



Road Needs Study Report - 2020

The Township of North Dundas

D.M. Wills Project No. 20-4740



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Environmental Services
Peterborough

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**Prepared for the Township of
North Dundas**

Executive Summary

The Township of North Dundas (Township) retained the services of D.M. Wills Associates (Wills) to undertake a review of the Township's existing road network, and assess its physical condition as well as confirm various road attributes. Data collected during the field review was used to develop a prioritized listing of the road network needs, the results of which are documented in this report.

The Township's road infrastructure system spans a total of 407 km primarily within a rural setting, with small areas of urban and semi-urban development. The road network includes surfaces ranging from gravel to hot mix paved (asphalt). The Township has approximately 137 km of gravel roads, 167 km of surface treated roads (low class bituminous (LCB)), and 104 km of hot mix asphalt paved roads (high class bituminous (HCB)).

Two (2) primary indicators of the relative health of a road are the structural adequacy rating (Inventory Manual) and the PCI (hard-top roads only for this study). The current average structural adequacy rating for the Township's road network is 13.5/20. The current average PCI for the Township's hard-top road network is 69.9 (out of 100).

13% (~52 km) of the road network has a Structural "NOW" need, 14% (~56 km) has a Structural "1-5" year need, and 13% (~53 km) of the road network has a Structural "6-10" year need.

It should be noted that a structural "NOW" need does not explicitly mean that work must be undertaken on the road immediately (although this may be so in some cases). A structural "NOW" need means that a significant portion of the road is showing distress of the road bed and requires significant intervention i.e. reconstruction or major rehabilitation to renew its service life. A structural "1-5" year need is expected to become a "NOW" need in the next five years, and a "6-10" year need is expected to become a "NOW" need in the next 10 years.

Note that many "6-10" year reconstruction needs may be deferred by timely resurfacing, extending their service lives. As highlighted above, the Township has a notable portion of their roads (13%) with a "6-10" Year Structural Need.

LCB to HCB Conversion Program

The Township's recent experience with surface treated roads has been unsatisfactory, with service lives of 3-4 years before major work is required. Normally, surface treatment can be expected to last at least 7 years. As such, the Township has requested that the conversion of all surface treated roads to hot mix pavement be considered in this report.

The Township currently maintains 167 km of surface treated roads. Although road reconstruction may vary section by section, this report considers a typical conversion

strategy of placing 150mm of Granular A before paving 1 lift (50mm). **The total LCB to HCB Conversion Program is estimated at \$24.4 Million.**

Resurfacing and Preservation Management

In addition to addressing currently deficient roads (i.e. capital reconstruction), a dedicated preservation management approach is required, **and perhaps even more important**, to “keep the good roads good”; the fundamental principle being that it costs much less to maintain a good road than it does to let it fail and then reconstruct it, from a life cycle cost perspective. Ultimately, the goal of preservation management is to extend the useful life of a road and road network, maximizing the municipality’s investment over the road life-cycle.

Road resurfacing is an effective way of extending the overall life of the pavement structure and therefore a road resurfacing program is highly recommended. Roads with a structural adequacy of 12/20 or greater are included as candidates for potential resurfacing. Preliminary recommendations and prioritization for road resurfacing are based on condition rating and traffic demands on each road section, as per the Inventory Manual. A road with higher traffic volumes and fair structural adequacy is given priority over a road with moderate traffic and good structural adequacy score, in an attempt to intervene and extend the life of the road before it deteriorates to a level that can no longer be resurfaced (i.e. more expensive reconstruction is required). Specific resurfacing treatment recommendations must be assessed through further field investigation and detail design effort, prior to selecting and implementing the resurfacing strategy.

Based on typical degradation rates for gravel roads, surface treatment, and hot mix, a resurfacing program and related budget is recommended as follows:

Hot Mix Paved Roads:

- 104 km of paved roads (HCB).
- Degradation rate 0.25 / year (rating drops from 10 to 5, over a 15-year period).
- Annual resurfacing 6.9 km / year.
- **Annual budget \$941,200:** (6.9 km / year x \$210,000 / In **RO1** x 2 lanes).

Gravel roads require regular maintenance. Maintenance includes regular grading and reapplication of new gravel. Typically, gravel roads should be resurfaced on a 3 - 5 year cycle.

Gravel Roads:

- 137 km of earth / gravel roads.
- 75 mm gravel every 3-5 years.
- Annual gravelling of 27.3 km.
- Granular A (\$12,000 / km).
- **Annual budget \$327,600** (27.3 km / year x \$14,000 **G**) **.

*** Cost based on supply and application of gravel by external forces.*

The total resurfacing program, (hot mix and gravel) is estimated at \$1,279,800 per year for the next 10 years. This budget will need to be increased in the future as it currently does not include surface treated roads (as they are being converted to HCB). In the long term (10 – 15 years), these new HCB roads will need to be need to be resurfaced as well, and the future resurfacing program is estimated at \$2,811,600.

Preservation techniques seal the surface as to prevent water infiltration into the granular base. Route and Seal is used on HCB pavements to seal individual cracks. Slurry Seal / Microsurfacing is used to seal large areas, although wide / active cracks will reflect through the treatment. As these treatments are best done early in a road's life cycle, the roads in the LCB to HCB Conversion Program are included. An annual preservation management budget has been estimated as follows:

Cracksealing

- 107 km of paved roads (HCB).
- 167 km of surface treated roads to be converted to HCB.
- Assume that cracksealing will be applied, on average, once per resurfacing cycle.
- Annual cracksealing of 18.0 km / year.
- **Annual budget \$72,000** (18.0 km x \$4,000 / km **Cracksealing**).

Slurry Seal / Microsurfacing

- 107 km of paved roads (HCB).
- 167 km of surface treated roads to be converted to HCB.
- Assume that slurry seal / microsurfacing will be applied, on average, once per resurfacing cycle.
- 18.0 km of road to preserve per year.
- **Annual budget \$396,900** (18.0 km x \$22,050 / km **Slurry Sealing / Microsurfacing**).

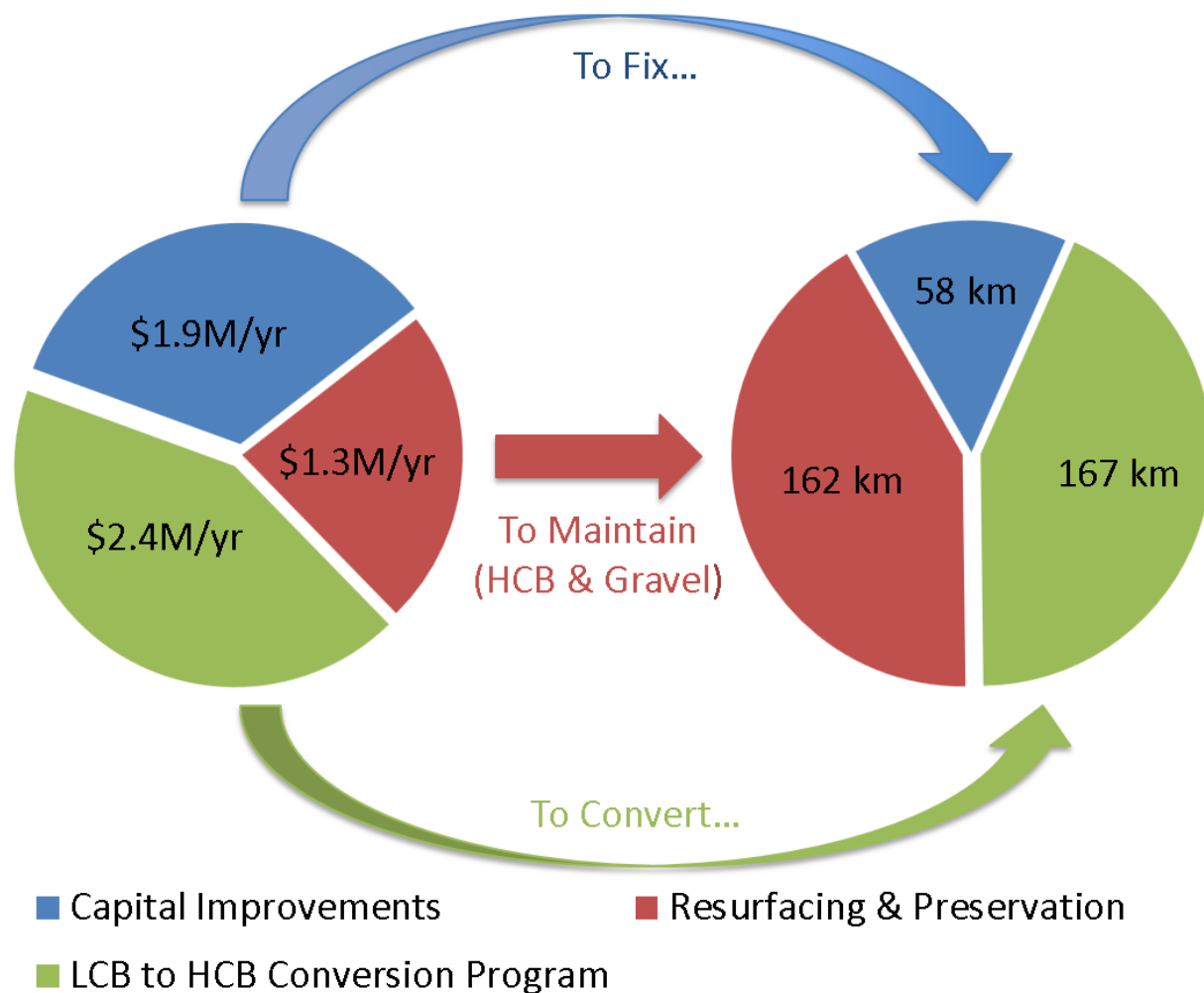
Further to the recommendations above with respect to resurfacing, it is also recommended that regular maintenance in the form of roadside ditch cleanout and clearing be undertaken as a critical component to preservation management in order to extend the useful service life of the existing roads.

Capital Improvements

Preliminary recommendations and prioritization for planned capital improvements i.e. reconstruction, have been developed based on the condition rating and traffic demands on each road section, as per the Inventory Manual. Those roads identified as having a "NOW", 1 – 5, or 6 - 10 year need have been included in the capital improvement plan for reconstruction.

Excluding surface treated roads, which are already included in the LCB to HCB Conversion Program, 58.4 km of roads were identified as having structural needs in the "NOW", 1 – 5 or 6-10 year periods. The estimated cost to improve these roads is approximately \$ 18.6 M.

A fully funded 10-year plan following the recommendations in this report includes \$1.3M/year for resurfacing needs, \$16.7 M (\$1.7 M/year) for the capital needs, and \$26.1 M for LCB to HCB Conversion Program over the next ten years. Funding recommendations can be visualized in the graphic below.



Given that 60% of the Township's Road network has no structural need identified, Wills recommends that priority should be given to resurfacing and preservation over capital needs should funding fall short of ideal levels.

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1.0 Purpose, Background and Study Method

1.1 Purpose

The purpose of the 2020 Road Needs Study Report is to update the current road inventory and road condition assessments within the Township of North Dundas (Township). Using this information, a prioritized listing of the road network needs is developed. The information derived from the study and documented in this report will provide assistance to the Township for developing and executing a planned road maintenance and improvement program.

The Township retained the services of D.M. Wills Associates (Wills) to undertake a review of the existing road network, and assess its physical condition as well as confirm various attributes. Data collected as a result of the field review is used to develop a prioritized listing of the road network needs, the results of which are documented in this report.

1.2 Background

The Township of North Dundas is located within The United Counties of Stormont, Dundas and Glengarry and located directly south of Ottawa. The communities of Winchester and Chesterville serve as the Township's largest and main population centres. Outside of these two communities, the Township is largely rural with several semi-urban developments.

In 2013, an Asset Management Plan was undertaken by the Township to inventory and document the Township's existing road assets. This current study (2020) utilizes and builds from the road asset information documented in the 2013 Asset Management Plan. Additionally, the road inventory was also built using a GIS shapefile of the road network that was provided by the Township & County.

1.3 Study Objectives

Based on discussion with Township staff, the following study objectives were identified:

- Provide a current inventory and value of the Township's roads, assess road conditions and needs, and develop a priority listing for construction needs and improvements.
- Provide a prioritized list of capital projects for the Township to invest in.

To ensure compliance with the latest Ministry of Transportation (MTO) guidelines, the inventories were completed in accordance with the most current edition of the Inventory Manual for Municipal Roads.

1.4 Study Methodology

The procedure utilized to complete the study was in accordance with the Ministry of Transportation's Inventory Manual for Municipal Roads (February 1991).

Additionally, field reviews for the purpose of Pavement Condition Index (PCI) were undertaken in accordance with:

- MTO Manual for Condition Rating of Flexible Pavements, SP-024.
- MTO Manual for Condition Rating of Surface-Treated Roads, SP-021.
- MTO Manual for Condition Rating of Gravel Roads, SP-025.

There are two (2) key observations when using PCI methods: the Ride Condition Rating (RCR), and the Distress Manifestation Index (DMI). RCR is a subjective measurement of how smooth a travelled surface is, rated from 0 to 10, with 10 representing excellent, new surfaces, and 0 representing an extremely rough, impassible road. DMI aggregates various forms of visible pavement distress into a rating from 0 to 10, with 10 representing a new surface and 0 representing a destroyed surface.

RCR and DMI are rated strictly independently. A rough road may have relatively few visible distresses while a fairly smooth road may display many distresses. In general, rough roads display associated visible distresses.

The combined approach facilitates comparing all the Township's roads, as the Inventory Manual prescribes the same rating system regardless of surface type, while also providing detailed descriptions of the types of distress encountered on surfaces as per the PCI ratings. This approach is compliant with O. Reg. 588/17. Wills undertook the field study in September/October of 2020.

