

## BACKGROUND

Unfortunately, all roads deteriorate with time. The source of this deterioration can often be attributed to poor quality of roadway materials and construction, improper design, excessive traffic or the damaging effects of water. The rate at which a road deteriorates varies, but it is known that the rate of deterioration increases as the condition of the road decreases.

Most municipalities do not have a comprehensive planning tool to guide the management of road maintenance. Without a properly organized road maintenance effort, the road system deteriorates at an accelerating rate, which causes the cost of repair to increase dramatically. Proper and regular road maintenance extends the lifetime of most pavement types and reduces costs, by reducing the frequency of reconstruction and emergency maintenance. Without an organized planning tool, some roads may receive extensive attention and others none at all. Neglect of certain roads will result in higher repair and reconstruction costs since these roads will deteriorate faster, requiring more frequent and expensive repairs.

The most effective tool to maximize roadway maintenance budgets is a Pavement Management System (PMS). A PMS is a valuable tool that is used to determine when and what roads will receive maintenance.

The principal goal of a PMS is to extend the useful life of the local roadway system. A roadway full of cracks, potholes and puddles costs a considerable amount of taxpayer dollars to restore to an acceptable condition. With the establishment of a regular pavement maintenance program, streets are periodically maintained using sealing and resurfacing methods. Eventually, very few roads would ever exhibit significant deterioration.

The costs of pavement maintenance techniques, such as seal coating and resurfacing, are small in comparison to the full depth reconstruction of a roadway. By periodically investing in lower cost improvements, such as seal coating and resurfacing, municipalities may significantly decrease the need for costly reconstruction measures. For this reason, regularly scheduled, cost-effective maintenance improvements can improve the quality of a roadway system, while reducing the total cost to the municipality.

## OBJECTIVE

The intended goal of Robinson Township Pavement Management System (PMS) is to provide a long range-planning tool for the maintenance of the Township's owned and maintained roadway system. The PMS will serve as a blueprint to maintain the Township's roads that are in good condition while improving roads that are in poor condition. The plan will schedule improvements over a period of time allowing the Township to plan expenditures. Each roadway section is evaluated to determine the correct maintenance.

*An effective PMS will provide the following:*

- An inventory and rating of existing roadway conditions*
- Planned yearly expenditures and maintenance program*

In order to properly develop a PMS, the Engineer must be familiar with the characteristics of previous pavement deterioration in the Township and the corresponding success and failure rates of various repair techniques. The Engineer must also be familiar with other less apparent issues, such as the soil and groundwater conditions under the roadway.

By carefully planning an effective PMS, the Township will be able to stretch its capital budget by reducing the need for costly repairs. This can be accomplished by utilizing a progressive system of maintenance.

As an example: After a new road begins to show signs of wear (5 to 10 years), instead of letting it deteriorate further, the road will receive an inexpensive asphalt seal coat that helps rejuvenate the asphalt surface of the road and prevents water penetration. Furthermore, over the next 5 to 25 years, the road will receive seal coats and resurfacing at various planned intervals. Eventually between the roads 35th to 40th year, it will most likely need a full-depth reconstruction or replacement. If the road did not receive any maintenance or repair, the road could be a candidate for full-depth reconstruction in 15 to 20 years (versus 35 to 40 years), due to the accelerating rate of deterioration.

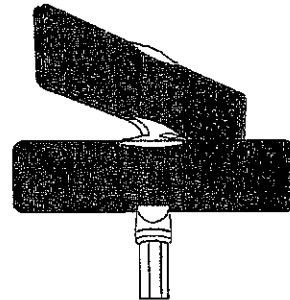


Additionally, by receiving regular maintenance, a road will remain in generally good condition for most of its life cycle. Without regular maintenance and/or repair the road will be in poor condition from approximately the midpoint to the end of its life cycle.

## SYSTEM PROGRAM

The first step in developing a PMS is to establish a consistent system of roadway evaluation. The Roadway Inventory contains a physical evaluation of every road owned and maintained within the Township. This information was recorded on the Roadway Rating Form. This form developed by our office, assigns numerical values to different roadway defects. Higher numerical values are assigned to severe or frequently occurring defects. The numerical values for each defect are added together, multiplied by two, and then subtracted from 100. The resulting number, termed a condition rating, defines the overall condition of the street. For example, a condition rating of 100 would be assigned to a perfect street with no cracks, potholes or other defects. A roadway in need of total reconstruction, with numerous defects, may have a condition rating of 64 or less.

During the roadway inventory in the Township of Robinson, information detailing the physical condition of each roadway was compiled, as described above. The information gathered includes the presence and condition of curb, ADA curb ramps, traffic markings, traffic stripes, and drainage. Roadway length dimensions were rounded to the nearest foot. The roadway widths were measured and rounded to the nearest foot.



