	19.120	6.938	30.055	34.07	12.36	53.56	56.113	$0	$0	$0	$0
2018	UC	2.384	0.688	18.120	11.24	3.24	85.50	21.192	$0	$0	$34,814	$34,814
2018	**Total**	**42.737**	**16.888**	**91.053**	**28.36**	**11.20**	**60.42**	**150.678**	**$907,779**	**$0**	**$92,218**	**$999,997**
2019	RC	9.575	20.873	38.967	13.79	30.06	56.13	69.415	$879,201	$0	$0	$879,201
2019	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2019	UB	21.508	4.550	30.055	38.32	8.10	53.56	56.113	$0	$0	$120,795	$120,795
2019	UC	2.384	0.688	18.120	11.24	3.24	85.50	21.192	$0	$0	$0	$0
2019	**Total**	**34.985**	**27.385**	**88.308**	**23.21**	**18.17**	**58.60**	**150.678**	**$879,201**	**$0**	**$120,795**	**$999,996**
2020	RC	16.972	15.446	36.997	24.44	22.25	53.29	69.415	$643,772	$0	$346,205	$989,976
2020	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2020	UB	21.508	4.550	30.055	38.32	8.10	53.56	56.113	$0	$0	$0	$0
2020	UC	0.896	2.176	18.120	4.22	10.26	85.50	21.192	$0	$0	$10,010	$10,010
2020	**Total**	**40.894**	**23.446**	**86.338**	**27.13**	**15.56**	**57.29**	**150.678**	**$643,772**	**$0**	**$356,214**	**$999,986**
2021	RC	15.704	19.715	33.996	22.62	28.40	48.97	69.415	$1,000,001	$0	$0	$1,000,001
2021	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2021	UB	12.870	13.188	30.055	22.93	23.50	53.56	56.113	$0	$0	$0	$0
2021	UC	0.194	2.878	18.120	0.91	13.58	85.50	21.192	$0	$0	$0	$0
2021	**Total**	**30.286**	**37.055**	**83.337**	**20.09**	**24.59**	**55.30**	**150.678**	**$1,000,001**	**$0**	**$0**	**$1,000,001**
2022	RC	15.781	22.460	31.175	22.73	32.35	44.91	69.415	$959,087	$0	$0	$959,087
2022	UA	1.518	1.274	1.166	38.35	32.18	29.45	3.958	$0	$0	$0	$0
2022	UB	2.656	23.402	30.055	4.73	41.70	53.56	56.113	$0	$0	$14,386	$14,386
2022	UC	0.688	2.384	18.120	3.24	11.24	85.50	21.192	$0	$0	$26,518	$26,518
2022	**Total**	**20.643**	**49.520**	**80.516**	**13.69**	**32.86**	**53.43**	**150.678**	**$959,087**	**$0**	**$40,904**	**$999,991**
2023	RC	8.602	32.418	28.395	12.39	46.70	40.90	69.415	$963,637	$0	$0	$963,637
2023	UA	0.759	2.033	1.166	19.17	51.36	29.45	3.958	$0	$0	$0	$0
2023	UB	3.320	22.738	30.055	5.91	40.52	53.56	56.113	$0	$0	$36,357	$36,357
2023	UC	0.494	2.578	18.120	2.33	12.16	85.50	21.192	$0	$0	$0	$0
2023	**Total**	**13.175**	**59.767**	**77.736**	**8.74**	**39.66**	**51.59**	**150.678**	**$963,637**	**$0**	**$36,357**	**$999,994**
2024	RC	19.604	22.534	27.277	28.24	32.46	39.29	69.415	$395,562	$0	$604,454	$1,000,015
2024	UA	0.000	2.792	1.166	0.00	70.54	29.45	3.958	$0	$0	$0	$0
2024	UB	0.932	25.126	30.055	1.66	44.77	53.56	56.113	$0	$0	$0	$0

Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2024	UC	0.494	2.578	18.120	2.33	12.16	85.50	21.192	$0	$0	$0	$0
2024	**Total**	**21.030**	**53.030**	**76.618**	**13.95**	**35.19**	**50.84**	**150.678**	**$395,562**	**$0**	**$604,454**	**$1,000,015**
2025	RC	20.939	22.794	25.681	30.16	32.83	36.99	69.415	$575,503	$0	$122,581	$698,085
2025	UA	0.000	2.792	1.166	0.00	70.54	29.45	3.958	$0	$0	$0	$0
2025	UB	4.550	21.508	30.055	8.10	38.32	53.56	56.113	$0	$0	$206,103	$206,103
2025	UC	1.682	1.390	18.120	7.93	6.55	85.50	21.192	$0	$0	$95,817	$95,817
2025	**Total**	**27.171**	**48.484**	**75.022**	**18.03**	**32.17**	**49.78**	**150.678**	**$575,503**	**$0**	**$424,501**	**$1,000,005**