During the field study, a visual assessment of the following road characteristics was documented to assess the current adequacy of the road:

- Platform Width (overall width of road).
- Surface Width (width of pavement surface).
- Shoulder Width.
- Surface Type (gravel, low class bituminous, or high class bituminous).
- Drainage Type (open ditches vs. storm sewers etc.).
- Surface Condition (assigned based on Ride Condition Rating for this Study).
- Maintenance Demand.
- Roadside Environment.
- Capacity.
- Alignment.

1.4.1 Critical Deficiencies

Critical deficiencies represent road characteristics that result in increased maintenance costs or lead to an inadequate level of service. Road sections may be assessed as critically deficient if any one (1) of the following characteristics fall below the minimum tolerable standards defined in the MTO Inventory Manual:

- Surface type - Insufficient surface type for traffic volumes.
- Surface width - Insufficient width of the road surface excluding the shoulders.
- Capacity - Inability of the road to accommodate traffic volumes at peak periods.
- Structural Adequacy - Inability of the road base to support vehicular traffic.
- Drainage - Increased frequency of flooding or excessive maintenance effort required to prevent flooding.

Critically deficient roads have generally reached the end of their service life and /or require major work to improve e.g. widening or new surface type. As such, reconstruction is generally required.

Surface Type

The following parameters were used to assess the adequacy of the road surface type. Road sections with traffic volumes (AADT) equal to or in excess of the Maximum Tolerable Trigger values for Earth and Gravel in **Table 1**, were noted as critically deficient triggering a "NOW" surface type need as per the Inventory Manual Method.

Table 1 - Surface Type by Annual Average Daily Traffic (AADT)

Surface Type	AADT			
	Inventory Manual		MTO Pavement Design and Rehabilitation Manual ¹	Maximum Tolerable Trigger Value
	Tolerable Range	Design Standard		
Earth (E)	<50	-	-	50
Gravel (G)	<400	0-199	0 - 199	400
Low Class Bituminous (LCB) / Surface Treatment	-	200-399	200 - 1500	1500
High Class Bituminous (HCB) / Hot Mix	-	400+	>1500	-

¹ Ministry of Transportation. Pavement Design and Rehabilitation Manual, Second Edition, 2013, Table 3.3.3 Structural Design Guidelines for Flexible Pavement – Secondary Highways

Table 1 provides further guidance with respect to surface type from both the Inventory Manual as well as the MTO Pavement Design and Rehabilitation Manual.

As detailed in **Table 1**, Gravel surfaces are generally considered acceptable for AADT of less than 200 vehicles but may be tolerable up to 400 AADT. Transitioning to Surface Treatment should be considered above 200 AADT. Gravel road maintenance costs (resurfacing, grading, dust suppression, etc.) versus surface treatment costs are key considerations.

Low Class Bituminous (LCB) i.e. Surface Treatment may be acceptable for traffic volumes between 200 and 1500 AADT. A transition to a Hot Mix or High Class Bituminous surface from Surface Treatment must be considered on a case by case basis. The following factors require consideration:

- Surface Treatment Maintenance Costs.
- Commercial Vehicle Loading.
- Roadside Environment (Urban, Semi-urban, vs. Rural).
- On-street Parking.
- Adjacent Drainage Infrastructure i.e. curb and gutter, catch basins etc.
- Asphalt Availability / Cost.
- Surface / Platform Width.
- Traffic Volume Growth.
- Sub-base Quality.
- Roadbed Frost Susceptibility.
- Future Resurfacing / Rehabilitation Costs.

Vehicle loading is one of the key considerations for pavement design and ultimately the decision between Hot Mix and Surface Treatment. Roads with high levels of commercial traffic require a more substantial pavement structure. The values noted in Table 1, for the "MTO Method" are generally reflective of a highway with 10% commercial vehicles. Roads with AADT in excess of 400 vehicles with a good sub-base and commercial vehicles up to 10% may still perform very well with a Surface Treatment. Existing/past performance of a Surface Treatment can be an excellent indicator when considering the upgrade to Hot Mix.

Surface Width

Surface widths that fall below minimum tolerable standards, as detailed in the MTO Inventory Manual are noted as critically deficient triggering a "NOW" need. The minimum tolerable surface widths for rural roads are included in **Table 2**:

Table 2 – Rural Road Surface Width by Annual Average Daily Traffic (AADT)

AADT	1-49	40-199	200-399	400-999	1000-1999	2000-2999	3000-3999	4000+
Road Width (m)	5.0	5.5	5.5	6.0	6.0	6.0	6.5	6.5

Capacity

An in-depth traffic capacity analysis was not completed as part of the scope of this Road Needs Study. Decisions with respect to expansion of roads should be made within the context of a Transportation Master Plan or Official Plan for the City.

However, from a general perspective, a two-lane road can typically provide adequate service up to an AADT of approximately 12,000 vehicles. The functionality of a road from a capacity standpoint is of course dependent upon other factors in combination with volume. Adjacent land uses, number of access points i.e. entrances and side roads etc. also have a significant impact on how the road functions.

A rural road with limited entrances and side roads will have a much greater capacity to flow traffic versus an urban street with many entrances and side road intersections. The AADT of 12,000 can be used as a 'rule of thumb' to trigger further analysis on the road capacity and operation. For the purposes of this study, a detailed capacity analysis was not undertaken as part of the scope of work. All roads were assigned to be adequate from a capacity perspective noting that no road section had an AADT greater than 10,000 vehicles.

Structural Adequacy

In cases where road base or structure is showing distress over more than 20% of the length of the road section, a score between 1 and 7 (out of 20) is assessed and the road section is assigned a "NOW" need and considered Critically Deficient per the Inventory Manual. The structural adequacy rating is often the best indicator of the overall road section's health.

It should be noted that a structural "NOW" need does not explicitly mean that work must be undertaken on the road immediately (although this may be so in some cases). A structural "NOW" need means that a significant portion of the road is showing distress of the road bed and requires significant intervention i.e. reconstruction or major rehabilitation to renew its service life. A structural "1-5" year need is expected to become a "NOW" need in the next five (5) years, and a "6-10" year need is expected to become a "NOW" need in the next ten (10) years.

Drainage

A road section is assessed as a "NOW" need for drainage generally when a road becomes impassible due to water one or more times a year. This information is not readily accessible from inspection. Characteristics such as ditching, water ponding on or around the road, and evidence of past washouts were used to assess road drainage. As such, a road was given a "NOW" need for drainage if there were evident drainage problems that would likely lead to an impassable road during a heavy rain or a rapid snow melt.

2.0 The Road System

2.1 Inventory and Classification

All roads in the municipal road system were inventoried according to the methods outlined in the Inventory Manual for Municipal Roads.

The inventory procedure requires that each road in the system be studied as a separate unit. Initially, the road system was divided into sections so that each conformed, as close as possible, to the following requirements:

- Uniform traffic volume.
- Uniform terrain.
- Uniform physical conditions.
- Uniform adjacent land.

Depending on location with respect to the built up areas, roads were classified in a manner generally descriptive of the type of construction as follows:

- Urban - Roads with curb and gutter and storm sewer drainage.
- Semi-Urban - Roads in built up areas (development exceeds 50% of the frontage) without curb and gutter or curb and gutter on one (1) side only.
- Rural - Roads with development on less than 50% of the frontage.

Rural roads were further evaluated based on estimated traffic volumes; such as 0 to 50 vehicles per day, 51 to 200, and 201 to 400 etc. For the purpose of this study, traffic volumes were adopted or estimated from traffic counts in the 2013 Asset Management Plan (**Note: Updated traffic counts will be included in final version of this report**).

Table 3 summarizes the total road length in kilometres by surface type and road environment as of November 2020.

The existing road system consists of 407 km of roadway, 137 km of gravel roads, 167 km of surface treated roads (LCB) and 104 km of HCB (asphalt paved) roads; with all calculations being approximate and rounded to the nearest kilometre.

Table 3 - Road System Inventory

Township of North Dundas		
Road System in Kilometres		
(As of November 2020)		
A.	Surface Type	Totals*
	Earth	0
	Gravel (loose Top Gravel)	137
	Surface Treatment (LCB & ICB)	167
	Hot Mix Asphalt (HCB)	104
	Total A	407 km
B.	Roadside Environment	
(i)	Rural	
	Earth	0
	Gravel (loose Top Gravel)	136
	Surface Treatment (LCB & ICB)	166
	Hot Mix Asphalt (HCB)	67
	Total Rural	369 km
(ii)	Semi-Urban	
	Gravel (loose Top Gravel)	<1
	Surface Treatment (LCB)	<1
	Hot Mix Asphalt (HCB)	30
	Total Semi-Urban	31 km
(iii)	Urban	
	Gravel (loose Top Gravel)	0
	Surface Treatment (LCB)	0
	Hot Mix Asphalt (HCB)	7
	Total Urban	7 km
	Total B	407km

**Estimated to the nearest centreline kilometre.*

3.0 Road Needs

The primary purpose of the study is to develop a list of all roads within the Township ranked according to priority with respect to road needs.

The method of evaluating road needs in terms of type, cost and timing of improvements is identified in the Inventory Manual for Municipal Roads.

It is important to note that budgetary restrictions will often influence the level of upgrades to the road system and therefore it is imperative to maximize the improvements based on availability of funds and needs priority.

3.1 Critical Deficiencies

The inventory of the road system revealed that certain road sections are now deficient or will become deficient during the study period.

As noted previously, critical deficiencies include road characteristics which result in increased maintenance costs and which inevitably lead to an inadequate level of service. A road section is critically deficient if any one of the following characteristics fall below the minimum tolerable standards defined in the Inventory Manual.

- Surface type - Incorrect surface type to suit traffic volumes on the roadway.
- Surface width - Insufficient width of the road surface excluding the shoulders.
- Capacity - Inability of the road to accommodate traffic volumes at peak periods.
- Structural Adequacy - Inability of the road base to support vehicular traffic.
- Drainage - Increased frequency of flooding or excessive maintenance effort required to prevent flooding.

Of the 407 km of roads inventoried, a total of 146 km were found to be critically deficient in one (1) or more areas. Of the 146 km, approximately 45 km represents roads with AADT of less than 50 vehicles. **It's worth noting that 94 km of the 150 km of NOW needs fall under a surface width need. The criteria for a surface width need is dependent on traffic volume and as we are currently undergoing updated traffic counts, this will change in the final version of the report.** Regardless of condition, roads with AADT of fifty (50) or less are typically assigned as "Adequate" (as per the Ministry protocol) for the purpose of the system adequacy calculation.

The overall system adequacy for the Township's road network, which is based upon the total road kilometres less the identified critically deficient ("NOW" needs) roads, is as follows:

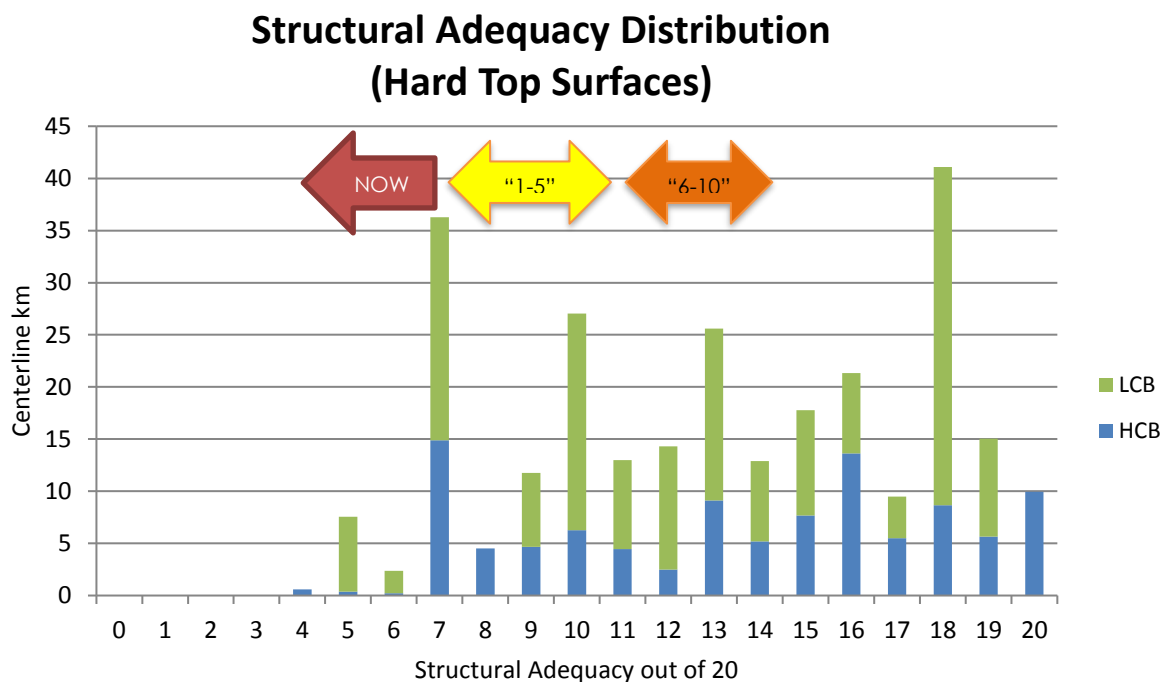
$$\text{2020 System Adequacy} = \frac{407 - (146 - 45)}{407} \times 100\% = 75\%$$

The average surface condition rating of all roads is 7.3/10 while the average structural adequacy rating is 13.5/20. This suggests that the typical road has a fair to good riding quality, but just at the point where significant rehabilitation or reconstruction is required.

As per O. Reg. 588/17, the average unpaved road was in fair condition and the average PCI for hard top surfaces in the Township is 69.9.

A review of the structural adequacy distribution of the Township's hard top roads identifies a group of roads, 115 km, that are in very good condition (structural adequacy of 15 and over), and with regular resurfacing and preservative maintenance, should not require reconstruction in the next ten (10) years. Another cohort of roads, approximately 53 km, are in average condition (Structural Adequacy from 12 to 14). Some of these roads may continue to perform well, but without timely resurfacing and preventative maintenance, many of them are expected to become NOW or 1 – 5 year needs. The remaining 103 km of hard top road network is well distributed over the very poor to poor range (structural adequacy from 4 to 11). Most of these roads will require reconstruction over the next five (5) years to fully repair them.