The physical characteristics rated for the roadways are as follows:

1. Alligator Cracks: This condition is characterized by a series of interconnecting cracks that divide the pavement into many-sided, sharp-angled pieces resembling an alligator's hide. Alligator cracking usually occurs in wheel paths or other areas subjected to loading. Alligator cracking can be caused by weakness in the base or sub-grade, which results in the fatigue failure of the asphalt concrete surface under repeated loading.
2. Potholes: This condition is characterized by holes in the pavement surface at least ½" deep and at least one square foot in surface area. Potholes generally occur when a serious distress, such as alligator cracking, combines with excess water, freeze-thaw cycling, and traffic loads. Potholes are also caused by poor quality hot mix asphalt (low asphalt binder contents or soft aggregate) or insufficient pavement thickness. These result in localized disintegration of the pavement materials and the materials are dislodged by traffic.
3. Drainage/Ponding Problems: This condition is typically characterized by inadequate roadway cross slopes holding water on a roadway. This can also be contributed to improper shaping of the road, improper spacing and sizing of drainage inlets, and blocked culverts usually cause poor drainage.
4. Polishing: This condition is characterized by the wearing away of the pavement surface caused by the dislodging of aggregate particles and loss of asphalt binder. The pavement surface becomes smooth and rounded (and subsequently slippery) under the action of traffic. Polishing is normally caused by oxidation of the asphalt binder of the mix, resulting in loss of flexibility and ability to hold the aggregate.

5. **Pavement Distortions:** This condition is characterized by the pavement being out of its natural or proper shape. Pavement distortions can be caused by base or sub-grade failure, shoving, or rutting.
6. **Transverse / Longitudinal Cracks:** This condition is characterized by visible fractures or separations of the pavement surface occurring transversely across or longitudinally down the roadway. This cracking may be caused by a poorly constructed paving joint, shrinkage of the surface due to low temperature, asphalt hardening, or a reflection crack from an underlying rigid base.
7. **Riding Quality:** This condition is characterized by the feel a driver gets when driving an automobile through a segment of a roadway at the posted speed limit. If the pavement appeared to be new and there was no discernible roughness felt in the ride of the vehicle, the pavement smoothness was rated excellent. The pavement smoothness was rated good if the ride of the vehicle remained smooth, yet the pavement appeared to show some signs of distress. A rating of fair for pavement smoothness was given if there was notable roughness felt in the ride of the vehicle but little discomfort sensed by the driver. If there was substantial roughness felt in the ride of the vehicle, and it became necessary to lower the speed of the vehicle below the posted limit, the pavement smoothness was rated as poor.

Each road is assigned a number and if there are parts of the road that exhibit different characteristics (width, type of pavement, condition, etc.) a segment number is also assigned, if applicable.

The roadway inventory produced data detailing the condition of each road owned and maintained in the Township of Robinson. This data assisted in answering the following questions:

1. What are the physical characteristics (length, width, etc.) of the existing roadway?
2. What is the current condition of the existing roadway?
3. What maintenance technique should be applied to each roadway, if the roadway was to receive a treatment in 2009?

Upon completion of the roadway survey, the condition ratings are used to assign maintenance and improvements to each street. Remington, Vernick and Beach's 100 years of municipal engineering experience has shown that a progressive, proactive road maintenance program contains the following road maintenance and repair techniques listed in Table 1. The cost for each repair type is provided and the condition rating used to determine each recommended type of repair.

The second part of the PMS, the Schedule of Improvements, recommends the road maintenance and repairs to be made over a period of time determined by the Township. After initial maintenance techniques are assigned, the repairs are spread out over the life of the PMS based on planned municipal expenditures and road conditions. The Township determined that a 20-year program would best fit the needs and yearly budget. The program is scheduled to begin with the 2010 Road Program.