Alternative 4: Annual Budget = $2,000,000 / Year

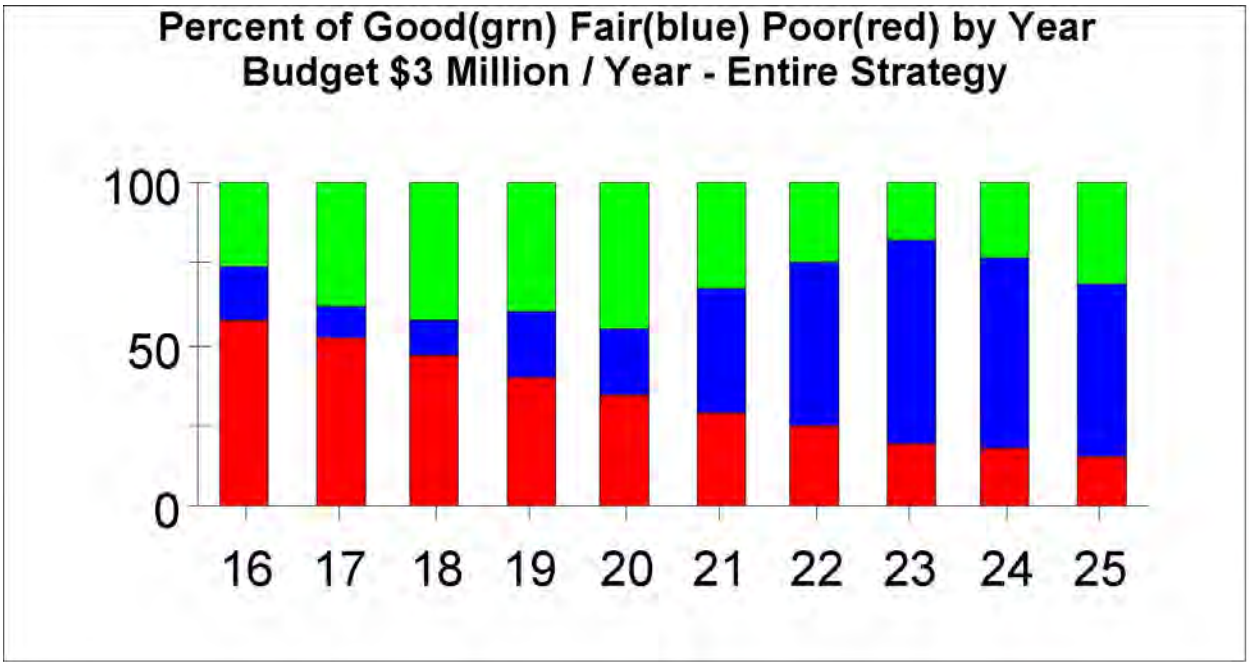


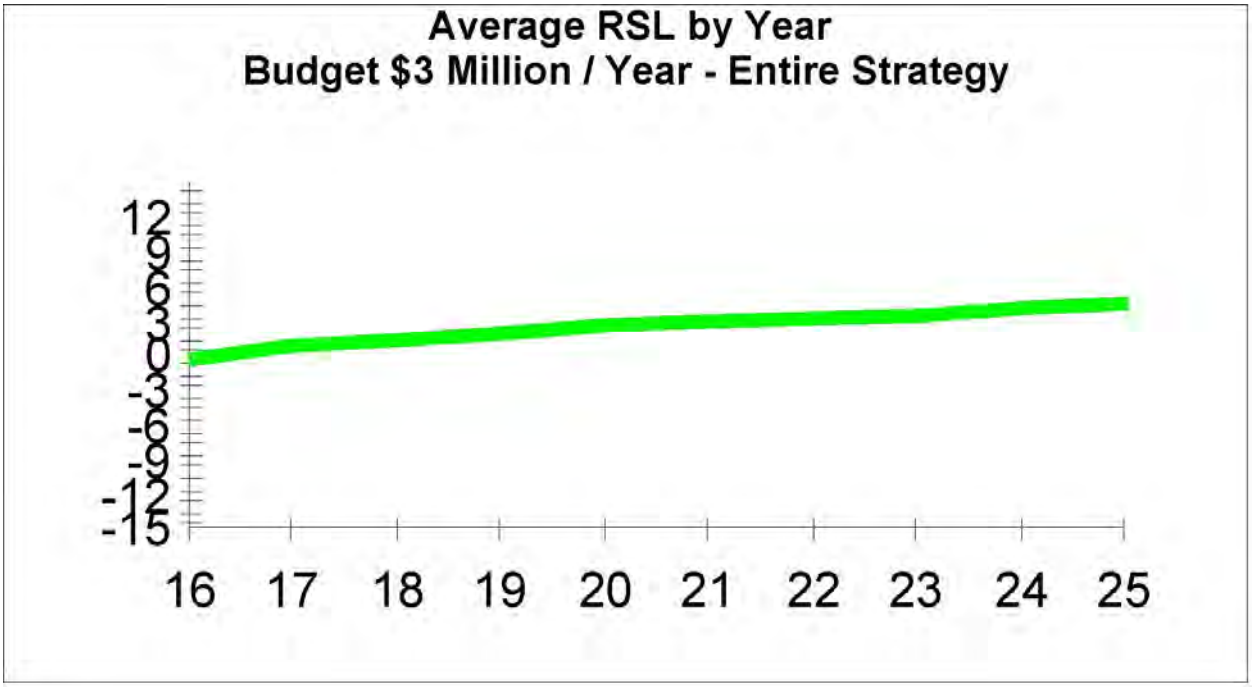


Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2016	RC	14.308	9.366	45.741	20.61	13.49	65.89	69.415	$0	$0	$572,892	$572,892
2016	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$124,872	$72,358	$197,230
2016	UB	15.160	13.802	27.151	27.01	24.59	48.38	56.113	$0	$702,695	$411,745	$1,114,440
2016	UC	2.916	0.896	17.380	13.75	4.22	82.01	21.192	$0	$0	$115,449	$115,449
2016	**Total**	**35.692**	**24.064**	**90.922**	**23.68**	**15.97**	**60.34**	**150.678**	**$0**	**$827,567**	**$1,172,444**	**$2,000,011**
2017	RC	19.149	9.366	40.900	27.58	13.49	58.92	69.415	$1,490,370	$0	$0	$1,490,370
2017	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$0	$0	$0
2017	UB	25.642	3.320	27.151	45.69	5.91	48.38	56.113	$0	$0	$509,635	$509,635
2017	UC	2.422	1.390	17.380	11.42	6.55	82.01	21.192	$0	$0	$0	$0
2017	**Total**	**50.521**	**14.076**	**86.082**	**33.52**	**9.34**	**57.12**	**150.678**	**$1,490,370**	**$0**	**$509,635**	**$2,000,005**
2018	RC	26.602	7.988	34.825	38.32	11.50	50.16	69.415	$1,907,790	$0	$57,404	$1,965,194
2018	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2018	UB	22.024	6.938	27.151	39.24	12.36	48.38	56.113	$0	$0	$0	$0
2018	UC	3.124	0.688	17.380	14.74	3.24	82.01	21.192	$0	$0	$34,814	$34,814
2018	**Total**	**53.784**	**16.888**	**80.006**	**35.69**	**11.20**	**53.09**	**150.678**	**$1,907,790**	**$0**	**$92,218**	**$2,000,008**
2019	RC	18.161	22.296	28.958	26.16	32.11	41.71	69.415	$1,879,192	$0	$0	$1,879,192
2019	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2019	UB	24.412	4.550	27.151	43.50	8.10	48.38	56.113	$0	$0	$120,795	$120,795
2019	UC	0.702	3.110	17.380	3.31	14.67	82.01	21.192	$0	$0	$0	$0
2019	**Total**	**45.308**	**31.230**	**74.140**	**30.06**	**20.72**	**49.20**	**150.678**	**$1,879,192**	**$0**	**$120,795**	**$1,999,987**
2020	RC	26.339	19.149	23.927	37.94	27.58	34.46	69.415	$1,643,800	$0	$346,205	$1,990,005
2020	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2020	UB	24.412	4.550	27.151	43.50	8.10	48.38	56.113	$0	$0	$0	$0
2020	UC	0.896	2.916	17.380	4.22	13.75	82.01	21.192	$0	$0	$10,010	$10,010