It is therefore recommended that, while the Township endeavors to repair these poor roads as part of its 10-year capital plan, every reasonable effort is made, through preservation management, to prevent the current cohort of fair to very good roads (115 km) from becoming capital reconstruction needs themselves.



3.2 Priority Ratings of Roads

A mathematical empirical formula was used to calculate the priority rating for each road section. The priority rating is a weighted calculation which takes into account the existing traffic volume and overall condition rating of the road.

This priority analysis is an impartial procedure to place the deficiencies in order of relative need. **A higher Priority Rating number indicates a relatively greater need for improvement.**

The formula takes into account the current traffic volume (AADT), whether it is from actual road counts or estimated road counts and the Condition Rating (CR) of the road at the time of this Road Needs Study Report. The formula is as follows:

$$\text{Priority Rating} = 0.2 \times (100 - \text{CR}) \times (\text{AADT} + 40)^{0.25}$$

In utilizing the above equation Wills identified a priority listing for review with Township staff. It is important to emphasize that the priority rating calculation considers only CR and traffic volumes.

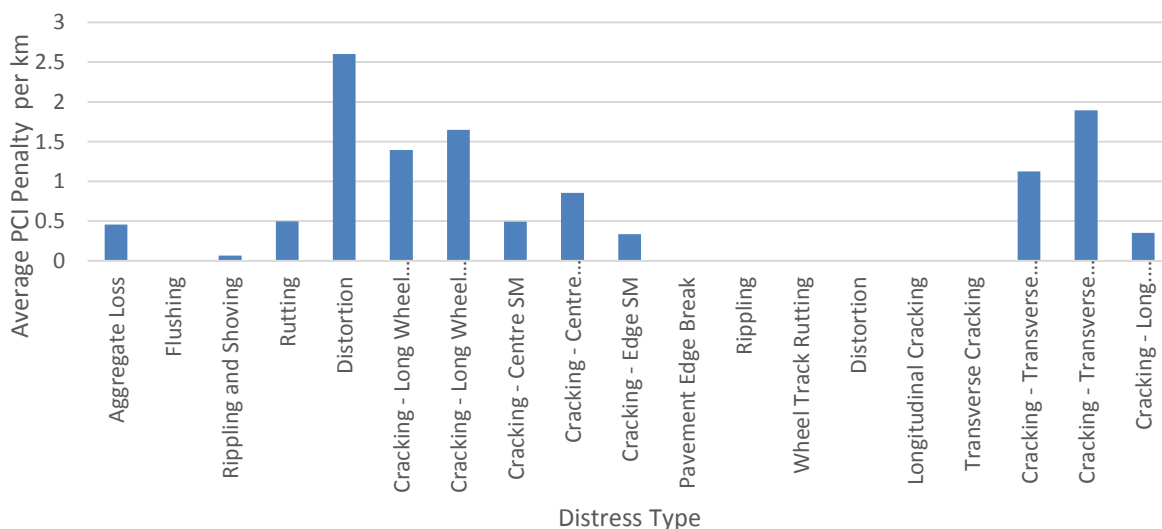
When developing the recommended capital expenditure plan consideration may be given to the remaining useful service life of a road / roadbed with a view to coordinating major reconstruction efforts at / near the end of the road's life. Furthermore, while a priority rating will give a general idea of which roads should be improved before others, it does not prescribe an exact order for road improvements nor does it determine the timing of preservation and rehabilitation work. For example, it may be wise to defer the full reconstruction of a high priority road ("let the bad roads fail") in favour of resurfacing work on a medium priority road ("keep the good roads good").

3.3 Dominant Distress Types

As detailed in

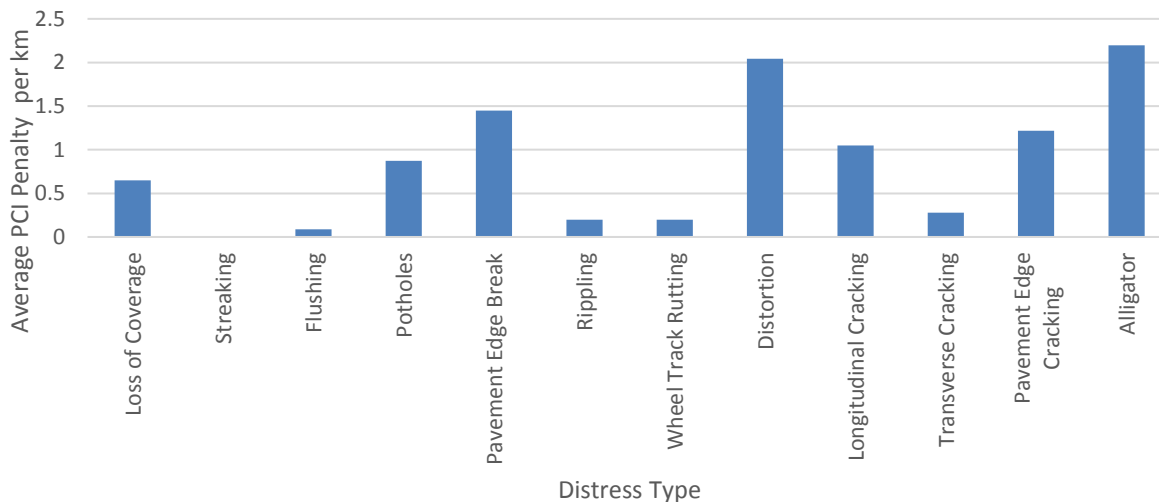
Figure 1, distortion had the highest effect on PCI rating on the Township's HCB network. Transverse and wheel track cracking were also substantial, with rutting and aggregate loss also responsible for significant penalties to the Township's PCI ratings. Flushing, and rippling and shoving were not observed during inspections.

Figure 1 – HCB Distress Type Prevalence



As detailed in **Figure 2** the principal distress type in the Township's LCB roads was also distortion. Other distress types were moderately significant except for flushing, rippling and transverse cracking which had a minor average impact on average PCI ratings for LCB Roads.

Figure 2 – Surface Treated Distress Type Prevalence



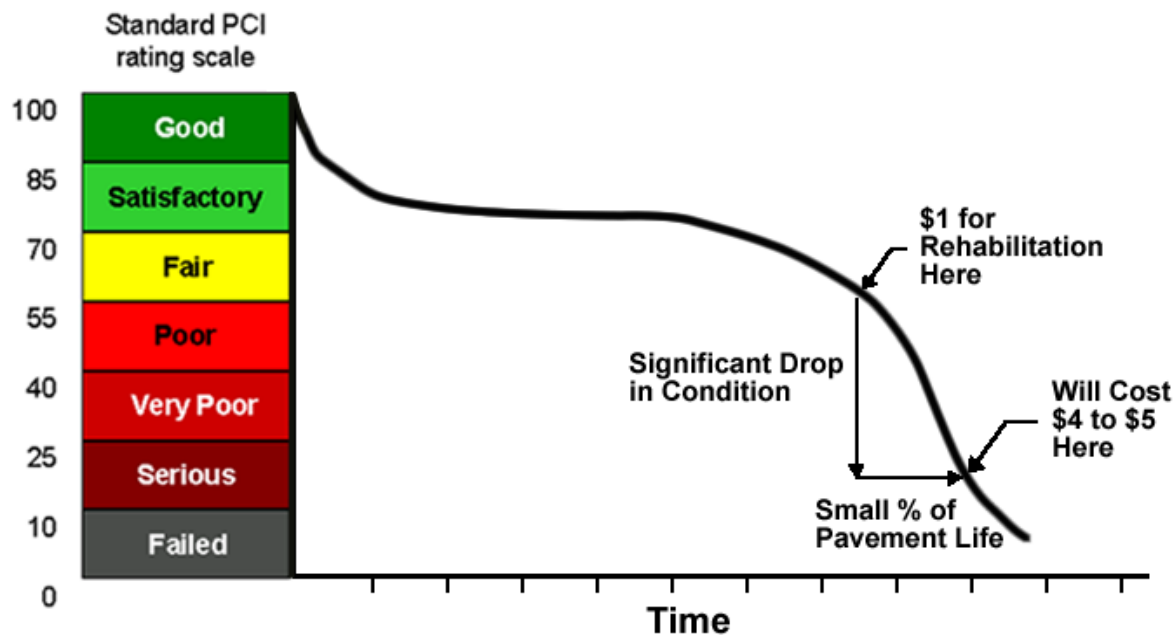
4.0 Roads Best Management Practices

The key to managing a pavement / road network is the timing of maintenance and rehabilitation activities. This idea evolves from the fact that a pavement's structural integrity does not fall constantly with time. A pavement generally provides a constant, acceptable condition for the first part of its service life and then begins to deteriorate very rapidly. In many cases, maintenance and rehabilitation measures are not taken until structural failure or noticeable changes in ride quality become apparent. This is the "fix it once it is already broken" approach.

The unfortunate consequence of this decision is that maintenance and rehabilitation becomes exponentially more expensive over the life of the pavement and is often overlooked until the pavement condition reaches a severe state of distress. There is opportunity for substantial cost savings when intervention is made *before* the pavement becomes severely compromised; i.e. "fix it before it breaks". **Figure 3** the underlying principle in support of a preservation management approach to pavement infrastructure. The principle also has application to each of the classes of roads maintained by the Township. Significant cost savings will result from proactive intervention rather than simply waiting as long as possible before performing maintenance.

Examples of approach to roads management with their associated cost implications over the lifecycle of a road are set out below in **Section 4.1** and are provided as an illustration of the benefit of a "preservation management approach".

Figure 3 - Typical Service Life of an Asphalt Pavement



4.1 Example Life Cycle Cost Analysis

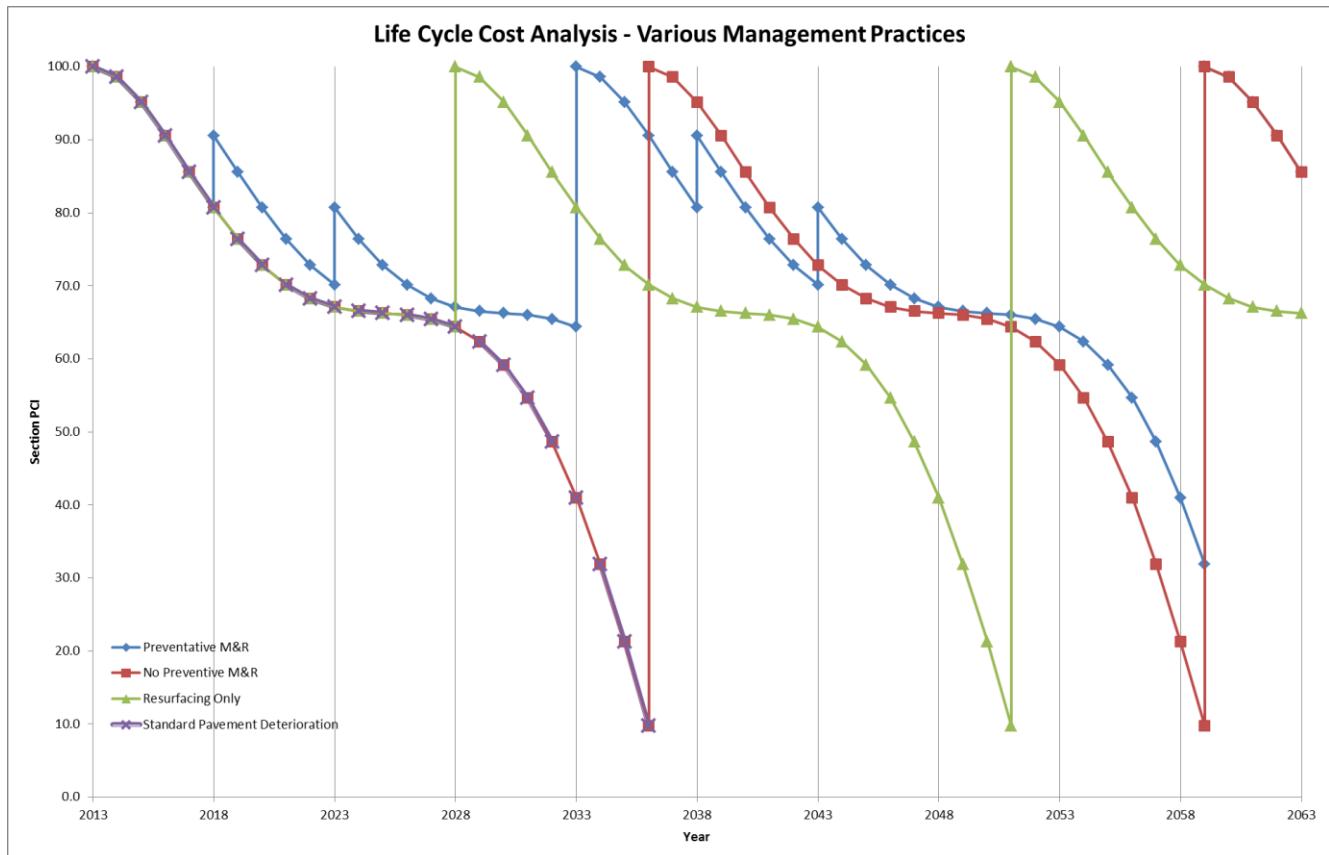
The following life cycle costs analysis compares three (3) different municipalities Municipality 1, Municipality 2 and Municipality 3; each with three (3) distinct approaches to pavement management. For this analysis we will assume each of the three (3) municipalities has 7000 m² of pavement, i.e. 1 km of asphalt paved road that is 7 m wide. In each scenario, the road is assumed to have been constructed in 2013 and will operate under normal traffic loading.