Pavement Management System  
Township of Robinson

Roadway Segments  
Listed Alphabetically

Street Name	From	To	Length (ft)	Width (ft)	Area (sq. yds)	Roadway Condition Rating in 2008	Treatment	Cost Per Square Yard	Estimated Construction Cost in 2009
AGNES STREET	STATION ST	DEAD END	686	22	1,677	96	Seal Coat	\$7.00	\$11,738
AIKEN ROAD	BEAVER GRADE ROAD	CLEVER ROAD	7815	23	19,972	72	Mill and Overlay	\$19.00	\$379,462
ALGONQUIN DRIVE	GLASS RD	ALGONQUIN DR	1426	20	3,169	88	Resurfacing	\$15.00	\$47,533
AMY JO LANE	JEFF DRIVE	CUL DE SAC	285	23	728	98	Seal Coat	\$7.00	\$5,098
AUGUST DRIVE	N SILVER LANE	OAK RIDGE ESTATES	1214	23	3,102	96	Seal Coat	\$7.00	\$21,717
BEACON RD	W WINDHAVEN RD	W HARBISON RD	4172	19	8,808	78	Mill and Overlay	\$19.00	\$167,344
BELL COURT DRIVE	BEAVER GRADE ROAD	CUL DE SAC	1056	23	2,699	92	Seal Coat	\$7.00	\$18,891
BELLVIEW CIRCLE	BELLVIEW DR	BELLVIEW DR	2112	21	4,928	90	Seal Coat	\$7.00	\$34,496
BELLVIEW DRIVE	ROBIN RD	BELLVIEW CIRCLE	1796	22	4,390	92	Seal Coat	\$7.00	\$30,732
BILMAR DRIVE	200 BILMAR DR	1000 BILMAR DR	1050	27	3,150	94	Seal Coat	\$7.00	\$22,050
BLACKHEATH DRIVE	FOXBURG DR	CUL DE SAC	730	23	1,866	92	Seal Coat	\$7.00	\$13,059
BLUE RIDGE DRIVE	GLASS RD	DEAD END	580	18	1,160	88	Resurfacing	\$15.00	\$17,400
BRIARLEAF DRIVE	THORNCLIFFE DR	DEADEND	345	23	862	94	Seal Coat	\$7.00	\$6,172
BURATTI DRIVE	PETRIE RD	CUL DE SAC	739	23	1,889	68	Mill and Overlay	\$19.00	\$35,883
BURKES DRIVE	WILLIAMS DR	CUL DE SAC	2212	23	5,653	78	Mill and Overlay	\$19.00	\$107,405
BURKETT PARK ROAD	SR 0060	MCCORMICK ROAD	3430	21	8,003	88	Resurfacing	\$15.00	\$120,050
CALGON CARBON DR	HIGHTOWER BLVD	PARKING LOT	1543	25	4,286	82	Resurfacing	\$15.00	\$64,292