2020	**Total**	**53.681**	**27.889**	**69.109**	**35.62**	**18.50**	**45.86**	**150.678**	**$1,643,800**	**$0**	**$356,214**	**$2,000,015**
2021	RC	24.887	26.602	17.926	35.85	38.32	25.82	69.415	$2,000,001	$0	$0	$2,000,001
2021	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2021	UB	12.870	16.092	27.151	22.93	28.67	48.38	56.113	$0	$0	$0	$0
2021	UC	0.194	3.618	17.380	0.91	17.07	82.01	21.192	$0	$0	$0	$0
2021	**Total**	**39.985**	**47.586**	**63.107**	**26.53**	**31.58**	**41.88**	**150.678**	**$2,000,001**	**$0**	**$0**	**$2,000,001**
2022	RC	24.784	32.469	12.162	35.70	46.77	17.52	69.415	$1,959,100	$0	$0	$1,959,100
2022	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2022	UB	2.656	26.306	27.151	4.73	46.87	48.38	56.113	$0	$0	$14,386	$14,386
2022	UC	0.688	3.124	17.380	3.24	14.74	82.01	21.192	$0	$0	$26,518	$26,518
2022	**Total**	**30.162**	**63.172**	**57.344**	**20.01**	**41.92**	**38.05**	**150.678**	**$1,959,100**	**$0**	**$40,904**	**$2,000,004**
2023	RC	17.428	45.488	6.499	25.10	65.53	9.36	69.415	$1,963,645	$0	$0	$1,963,645
2023	UA	1.017	2.291	0.650	25.69	57.88	16.42	3.958	$0	$0	$0	$0
2023	UB	3.320	25.642	27.151	5.91	45.69	48.38	56.113	$0	$0	$36,357	$36,357
2023	UC	0.494	3.318	17.380	2.33	15.65	82.01	21.192	$0	$0	$0	$0
2023	**Total**	**22.259**	**76.739**	**51.680**	**14.77**	**50.92**	**34.29**	**150.678**	**$1,963,645**	**$0**	**$36,357**	**$2,000,001**
2024	RC	29.110	37.181	3.124	41.93	53.56	4.50	69.415	$1,193,510	$0	$671,235	$1,864,745
2024	UA	0.000	3.308	0.650	0.00	83.57	16.42	3.958	$0	$0	$0	$0
2024	UB	0.932	28.030	27.151	1.66	49.95	48.38	56.113	$0	$0	$0	$0

Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2024	UC	2.916	0.896	17.380	13.75	4.22	82.01	21.192	$0	$0	$135,267	$135,267
2024	**Total**	**32.958**	**69.415**	**48.305**	**21.87**	**46.06**	**32.05**	**150.678**	**$1,193,510**	**$0**	**$806,501**	**$2,000,012**
2025	RC	31.311	38.104	0.000	45.10	54.89	0.00	69.415	$1,126,946	$0	$231,640	$1,358,586
2025	UA	0.000	3.308	0.650	0.00	83.57	16.42	3.958	$0	$0	$0	$0
2025	UB	5.453	24.412	26.248	9.71	43.50	46.77	56.113	$0	$435,265	$206,103	$641,368
2025	UC	2.422	1.390	17.380	11.42	6.55	82.01	21.192	$0	$0	$0	$0
2025	**Total**	**39.186**	**67.214**	**44.278**	**26.00**	**44.60**	**29.38**	**150.678**	**$1,126,946**	**$435,265**	**$437,743**	**$1,999,954**