The Life Cycle Cost Analysis (LCCA) assumes no user costs. The LCCA uses a discount rate of 2.5% / year.

The LCCA shows the three (3) different municipalities and tracks their pavement management decisions and related condition over the specified time period. Municipality 1 represents decisions made based on strategic preventive maintenance and rehabilitation (M&R), Municipality 2 represents decisions based on no preventive M&R and Municipality 3 represents decisions based on resurfacing only.

Figure 4 illustrates a time- pavement condition plot for each municipality

Figure 4 - Time-Condition Plot for 3 Municipalities



The costs associated with the corresponding maintenance and rehabilitation decisions are outlined in the following three (3) charts:

Preventive M&R									
Year	Age	Treatment	Δ PCI	PCI _q	Quantity	Unit	Unit Cost	Total Cost	Present Worth
		-- Annual Ditching/Clearing --							
2018	5	Localized Preventive - Rout and Seal	81-90	Satisfactory-Good	1000	m	\$1.50	\$1,500.00	\$1,325.78
2023	10	Global Preventive - Slurry Seal	70-81	Satisfactory-Good	7000	m ²	\$6.50	\$45,500.00	\$35,544.53
2033	20	Surface Course	64-100	Poor-Good					
		Mill and Dispose of Surface Course			7000	m ²	\$12.00	\$84,000.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
								\$204,487.50	\$124,792.78
2038	25	Localized Preventive - Rout and Seal	81-88	Satisfactory-Good	4500	m	\$1.50	\$6,750.00	\$3,640.89
2043	30	Global Preventive - Slurry Seal	68-78	Satisfactory-Good	7000	m ²	\$6.50	\$45,500.00	\$21,691.79
2048	35	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	5%	m ²	\$30.00	\$10,500.00	\$4,424.40
2053	40	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	10%	m ²	\$30.00	\$21,000.00	\$7,821.04
2058	45	Full Reconstruction	32-100	Serious-Good					
		Remove Asphalt Full Depth			7000	m ²	\$15.00	\$105,000.00	
		Add and Compact Corrective Aggregate/Correct Crossfall (25mm avg.)			420	t	\$35.00	\$14,700.00	
		40mm Base Course			686	t	\$125.00	\$85,750.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
								\$325,937.50	\$107,290.28
2063	5	Localized Preventive - Rout and Seal	81-90	Satisfactory-Good	1000	m	\$1.50	\$1,500.00	\$436.41
Final PCI in 2063:			90	Good					Net: \$306,967.90
								Residual Value:	\$85,346.08
								Total Cost:	\$221,621.82

The policy of Municipality 1 is to strategically intervene with preventative maintenance measures over the course of the pavement's service life. Two (2) significant maintenance measures are performed on the pavement at various times and ultimately extend the service life of the pavement, prorating the total cost of the pavement over a longer period of time. Eventually, a full reconstruction is required and this cycle repeats. The total life cycle costs are substantially less when compared to Municipality 2 and 3, at a total of \$221,622 over 50 years.

No Preventive M&R									
Year	Age	Treatment	Δ PCI	PCI _q	Quantity	Unit	Unit Cost	Total Cost	Present Worth
2023	10	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	5%	m ²	\$30.00	\$10,500.00	\$8,202.58
2028	15	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	10%	m ²	\$30.00	\$21,000.00	\$14,499.78
2030	17	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	20%	m ²	\$30.00	\$42,000.00	\$27,602.19
2036	23	Full Reconstruction	10-100	Poor-Good					
		Remove Asphalt Full Depth			7000	m ²	\$15.00	\$105,000.00	
		Add and Compact Corrective Aggregate/Correct Crossfall (25mm avg.)			420	t	\$35.00	\$14,700.00	
		40mm Base Course			686	t	\$125.00	\$85,750.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
								\$325,937.50	\$184,707.88
2043	7	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	5%	m ²	\$30.00	\$10,500.00	\$5,005.80
2048	12	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	10%	m ²	\$30.00	\$21,000.00	\$8,848.79
2053	17	Safety/Stopgap Maintenance - AC Patching/Leveling	N/A	N/A	20%	m ²	\$30.00	\$42,000.00	\$15,642.09
2059	23	Full Reconstruction	10-100	Poor-Good					
		Remove Asphalt Full Depth			7000	m ²	\$15.00	\$105,000.00	
		Add and Compact Corrective Aggregate/Correct Crossfall (25mm avg.)			420	t	\$35.00	\$14,700.00	
		40mm Base Course			686	t	\$125.00	\$85,750.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
								\$325,937.50	\$104,673.45
Final PCI in 2063:			86	Good	Net:				\$369,182.56
Residual Value:								\$81,552.92	
Total Cost:								\$287,629.64	

The policy of Municipality 2 is to simply construct the pavement and wait until serious deficiencies begin to appear before acting. This approach unfortunately remains common still today. Over the last period of the pavement's life, maintenance is required to ensure safety and operation until the pavement becomes completely destroyed. Once the pavement has failed, a complete reconstruction is carried out restoring the pavement to new condition. This cycle repeats again until a second reconstruction is required. The total costs are substantial and total \$287,630 over 50 years.

The policy of Municipality 3 is periodic resurfacing. The pavement is constructed and time passes until early signs of serious distress are observed. This occurs after the time when preventive maintenance is neither appropriate nor possible, but before the pavement becomes completely destroyed. Resurfacing is performed and restores the pavement to almost new condition. The pavement then deteriorates for the remainder of its life, requiring significant maintenance in the last years before it becomes completely destroyed. A full reconstruction is then carried out and the cycle continues. The total costs are in between that of Municipality 1 and 2 at \$260,038 over 50 years.

Resurfacing Only									
Year	Age	Treatment	Δ PCI	PCI _q	Quantity	Unit	Unit Cost	Total Cost	Present Worth
2028	15	Surface Course	64-100	Poor-Good					
		Mill and Dispose of Surface Course			7000	m ²	\$12.00	\$84,000.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
							\$204,487.50	\$141,191.58	
2051	23	Full Reconstruction	10-100	Serious-Good					
		Remove Asphalt Full Depth			7000	m ²	\$15.00	\$105,000.00	
		Add and Compact Corrective Aggregate/Correct Crossfall (25mm avg.)			420	t	\$35.00	\$14,700.00	
		40mm Base Course			686	t	\$125.00	\$85,750.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
							\$325,937.50	\$127,534.43	
2067	15	Surface Course	64-100	Poor-Good					
		Mill and Dispose of Surface Course			7000	m ²	\$12.00	\$84,000.00	
		50mm Surface Course			892.5	t	\$135.00	\$120,487.50	
							\$204,487.50	\$53,898.67	
Final PCI in 2063:			66	Good				Net:	\$322,624.67
								Residual Value:	\$62,587.12
								Total Cost:	\$260,037.55

It may be easy to see upfront cost savings by understanding that as long as any costs associated with maintaining the pavement are deferred as long as possible, money will be saved. The reality is that extending a pavements service life prorates the total cost of the pavement over a longer period of time and ultimately becomes more economical in the long run. If preventive maintenance measures are strategically planned and carried out then the service life of the pavement can be maximized and substantial reconstruction costs can be deferred for longer periods of time. In a time when economy and efficiency are becoming more and more important, this type of proactive management is essential in the management of infrastructure.

Preservation Management Approach

4.1.1 Gravel Roads

The Township currently maintains approximately 137 km of gravel road. The proposed preservation management approach for this class of road is outlined in the following **Table 4** and **Table 5**.

Table 4 - Preservation Management Approach- Gravel Surface

Action	Frequency
Regrade surfaces to maintain smooth / safe driving surface and proper crossfall.	As needed, generally 2-3 times per year for higher volume gravel, or more frequently as necessary; 1-2 for lower volume.
Add calcium to tighten surface, retain aggregate and reduce dust.	Each spring on all roads of higher volume and as needed during summer months.
Ditching and brushing of right-of-ways to improve roadbed drainage and safety.	Complete road network every 10 years.

Table 5 - Capital Activities – Gravel Roads

Action	Frequency
Add layer (75 mm) of granular material to road surface.	Every 3-5 years for gravel roads.
Base and sub-base improvements.	As needed or as dictated by traffic volumes.
Reconstruct / convert to hard top.	As dictated by traffic volumes.

4.1.2 Asphalt Roads

Asphalt surfaces are the smoothest and most durable hard top surface used by the Township however; they are also the most expensive. The Township currently maintains 104 km of asphalt surface roads. Asphalt provides a constant, acceptable condition for the initial portion of its service life but then begins to deteriorate rapidly as it ages. Surface defects such as cracking and raveling are the first signs of the deterioration. If left untreated, the pavement will rapidly deteriorate to the point where reconstruction is the only option. A preservation management strategy can mitigate this by applying renewal treatments earlier in the pavements life before the conditions begin to deteriorate too far. **Table 6** below summarizes preservation management activities to be considered for asphalt roads:

Table 6 - Preservation Management Approach – Rural Asphalt Roads

Activity	Age (Years)	Ride Condition Rating	Estimated Service Life Extension (Years)
Crack seal	2-6	9	2
Slurry Seal / Microsurface	4-8	8	4-6
Overlay	12-15	6-7	10
Pulverize and Pave	20-25	< 5	20
Reconstruct	30	< 4	30

Note: Slurry seal can be used on lower volume paved roads (less than 1000 vehicles per day). For roads with volumes in excess of 1000 AADT, microsurfacing should be considered.

In addition to the above noted preservation approach, the following best management practices may be employed to extend the service life and reduce life cycle costs of asphalt roads:

1. Review the condition of other infrastructure, particularly underground infrastructure prior to implementing any major renewal or rehabilitation of the pavement. Any repairs or capital upgrades to other infrastructure should be coordinated. This should reduce utility cuts in newer asphalt.
2. Repair potholes in the surface in a timely fashion to prevent saturation and weakening of road base.
3. Undertake regular shouldering program of rural paved roads to promote proper drainage. Poorly maintained shoulders allow surface water to pond and saturate the road base, which weakens the base and leads to cracking at the edge of pavements.
4. Undertake a ditching program to ensure there is adequate drainage for road base on rural roads. This will reduce the likelihood of structural distresses caused by softening of the road base due to poor drainage.
5. Specify the appropriate type of performance graded asphalt cement for the location.
6. Undertake a clearing program to reduce shading of the roadbed and remove roots / vegetation from the road base.

4.2 Application of Preservation Management Approach

The preservation management activities detailed in each of the tables above are not necessarily intended or required to be completed on each and every road. Road deterioration rates and the type of deterioration will dictate when action should be taken and what kind of treatment is most appropriate. The intention of the above is to outline the series of techniques to be considered in an effort to realize and extend the useful service life of the road asset for the lowest overall lifecycle cost while maintaining the highest overall condition. As detailed in the life cycle costs analysis presented above, the preservation management approach to roads is proven to yield the lowest overall life-cycle costs.

Each of the preservation management activities for gravel, surface treatment and asphalt roads identified above (including route and seal, slurry seal, resurfacing etc.), shall be considered as part of the regular Road Needs Study Report every five (5) years. Recommendations on the specific treatments required shall be documented and prioritized in this Report.

5.0 Road Needs Study Rehabilitation Strategies

5.1 Types of Improvements

All roads were examined to appraise the extent and type of improvement necessary.

“Order of Magnitude” construction costs were developed for each of the below options on a per kilometre basis. An estimated cost for isolated frost heave repairs was also considered.

The below alternative rehabilitation strategies are considered preliminary in nature and are intended to assist in providing an order of magnitude cost estimate to rehabilitate the road. Further field investigations and engineering design is required to confirm and develop the rehabilitation strategies for each road.

5.1.1 Asphalt

High Class Bituminous roads (HCB) or hot mix asphalt roads have rehabilitation alternatives ranging from a simple overlay to complete reconstruction. The following is a listing of standard road rehabilitation techniques that were considered for HCB or hot mix asphalt roads.

RO1	Resurfacing, Single-Lift Overlay.
RO2	Resurfacing, Double-Lift Overlay.
RMP1	Resurfacing, Mill and Pave 1-Lift.
RMP2	Resurfacing, Mill and Pave 2-Lifts.
PP1	Pulverize and Pave 1-Lift.
PP2	Pulverize and Pave 2-Lifts.
Recon 1R	Excavate and Reconstruct Road and Pave 1-Lift – Rural.
Recon 1S	Excavate and Reconstruct Road and Pave 1-Lift – Semi-Urban.
Recon 2S	Excavate and Reconstruct Road and Pave 2-Lifts – Semi-Urban.
Recon 2U	Excavate and Reconstruct Urban Road and Pave 2-Lifts – Urban.
SS	Slurry Seal (Preventative Maintenance).
MS	Microsurfacing (Preventative Maintenance).
RS	Route and Seal (Preventative Maintenance).

5.1.2 Gravel

Gravel roads can likewise be upgraded with the reapplication of Gravel (G) or surface treatments (ST2).

5.2 Benchmark Construction Costs

The Unit Price Form found in **Appendix A** is based on historical information provided by the Township. The unit prices were used to prepare an array of benchmark construction costs. The design standards in **Table 7** were utilized for development of the benchmark cost estimates for reconstruction. It should be noted that these are suggested standards and therefore should not necessarily be used as standards for detail design of roadway improvements.

Table 7 - Design Standards for Construction Cost Estimates

Functional Classification	Surface Width (m)	Shoulder Width (m)	Granular A Depth (mm)	Granular B Depth (mm)	Hot Mix Depth (mm)*
Rural R200 (50 to 199 vpd)	6.0	1.5	150	450	-
Rural R300 (200 to 399 vpd)	6.0	1.5	150	450	16*
Rural R400 (400 to 999 vpd)	6.5	1.5	150	450	50
Semi - Urban Local Residential	6.0	1.5	150	450	50
Semi - Urban Local Industrial	6.5	1.5	150	450	50
Urban Local Residential	8.5	-	150	600	100
Urban Local Industrial	9.0	-	150	600	100

Note - Prime and Double Surface Treatment is based on 16 mm of Hot Mix.

