

Town of South Bethany, DE



2016

Pavement Management Study

Prepared by:

Kercher Engineering, Inc.



**KERCHER
ENGINEERING
INC.**

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Pavement Management

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Municipal Engineers

Pavement Engineers

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December 13, 2016

Mr. Melvin Cusick
Town Manager
Town of South Bethany
402 Evergreen Road
South Bethany, DE 19930

RE: Y2016 Pavement Management Study
KEI Project No. 16-1108M

Dear Mr. Cusick:

Kercher Engineering, Inc. (KEI) has completed an assessment of the pavement network of the Town of South Bethany. The following report documents the findings of the network level assessment including the establishment of a pavement network inventory, the Pavement Condition Survey (PCS) process followed, the pavement treatment definitions and costs, and the final results of the study.

The main purpose of a pavement management program is to provide an intelligent, systematic approach to making maintenance decisions. It is a "Network Level" management tool that analyzes the entire road network of the Town. The results from this analysis are intended to be used to identify which general pavement maintenance strategies should be applied to individual roads in the road network to improve network condition and identify short and long term budgetary needs.

Pavement management programs prioritize maintenance and preservation activities for the overall pavement network based on the realization that proper timing of maintenance is crucial. Research has shown that deterioration of a pavement accelerates dramatically as the pavement approaches the end of its design life. Delaying needed maintenance will allow the network to deteriorate unnecessarily, resulting in increasingly higher maintenance costs such as rehabilitation and reconstruction.

Pavement management seeks to determine the proper timing and application of maintenance strategies to minimize the required annual cost of repairs while providing the traveling public with the highest level of service. While it can be appealing to address the worst roads in the network first, it is actually more fiscally responsible to maintain the good roads in a good state of repair first to keep them from deteriorating than it is to wait until roads fall into disrepair and then react. However, when a pavement network has roads that have already fallen into disrepair, there will need to be a funding avenue available to bring the roads back to a state of good structural and functional condition and then develop a long term plan to maintain the roads in the best condition possible. Therefore, it is most effective to develop a program that maintains a budget for

maintenance and preservation of the higher condition roads while simultaneously funding the rehabilitation of lower condition roads.

A. Roadway Inventory Development

KEI utilized the street inventory developed by KEI under a contract with the Delaware Technology Transfer Center. The data was obtained by reviewing DelDOT’s Subdivision Streets Inventory Manual. Although dimensions may not be completely accurate, the data should be sufficient to development of a network level cost estimate. For each roadway segment managed by the Town, the inventory includes the street name, begin and end descriptions, length and width. When developing a network level pavement management assessment, these are minimum inventory elements required to estimate repair costs.

The Street Inventory is provided in Appendix A.

B. Pavement Condition Survey Process

KEI performed a PCS of all asphalt pavement street segments within the Town. This involved driving each segment and observing and quantifying the severity and extent of each pavement distress using the methodology employed by KEI for municipalities in the mid-Atlantic region. Below are the distresses, along with severity and extent levels.

- Structural (Alligator) Cracking – 3 Severities and 6 Levels of Extents
- Environmental Cracking – 3 Severities and 4 Levels of Extents
- Patching and Potholes – 3 Severities and 6 Levels of Extents
- Longitudinal Cracking - 3 Severities and 3 Levels of Extents
- Surface Defects (Oxidation/Raveling) – 3 Severities and 4 Levels of Extents
- Rutting and Roughness – 3 Severities and 4 Levels of Extents

The results of the condition survey are provided in Appendix B.

C. Pavement Treatment Definitions

KEI has incorporated Treatment recommendations for each street segment as part of the analysis results. The Treatment definitions and unit costs used in this report are consistent with costs of neighboring communities over the past few years. The following are the Unit Costs assigned to each treatment used in this assessment. Attached to this document is additional detail on the Treatment definitions and applicability to certain pavement conditions – see Appendix D.