Alternative 5: Annual Budget = $3,000,000 / Year

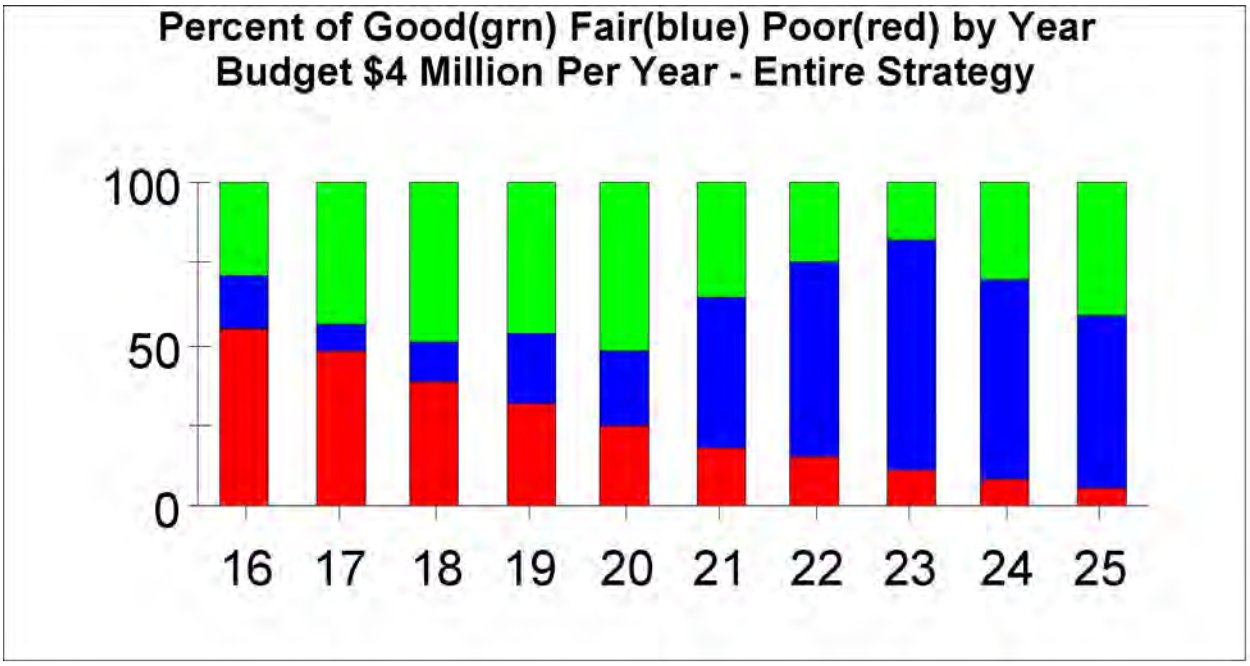


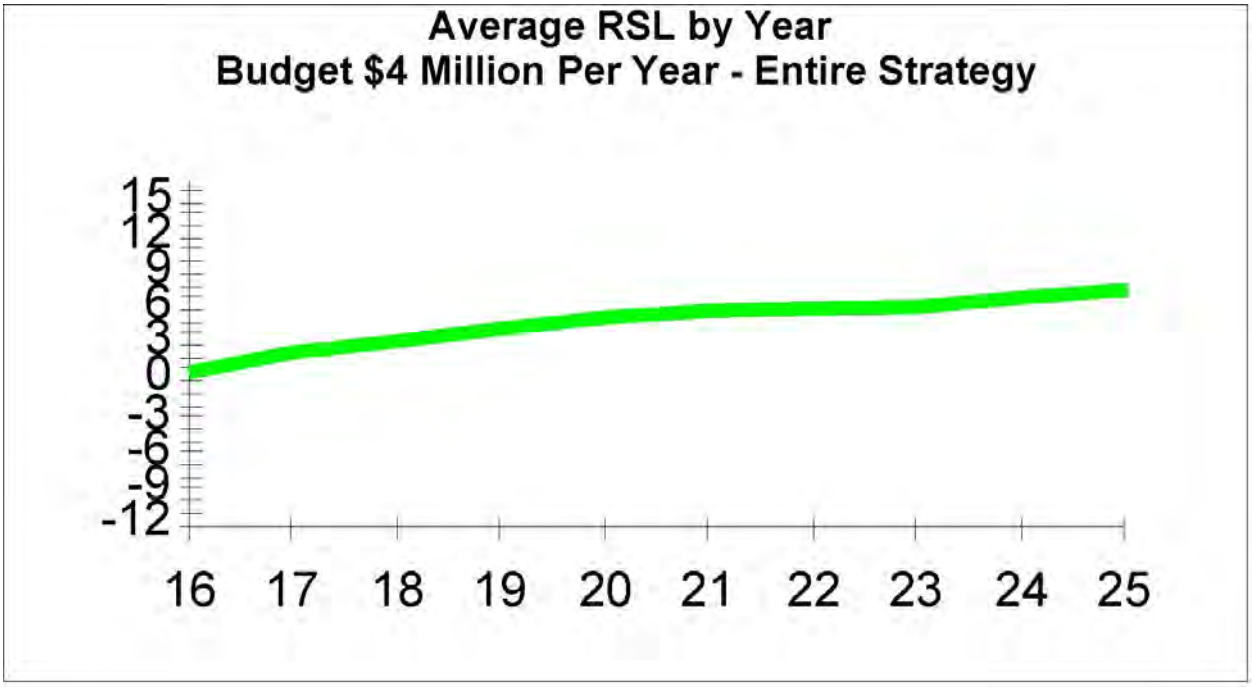


Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2016	RC	14.308	9.366	45.741	20.61	13.49	65.89	69.415	$0	$0	$572,892	$572,892
2016	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$124,872	$72,358	$197,230
2016	UB	19.292	13.802	23.019	34.38	24.59	41.02	56.113	$0	$1,702,688	$411,745	$2,114,432
2016	UC	2.916	0.896	17.380	13.75	4.22	82.01	21.192	$0	$0	$115,449	$115,449
2016	**Total**	**39.824**	**24.064**	**86.790**	**26.42**	**15.97**	**57.59**	**150.678**	**$0**	**$1,827,560**	**$1,172,444**	**$3,000,003**
2017	RC	22.397	9.366	37.652	32.26	13.49	54.24	69.415	$2,490,354	$0	$0	$2,490,354
2017	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$0	$0	$0
2017	UB	29.774	3.320	23.019	53.06	5.91	41.02	56.113	$0	$0	$509,635	$509,635
2017	UC	2.422	1.390	17.380	11.42	6.55	82.01	21.192	$0	$0	$0	$0
2017	**Total**	**57.901**	**14.076**	**78.701**	**38.42**	**9.34**	**52.23**	**150.678**	**$2,490,354**	**$0**	**$509,635**	**$2,999,989**
2018	RC	33.034	7.988	28.393	47.58	11.50	40.90	69.415	$2,907,770	$0	$57,404	$2,965,174
2018	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2018	UB	26.156	6.938	23.019	46.61	12.36	41.02	56.113	$0	$0	$0	$0
2018	UC	3.124	0.688	17.380	14.74	3.24	82.01	21.192	$0	$0	$34,814	$34,814
2018	**Total**	**64.348**	**16.888**	**69.442**	**42.70**	**11.20**	**46.08**	**150.678**	**$2,907,770**	**$0**	**$92,218**	**$2,999,988**
2019	RC	27.715	22.296	19.404	39.92	32.11	27.95	69.415	$2,879,216	$0	$0	$2,879,216
2019	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2019	UB	28.544	4.550	23.019	50.86	8.10	41.02	56.113	$0	$0	$120,795	$120,795
2019	UC	0.702	3.110	17.380	3.31	14.67	82.01	21.192	$0	$0	$0	$0
2019	**Total**	**58.995**	**31.230**	**60.453**	**39.15**	**20.72**	**40.12**	**150.678**	**$2,879,216**	**$0**	**$120,795**	**$3,000,011**
2020	RC	35.706	22.397	11.312	51.43	32.26	16.29	69.415	$2,643,796	$0	$346,205	$2,990,001
2020	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2020	UB	28.544	4.550	23.019	50.86	8.10	41.02	56.113	$0	$0	$0	$0
2020	UC	0.896	2.916	17.380	4.22	13.75	82.01	21.192	$0	$0	$10,010	$10,010