CAMELOT CIRCLE	PETRIE RD	RETURN LOOP	951	23	2,430	92	Seal Coat	\$7.00	\$17,012
CHEROKEE DRIVE	ALGONQUIN DR	DEAD END	633	16	1,125	84	Resurfacing	\$15.00	\$16,880
CHERYL DRIVE	EICHELBERGER DR	CUL SE SAC	370	23	948	94	Seal Coat	\$7.00	\$6,619
CHESTNUT RIDGE DRIVE	RIDGE ROAD	CUL DE SAC	2894	23	7,398	94	Seal Coat	\$7.00	\$51,770
CHEYENNE DRIVE	IRIQUOIS DR	DEAD END	422	18	844	88	Resurfacing	\$15.00	\$12,660
CHRISTOPHER CIRCLE	BALDWIN ROAD	CUL DE SAC	633	23	1,618	74	Mill and Overlay	\$19.00	\$30,736
CHURCH DR.	COLONY DR	WILLIAMS DR	792	23	2,024	94	Seal Coat	\$7.00	\$14,168
CHURCHILL ROAD	MCMICHAEL RD	SR 0060	2957	29	9,528	98	Seal Coat	\$7.00	\$66,697
COBBLESTONE CIRCLE	N SILVER LANE	COBBLESTONE CIRCLE	3489	23	8,916	98	Seal Coat	\$7.00	\$62,414
COKETOWN ROAD	PETRIE RD	136 COKETOWN RD	2000	18	4,000	94	Seal Coat	\$7.00	\$28,000
COKETOWN ROAD	136 COKETOWN RD	DEADEND	1380	16	2,453	78	Mill and Overlay	\$19.00	\$46,613
COLONY DRIVE	CHURCH DR	NANTON WAY	316	23	813	98	Seal Coat	\$7.00	\$5,689
CONSTANCE DRIVE	COUNTRYVIEW DR	CUL DE SAC	951	23	2,430	90	Seal Coat	\$7.00	\$17,012
COSTCO DRIVE	PARK MANOR BLVD	CUL DE SAC	390	40	1,733	92	Seal Coat	\$7.00	\$12,133
COUNTRY CLUB DRIVE	HADDOCK DRIVE	E HARBISON RD	1955	23	4,896	96	Seal Coat	\$7.00	\$34,973
COUNTRY CLUB DRIVE	E HARBISON RD	BALDWIN RD	6442	23	16,463	72	Mill and Overlay	\$19.00	\$312,795
COUNTRYSIDE DRIVE	AIKEN RD	DEAD END	1320	23	3,373	90	Seal Coat	\$7.00	\$23,613
COUNTRYVIEW DRIVE	AIKEN RD	CUL DE SAC	3009	23	7,690	90	Seal Coat	\$7.00	\$53,828
DENDRON DRIVE	MAGNUS LN	FOREST GROVE RD	2429	23	6,207	84	Resurfacing	\$15.00	\$93,112
DEVASSIE ROAD	CAMPBELLS RUN RD	SR 0060	2376	23	6,072	86	Resurfacing	\$15.00	\$91,080
DIANA DRIVE	SILVER LN	COUNTRYVIEW DR	1267	23	3,238	90	Seal Coat	\$7.00	\$22,665