Treatment	Unit Cost (SY)
Do Nothing	\$0.00
Micro-surfacing	\$3.50
Rehab – Minor (Overlays)	\$14.00

The unit prices are based on similar work being performed in nearby communities (Bethany Beach, Fenwick Island and Ocean View). Please note that actual construction costs can vary greatly depending upon many factors such the size and scope of work including composition of types of repairs (patching, crack sealing, rotomilling, utility adjustments, etc.), number of bidders, time of year, cost of raw materials, etc. Additionally, as stated in our Proposal, a detailed project-level investigation is not warranted at this time. Once a project-level investigation including field measures is performed, a more accurate scope-of-work can be developed which will help to improve the accuracy of the estimated costs.

D. Pavement Network Level Analysis Process

The analysis process followed by KEI includes utilizing a selection of treatments based on the distresses measured on each street segment. The selected treatments and estimated costs are provided in Appendix C. The list of streets is grouped by Treatment Type.

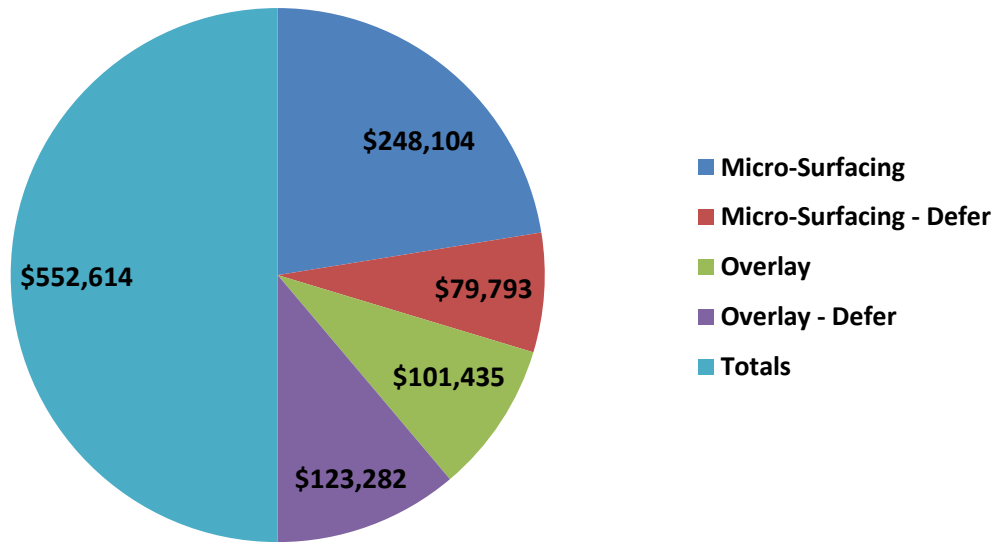
E. Conclusions

The total estimated cost of Treatments required to bring the network to a good state of repair would be approximately \$552,614. The actual length of the network that was surveyed was 9.77 miles of Town maintained paved roads. Based on our experience of working with many agencies of different sizes across the United States, the Town of South Bethany’s Pavement Network is in relatively good condition at this time. The good news is that a network-level preventive maintenance program utilizing micro-surfacing will be able to cost-effectively extend pavement life by 8 to 10 years, possibly longer if applied in the next year or two. As an example, the Town of Ocean View’s pavement network was in similar condition 10 years ago and utilizing a properly timed preventive maintenance program, their pavement network continues of be in good condition.

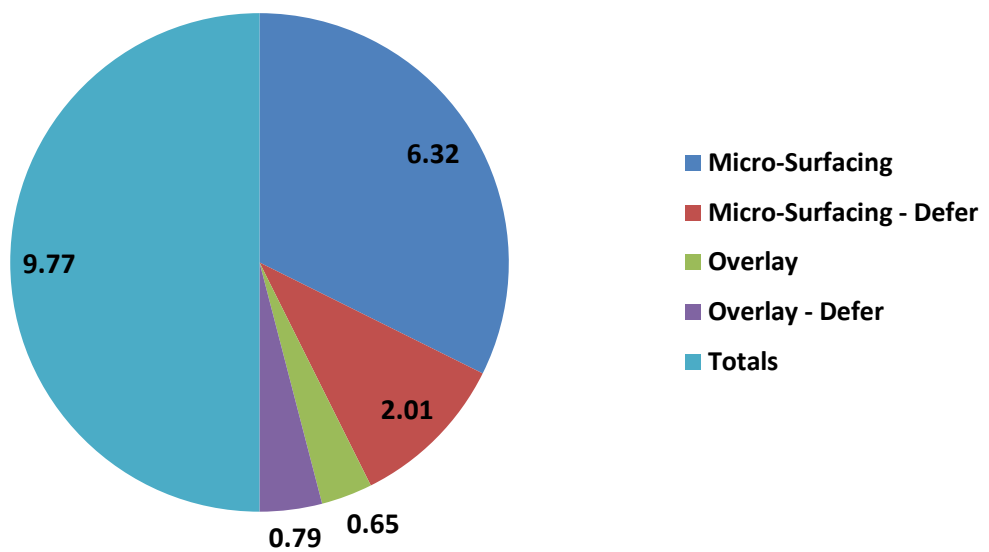
The following table shows the breakdown of the network by required Treatment activity.