6.0 Improvement Plan

A Road Needs Summary Table, including the Capital Improvement, LCB to HCB Conversion Program, and Resurfacing is included in Appendix B. AADT is based on traffic counts of the previous Road Needs Study (to be updated following traffic counts). All costs are in 2020 dollars.

6.1 LCB to HCB Conversion Program

The Township's recent experience with surface treated roads has been unsatisfactory, with service lives of 3-4 years before major work is required. Normally, surface treatment can be expected to last at least 7 years. As such, the Township has requested that the conversion of all surface treated roads to hot mix pavement be considered in this report.

The Township currently maintains 167 km of surface treated roads. Although road reconstruction may vary section by section, this report considers a typical conversion

strategy of placing 150mm of Granular A before paving 1 lift (50mm). The total LCB to HCB Conversion Program is estimated at \$24.4 Million.

6.2 Capital Improvements

Preliminary recommendations and prioritization for planned capital improvements i.e. reconstruction, have been developed based on the condition rating and traffic demands on each road section, as per the Inventory Manual. Those roads identified as having a "NOW", 1 – 5, or 6 - 10 year need have been included in the capital improvement plan for reconstruction.

Excluding surface treated roads, which are already included in the LCB to HCB Conversion Program, 58.4 km of roads were identified as having structural needs in the "NOW", 1 – 5 or 6-10 year periods. The estimated cost to improve these roads is approximately \$ 18.6 M.

6.3 Annual Resurfacing Program

Hot Mix Paved Roads:

- 104 km of paved roads (HCB).
- Degradation rate 0.25 / year (rating drops from 10 to 5, over a 15-year period).
- Annual resurfacing 6.9 km / year.
- **Annual budget \$952,200:** (6.9 km / year x \$210,000 / ln **RO1** x 2 lanes).

Gravel roads require regular maintenance. Maintenance includes regular grading and reapplication of new gravel. Typically, gravel roads should be resurfaced on a 3 - 5 year cycle.

Gravel Roads:

- 137 km of earth / gravel roads.
- 75 mm gravel every 3-5 years.
- Annual gravelling of 27.3 km.
- Granular A (\$12,000 / km).
- **Annual budget \$327,600** (27.3 km / year x \$14,000 **G**) **.

*** Cost based on supply and application of gravel by external forces.*

The total resurfacing program, (hot mix and gravel) is estimated at \$1,279,800 per year for the next 10 years. This budget will need to be increased in the future as it currently does not include surface treated roads (as they are being converted to HCB). In the long term (10 – 15 years), these new HCB roads will need to be need to be resurfaced as well, and the future resurfacing program is estimated at \$2,811,600.

6.4 Preservation Management

Cracksealing

- 107 km of paved roads (HCB).
- 167 km of surface treated roads to be converted to HCB.
- Assume that cracksealing will be applied, on average, once per resurfacing cycle.
- Annual cracksealing of 18.0 km / year.
- **Annual budget \$72,000** (18.0 km x \$4,000 / km **Cracksealing**).

Slurry Seal / Microsurfacing

- 107 km of paved roads (HCB).
- 167 km of surface treated roads to be converted to HCB.
- Assume that slurry seal / microsurfacing will be applied, on average, once per resurfacing cycle.
- 18.0 km of road to preserve per year.
- **Annual budget \$396,900** (18.0 km x \$22,050 / km **Slurry Sealing / Microsurfacing**).

6.5 Road Maintenance

Preventative road and roadside maintenance is critical to prolonging the useful service life of a road and maximizing the capital investment. A continuous road and roadside maintenance program is recommended to reduce the road degradation rates. Ditch cleanout and clearing of vegetation from the right-of-way should be carried out on a regular basis. This can either be accomplished through dedicated internal Township forces or sub-contracting to private contractors. Consideration may be given to a dedicated capital program of ditch cleanout and clearing, to ensure resources are dedicated to these important activities.

Ditching Program:

- 369 km of rural roads.
- 27 km of Semi-Urban Roads with open ditch drainage.
- Ideally perform ditch cleanout on the entire network every 10 years.
- 39.7 km of road to ditch per year.
- **Annual budget \$277,900** (40 km x \$7,000 / km **ditching, both sides**).

Brushing Program:

- 369 km of rural roads.
- Brushing from the shoulder to the ROW on the entire network every 10 years.
- 36.9 km of road to brush per year.
- **Annual budget \$110,700** (36.9 km x \$3,000 / km **brushing, both sides**)

7.0 Replacement Cost

In conjunction with this Road Needs Study Report, a replacement cost for the road asset was calculated based strictly on roadbed materials i.e. sub-base, base and surface. Road design standards noted in **Table 7** were used to estimate the existing depth of road bed materials for the purpose of the replacement cost calculation.

The total replacement cost for the Township's road infrastructure is approximately \$96.3 M.

Note this cost represents the theoretical road bed materials costs only and does not include items such as removal of the existing road bed, installation of signs, pavement markings, lighting, drainage infrastructure, property etc.

8.0 Summary

D.M. Wills Associates (Wills) undertook a review of the Township of North Dundas's (Township) existing road network to assess its physical condition and confirm various road attributes. Data collected as a result of the field review was used to develop a prioritized listing of the road network needs based primarily on condition and traffic volumes.

Wills undertook the field study in September/October of 2020. A visual assessment of each road within the Township was undertaken to assess the current condition of the road.

Two (2) primary indicators of the relative health of a road are the structural adequacy rating (Inventory Manual) and the PCI (hard-top roads only for this study). The current average structural adequacy rating for the Township's road network is 13.5/20. The current average PCI for the Township's hard-top road network is 69.9 (out of 100).

13% (~52 km) of the road network has a Structural "NOW" need, 14% (~56 km) has a Structural "1-5" year need, and 13% (~53 km) of the road network has a Structural "6-10" year need.

LCB to HCB Conversion Program

The Township's recent experience with surface treated roads has been unsatisfactory, with service lives of 3-4 years before major work is required. Normally, surface treatment can be expected to last at least 7 years. As such, the Township has requested that the conversion of all surface treated roads to hot mix pavement be considered in this report.

The Township currently maintains 167 km of surface treated roads. Although road reconstruction may vary section by section, this report considers a typical conversion strategy of placing 150mm of Granular A before paving 1 lift (75mm). **The total LCB to HCB Conversion Program is estimated at \$24.4 Million.**

Preservation Management

In addition to addressing currently deficient roads (i.e. capital reconstruction), a dedicated preservation management approach is required, **and perhaps even more importantly**, to “keep the good roads good”; the fundamental principle being that it costs much less to maintain a good road than it does to let it fail and then reconstruct it, from a life cycle cost perspective. Ultimately, the goal of preservation management is to extend the useful life of a road and road network, maximizing the municipality's investment over the road life-cycle.

Road resurfacing is an effective way of extending the overall life of the pavement structure and therefore a road resurfacing program is highly recommended. Roads with a structural adequacy of 12/20 or greater are included as candidates for potential resurfacing. Preliminary recommendations and prioritization for road resurfacing are based on condition rating and traffic demands on each road section, as per the Inventory Manual. A road with higher traffic volumes and fair structural adequacy is given priority over a road with moderate traffic and good structural adequacy score, in an attempt to intervene and extend the life of the road before it deteriorates to a level that can no longer be resurfaced (i.e. more expensive reconstruction is required). Specific resurfacing treatment recommendations must be assessed through further field investigation and detail design effort, prior to selecting and implementing the resurfacing strategy.

Based on typical degradation rates for gravel roads, surface treatment, and hot mix, a total resurfacing program, (hot mix and gravel) is estimated at \$1,279,800 per year.

Further to the recommendations above with respect to resurfacing, it is also recommended that regular maintenance in the form of roadside ditch cleanout and clearing be undertaken as a critical component to preservation management in order to extend the useful service life of the existing roads.

Capital Improvements

Preliminary recommendations and prioritization for planned capital improvements i.e. reconstruction, have been developed based on the condition rating and traffic demands on each road section, as per the Inventory Manual. Those roads identified as having a “NOW”, 1 – 5, or 6 - 10 year need have been included in the capital improvement plan for reconstruction.

Excluding surface treated roads, which are already included in the LCB to HCB Conversion Program, 58.4 km of roads were identified as having structural needs in the “NOW”, 1 – 5 or 6-10 year periods. The estimated cost to improve these roads is approximately \$ 18.6 M.

A fully funded 10-year plan following the recommendations in this report includes \$1.3M/year for resurfacing needs, \$18.6 M (\$1.9 M/year) for the capital needs, and \$24.4 M for LCB to HCB Conversion Program over the next ten years.

An additional length of approximately 94 km of road is identified as having inadequate surface widths. **The warrant for a surface width need is dependent on traffic volume and as we are currently undergoing updated traffic counts, this length will change in the final version of the report.** Generally, provided no operational or safety concerns are identified, roads with surface width deficiencies are typically addressed / considered at the next full reconstruction cycle. All roads currently meet the minimum tolerable standard for surface type, based on the Inventory Manual methodology. Additional guidance regarding road surface types is discussed within the document.

The time of inspection plays a significant role in assessing a road's condition. Certain deficiencies, particularly for gravel roads, are only obvious during the "spring break-up" period. By midsummer, any evidence to suggest these deficiencies may have disappeared due to regular grading and grooming activities and general drying of the roadbed. The field work for this study was carried out in September/October 2020, missing out on any "spring break-up" that may occur earlier in the year.

We trust the above and attached information will be of benefit to the Township and appreciate the opportunity to assist the Township in developing its road improvement plan.

Respectfully submitted,



Eric St. Pierre, P.Eng
Transportation Engineer
TK/ESP/ms



Turner Kuhlmeier, E.I.T.
Transportation E.I.T.

Statement of Limitations

This report has been prepared by D.M. Wills Associates on behalf of the Township of North Dundas. The conclusions and recommendations in this report are based on available background documentation and discussions with applicable Township staff at the time of preparation.

The report is intended to document the 2020 Roads Needs Study Report findings and assist the Township in developing budgetary plans for investment into their road network.

Any use which a third party makes of this report, other than as a Road Needs Study Report is the responsibility of such third parties. D.M. Wills Associates Limited accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or action taken based on using this report for purposes other than as a summary of the 2020 Road Needs Study Report findings.

Appendix A

Unit Price Form

ROAD IMPROVEMENT COSTS

Township of North Dundas

Unit Costs	Units	Unit Cost
Granular A	t	\$14.50
Granular B	t	\$17.00
Hot Mix	t	\$120.00
Earth Excavation	m3	\$12.00
Asphalt Removal	m2	\$6.00
Asphalt Removal - Partial Depth	m2	\$3.00
Removal of Concrete Curb & Gutter	m	\$25.00
Concrete Curb & Gutter	m	\$100.00
In-Place Full Depth Reclamation	m2	\$4.00
Surface Treatment - Single	m2	\$3.00
Surface Treatment - Double	m2	\$5.00
Granular A Conversion	2.2	t/m3
Granular B Conversion	2	t/m3
Hot Mix Conversion	2.45	t/m3

Gravel (50mm)								
Item	Width - m	Depth - mm	Conversion Factor	Unit		Quantity	Unit Cost	Cost/km (x 1000)
Granular A	7.0	75	2.2	t		1155	\$14.50	\$ 17
							G	17

Frost Heave Treatment								
Item	Width - m	Depth - mm	Conversion Factor	Unit		Quantity	Unit Cost	Cost/50m Digout (x 1000)
Earth Excavation	8.0	800		m3		320	\$12.00	\$ 4
Granular A	7.0	150	2.2	t		115.5	\$14.50	\$ 2
Granular B	8.0	650	2	t		520	\$17.00	\$ 9
							FT	14

Surface Treatment - Rural/Semi Urban - Single [ST1]								
Item	Width - m	Depth - mm	Conversion Factor	Unit		Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Single (Overlay)	7.0			m2		7000	\$3.00	\$ 21
							ST1	21

Surface Treatment - Rural/Semi Urban - Double [ST2]								
Item	Width - m	Depth - mm	Conversion Factor	Unit		Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Double (Overlay)	7.0			m2		7000	\$5.00	\$ 35
							ST2	35

Surface Treatment - Rural/Semi Urban - Double with Removal of Existing [ST2R]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Double	7.0			m2		7000	\$5.00	\$ 35
Removal Asphalt Pavement	7.0	16		m2		7000	\$6.00	\$ 42
							ST2R	77

Surface Treatment - Rural/Semi Urban - Double with Granular Base [ST2A]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Double	7.0			m2		7000	\$5.00	\$ 35
Granular A	7.0	150	2.2	t		2310	\$14.50	\$ 33
							ST2A	68

Surface Treatment - Rural/Semi Urban - Double with Pulverization and Granular Base [ST2PA]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Double	7.0			m2		7000	\$5.00	\$ 35
Granular A	7.0	150	2.2	†		2310	\$14.50	\$ 33
Pulverizing	7.0			m2		7000.0	\$4.00	\$ 28
Minor Items @ 25%								\$ 7
							ST2PA	103

Surface Treatment - Rural/Semi Urban - Widening and Double with Pulverization and Granular Base [ST2PAW]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Surface Treatment - Double	7.0			m2		7000	\$5.00	\$ 35
Granular A	7.0	150	2.2	†		2310	\$14.50	\$ 33
Pulverizing	7.0			m2		7000.0	\$4.00	\$ 28
Earth Excavation	2	450		m3		900	\$12.00	\$ 11
Granular B	1	450	2	†		900	\$17.00	\$ 15
Minor Items @ 25%								\$ 14
							ST2PAW	136

Resurfacing - Rural/Semi Urban Single Lift Overlay [RO1]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction **	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	3	50	2.45	†	74	441	\$120.00	\$ 53
Granular A	1.5	50	2.2	†		165	\$14.50	\$ 2
Minor Items @ 15%								\$ 8
							RO1	64