2020	**Total**	**67.180**	**31.137**	**52.361**	**44.58**	**20.66**	**34.75**	**150.678**	**$2,643,796**	**$0**	**$356,214**	**$3,000,010**
2021	RC	34.071	33.034	2.310	49.08	47.58	3.32	69.415	$3,000,002	$0	$0	$3,000,002
2021	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2021	UB	12.870	20.224	23.019	22.93	36.04	41.02	56.113	$0	$0	$0	$0
2021	UC	0.194	3.618	17.380	0.91	17.07	82.01	21.192	$0	$0	$0	$0
2021	**Total**	**49.169**	**58.150**	**43.359**	**32.63**	**38.59**	**28.77**	**150.678**	**$3,000,002**	**$0**	**$0**	**$3,000,002**
2022	RC	27.392	42.023	0.000	39.46	60.53	0.00	69.415	$785,251	$0	$0	$785,251
2022	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2022	UB	7.442	30.438	18.233	13.26	54.24	32.49	56.113	$0	$2,173,846	$14,386	$2,188,232
2022	UC	0.688	3.124	17.380	3.24	14.74	82.01	21.192	$0	$0	$26,518	$26,518
2022	**Total**	**37.556**	**76.859**	**36.263**	**24.92**	**51.00**	**24.06**	**150.678**	**$785,251**	**$2,173,846**	**$40,904**	**$3,000,002**
2023	RC	11.312	58.103	0.000	16.29	83.70	0.00	69.415	$0	$0	$0	$0
2023	UA	1.017	2.291	0.650	25.69	57.88	16.42	3.958	$0	$0	$0	$0
2023	UB	14.503	29.774	11.836	25.84	53.06	21.09	56.113	$0	$2,963,658	$36,357	$3,000,015
2023	UC	0.494	3.318	17.380	2.33	15.65	82.01	21.192	$0	$0	$0	$0
2023	**Total**	**27.326**	**93.486**	**29.866**	**18.13**	**62.04**	**19.82**	**150.678**	**$0**	**$2,963,658**	**$36,357**	**$3,000,015**
2024	RC	16.618	52.797	0.000	23.94	76.05	0.00	69.415	$0	$0	$671,235	$671,235
2024	UA	0.650	3.308	0.000	16.42	83.57	0.00	3.958	$552,906	$0	$0	$552,906
2024	UB	15.474	32.162	8.477	27.57	57.31	15.10	56.113	$119,173	$1,521,390	$0	$1,640,562

Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2024	UC	2.916	0.896	17.380	13.75	4.22	82.01	21.192	$0	$0	$135,267	$135,267
2024	**Total**	**35.658**	**89.163**	**25.857**	**23.66**	**59.17**	**17.16**	**150.678**	**$672,079**	**$1,521,390**	**$806,501**	**$2,999,969**
2025	RC	22.397	47.018	0.000	32.26	67.73	0.00	69.415	$0	$0	$387,061	$387,061
2025	UA	0.650	3.308	0.000	16.42	83.57	0.00	3.958	$0	$0	$0	$0
2025	UB	21.866	28.544	5.703	38.96	50.86	10.16	56.113	$2,406,826	$0	$206,103	$2,612,929
2025	UC	2.422	1.390	17.380	11.42	6.55	82.01	21.192	$0	$0	$0	$0
2025	**Total**	**47.335**	**80.260**	**23.083**	**31.41**	**53.26**	**15.31**	**150.678**	**$2,406,826**	**$0**	**$593,165**	**$2,999,990**