Treatment	Cost	% of Total Cost	Length (miles)	% of Total Length
Micro-Surfacing	\$248,104	44.90%	6.32	64.69%
Micro-Surfacing - Defer	\$79,793	14.44%	2.01	20.57%
Overlay	\$101,435	18.36%	0.65	6.65%
Overlay - Defer	\$123,282	22.31%	0.79	8.09%
Totals	\$552,614		9.77	

2016 - Cost of Repairs by Treatment Type



2016 - Length of Repairs by Treatment Type (Mileage)



This report will provide the Town of South Bethany with a viable starting point for planning purposes for determining short term budgetary needs for pavement maintenance. In addition to serving as a starting point for planning purposes, the total estimated cost will serve as a benchmark in the future to measure whether or not the Town is making headway in reducing the amount of required maintenance. Obviously, it is not expected that the Town can fix every street this year. However, it must be realized that in the years to come, other streets will continue to age and will also need repair. Therefore it is essential that a comprehensive, long-term maintenance plan be developed and adequate pavement maintenance funds be allocated to the network.

Should you have any questions, please contact me. I may be reached at 302-894-1098, Ext. 301 or by email at ask@kercherei.com

Sincerely,

Kercher Engineering, Inc.

A handwritten signature in black ink that reads "Alan S. Kercher". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Alan S. Kercher, P.E.
President

APPENDIX A

STREET INVENTORY

STREET INVENTORY

<u>NAME</u>	<u>FROMSTREET</u>	<u>TOSTREET</u>	<u>Width</u>	<u>LENGTH</u>
ANCHORAGE AVE.	W. 12TH ST.	JEFFERSON CREEK	19	0.330
ANCHORAGE DRIVE	OCEAN HIGHWAY	PETERSON DRIVE	19	0.310
BAY SHORE DR.-1	OCEAN HWY	BAYSHORE E-W	19	0.330
BAY SHORE DR.-2	BAYSHORE N-S	JEFFERSON CREEK	19	0.220
BLACK GUM DR.	ROAD 361	CUL-DE-SAC	22	0.250
BOONE ROAD	YORK ROAD	LAGOON	19	0.050
BRANDYWINE DR.	OCEAN HWY.	JEFFERSON CREEK	19	0.310
BRISTOL ROAD	YORK ROAD	CUL-DE-SAC	19	0.140
CANAL DRIVE	RUSSEL ROAD	JEFFERSON CREEK	19	0.440
CARLISLE RD.	YORK ROAD	CUL-DE-SAC	19	0.280
CATTAIL ROAD	TAMARACK DRIVE	BLACK GUM DRIVE	19	0.100
CLEVELAND DR.	ANCHORAGE DRIVE	EVERGREEN ROAD	19	0.130
DIVISION ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
EIGHTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
EIGHTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
ELEVENTH ST. WEST	PETERSON DRIVE	JEFERSON CREEL	19	0.060
ELIZABETHS COURT	ELIZABETHS WAY	CUL-DE-SAC	19	0.090
ELIZABETHS WAY	MAYS WAY	CLEVELAND DRIVE	19	0.220
EVERGREEN ROAD-1	OCEAN HWY.	PETERSON DRIVE	19	0.300
EVERGREEN ROAD-2	PETERSON DRIVE	TOWN HALL	19	0.160
FIFTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
FIFTH ST. SOUTH SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
FIFTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
FIRST ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
FIRST ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
FIRST ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
FOURTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
FOURTH ST. WEST	CANAL DRIVE	JEFFERSON DRIVE	19	0.050
FOURTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
GODWIN PLACE	OCEAN HWY.	JEFFERSON CREEK	19	0.040
HENLOPEN DRIVE	OCEAN HWY.	JEFFERSON CREEK	19	0.310
INDIAN STREET	OCEAN HWY.	OCEAN DRIVE	19	0.070
JAMAICA ST.	OCEAN HWY.	OCEAN DRIVE	19	0.070
KENT PLACE	OCEAN HWY.	JEFFERSON CREEK	19	0.040
KEWANEE ST.	OCEAN HWY.	OCEAN DRIVE	19	0.070
KIMBERLY RD.	YORK RD.	CUL-DE-SAC	19	0.130
LAYTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	19	0.310
LOGAN ST.	OCEAN HWY.	OCEAN DRIVE	19	0.070
MAYS WAY	ANCHORAGE DRIVE	EVERGREEN ROAD	19	0.060
NEW CASTLE DR.	OCEAN HWY.	JEFFERSON CREEK	19	0.310