Resurfacing - Rural/Semi Urban - Double Lift Overlay [RO2]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction **	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	3	90	2.45	†	66	728	\$120.00	\$ 87
Granular A	1.5	90	2.2	†		297	\$14.50	\$ 4
Minor Items @ 15%								\$ 14
							RO2	105

Resurfacing - Urban - Single Lift Mill and Pave [RMP1]								
Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	4.25	50	2.45	†		521	\$120.00	\$ 62
Remove Curb and Gutter				m		200	\$25.00	\$ 5.00
Curb and Gutter - 20%				m		200	\$100.00	\$ 20.00
Milling	4.25			m2		4250	\$3.00	\$ 12.75
Minor Items @ 25%								\$ 25
							RMP1	125

Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	4.25	90	2.45	t		937	\$120.00	\$ 112
Remove Curb and Gutter				m		200	\$25.00	\$ 5.00
Curb and Gutter - 20%				m		200	\$100.00	\$ 20.00
Milling	4.25			m2		4250	\$3.00	\$ 12.75
Minor Items @ 25%								\$ 38
							RMP2	188

Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	3	50	2.45	†		367.5	\$120.00	\$ 44
Granular A	1.5	50	2.2	†		165	\$14.50	\$ 2
Pulverize	3			m2		3000	\$4.00	\$ 12.00
Minor Items @ 25%								\$ 15
							PP1	73

Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Hot Mix	3	90	2.45	†		661.5	\$120.00	\$ 79
Granular A	1.5	90	2.2	†		297	\$14.50	\$ 4
Pulverize	3			m2		3000	\$4.00	\$ 12
Minor Items @ 25%								\$ 24
							PP2	120

Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction **	Quantity	Unit Cost	Cost/km (x 1000)
Earth Excavation	2	600		m3		1200	\$12.00	\$ 14
Granular A	5	150	2.2	†		1650	\$14.50	\$ 24
Granular B	5	450	2	†		4500	\$17.00	\$ 77
Hot Mix	8	50	2.45	†	196	1176	\$120.00	\$ 141
Milling	4			m2		4000	\$3.00	\$ 12
Minor Items @ 25%								\$ 67
							RW1	335

Item	Width - m	Depth - mm	Conversion Factor	Unit	Crossfall Correction	Quantity	Unit Cost	Cost/km (x 1000)
Earth Excavation	2	600		m3		1200	\$12.00	\$ 14
Granular A	5	150	2.2	†		1650	\$14.50	\$ 24
Granular B	5	450	2	†		4500	\$17.00	\$ 77
Hot Mix	8	90	2.45	†	353	2117	\$120.00	\$ 254
Milling	4			m2		4000	\$3.00	\$ 12
Minor Items @ 25%								\$ 95
							RW2	476

Gravel Road Widening								
<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Earth Excavation	2	600		m3		1200	\$12.00	\$ 14
Granular A	1	150	2.2	t		330	\$14.50	\$ 5
Granular B	1	450	2	t		900	\$17.00	\$ 15
Minor Items @ 25%								\$ 9
							GW	43

Rural: Full Excavation and Reconstruction - Gravel (6 m surface width)								
<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Earth Excavation	5	600		m3		3000	\$12.00	\$ 36
Granular A	3	150	2.2	t		990	\$14.50	\$ 14
Granular B	5	450	2	t		4500	\$17.00	\$ 77
Minor Items @ 25%								\$ 32
							Recon G	159

Rural: Full Excavation and Reconstruction - 1 Lift								
<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Asphalt Removal - Full Depth	3			m2		3000	\$6.00	\$ 18
Earth Excavation	5	600		m3		3000	\$12.00	\$ 36
Granular A	4	150	2.2	t		1320	\$14.50	\$ 19
Granular B	5	450	2	t		4500	\$17.00	\$ 77
Hot Mix	3	50	2.45	t		368	\$120.00	\$ 44
Minor Items @ 25%								\$ 48
							Recon 1R	242

Semi-Urban: Full Excavation and Reconstruction - 1 Lift								
<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Asphalt Removal - Full Depth	3			m2		3000	\$6.00	\$ 18
Earth Excavation	5	600		m3		3000	\$12.00	\$ 36
Granular A	4	150	2.2	t		1320	\$14.50	\$ 19
Granular B	5	450	2	t		4500	\$17.00	\$ 77
Hot Mix	3	50	2.45	t		368	\$120.00	\$ 44
Minor Items @ 25%								\$ 48
							Recon 1S	242

Semi-Urban: Full Excavation and Reconstruction - 2 Lift								
<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Asphalt Removal - Full Depth	3			m2		3000	\$6.00	\$ 18
Earth Excavation	5	600		m3		3000	\$12.00	\$ 36
Granular A	4	150	2.2	t		1320	\$14.50	\$ 19
Granular B	5	450	2	t		4500	\$17.00	\$ 77
Hot Mix	3	90	2.45	t		662	\$120.00	\$ 79
Minor Items @ 25%								\$ 57
							Recon 2S	286

Urban: Full Excavation and Reconstruction - 2 Lift

<i>Item</i>	<i>Width - m</i>	<i>Depth - mm</i>	<i>Conversion Factor</i>	<i>Unit</i>	<i>Crossfall Correction</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Asphalt Removal - Full Depth	4.25			m2		4250	\$6.00	\$ 26
Earth Excavation	5.5	750		m3		4125	\$12.00	\$ 50
Granular A	4.5	150	2.2	t		1485	\$14.50	\$ 22
Granular B	5.5	600	2	t		6600	\$17.00	\$ 112
Hot Mix	4.25	90	2.45	t		937	\$120.00	\$ 112
Remove Curb and Gutter				m		1000	\$25.00	\$ 25.00
Curb and Gutter				m		1000	\$100.00	\$ 100.00
Minor Items @ 25%								\$ 80
							Recon 2U	526

Rout and Seal

<i>Item</i>				<i>Unit</i>		<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Rout and Seal				m		1000	\$4.00	\$ 4
							RS	4

Slurry Seal

<i>Item</i>	<i>Width - m</i>			<i>Unit</i>		<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Slurry Seal	7			m2		7000	\$3.15	\$ 22
							SS	22

Microsurfacing

<i>Item</i>	<i>Width - m</i>			<i>Unit</i>		<i>Quantity</i>	<i>Unit Cost</i>	<i>Cost/km (x 1000)</i>
Microsurfacing	7			m2		7000	\$6.00	\$ 42
							MS	42

Appendix B

Road Needs Summary Table – by Program

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
LCB to HCB Conversion Program								
RS339	Nesbitt Road - Section 307, From: Webb Rd To: Forward Rd	3.7	150	Convert LCB to HCB	\$542	4	5	46
RB198	Anne Street - Section 194, From: County Rd #38 To: Sesame St.	0.18	200	Convert LCB to HCB	\$26	6	9	52
RB015	Marionville Road - Section 035, From: Spruce Dr To: County Rd #31	1.2	269	Convert LCB to HCB	\$176	4	5	60
RB081a	Kerrs Ridge Road Section 125A, From: Lilico Rd to: Development Rd	1.2	250	Convert LCB to HCB	\$176	4	5	61
RB271	McMillan Street - Section 264, From: County Rd #7 To: King St.	0.12	150	Convert LCB to HCB	\$18	6	11	57
RB057	Forward Road S - Section 85, From: 1.1km North of Nation Valley Rd To: Nation Valley Rd	1.1	150	Convert LCB to HCB	\$161	4	5	58
RB140	Development Road - Section 134, From: Kerrs Ridge Rd To: County Rd #43	2.7	399	Convert LCB to HCB	\$395	6	7	66
RB075A	Allen Road - Section 112, French Settlement Road to Loughlin Road	2.8	88	Convert LCB to HCB	\$410	6	10	55
RB110	Fawcett Road - Section 164, From: County Road 38 To: West of County Road #31 (Start of Gravel)	2	75	Convert LCB to HCB	\$293	5	7	54
RB039B	Marionville Road - Section 34B, From: 1.8km West of Rodney Lane To: Spruce Drive	0.63	200	Convert LCB to HCB	\$92	5	6	62
RB134	River Road - Section 76, From: Queen St. West To: 1.0km West of Queen St.	1	150	Convert LCB to HCB	\$146	6	9	60
RB299	Maple Street - Section 178, From: Lough Road To: Scott Street	0.4	100	Convert LCB to HCB	\$59	7	13	57
RB053b	River Road - Section 77b, From: 1.0km West of Queen Street To: Nation Valley Rd	2.8	150	Convert LCB to HCB	\$410	6	9	60
RB106	Cameron Road - Section 158, From: County Rd #1 To: Development Rd	3.7	205	Convert LCB to HCB	\$542	5	7	63
RB196	Nation River Road - Section 188, From: County Road #3 To: Boundary Road	3.6	316	Convert LCB to HCB	\$527	6	10	68

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB014A	Gray Road - Section 064, From: 0.3km W of Helmer Road To: 0.7km E of Helmer Road	1	200	Convert LCB to HCB	\$146	6	11	65
RB136	Nation Valley Road - Section 82, From: River Rd To: 1.0km East of River Rd	1	117	Convert LCB to HCB	\$146	5	7	63
RB090	Levere Road - Section 136, From: Development Road To: County Rd #3	3.8	72	Convert LCB to HCB	\$556	5	7	60
RB069A	Guy Road - Section 105, From: County Road #3 To: Pemberton Road	3.7	152	Convert LCB to HCB	\$542	6	11	66
RB158	Bisson Road - Section 33, From: Marionville Rd To: Ormond Rd	1.5	100	Convert LCB to HCB	\$220	5	6	64
RB145	Cayer Road - Section 003, From: County Rd #3 To: Castor River	1.8	668	Convert LCB to HCB	\$264	7	13	76
RB129	Cayer Road - Section 004, From: Castor River To: County Rd #13	2.5	668	Convert LCB to HCB	\$366	7	13	76
RB301	Belmeade Road - Section 110, From: County Road #1 To: Dead End	1.7	150	Convert LCB to HCB	\$249	6	7	67
RB039	Marionville Road - Section 34, From: Bisson Road To: Rodney Lane	3.09	200	Convert LCB to HCB	\$452	7	13	69
RB137	Nation Valley Road - Section 83, From: 1.0km East of River Rd To: Forward Road	4.5	117	Convert LCB to HCB	\$659	5	7	66
RB073A	Belmeade Road - Section 110, From: County Road #31 To: County Road #1	10.1	360	Convert LCB to HCB	\$1,479	7	12	74
RB135	River Road - Section 78, From: Nation Valley Rd To: County Rd #31	3.8	148	Convert LCB to HCB	\$556	6	10	69
RS351	Van Camp Road - Section 319, From: Development Rd To: County Rd #3	3.7	250	Convert LCB to HCB	\$542	6	11	73
RB099	Shaw Road - Section 152A, From: Boundary Rd To: County Rd #43	3.9	150	Convert LCB to HCB	\$571	6	10	70
RB039A	Marionville Road - Section 34A, From: Rodney Lane To: 1.8 km West of Rodney Lane	1.8	200	Convert LCB to HCB	\$264	7	13	72
RB017	Liscumb Road - Section 002, From: County Rd # 43 To: County Rd #3	2.3	438	Convert LCB to HCB	\$337	7	13	77

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB096	Clark Road - Section 148, From: Railroad Crossing To: Boundary Rd	2.7	100	Convert LCB to HCB	\$395	5	9	69
RB019A	Crump Road - Section 058A, From: Laneway (1.6 km West) To: Dead End	2	49	Convert LCB to HCB	\$293	5	7	66
RB011	Spruce Drive - Section 007, From: Marionville Rd To: Ormond Rd	1.3	250	Convert LCB to HCB	\$190	7	13	75
RB005	St. Mary's Road - Section 096	0.4	49	Convert LCB to HCB	\$59	5	9	68
RB029A	Kittle Road - Section 057, From: County Road #7 To: Boyne Road	3.7	68	Convert LCB to HCB	\$542	6	10	70
RB100A	Hyndman Road - Section 152B, From: County Road #43 To: West Boundary	3.9	150	Convert LCB to HCB	\$571	8	15	74
RB058	Forward Road S - Section 86, From: Nation Valley Road To: Nesbitt Rd	1.7	149	Convert LCB to HCB	\$249	7	12	74
RB077A	French Settlement Road - Section 114, From: County Rd #1 To: East End	2	595	Convert LCB to HCB	\$293	8	15	81
RB006A	Loucks Road - Section 061	3	75	Convert LCB to HCB	\$439	6	10	71
RB088A	Church Road - Section 132, From: County Road #43 To: Development Road	3.7	237	Convert LCB to HCB	\$542	7	14	77
RB050	Boundary (Mtn Twp) Road - Section 71, From: French Settlement Road. To: Loughlin Ridge.	0.9	520	Convert LCB to HCB	\$132	8	15	81
RB105A	McIntyre Road - Section 157, From: Boundary Road To: Cameron Road	2.8	150	Convert LCB to HCB	\$410	7	13	76
RB104	Boundary (Mtn Twp) Road - Section 156, From: Cameron Road To: Dead End	0.24	49	Convert LCB to HCB	\$35	9	18	71
RB130	Rodney Lane - Section 005, From: County Rd #13 To: Ormond Rd	1.4	532	Convert LCB to HCB	\$205	8	16	82
RB021	Carruthers Road - Section 019, From: County Rd #32 To: County Rd #7	4	100	Convert LCB to HCB	\$586	7	14	77
RB300	Scott Street - Section 179, From: County Road 3 To: Maple Street	0.5	49	Convert LCB to HCB	\$73	7	13	75
RB133	Boundary (Win-Fin Twp) Road - Section 53, From: 1.6km North of Gibeault Road To: County Road #13	1.9	277	Convert LCB to HCB	\$278	9	18	83