Pavement Management System  
Township of Robinson

Roadway Segments  
Listed Alphabetically

Street Name	From	To	Length (ft)	Width (ft)	Area (sq. yds)	Roadway Condition Rating in 2009	Treatment	Cost Per Square Yard	Estimated Construction Cost in 2009
DIEBOLD ROAD	ELLEN DR	DEAD END	2588	23	6,614	98	Seal Coat	\$7.00	\$46,296
DIEBOLD ROAD	SILVER LANE	ELLEN DR	1400	23	3,578	88	Resurfacing	\$15.00	\$53,667
EAST CALVIN DRIVE	SILVER LANE	CUL DE SAC	528	23	1,349	98	Seal Coat	\$7.00	\$9,445
EAST HARBISON ROAD	COUNTRY CLUB DR	EAST WINDHAVEN RD	1056	23	2,699	76	Mill and Overlay	\$19.00	\$51,275
EAST WINDHAVEN	COUNTRY CLUB DR	SR 0060	2534	21	5,913	74	Mill and Overlay	\$19.00	\$112,341
EAST WINDHAVEN	HADDOCK DR	COUNTRY CLUB DR	898	23	2,295	94	Seal Coat	\$7.00	\$16,064
EDWARD LANE	SCOTTDALE DRIVE	CUL DE SAC	422	23	1,078	94	Seal Coat	\$7.00	\$7,549
EICHELBERGER DRIVE	AUGUST DR	N SILVER LANE	2851	23	7,286	94	Seal Coat	\$7.00	\$51,001
ELCO DR.	FOREST GROVE RD	ESSEX DR.	1798	22	4,390	98	Seal Coat	\$7.00	\$30,732
ELIZABETH STREET	LEWIS AVE	DEAD END	1274	21	2,873	70	Mill and Overlay	\$19.00	\$56,481
ELLEN DRIVE	DIEBOLD RD	N SILVER LANE	1531	23	3,913	86	Resurfacing	\$15.00	\$58,688
ELLIOTT DRIVE	CLEVER RD	DEAD END	792	22	1,936	64	Full Depth Reconst.	\$40.00	\$77,440
ESSEX DRIVE	SILVER LN	SUFFOLK DR	2060	23	5,264	76	Mill and Overlay	\$19.00	\$100,024
EVERLYN DRIVE	FOREST GROVE RD	EVERLYN DR	1214	21	2,833	88	Resurfacing	\$15.00	\$42,490
FAIRBOROUGH COURT	WILLIAMS DR	CUL DE SAC	633	23	1,618	98	Seal Coat	\$7.00	\$11,324
FAIRLAMB DRIVE	DENDRON DR	CUL DE SAC	633	23	1,618	84	Resurfacing	\$15.00	\$24,265
FALCK ROAD	SILVER LANE	DEAD END	1478	18	2,956	82	Resurfacing	\$15.00	\$44,340
FAWRIDGE DRIVE	PHILLIPS LANE	CUL DE SAC	102	23	261	92	Seal Coat	\$7.00	\$1,825
FAWNVUE DRIVE	WEST CALVIN DR	PHILLIPS LN	7076	23	18,083	88	Resurfacing	\$15.00	\$271,247
FAWNWOOD DRIVE	PHILLIPS LN	DEAD END	422	23	1,078	92	Seal Coat	\$7.00	\$7,549
FIELD CLUB DR CIRCLE	FIELD CLUB DRIVE	RETURN LOOP	2850	23	7,283	98	Seal Coat	\$7.00	\$50,983
FIELD CLUB DRIVE	CLEVER ROAD	FIELD CLUB DR LOOP	1980	23	5,060	94	Seal Coat	\$7.00	\$35,420
FOXBURG DRIVE	COUNTRY CLUB DR	CUL DE SAC	1826	23	4,666	90	Seal Coat	\$7.00	\$32,665
FRANCIS DRIVE	EICHELBERGER DR	DIEBOLD RD	2376	23	6,072	92	Seal Coat	\$7.00	\$42,504
GEYSER ROAD	W HARBISON	CAMPBELLS RUN RD	3141	19	6,831	70	Mill and Overlay	\$19.00	\$125,989
GLASS ROAD	MCCORMICK ROAD	GEYSER RD	6710	22	16,402	90	Seal Coat	\$7.00	\$114,816
GLENORA DRIVE	MAGNUS LN	CUL DE SAC	686	23	1,753	84	Resurfacing	\$15.00	\$26,297
GLENVUE DRIVE	SCOTTDALE DRIVE	CUL DE SAC	317	23	810	96	Seal Coat	\$7.00	\$5,671
GORDON DRIVE	COUNTRY CLUB DR	SCOTTDALE DR	422	23	1,078	94	Seal Coat	\$7.00	\$7,549
GRANDVIEW AVENUE	STATIA ST	DEAD END	739	18	1,478	94	Seal Coat	\$7.00	\$10,346
GREENVIEW DRIVE	ROBIN RD	WOODLAND DR	1848	21	4,312	94	Seal Coat	\$7.00	\$30,184
GROVETON DRIVE	VILLAGE DRIVE	CUL DE SAC	320	23	818	94	Seal Coat	\$7.00	\$5,724
HADDOCK DRIVE	SR 0060	EAST WINDHAVEN	1162	26	3,357	84	Resurfacing	\$15.00	\$50,353
HANCOCK COURT	MEADE DR	CUL DE SAC	317	23	810	90	Seal Coat	\$7.00	\$5,871
HAYES AVENUE	LEWIS AVENUE	DEAD END	280	14	436	78	Mill and Overlay	\$19.00	\$8,276
HEATHER LANE	FOXBURG DR	CUL DE SAC	170	23	434	90	Seal Coat	\$7.00	\$3,041
HELEN ST.	MCKEES ROCKS RD	DEAD END	1215	14	1,890	74	Mill and Overlay	\$19.00	\$35,910
HICKMAN ROAD	BEAVER GRADE ROAD	DEAD END	1901	19	4,013	96	Seal Coat	\$7.00	\$28,083