STREET INVENTORY - CONTINUED

NAME	FROMSTREET	TOSTREET	Width	LENGTH
NINTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
NINTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
OCEAN DRIVE	N. 6TH ST.	LOGAN ST.	20	0.670
PERIWINKLE RD.	CUL-DE-SAC	CUL-DE-SAC	19	0.150
PETERSON DRIVE	ANCHORAGE DRIVE	EVERGREEN ROAD	19	0.150
PLYMOUTH ROAD	YORK ROAD	CUL-DE-SAC	19	0.050
REBECCA ROAD	YORK ROAD	CUL-DE-SAC	19	0.120
RUSSELL ROAD	CANAL DRIVE	EVERGREEN ROAD	19	0.130
RUSSELL ROAD - 2	CUL-DE-SAC	CANAL DRIVE	19	0.080
SEASIDE DRIVE	OCEAN HWY.	SEASIDE DRIVE	19	0.210
SECOND ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
SECOND ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
SECOND ST. WEST	CANAL	END	19	0.060
SEVENTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
SEVENTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
SIXTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
SIXTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
SIXTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
SURFSIDE STREET	NINTH ST. SOUTH	DEAD END	19	0.040
SUSSEX PLACE	OCEAN HWY.	JEFFERSON CREEK	19	0.040
TAMARACK COURT	TAMARACK DRIVE	CUL-DE-SAC	19	0.020
TAMARACK DRIVE	CANAL ROAD	CATTAIL RD.	19	0.200
TENTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	19	0.060
TERN DRIVE	OCEAN HWY.	CUL-DE-SAC	19	0.080
THIRD ST. NORTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
THIRD ST. WEST	CANAL DRIVE	JEFFERSON CREEK	19	0.050
THIRD ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	19	0.070
TOWN ROAD	RUSSELL ROAD	EVERGREEN RD.	19	0.040
TWELFTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	19	0.070
VICTORIA RD.	YORK RD.	CUL-DE-SAC	19	0.120
YORK ROAD	OCEAN HWY.	PLYMOUTH RD.	19	0.200
YORK ROAD - 1	PLYMOUTH RD.	REBECCA RD.	19	0.250
PETHERTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	19	0.310