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB079	Boundary (Mtn Twp) Road - Section 116, From: Belmeade Rd To: French Settlement Road	3.7	520	Convert LCB to HCB	\$542	9	18	86
RB098A	West Boundary Road - Section 150, From: Clarke Road To: N. Flesher Crescent	3.3	100	Convert LCB to HCB	\$483	8	15	81
RB097B	Ronson Road - Section 145, From: Boundary Rd To: Dead End	0.7	49	Convert LCB to HCB	\$103	9	18	79
RB046A	Boundary (Win-Fin Twp) Road - Section 51, From: County Road #9 To: Gibeault Road	2.4	277	Convert LCB to HCB	\$351	9	18	85
RB047	Boundary (Win-Fin Twp) Road - Section 52, From: Gibeault Rd To: 1.6km North of Gibeault Rd	1.6	277	Convert LCB to HCB	\$234	9	18	85
RB143	Irish Headline Road - Section 190, From: County Rd #1 To: County Rd #16	4	200	Convert LCB to HCB	\$586	9	17	84
RB080	Loughlin Ridge Road - Section 118, From: County Rd # 1 To: East End	1.9	75	Convert LCB to HCB	\$278	8	16	81
RB012	Belanger Road - Section 066, From: County Rd #43 To: Maple Ridge Rd	0.6	392	Convert LCB to HCB	\$88	9	19	87
RB016	Belanger Road - Section 067, From: Maple Ridge Rd To: Boyne Rd	2.7	392	Convert LCB to HCB	\$395	9	19	87
RB142	Van Camp Road - Section 141, From: Development Rd To: County Rd #1	3.7	245	Convert LCB to HCB	\$542	9	18	86
RB007	Connaught Road - Section 049	4	241	Convert LCB to HCB	\$586	9	18	86
RB138	Nesbitt Road - Section 90, From: County Rd #31 To: Webb Rd	1.4	153	Convert LCB to HCB	\$205	9	18	85
RB103	Cameron Road - Section 155, From: County Road #1 To: Boundary Road	3.7	205	Convert LCB to HCB	\$542	9	18	86
RB107	Cameron Road - Section 159, From: Development Rd To: 0.2km West of Margaret St.	2.9	205	Convert LCB to HCB	\$425	9	18	86
RB008	Limerick Road - Section 097	4.4	76	Convert LCB to HCB	\$644	9	16	84
RB031A	McMillan Road - Section 094, From: Forward Road To: County Road #7	1.8	150	Convert LCB to HCB	\$264	10	19	86

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB122	Wallace Road - Section 189, From: Boundary with South Dundas	0.1	100	<i>Convert LCB to HCB</i>	\$15	9	18	85
RB095	Ronson Road - Section 145, From: Simms St To: Dead End	2.1	75	<i>Convert LCB to HCB</i>	\$308	9	18	86
RB023	Marionville Road - Section 031, From: Stevens Rd To: County Rd #7	2.8	250	<i>Convert LCB to HCB</i>	\$410	10	19	89
RB131	Coulthart Road - Section 15, From: County Rd #7 To: 3.0km East of County Rd #7	3	67	<i>Convert LCB to HCB</i>	\$439	9	18	86
RB038	Coulthart Road - Section 16, From: 3.0km East of County Rd #7 To: Boundary Rd	1	67	<i>Convert LCB to HCB</i>	\$146	9	18	86
RB022	Marionville Road - Section 030, From: County Rd #32 To: Stevens Rd	1.5	217	<i>Convert LCB to HCB</i>	\$220	10	19	89
NOW Needs								
RB294	Droppo Road - Section 95 A, From: 0.3km East of Forward Road To: 0.5km West of County Road #7	1.7	300	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$260	3	4	40
RB160	Old Carriage Lane - Section 41, From: Forest Hill Rd. To: County Rd #31	1	277	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$442	6	7	53
RB257	Industrial Drive - Section 250, From: Queen St To: Railroad Crossing	0.4	202	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$177	5	7	50
RB074	Allen Road - Section 111, From: Belmeade Road To: French Settlement Road (Unmaintained)	1.1	49	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$168	3	4	39
RS337	Industrial Ave - Section 305, From: County Rd #31 To: Dead End	0.06	100	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$27	4	5	46
RB083	Spruit Road - Section 127, From: Development Road To: 2.6km East of Development Road	2.6	100	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$398	5	6	46
RB159	Forest Hill Road - Section 40, From: County Rd #31 To: Dead End	0.6	200	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$265	6	7	53
RB175	Christina Crescent - Section 122, From: St. John's St. To: St. John St.	0.3	75	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$133	5	4	47
RB250	John Street - Section 243, From: County Rd #7 To: Francis St.	0.15	75	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$66	5	6	48

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB202	Beach Street - Section 198, From: County Rd #3 To: Victoria St.	0.14	100	Recon 1S - Full Reconstruction + 1 Lift	\$62	5	7	51
RB258	Brannen Drive - Section 251, From: Industrial Dr. To: 75m East of Industrial Dr.	0.08	49	Recon 1S - Full Reconstruction + 1 Lift	\$35	5	7	47
RB062	Nesbitt Road - Section 92, From: Forward Road To: Dead End	0.3	49	Recon 1S - Full Reconstruction + 1 Lift	\$133	4	5	47
RB174	St. John's - Section 121, From: County Rd #1 To: Dead End	0.3	49	Recon 1S - Full Reconstruction + 1 Lift	\$133	5	4	47
RB256	Harper Street - Section 249, From: Railroad Crossing To: Cul de Sac	0.21	49	Recon 1S - Full Reconstruction + 1 Lift	\$93	5	7	48
RB251	John Street - Section 244, From: Francis St. To: Dead End	0.08	49	Recon 1S - Full Reconstruction + 1 Lift	\$35	5	6	48
RB153	McConnell Court - Section 25, From: Hume St. To: Cul de Sac	0.1	49	Recon 1S - Full Reconstruction + 1 Lift	\$44	6	7	49
RB197	Sandy Row Road - Section 193, From: 2.9km West of County Rd #16 To: County Rd #1	1.2	422	Recon 1R - Full Reconstruction + 1 Lift	\$530	5	7	67
RB178	Development Road - Section 135, From: County Rd #43 To: County Rd #3	6.85	399	Recon 1R - Full Reconstruction + 1 Lift	\$3,027	6	7	68
RB172	Loughlin Ridge Road - Section 118, From: Boundary Rd To: County Rd # 1	3.9	245	Recon 1R - Full Reconstruction + 1 Lift	\$1,724	6	7	67
RB166	Falcone Lane - Section 68, From: County Road #43 To: Cul de Sac	0.4	49	Recon 1R - Full Reconstruction + 1 Lift	\$177	5	7	63
1 - 5 Year Needs								
RB240	Clarence Street - Section 233, From: County Rd #38 To: Louise St.	0.13	968	PP1 - Pulverize and Pave 1 Lift	\$22	6	10	55
RB247	York Street - Section 240, From: County rod #38 To: Hospital Entrance	0.14	528	PP1 - Pulverize and Pave 1 Lift	\$24	6	9	51
RB207	Clarence Street - Section 203A, From: County Rd #38 To: Albert St.	0.2	400	PP1 - Pulverize and Pave 1 Lift	\$34	5	8	52
RS325	Albert Street - Section 293, From: Main St. To: Victoria St.	0.21	400	PP1 - Pulverize and Pave 1 Lift	\$35	5	8	53
RB213	Fred Street - Section 207, From: County Rd #38 To: Community Centre	0.36	389	PP1 - Pulverize and Pave 1 Lift	\$61	6	9	53

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB177	Kerrs Ridge Road - Section 124, From: County Rd #43 To: 0.3km East of County Rd #1	0.7	334	PP1 - Pulverize and Pave 1 Lift	\$118	6	8	54
RB221	Centre Street - Section 214, From: North St. To: Dufferin St.	0.11	200	PP1 - Pulverize and Pave 1 Lift	\$19	6	9	51
RB235	Church Street - Section 228, From: Cass St. To: 61m West of Cass St.	0.06	400	PP1 - Pulverize and Pave 1 Lift	\$10	6	11	58
RB147	Ormond Road - Section 008, From: County Rd 31 To: Rodney Rd	2.6	979	Recon 1R - Full Reconstruction + 1 Lift	\$1,149	5	8	67
RB144	Dawley Drive - Section 001, From: County Rd #3 To: County Rd #43	0.5	250	PP1 - Pulverize and Pave 1 Lift	\$84	6	10	55
RB265	Thompson Road - Section 258, From: Faubert Ave. To: Cul de Sac	0.33	200	PP1 - Pulverize and Pave 1 Lift	\$56	6	8	54
RB181	Clark Road - Section 146, From: County Rd #1 To: 0.9km West of County Rd#1	0.9	244	PP1 - Pulverize and Pave 1 Lift	\$152	6	11	57
RB192	Drew Drive - Section 184, From: Sandy Row Rd. To: Georgian St.	0.3	200	PP1 - Pulverize and Pave 1 Lift	\$51	6	11	58
RB171	Boundary (Mtn Twp) Road - Section 117, From: Loughlin Ridge Rd To: County Rd #43	1.1	520	Recon 1R - Full Reconstruction + 1 Lift	\$486	6	10	67
RB194	Nationview Drive - Section 186, From: Sandy Row Rd To: Francis Rd	0.3	110	PP1 - Pulverize and Pave 1 Lift	\$51	6	10	55
RB193	Georgian Street - Section 185, From: Drew Drive. To: South Nation Way	0.15	150	PP1 - Pulverize and Pave 1 Lift	\$25	6	11	58
RB248	Howard Street - Section 241, From: County Rd #7 To: Dead End	0.23	100	PP1 - Pulverize and Pave 1 Lift	\$39	6	10	55
RB210	York Court - Section 205, From: Albert Street To: Cul de Sac	0.18	49	PP1 - Pulverize and Pave 1 Lift	\$30	6	9	50
RB185	Margaret Street - Section 162A, From: Cameron Street To: Sullivan Street	0.1	49	PP1 - Pulverize and Pave 1 Lift	\$17	6	10	52
RB186	Sarah Street - Section 162B, From: Sullivan Street To: County Road #3	0.1	49	PP1 - Pulverize and Pave 1 Lift	\$17	6	10	52
RB226	Whitney Street - Section 219, From: County Rd #3 To: Dead End	0.11	49	PP1 - Pulverize and Pave 1 Lift	\$19	6	10	52

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB200	Quart Court - Section 196, From: Sesame St. To: Cul de Sac	0.09	49	PP1 - Pulverize and Pave 1 Lift	\$15	6	10	53
RB163	Bridle Path - Section 44, From: Old Carriage Lane To: Dead End	0.2	75	PP1 - Pulverize and Pave 1 Lift	\$34	6	10	56
RB220	North Street - Section 213B, From: 70m East of Centre St.	0.05	49	PP1 - Pulverize and Pave 1 Lift	\$8	6	10	54
RB195	Francis Street - Section 187, From: Nationview Rd To: Nationview Rd	0.3	75	PP1 - Pulverize and Pave 1 Lift	\$51	6	10	57
RB001	Loucks Road - Section 062	0.3	100	Recon 1R - Full Reconstruction + 1 Lift	\$133	6	8	62
RB170	Winchester Springs Road - Section 88, From: Gary Rd To: County Rd #31	2.9	155	Recon 1R - Full Reconstruction + 1 Lift	\$1,282	6	9	66
RB010	Maple Ridge Road - Section 065	2.7	200	PP1 - Pulverize and Pave 1 Lift	\$456	6	11	68
RB225	Alexander Street - Section 218, From: County Rd #3/Main To: Dead End	0.23	175	Recon 1R - Full Reconstruction + 1 Lift	\$102	6	10	68
RB167	Queensway Road - Section 74, From: County Road #43 To: River Road	0.3	75	Recon 1R - Full Reconstruction + 1 Lift	\$133	6	10	69
RB284	Queen Street East - Section 278, From: King St. To: County Rd #7	0.12	1069	PP1 - Pulverize and Pave 1 Lift	\$20	6	11	83
RS327	Baker Road - Section 295, From: Pemberton Road To: County Road #31	1.8	75	Recon 1R - Full Reconstruction + 1 Lift	\$795	6	10	71
RB224	Gladstone Street - Section 217, From: County Rd #3 To: Dead End	0.35	332	Recon 2U - Full Reconstruction + 2 Lifts	\$338	6	9	79
RB288	College Street - Section 283, From: Church St. To: Mill St.	0.54	400	Recon 2U - Full Reconstruction + 2 Lifts	\$522	6	9	80
RS324	Albert Street - Section 292, From: Clarence St To: Sesame St.	0.37	400	Recon 2U - Full Reconstruction + 2 Lifts	\$357	6	10	82
RB277	Casselman Street - Section 271, From: Water St. To: Ralph St.	0.09	150	Recon 2U - Full Reconstruction + 2 Lifts	\$87	6	8	80
RB203	Victoria Street - Section 199, From: Albert St. To: Cul de Sac	0.34	100	Recon 2U - Full Reconstruction + 2 Lifts	\$328	6	10	81
RB281	Emma Street - Section 275, From: Dead End To: Albert St.	0.08	49	Recon 2U - Full Reconstruction + 2 Lifts	\$77	6	8	80
RB274	Water Street - Section 267, From: County Rd #7 To: 220m SE of County Rd #7	0.22	100	PP1 - Pulverize and Pave 1 Lift	\$37	6	11	83