Pavement Management System  
Township of Robinson

Roadway Segments  
Listed Alphabetically

Street Name	From	To	Length (ft)	Width (ft)	Area (sq. yds)	Roadway Condition Rating in 2009	Treatment	Cost Per Square Yard	Estimated Construction Cost in 2009
HICKMAN ROAD	EWINGS MILL RD	DEAD END	580	14	902	90	Seal Coat	\$7.00	\$6,316
HIDDEN COURT	DIEBOLD RD	CUL DE SAC	325	23	831	96	Seal Coat	\$7.00	\$5,814
HIGHTOWER BLVD	SR 0060	DEAD END	950	23	2,426	88	Resurfacing	\$15.00	\$36,417
HODGEKISS DRIVE	ROBERT DR	FRANCIS DR	686	23	1,753	96	Seal Coat	\$7.00	\$12,272
IRIQUOIS DRIVE	IRIQUOIS DR	ALGONQUIN DR	1162	23	2,970	90	Seal Coat	\$7.00	\$20,787
JEFF DRIVE	PETRIE ROAD	CUL DE SAC	944	23	2,412	96	Seal Coat	\$7.00	\$16,887
JUANITA DRIVE	ZENOBIA DR	DEAD END	687	20	1,527	86	Resurfacing	\$15.00	\$22,900
KATHLEEN DRIVE	PHILLIPS LN	CUL DE SAC	2535	23	6,478	80	Resurfacing	\$15.00	\$97,175
KEINERS LANE	CAMPBELLS RUN RD	WEST HARBISON	3908	20	8,684	76	Mill and Overlay	\$19.00	\$165,004
KLAMATH DRIVE	IRIQUOIS DR	ALGONQUIN DR	528	21	1,232	86	Resurfacing	\$15.00	\$18,480
KOHLLEN DRIVE	CALVIN DR	CUL DE SAC	792	23	2,024	96	Seal Coat	\$7.00	\$14,168
LAKE STEUBEN DRIVE	LAKESIDE DR	COUNTRYVIEW DR	422	23	1,076	80	Seal Coat	\$7.00	\$7,549
LAKESIDE DRIVE	LAKEVIEW DR	CUL DE SAC	1584	23	4,048	88	Resurfacing	\$15.00	\$60,720
LAKEVIEW DRIVE	AIKEN RD	CUL SE SAC	2112	23	5,397	90	Seal Coat	\$7.00	\$37,781
LANCELOT LANE	CAMELOT CR	CUL DE SAC	158	23	404	92	Seal Coat	\$7.00	\$2,626
LENORA DRIVE	ELIZABETH ST	ROYAL AVE	2060	20	4,578	70	Mill and Overlay	\$19.00	\$86,978
LEONA LANE	EWINGS MILL RD	TOWNSHIP FACILITY	1465	23	3,744	86	Resurfacing	\$15.00	\$58,158
LEWIS AVENUE	SR 0051	ELIZABETH ST	2535	23	6,478	80	Resurfacing	\$15.00	\$97,175
LOCUST STREET	MCKEES ROCKS ROAD	SR 0080	1637	23	4,189	92	Seal Coat	\$7.00	\$29,284
MAGNUS LANE	DENDRON DR	CUL DE SAC	1114	23	2,647	84	Resurfacing	\$15.00	\$42,703
MAGNUS LANE	FOREST GROVE RD	DENDRON DR	1536	23	3,925	98	Seal Coat	\$7.00	\$27,477
MARS DRIVE	VENUS DR	NEPTUNE DR	580	19	1,224	80	Resurfacing	\$15.00	\$18,367
MASON DRIVE	EVELYN DR	WILLIAMS DR	1373	23	3,509	98	Seal Coat	\$7.00	\$24,561
MCCLELLAND COURT	MEADE COURT	CUL DE SAC	264	23	675	90	Seal Coat	\$7.00	\$4,723
MCMILLAN RD	KEINERS LANE	DEAD END	3591	18	7,182	88	Resurfacing	\$15.00	\$107,730
MEADE DRIVE	BEAVER GRADE ROAD	CUL DE SAC	1796	23	4,590	86	Resurfacing	\$15.00	\$68,847
MEADOW RIDGE COURT	DIEBOLD RD	CUL DE SAC	468	23	1,196	94	Seal Coat	\$7.00	\$8,372
MEADOW VIEW COURT	DIEBOLD RD	CUL DE SAC	924	23	2,361	94	Seal Coat	\$7.00	\$16,529
MEADOW VIEW DRIVE	DIEBOLD RD	CUL DE SAC	1000	23	2,556	94	Seal Coat	\$7.00	\$17,889
MONTOUR CHURCH RD	MUNICIPAL LINE	CHURCH PARKING LOT	288	23	736	92	Seal Coat	\$7.00	\$5,152
MOON RUN ROAD	SR 0060	DEAD END	4488	20	9,973	70	Mill and Overlay	\$19.00	\$189,493
NANCY JEAN DRIVE	N SILVER LANE	KATHLEEN DR	686	23	1,753	80	Resurfacing	\$15.00	\$26,297
NANTON WAY	MASON DR	DEAD END	792	23	2,024	98	Seal Coat	\$7.00	\$14,168
NEPTUNE DRIVE	MARS DR	AIKEN RD	581	19	1,227	70	Mill and Overlay	\$19.00	\$23,305
NORFOLK DRIVE	SUFFOLK DR	DEAD END	3168	23	8,096	82	Resurfacing	\$15.00	\$121,440
OAK LANE	AUGUST DR	DEAD END	285	23	728	94	Seal Coat	\$7.00	\$5,098
OXFORD DRIVE	ESSEX DR	CUL DE SAC	898	23	2,295	80	Resurfacing	\$15.00	\$34,423
PARK DRIVE	PHILLIPS LN	DEAD END	264	23	675	92	Seal Coat	\$7.00	\$4,723