APPENDIX B

CONDITION SURVEY DATA

CONDITION SURVEY DATA

Name	From	To	Alig. Sev	Crack Ext	Trans. Sev	Crack Ext	Long. Sev	Patch Ext	Rough Sev.	Ravel Sev.
ANCHORAGE AVE.	W. 12TH ST.	JEFFERSON CREEK	L	1	M	1	W/L	H/1		M
ANCHORAGE DRIVE	OCEAN HIGHWAY	PETERSON DRIVE	L	5	M	3	W/L			M
BAY SHORE DR.-1	OCEAN HWY	BAYSHORE E-W	L	3	M	1	W/L			M
BAY SHORE DR.-2	BAYSHORE N-S	JEFFERSON CREEK	L	1	M	1				M
BLACK GUM DR.	ROAD 361	CUL.-DE-SAC	M	1			W/L			L
BOONE ROAD	YORK ROAD	LAGOON	L	1			W/L			M
BRANDYWINE DR.	OCEAN HWY.	JEFFERSON CREEK	M	1			W/L			M
BRISTOL ROAD	YORK ROAD	CUL.-DE-SAC	M	3	M	1	M/M			M
CANAL DRIVE	RUSSEL ROAD	JEFFERSON CREEK	M	1			W/L	M/1		L
CARLISLE RD.	YORK ROAD	CUL.-DE-SAC	L	2	M	1	W/L			M
CATTAIL ROAD	TAMARACK DRIVE	BLACK GUM DRIVE								L
CLEVELAND DR.	ANCHORAGE DRIVE	EVERGREEN ROAD	L	1	M	1	W/L	M/1		M
DIVISION ST. NORTH	OCEAN HWY.	OCEAN DRIVE					W/L			L
EIGHTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE					W/L			L
EIGHTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	L	1			W/L			M
ELEVENTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	L	1						M
ELIZABETHS COURT	ELIZABETHS WAY	CUL.-DE-SAC	L	1	M	1				M
ELIZABETHS WAY	MAYS WAY	CLEVELAND DRIVE	L	1	M	1	W/L	L/1		M
EVERGREEN ROAD-1	OCEAN HWY.	PETERSON DRIVE	L	3	M	1		M/1		L
EVERGREEN ROAD-2	PETERSON DRIVE	TOWN HALL	L	1			L/L			L
FIFTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE					W/L			L
FIFTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	L	1			W/L			L

CONDITION SURVEY DATA – CONTINUED

Name	From	To	Sev	Ext	Sev	Ext	Sev	Ext	Sev	Ext	Sev	Sev	
FIFTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	M	1							H/1		
FIRST ST. NORTH	OCEAN HWY.	OCEAN DRIVE							ML			L	
FIRST ST. SOUTH	OCEAN HWY.	OCEAN DRIVE							ML			L	
FIRST ST. WEST	CANAL DRIVE	JEFFERSON CREEK									L/1	M	
FOURTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE							ML		L/2	L	
FOURTH ST. WEST	CANAL DRIVE	JEFFERSON DRIVE									L/1	M	
FOURTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE							ML			L	
GODWIN PLACE	OCEAN HWY.	JEFFERSON CREEK	L	1					ML			M	
HENLOPEN DRIVE	OCEAN HWY.	JEFFERSON CREEK	L	1	M	1			ML			M	
INDIAN STREET	OCEAN HWY.	OCEAN DRIVE							ML			L	
JAMAICA ST.	OCEAN HWY.	OCEAN DRIVE							ML			L	
KENT PLACE	OCEAN HWY.	JEFFERSON CREEK							ML			M	
KEWANEE ST.	OCEAN HWY.	OCEAN DRIVE							ML			L	
KIMBERLY RD.	YORK RD.	CUL.-DE-SAC	L	1	M	1			ML		M/1	M	
LAYTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	M	1	M	1			ML		M/1	M	
LOGAN ST.	OCEAN HWY.	OCEAN DRIVE							ML			L	
MAYS WAY	ANCHORAGE DRIVE	EVERGREEN ROAD	L	1	M	1			ML			M	
NEW CASTLE DR.	OCEAN HWY.	JEFFERSON CREEK	L	1	M	1			ML		M/1	M	
NINTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE											
NINTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	L	1								L	
OCEAN DRIVE	N. 6TH ST.	LOGAN ST.	L	1	L	1			ML			L	
PERIWINKLE RD.	CUL.-DE-SAC	CUL.-DE-SAC	L	1					ML			L	
PETERSON DRIVE	ANCHORAGE DRIVE	EVERGREEN ROAD	M	1					ML			L	
PLYMOUTH ROAD	YORK ROAD	CUL.-DE-SAC	M	1					ML			M	
REBECCA ROAD	YORK ROAD	CUL.-DE-SAC	L	4	M	1			ML		H/1	M	