Alternative 6: Annual Budget = $4,000,000 / Year





Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2016	RC	15.888	9.366	44.161	22.88	13.49	63.61	69.415	$0	$360,114	$572,892	$933,006
2016	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$124,872	$72,358	$197,230
2016	UB	21.936	13.802	20.375	39.09	24.59	36.31	56.113	$0	$2,342,560	$411,745	$2,754,305
2016	UC	2.916	0.896	17.380	13.75	4.22	82.01	21.192	$0	$0	$115,449	$115,449
2016	**Total**	**44.048**	**24.064**	**82.566**	**29.23**	**15.97**	**54.79**	**150.678**	**$0**	**$2,827,546**	**$1,172,444**	**$3,999,989**
2017	RC	27.225	9.366	32.824	39.22	13.49	47.28	69.415	$3,490,368	$0	$0	$3,490,368
2017	UA	3.308	0.000	0.650	83.57	0.00	16.42	3.958	$0	$0	$0	$0
2017	UB	32.418	3.320	20.375	57.77	5.91	36.31	56.113	$0	$0	$509,635	$509,635
2017	UC	2.422	1.390	17.380	11.42	6.55	82.01	21.192	$0	$0	$0	$0
2017	**Total**	**65.373**	**14.076**	**71.229**	**43.38**	**9.34**	**47.27**	**150.678**	**$3,490,368**	**$0**	**$509,635**	**$4,000,003**
2018	RC	41.047	7.988	20.380	59.13	11.50	29.36	69.415	$3,907,780	$0	$57,404	$3,965,185
2018	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2018	UB	28.800	6.938	20.375	51.32	12.36	36.31	56.113	$0	$0	$0	$0
2018	UC	3.124	0.688	17.380	14.74	3.24	82.01	21.192	$0	$0	$34,814	$34,814
2018	**Total**	**75.005**	**16.888**	**58.785**	**49.77**	**11.20**	**39.01**	**150.678**	**$3,907,780**	**$0**	**$92,218**	**$3,999,999**
2019	RC	37.269	23.876	8.270	53.69	34.39	11.91	69.415	$3,879,207	$0	$0	$3,879,207
2019	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2019	UB	31.188	4.550	20.375	55.58	8.10	36.31	56.113	$0	$0	$120,795	$120,795
2019	UC	0.702	3.110	17.380	3.31	14.67	82.01	21.192	$0	$0	$0	$0
2019	**Total**	**71.193**	**32.810**	**46.675**	**47.24**	**21.77**	**30.97**	**150.678**	**$3,879,207**	**$0**	**$120,795**	**$4,000,002**
2020	RC	42.190	27.225	0.000	60.77	39.22	0.00	69.415	$2,701,887	$0	$346,205	$3,048,092
2020	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2020	UB	33.346	4.550	18.218	59.42	8.10	32.46	56.113	$0	$941,923	$0	$941,923
2020	UC	0.896	2.916	17.380	4.22	13.75	82.01	21.192	$0	$0	$10,010	$10,010
2020	**Total**	**78.466**	**35.965**	**36.248**	**52.07**	**23.86**	**24.05**	**150.678**	**$2,701,887**	**$941,923**	**$356,214**	**$4,000,025**
2021	RC	28.368	41.047	0.000	40.86	59.13	0.00	69.415	$0	$0	$0	$0
2021	UA	2.034	1.274	0.650	51.38	32.18	16.42	3.958	$0	$0	$0	$0
2021	UB	24.010	22.868	9.235	42.78	40.75	16.45	56.113	$0	$4,000,020	$0	$4,000,020
2021	UC	0.194	3.618	17.380	0.91	17.07	82.01	21.192	$0	$0	$0	$0
2021	**Total**	**54.606**	**68.807**	**27.265**	**36.24**	**45.66**	**18.09**	**150.678**	**$0**	**$4,000,020**	**$0**	**$4,000,020**
2022	RC	16.258	53.157	0.000	23.42	76.57	0.00	69.415	$0	$0	$0	$0
2022	UA	2.684	1.274	0.000	67.81	32.18	0.00	3.958	$531,436	$0	$0	$531,436
2022	UB	18.263	33.082	4.768	32.54	58.95	8.49	56.113	$3,146,919	$280,707	$14,386	$3,442,013
2022	UC	0.688	3.124	17.380	3.24	14.74	82.01	21.192	$0	$0	$26,518	$26,518
2022	**Total**	**37.893**	**90.637**	**22.148**	**25.14**	**60.15**	**14.69**	**150.678**	**$3,678,355**	**$280,707**	**$40,904**	**$3,999,967**
2023	RC	0.000	69.415	0.000	0.00	100.00	0.00	69.415	$0	$0	$0	$0
2023	UA	1.667	2.291	0.000	42.11	57.88	0.00	3.958	$0	$0	$0	$0
2023	UB	21.875	32.418	1.820	38.98	57.77	3.24	56.113	$2,458,806	$0	$36,357	$2,495,162
2023	UC	3.742	3.318	14.132	17.65	15.65	66.68	21.192	$0	$1,504,809	$0	$1,504,809
2023	**Total**	**27.284**	**107.442**	**15.952**	**18.10**	**71.30**	**10.58**	**150.678**	**$2,458,806**	**$1,504,809**	**$36,357**	**$3,999,971**
2024	RC	15.888	53.527	0.000	22.88	77.11	0.00	69.415	$0	$0	$745,358	$745,358
2024	UA	0.650	3.308	0.000	16.42	83.57	0.00	3.958	$0	$0	$0	$0
2024	UB	21.307	34.806	0.000	37.97	62.02	0.00	56.113	$1,547,797	$0	$0	$1,547,797