Pavement Management System  
Township of Robinson

Roadway Segments  
Listed Alphabetically

Street Name	From	To	Length (ft)	Width (ft)	Area (sq. yds)	Roadway Condition Rating in 2009	Treatment	Cost Per Square Yard	Estimated Construction Cost in 2009
PARK MANOR BLVD	ROBINSON CENTER DR	ROB. TOWN CNTR BLVD	5178	50	28,767	92	Seal Coat	\$7.00	\$201,367
PARK MANOR BLVD	MUNICIPAL LINE	ROB. TOWN CNTR BLVD	1700	50	9,444	92	Seal Coat	\$7.00	\$66,111
PARK MANOR DRIVE	SR 0060	DEAD END	1901	50	10,561	94	Seal Coat	\$7.00	\$73,928
PARKWAYVIEW DRIVE	CAMPBELLS RUN RD	PARKING LOT	1160	26	3,351	80	Resurfacing	\$15.00	\$50,267
PEBBLE COURT	COBBLESTONE CIRCLE	CUL DE SAC	580	23	1,482	98	Seal Coat	\$7.00	\$10,376
PENN CENTER BLVD	CAMPBELLS RUN ROAD	CUL DE SAC	899	30	2,993	90	Seal Coat	\$7.00	\$20,953
PHILLIPS LANE	N SILVER LANE	80 PHILLIPS LN	6072	22	14,843	98	Seal Coat	\$7.00	\$103,899
PHILLIPS LANE	80 PHILLIPS LANE	DEAD END	1920	23	4,907	90	Seal Coat	\$7.00	\$34,347
PHILOMENA DRIVE	FOREST GROVE RD	JUANITA DR	317	20	704	94	Seal Coat	\$7.00	\$4,931
PITTSBURGH AVENUE	LEWIS AVE	DEAD END	1108	22	2,708	52	Full Depth Reconst.	\$40.00	\$108,338
PLAIN VIEW DRIVE	PETRIE RD	CUL DE SAC	1267	23	3,238	80	Resurfacing	\$15.00	\$48,568
REGINA DRIVE	PHILLIPS LANE	DEAD END	1056	23	2,699	74	Mill and Overlay	\$19.00	\$51,275
ROB. TOWN CTR BLVD	PARK MANOR BLVD	ROBINSON CENTER DR	3168	50	17,600	88	Resurfacing	\$15.00	\$264,000
ROBERT DRIVE	DIEBOLD RD	DEAD END	370	23	946	94	Seal Coat	\$7.00	\$6,619
ROBIN HILL DRIVE	AIKEN RD	CUL DE SAC	1004	23	2,586	90	Seal Coat	\$7.00	\$17,960
ROBIN ROAD	BEAVER GRADE ROAD	GREENVIEW DR	845	21	1,972	96	Seal Coat	\$7.00	\$13,802
ROBINSON CENTER DRIVE	PARK MANOR DRIVE	ROB. TOWN CNTR BLVD	3100	50	17,222	92	Seal Coat	\$7.00	\$120,556
ROBINSON CENTER DRIVE	MALL LOOP ROAD		7100	50	39,444	92	Seal Coat	\$7.00	\$276,111
ROBINSON LANE	PARK MANOR BLVD	PARK MANOR DRIVE	775	30	2,583	92	Seal Coat	\$7.00	\$18,083
ROBINSON POOL DR	CLEVER RD	DEAD END	1200	23	3,067	96	Seal Coat	\$7.00	\$21,467
SCHOOL STREET	MOON RUN RD	MOON RUN RD	1690	14	2,629	76	Mill and Overlay	\$19.00	\$49,949
SCHORR DRIVE	DIEBOLD RD	CUL DE SAC	580	23	1,431	94	Seal Coat	\$7.00	\$10,018
SCHULER AVENUE	PETRIE RD	DEAD END	1875	21	4,375	80	Resurfacing	\$15.00	\$65,625
SCOTTDALE DRIVE	COUNTRY CLUB DR	CUL DE SAC	1373	23	3,509	94	Seal Coat	\$7.00	\$24,561
SIESTA COURT	GLASS RD	CUL DE SAC	264	21	616	76	Mill and Overlay	\$19.00	\$11,704
SILVER LANE	BEAVER GRADE	CLEVER	3907	26	11,287	94	Seal Coat	\$7.00	\$79,008
SILVER LANE	CLEVER ROAD	FOREST GROVE RD	6336	26	18,304	82	Resurfacing	\$15.00	\$274,560
SOUTH MEADOW CT	DIEBOLD RD	CUL DE SAC	505	23	1,291	96	Seal Coat	\$7.00	\$9,034
SPARTAN DRIVE	EAST CALVIN DR	CUL DE SAC	580	23	1,482	98	Seal Coat	\$7.00	\$10,376
ST ANDREWS DRIVE	COUNTRY CLUB DR	COUNTRY CLUB DR	1245	23	3,182	88	Resurfacing	\$15.00	\$47,725
STATIA STREET	ELIZABETH ST	DEAD END	950	18	1,900	92	Seal Coat	\$7.00	\$13,300
STATION STREET	SR 0051	AGNES STREET	1056	23	2,699	98	Seal Coat	\$7.00	\$18,891
STATION STREET	AGNES ST	LEWIS AVE	898	20	1,996	60	Full Depth Reconst.	\$40.00	\$79,822
STERLING DRIVE	NORFOLK DR	CUL DE SAC	1880	23	4,804	88	Resurfacing	\$15.00	\$72,067
STRAWBERRY LANE	MAGNUS LN	DEAD END	950	23	2,428	82	Resurfacing	\$15.00	\$36,417
SUFFOLK DRIVE	STERLING DR	NORFOLK DR	1648	23	4,723	80	Resurfacing	\$15.00	\$70,840
SUMMER DRIVE	WILLIAMS DR	CUL DE SAC	739	23	1,889	98	Seal Coat	\$7.00	\$13,220
SUMMIT DRIVE	SILVER LANE	DEAD END	580	23	1,482	72	Mill and Overlay	\$19.00	\$28,162