CONDITION SURVEY DATA – CONTINUED

Name	From	To	Alig. Sev	Crack		Trans.		Crack		Long. Sev	Patch		Rough Sev.	Ravel Sev.
				Ext	Sev	Ext	Sev	Ext	Sev					
RUSSELL ROAD -1	CANAL DRIVE	EVERGREEN ROAD	L	1						M/L				L
RUSSELL ROAD -2	CUL-DE-SAC	CANAL DRIVE	M	2						M/L				L
SEASIDE DRIVE	OCEAN HWY.	SEASIDE DRIVE	L	2	M		1			M/L				L
SECOND ST. NORTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
SECOND ST. WEST	CANAL	END	M	1										M
SECOND ST. SOUTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
SEVENTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
SEVENTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK												M
SIXTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
SIXTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
SIXTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	L	1						M/L				M
SURFIDE STREET	NINTH ST. SOUTH	DEAD END												L
SUSSEX PLACE	OCEAN HWY.	JEFFERSON CREEK								M/L				M
TAMARACK COURT	TAMARACK DRIVE	CUL-DE-SAC												M
TAMARACK DRIVE	CANAL ROAD	CATTAIL RD.								M/L				L
TENTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	L	1						M/L		M/1		M
TERN DRIVE	OCEAN HWY.	CUL-DE-SAC	L	1						M/L				M
THIRD ST. NORTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
THIRD ST. WEST	CANAL DRIVE	JEFFERSON CREEK	M	1								H/1		M
THIRD ST. SOUTH	OCEAN HWY.	OCEAN DRIVE								M/L				L
TOWN ROAD	RUSSELL ROAD	EVERGREEN RD.	M	5						M/L				L
TWELFTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	L	1								L/1		M
VICTORIA RD.	YORK RD.	CUL-DE-SAC	L	3						M/L		L/1		M
YORK ROAD	OCEAN HWY.	PLYMOUTH RD.	L	4	M					M/L				M
YORK ROAD - 1	PLYMOUTH RD.	REBECCA RD.	L	1	M					M/L				M
PETHERTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	M	1	M			1		M/L		L/1		M

APPENDIX C

SUMMARY OF REPAIRS AND COSTS (GROUPED BY TREATMENT TYPE)

REPAIRS GROUPED BY TREATMENT TYPE

Micro-Surfacing			
NAME	FROMSTREET	TOSTREET	Cost
ANCHORAGE AVE.	W. 12TH ST.	JEFFERSON CREEK	\$12,874
BAY SHORE DR.-2	BAYSHORE N-S	JEFFERSON CREEK	\$8,583
BLACK GUM DR.	ROAD 361	CUL-DE-SAC	\$11,293
BOONE ROAD	YORK ROAD	LAGOON	\$1,951
BRANDYWINE DR.	OCEAN HWY.	JEFFERSON CREEK	\$12,094
CANAL DRIVE	RUSSEL ROAD	JEFFERSON CREEK	\$17,166
CARLISLE RD.	YORK ROAD	CUL-DE-SAC	\$10,924
CATTAIL ROAD	TAMARACK DRIVE	BLACK GUM DRIVE	\$3,901
CLEVELAND DR.	ANCHORAGE DRIVE	EVERGREEN ROAD	\$5,072
EIGHTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
EIGHTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
ELEVENTH ST. WEST	PETERSON DRIVE	JEFERSON CREEL	\$2,341
ELIZABETHS COURT	ELIZABETHS WAY	CUL-DE-SAC	\$3,511
ELIZABETHS WAY	MAYS WAY	CLEVELAND DRIVE	\$8,583
EVERGREEN ROAD-2	PETERSON DRIVE	TOWN HALL	\$6,242
FIFTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
FIRST ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
FOURTH ST. WEST	CANAL DRIVE	JEFFERSON DRIVE	\$1,951
GODWIN PLACE	OCEAN HWY.	JEFFERSON CREEK	\$1,561
HENLOPEN DRIVE	OCEAN HWY.	JEFFERSON CREEK	\$12,094
KENT PLACE	OCEAN HWY.	JEFFERSON CREEK	\$1,561
KIMBERLY RD.	YORK RD.	CUL-DE-SAC	\$5,072
LAYTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	\$12,094
MAYS WAY	ANCHORAGE DRIVE	EVERGREEN ROAD	\$2,341
NEW CASTLE DR.	OCEAN HWY.	JEFFERSON CREEK	\$12,094
NINTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
PERIWINKLE RD.	CUL-DE-SAC	CUL-DE-SAC	\$5,852
PETERSON DRIVE	ANCHORAGE DRIVE	EVERGREEN ROAD	\$5,852
PETHERTON DRIVE	OCEAN HWY.	JEFFERSON CREEK	\$12,094
PLYMOUTH ROAD	YORK ROAD	CUL-DE-SAC	\$1,951
RUSSELL ROAD	CANAL DRIVE	EVERGREEN ROAD	\$5,072
RUSSELL ROAD - 2	CUL-DE-SAC	CANAL DRIVE	\$3,121
SEASIDE DRIVE	OCEAN HWY.	SEASIDE DRIVE	\$8,193
SECOND ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
SEVENTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
SUSSEX PLACE	OCEAN HWY.	JEFFERSON CREEK	\$1,561
TAMARACK COURT	TAMARACK DRIVE	CUL-DE-SAC	\$780
TAMARACK DRIVE	CANAL ROAD	CATTAIL RD.	\$7,803