Year	Category	Good Miles	Fair Miles	Poor Miles	% Good	% Fair	% Poor	Total Miles	RC Cost	RH Cost	PM Cost	Total Cost
2024	UC	8.012	0.896	12.284	37.80	4.22	57.96	21.192	$1,571,614	$0	$135,267	$1,706,881
2024	**Total**	**45.857**	**92.537**	**12.284**	**30.43**	**61.41**	**8.15**	**150.678**	**$3,119,411**	**$0**	**$880,624**	**$4,000,035**
2025	RC	27.225	42.190	0.000	39.22	60.77	0.00	69.415	$0	$0	$542,488	$542,488
2025	UA	0.650	3.308	0.000	16.42	83.57	0.00	3.958	$0	$0	$5,862	$5,862
2025	UB	22.768	33.346	0.000	40.57	59.42	0.00	56.113	$0	$0	$206,103	$206,103
2025	UC	11.256	1.390	8.546	53.11	6.55	40.32	21.192	$3,243,575	$0	$0	$3,243,575
2025	**Total**	**61.898**	**80.234**	**8.546**	**41.07**	**53.24**	**5.67**	**150.678**	**$3,243,575**	**$0**	**$754,453**	**$3,998,028**

Exhibit 7

Composite Graph:
PASER Rating vs. Program Year
Alternatives 1 through 6

Town of Winchester Asphalt Road Network

Lenard Engineering, Inc.

Calculate Weighted PASER Projection

Job No.: 15-131

Date: 05/31/16

Client: Town of Winchester

Prepared By: DNB

Project: 2016 Pavement Management Plan

	Projected Weighted Average PASER Rating Table									
Program Year	0	1	2	3	4	5	6	7	8	9
Do Nothing	3.3	3.0	2.9	2.8	2.4	2.4	2.3	2.0	2.0	1.8
$600,000 Per Year	3.8	3.9	4.1	4.0	4.0	3.8	3.7	3.6	3.7	3.6
$1,000,000 Per Year	4.1	4.2	4.2	4.2	4.2	4.1	4.0	4.1	4.3	4.3
$2,000,000 Per Year	4.4	4.6	4.7	4.8	5.0	5.0	5.0	5.1	5.6	5.6
$3,000,000 Per Year	4.5	4.9	5.3	5.5	5.8	5.8	5.9	5.9	6.3	6.4
$4,000,000 Per Year	4.7	5.3	5.8	6.1	6.5	6.4	6.3	6.4	6.9	7.1