Pavement Management System  
Township of Robinson

Roadway Segments  
Listed Alphabetically

Street Name	From	To	Length (ft)	Width (ft)	Area (sq. yds)	Roadway Condition Rating In 2009	Treatment	Cost Per Square Yard	Estimated Construction Cost In 2009
SUNSET DRIVE	SR 0060	DEAD END	845	21	1,972	96	Seal Coat	\$7.00	\$13,802
SUTHERLAND DRIVE	PARK MANOR BLVD	DEAD END	800	30	3,000	96	Seal Coat	\$7.00	\$21,000
THORNCLIFFE DRIVE	BALDWIN RD	DEADEND	1530	23	3,910	92	Seal Coat	\$7.00	\$27,370
TIDBALL ROAD	SR 0060	MCMICHAEL RD	2376	22	5,808	96	Seal Coat	\$7.00	\$40,656
VENUS DRIVE	AIKEN RD	MARS DR	581	19	1,227	90	Seal Coat	\$7.00	\$8,506
VILLAGE DRIVE	SR 0051	LEWIS AVE	1640	23	4,191	90	Seal Coat	\$7.00	\$29,338
VIOLA DRIVE	DIANA DR	DEAD END	125	21	282	88	Resurfacing	\$15.00	\$4,375
VISTA DRIVE	CAMPBELLS RUN	DEAD END	1531	26	4,423	86	Resurfacing	\$15.00	\$66,343
WALNUT DRIVE	TIDBALL ROAD	HICKORY CIRCLE	390	23	997	80	Resurfacing	\$15.00	\$14,950
WATERFORD DRIVE	SR 0060	CUL DE SAC	1690	22	4,131	84	Resurfacing	\$15.00	\$61,967
WELLINGTON COURT	WATERFORD DR	CUL DE SAC	423	23	1,081	84	Resurfacing	\$15.00	\$16,215
WEST CALVIN DRIVE	SILVER LANE	CUL DE SAC	1670	23	4,268	98	Seal Coat	\$7.00	\$29,874
WEST CHESTER DRIVE	WATERFORD DR	CUL DE SAC	1901	23	4,858	84	Resurfacing	\$15.00	\$72,872
WEST HARBISON	KEINERS LANE	GLASS RD	2482	22	6,067	98	Seal Coat	\$7.00	\$42,470
WEST HARBISON	BEACON RD	KEINERS LN	1954	17	3,691	98	Seal Coat	\$7.00	\$25,836
WEST HARBISON	BEACON RD	DEAD END	1584	16	2,816	94	Seal Coat	\$7.00	\$19,712
WEST WINDHAVEN	SR 0060	HILLSVIEW DRIVE	1796	19	3,792	78	Mill and Overlay	\$19.00	\$72,040
WESTPOINTE DRIVE	HIGHTOWER BLVD	APARTMENT COMPLEX	420	23	1,073	88	Resurfacing	\$15.00	\$16,100
WILLIAMS DRIVE	FOREST GROVE	MASON DRIVE	1163	20	2,584	98	Seal Coat	\$7.00	\$18,091
WILLIAMS DRIVE	MASON DR	SUMMER DR	740	23	1,891	94	Seal Coat	\$7.00	\$13,238
WILLIAMS DRIVE	SUMMER DR	BURKES DR	844	23	2,157	80	Resurfacing	\$15.00	\$32,353
WILMA DRIVE	ZENOBIA DR	JUANITA DR	950	20	2,111	86	Resurfacing	\$15.00	\$31,667
WINDOVER DR	WEST HARBISON	WEST HARBISON	1742	23	4,452	98	Seal Coat	\$7.00	\$31,162
WINDSOR WAY	CAMELOT CR	CUL DE SAC	212	23	542	92	Seal Coat	\$7.00	\$3,792
WINDVUE DRIVE	THORNCLIFFE DR	DEADEND	1109	23	2,834	90	Seal Coat	\$7.00	\$19,839
WINTER ROAD	AIKEN RD	CUL DE SAC	1109	23	2,834	90	Seal Coat	\$7.00	\$19,839
WOODCREST DRIVE	WINDVUE DR	THORNCLIFFE RD	1056	23	2,699	90	Seal Coat	\$7.00	\$18,891
WOODLAND DRIVE	BELLVIEW DR	DEAD END	581	21	1,356	92	Seal Coat	\$7.00	\$9,490
ZENOBIA DRIVE	FOREST GROVE RD	DEAD END	528	20	1,173	86	Resurfacing	\$15.00	\$17,600
ZESTA DRIVE	CHURCHILL RD	PARKING LOT	952	23	2,433	98	Seal Coat	\$7.00	\$17,030
<b>Total</b>									<b>\$8,618,043</b>

Notes:

1. Values were taken from field measurements, various mapping, and previous studies. Values are for informational purposes only and shall not be used for construction or bidding.
2. Pavement lengths and width are approximate and do not include turning lanes, medians, etc.