REPAIRS GROUPED BY TREATMENT TYPE - CONTINUED

<u>Micro-surfacing - Continued</u>			
<u>NAME</u>	<u>FROMSTREET</u>	<u>TOSTREET</u>	<u>Cost</u>
TENTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	\$2,341
TERN DRIVE	OCEAN HWY.	CUL-DE-SAC	\$3,121
THIRD ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
TWELFTH ST. WEST	PETERSON DRIVE	JEFFERSON CREEK	\$2,731
VICTORIA RD.	YORK RD.	CUL-DE-SAC	\$4,682
YORK ROAD - 1	PLYMOUTH RD.	REBECCA RD.	\$9,753
SIXTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
		Cost	\$248,104
<u>Micro-Surfacing Deferred</u>			
<u>NAME</u>	<u>FROMSTREET</u>	<u>TOSTREET</u>	<u>Cost</u>
DIVISION ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FIFTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FIFTH ST. SOUTH SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FIRST ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FIRST ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FOURTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
FOURTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
INDIAN STREET	OCEAN HWY.	OCEAN DRIVE	\$2,731
JAMAICA ST.	OCEAN HWY.	OCEAN DRIVE	\$2,731
KEWANEE ST.	OCEAN HWY.	OCEAN DRIVE	\$2,731
LOGAN ST.	OCEAN HWY.	OCEAN DRIVE	\$2,731
NINTH ST. WEST	CANAL DRIVE	JEFFERSON CREEK	\$1,951
OCEAN DRIVE	N. 6TH ST.	LOGAN ST.	\$27,515
SECOND ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
SECOND ST. WEST	CANAL	END	\$2,341
SEVENTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
SIXTH ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
SIXTH ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
SURFSIDE STREET	NINTH ST. SOUTH	DEAD END	\$1,561
THIRD ST. NORTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
THIRD ST. SOUTH	OCEAN HWY.	OCEAN DRIVE	\$2,731
		Cost	\$79,793

REPAIRS GROUPED BY TREATMENT TYPE – CONTINUED

HMA Overlays			
<u>NAME</u>	<u>FROMSTREET</u>	<u>TOSTREET</u>	<u>Cost</u>
ANCHORAGE DRIVE	OCEAN HIGHWAY	PETERSON DRIVE	\$48,377
EVERGREEN ROAD-1	OCEAN HWY.	PETERSON DRIVE	\$46,816
TOWN ROAD	RUSSELL ROAD	EVERGREEN RD.	\$6,242
		Cost	\$101,435
HMA Overlays - Deferred			
<u>NAME</u>	<u>FROMSTREET</u>	<u>TOSTREET</u>	<u>Cost</u>
BRISTOL ROAD	YORK ROAD	CUL-DE-SAC	\$21,847
BAY SHORE DR.-1	OCEAN HWY	BAYSHORE E-W	\$51,498
REBECCA ROAD	YORK ROAD	CUL-DE-SAC	\$18,726
YORK ROAD	OCEAN HWY.	PLYMOUTH RD.	\$31,211
		Cost	\$123,282
		Total Cost	\$552,614