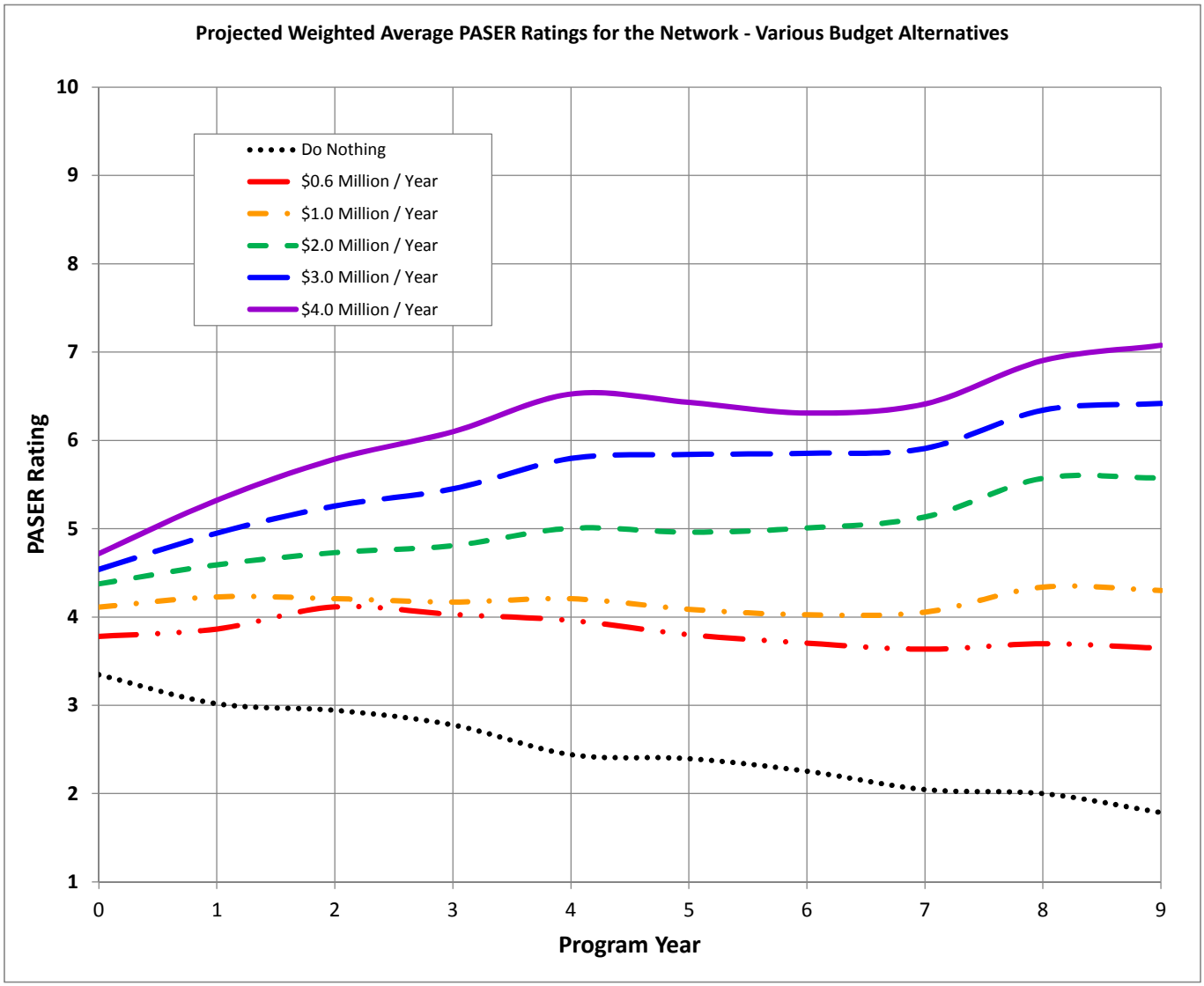


Exhibit 8

Table Summarizing RoadSoft-Generated Pavement Management Budget Strategies

Alternatives 1 through 6

Town of Winchester Asphalt Road Network

Lenard Engineering, Inc.

Comparison of Pavement Management Budget Strategies

Job No.: 15-131

Date: 05/31/16

Client: Town of Winchester

Prepared By: DNB

Project: 2016 Pavement Management Plan

Alternative 1

Annual Budget: $ 0

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$0	$0	**$0**
2017	$0	$0	$0	**$0**
2018	$0	$0	$0	**$0**
2019	$0	$0	$0	**$0**
2020	$0	$0	$0	**$0**
2021	$0	$0	$0	**$0**
2022	$0	$0	$0	**$0**
2023	$0	$0	$0	**$0**
2024	$0	$0	$0	**$0**
2025	$0	$0	$0	**$0**
Totals:	$0	$0	$0	**$0**

Alternative 2

Annual Budget: $600,000

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$0	$600,000	**$600,000**
2017	$0	$0	$600,000	**$600,000**
2018	$49,000	$0	$551,000	**$600,000**
2019	$479,000	$0	$121,000	**$600,000**
2020	$244,000	$0	$356,000	**$600,000**
2021	$600,000	$0	$0	**$600,000**
2022	$559,000	$0	$41,000	**$600,000**
2023	$564,000	$0	$36,000	**$600,000**
2024	$464,000	$0	$136,000	**$600,000**
2025	$288,000	$0	$312,000	**$600,000**
Totals:	$3,247,000	$0	$2,753,000	**$6,000,000**

Alternative 3

Annual Budget: $1,000,000

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$0	$1,000,000	**$1,000,000**
2017	$350,000	$0	$650,000	**$1,000,000**
2018	$908,000	$0	$92,000	**$1,000,000**
2019	$879,000	$0	$121,000	**$1,000,000**
2020	$644,000	$0	$356,000	**$1,000,000**
2021	$1,000,000	$0	$0	**$1,000,000**
2022	$959,000	$0	$41,000	**$1,000,000**
2023	$964,000	$0	$36,000	**$1,000,000**
2024	$396,000	$0	$604,000	**$1,000,000**
2025	$576,000	$0	$424,000	**$1,000,000**
Totals:	$6,676,000	$0	$3,324,000	**$10,000,000**

Alternative 4

Annual Budget: $2,000,000

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$828,000	$1,172,000	**$2,000,000**
2017	$1,490,000	$0	$510,000	**$2,000,000**
2018	$1,908,000	$0	$92,000	**$2,000,000**
2019	$1,879,000	$0	$121,000	**$2,000,000**
2020	$1,644,000	$0	$356,000	**$2,000,000**
2021	$2,000,000	$0	$0	**$2,000,000**
2022	$1,959,000	$0	$41,000	**$2,000,000**
2023	$1,964,000	$0	$36,000	**$2,000,000**
2024	$1,194,000	$0	$806,000	**$2,000,000**
2025	$1,127,000	$435,000	$438,000	**$2,000,000**
Totals:	$15,165,000	$1,263,000	$3,572,000	**$20,000,000**

Alternative 5

Annual Budget: $3,000,000

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$1,828,000	$1,172,000	**$3,000,000**
2017	$2,490,000	$0	$510,000	**$3,000,000**
2018	$2,908,000	$0	$92,000	**$3,000,000**
2019	$2,879,000	$0	$121,000	**$3,000,000**
2020	$2,644,000	$0	$356,000	**$3,000,000**
2021	$3,000,000	$0	$0	**$3,000,000**
2022	$785,000	$2,174,000	$41,000	**$3,000,000**
2023	$0	$2,964,000	$36,000	**$3,000,000**
2024	$672,000	$1,521,000	$807,000	**$3,000,000**
2025	$2,407,000	$0	$593,000	**$3,000,000**
Totals:	$17,785,000	$8,487,000	$3,728,000	**$30,000,000**

Alternative 6

Annual Budget: $4,000,000

Year	Reconstruction	Rehabilitation	Preventive Maintenance	**Total Annual Expenditure**
2016	$0	$2,828,000	$1,172,000	**$4,000,000**
2017	$3,490,000	$0	$510,000	**$4,000,000**
2018	$3,908,000	$0	$92,000	**$4,000,000**
2019	$3,879,000	$0	$121,000	**$4,000,000**
2020	$2,702,000	$942,000	$356,000	**$4,000,000**
2021	$0	$4,000,000	$0	**$4,000,000**
2022	$3,678,000	$281,000	$41,000	**$4,000,000**
2023	$2,459,000	$1,505,000	$36,000	**$4,000,000**
2024	$3,119,000	$0	$881,000	**$4,000,000**
2025	$3,245,000	$0	$755,000	**$4,000,000**
Totals:	$26,480,000	$9,556,000	$3,964,000	**$40,000,000**