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
6 - 10 Year Needs								
RB286	College Street - Section 281, From: South St. West To: May St.	0.18	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$38	7	13	58
RB287	College Street - Section 282, From: Mary St. To: Church St.	0.35	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$74	7	13	58
RB238	Victoria Street - Section 231, From: 205m East of Church St. To: Louise St.	0.21	400	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$35	7	12	58
RB246A	May Street - Section 239, From: County Rd #38 To: Hospital Entrance	0.14	412	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$30	7	13	59
RB239	Victoria Street - Section 232, From: Louise St. To: County Rd #38	0.14	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$30	7	13	59
RB241	Clarence Street - Section 234, From: Louise St. To: 100m West of Cass Dr.	0.27	450	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$57	7	13	61
RB209	York Street - Section 204, From: St. Lawrence St. To: Albert Street	0.18	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$38	7	13	58
RB245	Fred Street - Section 238, From: Community Centre To: Christie Lane	0.24	273	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$51	7	14	60
RB152	Alyssa Cr. Section 24, From: County Road #7 to Thomas Drive around Alyssa Cr. To Thomas Drive	0.75	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$127	6	12	58
RB228	Annable Road - Section 221, From: Dufferin St. To: Howatd St.	0.2	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$42	7	14	59
RB264	Faubert Avenue - Section 257, From: South St. To: Thompson Rd	0.37	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$63	6	12	59
RB269	Mary Street - Section 262, From: County Rd #7 To: College St.	0.32	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$68	7	13	59
RB151	Thomas Dr - Section 23, From: Alyssa Cr. To: Moffat St/Cty Rd 7.	0.25	100	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$42	6	12	56
RB252	Francis Street - Section 245, From: John St. To: Joseph St.	0.07	75	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$12	6	12	55
RB253	Francis Street - Section 246, From: Joseph St. To: County Rd #37	0.13	75	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$22	6	12	55
RB244	Henderson Crescent - Section 237, From: Louise St. To: Louise St.	0.31	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$66	7	14	61
RB188	Church Street - Section 180, From: County Rd #3 To: Maple St.	0.1	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$21	7	13	58

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB211	May Street - Section 206A, From: County Rd #38 To: Albert St.	0.2	49	RMP1 - Mill & Pave, 1 Lift	\$42	6	13	56
RB155	Steinburg Court - Section 27, From: Ralph St. To: Cul de Sac	0.2	49	PP1 - Pulverize and Pave 1 Lift	\$34	7	12	57
RB255	Joseph Street - Section 248, From: Francis St. To: Harper St.	0.12	100	RMP1 - Mill & Pave, 1 Lift	\$25	7	13	62
RB243	Louise Street - Section 236, From: York St. To: Dead End	0.36	100	RMP1 - Mill & Pave, 1 Lift	\$76	7	14	62
RS352	Wintonia Dr. - Section 320, From: St Lawrence St. To: James St.	0.25	100	RMP1 - Mill & Pave, 1 Lift	\$53	7	13	63
RB125	North Street - Section 213A, From: Centre Street To: 70m East of Centre Street	0.07	49	RMP1 - Mill & Pave, 1 Lift	\$15	7	13	59
RB199	Sesame Street - Section 195, From: Albert St. To: Dead End	0.3	49	RMP1 - Mill & Pave, 1 Lift	\$63	7	14	59
RB003	Frood Corners Road - Section 060	0.15	49	RMP1 - Mill & Pave, 1 Lift	\$32	7	14	61
RB206	MacDonald Crescent - Section 202, From: Clarence St. To: Cul de Sac	0.13	49	RMP1 - Mill & Pave, 1 Lift	\$27	7	14	61
RB173	Maurice Street - Section 120, From: County Rd #1 To: Cul de Sac	0.3	49	RMP1 - Mill & Pave, 1 Lift	\$63	7	13	61
RB156	Mill Street - Section 28, From: County Rd #13 To: County Rd #13	0.25	49	RMP1 - Mill & Pave, 1 Lift	\$53	8	14	61
RB215	Queen Street East - Section 209, From: County Rd #3 To: Dead End	0.18	49	RMP1 - Mill & Pave, 1 Lift	\$38	8	14	62
RB132	Cloverdale Road - Section 45, From: County Road #31 To: Dead End	1.3	100	RMP1 - Mill & Pave, 1 Lift	\$275	7	14	70
RB187	Lough Road - Section 177, From: Section #176 South To: County Rd #3	0.4	152	RMP1 - Mill & Pave, 1 Lift	\$85	7	13	75
RB019	Crump Road - Section 058, From: County Road #7 To: Thibault Ct	0.2	175	RMP1 - Mill & Pave, 1 Lift	\$42	7	14	77
RB189	Bank Street - Section 181, From: Maple St. To: County Rd #3	0.1	49	RMP1 - Mill & Pave, 1 Lift	\$21	7	13	73
RB084	Spruit Road - Section 128, From: 2.6km East of Development Road To: County Road #31	5	100	RMP1 - Mill & Pave, 1 Lift	\$1,058	7	13	76

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB182	Clark Road - Section 147, From: 0.9km West of County Rd #1 To: Railroad Crossing	0.6	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$127	7	14	77
RB222	Centre Street - Section 215, From: Dufferin St. To: Queen St.	0.09	494	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$19	7	13	85
RB164	Boyne Road - Section 47, From: Ottawa St. To: Town Limits	0.3	1810	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$63	8	14	90
RB212	May Street - Section 206B, From: Albert St. To: Dead End	0.3	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$63	7	13	85
RB291	Victoria Street - Section 287, From: County Rd #7 To: College St.	0.34	422	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$72	7	14	87
RB266	South Street East - Section 259, From: County Rd #7 To: Dead End	0.23	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$39	6	12	84
RB204	Victoria Street - Section 200, From: Albert St. To: County Rd #38	0.2	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$42	7	13	86
RB283	Queen Street East - Section 277, From: Albert St. To: King St.	0.07	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$15	7	14	88
RB254	Joseph Street - Section 247, From: County Rd #7 To: Francis St.	0.21	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$44	7	13	86
RB267	Riverside Drive - Section 260, From: South St. East To: South St. East	0.28	49	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$47	6	12	84
RB282	Emma Street - Section 276, From: Albert St. To: County Rd #7	0.19	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$40	7	13	87
RB278	Ralph Street - Section 272, From: King St. To: Albert St.	0.11	200	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$23	7	14	88
RB276	Casselman Street - Section 270, From: Water St. To: Dead End	0.02	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$4	7	14	88
RB127	Gillard's Lane - Section 279, From: County Road #7 To: Dead End	0.03	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$6	7	14	88
No Identified Need (Preservation & Regular Resurfacing Strategies)								
RB111	Gypsy Lane - Section 165, From: County Road #31 To: County Road #38	2.1	200	<i>G - Gravel (75mm)</i>	\$24	6	10	52
RB236	Church Street - Section 229, From: 61m West of Cass St. To: Christie Ln	0.41	400	<i>Preventative Maintenance</i>	-	8	16	63

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB243A	Louise Street - Section 236A, From: Victoria St. To: York St. (220M)	0.21	400	<i>Preventative Maintenance</i>	-	8	16	64
RB124	Sandy Row - Section 192, From: County Road #16 To: 1.2km East of County Road #1	2.9	400	<i>G - Gravel (75mm)</i>	\$33	8	15	65
RB191	Bridge Street - Section 183, From: County Rd #3 To: Sandy Row Rd	0.5	350	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$48	8	15	65
RB076	Observatory Road - Section 113, From: County Road #1 To: Allen Road (unmaintained)	0.6	49	<i>G - Gravel (75mm)</i>	\$7	6	8	50
RS326	Albert Street - Section 294, From: Victoria St. To: Clarence St.	0.11	400	<i>Preventative Maintenance</i>	-	9	18	67
RB296	Jennings Road - Section 109, From: 0.7km North of Spruit Road To: 0.3km South of Armstrong Road	4.15	49	<i>G - Gravel (75mm)</i>	\$48	5	10	51
RB297	McIntosh Road - Section 167, From: Pemberton Road To: 2.5km West of Pemberton Road	2.7	49	<i>G - Gravel (75mm)</i>	\$31	5	8	51
RB114	Moore Road - Section 169, From: Timmins Road To: County Road #3	2	49	<i>G - Gravel (75mm)</i>	\$23	7	14	51
RB217	Gordon Street - Section 211, From: Centre St. To: Parmalat Entrance	0.04	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$4	8	15	62
RB298	Barkley Road - Section 170A, From: Bailey Road To: 0.2km West of County Road #3	1.3	49	<i>G - Gravel (75mm)</i>	\$15	6	10	52
RB093	Levere Road - Section 139, From: Development Road To: Dead End	0.1	75	<i>G - Gravel (75mm)</i>	\$1	6	12	55
RS328	Christie Lane - Section 296, From: Fred St. To: Church St.	0.75	300	<i>Preventative Maintenance</i>	-	9	17	66
RB208	Clarence Street - Section 203B, From: Albert St. To: Dead End	0.22	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$21	8	15	63
RB237	Victoria Street - Section 230, From: Church St. To: 205m East of Church St.	0.21	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$20	8	15	63
RS336	Fred Street - Section 304, From: County Rd #38 To: Dead End (East)	0.45	273	<i>Preventative Maintenance</i>	-	9	17	66

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB066	Baldwin Road - Section 102A, From: Sandy Row Road To: 0.1km South of Sandy Row Road	0.1	49	G - Gravel (75mm)	\$1	6	12	54
RB295	Baldwin Road - Section 102B, From: 0.1km South of Sandy Row Road To: Kirkwood Road	1.8	49	G - Gravel (75mm)	\$21	6	12	54
RS345	Steen Road - Section 313, From: Thompson Road To: County Road #3	1.5	49	G - Gravel (75mm)	\$17	6	12	54
RB108	Sullivan Street - Section 161, From: County Rd #3 To: Margaret St.	0.2	49	G - Gravel (75mm)	\$2	6	12	54
RB227	Howard Street - Section 220, From: County Rd #3 To: Dufferin St.	0.23	223	Preventative Maintenance	-	8	16	65
RB270	Armstrong Place - Section 263, From: Mary St. To: Cul de Sac	0.11	386	Preventative Maintenance	-	9	18	69
RB234	Church Street - Section 227, From: County Rd #38 To: Cass St.	0.25	500	Preventative Maintenance	-	9	18	71
RB242	Cass Crescent - Section 235, From: Clarence St. To: Victoria St.	0.2	400	Preventative Maintenance	-	9	18	70
RB092	Crowder Road - Section 138, From: County Road #43 To: Levere Road	2.5	100	G - Gravel (75mm)	\$29	8	16	61
RB070	Cass Bridge Road - Section 106, From: Pemberton Road To: County Road #31	2.6	49	G - Gravel (75mm)	\$30	8	16	57
RB020	Kyle Road - Section 018, From: County Road #13 To: Carruthers Road	1.3	75	G - Gravel (75mm)	\$15	7	14	60
RS346	Tabitha Crescent - Section 314, From: Lori Ln. To: Lori Ln.	0.48	100	RO1 - Hot Mix Overlay, 1 Lift	\$46	8	15	62
RB180	Van Allen Street - Section 144, From: County Rd #1 To: Dead End	0.2	100	RO1 - Hot Mix Overlay, 1 Lift	\$19	8	15	62
RB064	Pemberton Road - Section 100, From: County Road #43 To: Sandy Row Road	4	115	G - Gravel (75mm)	\$46	7	14	63
RB263	Martin Street - Section 256, From: Streeterpete Rd. To: South St.	0.08	200	Preventative Maintenance	-	9	17	67
RB067	Kirkwood Road - Section 103, From: County Road #5 To: Sandy Row Road	1.5	50	G - Gravel (75mm)	\$17	6	12	58

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB063	Lafleur Road - Section 99, From: County Road #3 To: Thompson Road	1.6	75	G - Gravel (75mm)	\$18	7	14	61
RB179A	Simms Street - Section 143, From: County Rd #1 To: Clarke Rd	0.4	100	Preventative Maintenance	-	8	16	63
RB231	Bailey Avenue - Section 224, From: Holmes St. To: County Rd #3	0.39	150	Preventative Maintenance	-	8	16	66
RB120	Lough Road - Section 175, From: Peppermill Rd To: Cameron Rd	0.3	150	G - Gravel (75mm)	\$3	8	16	66
RB045	Boundary (Win-Fin Twp) Road - Section 50, From: County Road #9 To: Dead End	0.9	49	G - Gravel (75mm)	\$10	7	14	59
RB013	Helmer Road - Section 063, From: Maple Ridge Road To: gray Road	1	49	G - Gravel (75mm)	\$12	7	14	59
RB056	Nation Valley Road - Section 81, From: Bridge Westerly To: Dead End	1	49	G - Gravel (75mm)	\$12	7	14	59
RB032	Webb Road - Section 091B, From: Nesbitt Road To: Dead End	1.1	49	G - Gravel (75mm)	\$13	7	14	59
RB002	Kelly Road - Section 056, From: Connaught Rd To: County Rd #9	1.2	100	G - Gravel (75mm)	\$14	8	16	64
RB113	McIntosh Road - Section 168, From: County Road #3 To: 2.5km West of Pemberton Road	2.5	100	G - Gravel (75mm)	\$29	8	16	64
RB065	Sandy Row Road - Section 101, From: Pemberton Road To: Closed Bridge	4.7	250	G - Gravel (75mm)	\$54	7	14	70
RB216	Queen Street East - Section 210, From: County Rd #3 To: Centre St.	0.19	400	Preventative Maintenance	-	10	19	73
RB089	Development Road - Section 133, From: Kerr's Ridge Rd To: Dead End	0.2	49	G - Gravel (75mm)	\$2	7	14	60
RS333	Elizabeth Drive - Section 301, From: Erin Ave. To: Forward Rd.	0.26	150	Preventative Maintenance	-	9	18	67
RB121	Lough Road - Section 176, From: Cameron Road To: 0.4km North of County Road #3	2.4	150	G - Gravel (75mm)	\$28	8	16	67
RS331	Country Lane - Section 299, From: Armstrong Rd To: Lafortunate Dr	0.63	275	Preventative Maintenance	-	9	18	71

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB027	McLaughlin Road - Section 017, From: Coulthart Road To: County Road #13	1.5	75	G - Gravel (75mm)	\$17	7	14	63
RB052	Ball Road - Section 73, From: River Road To: County Road #43	0.8	77	G - Gravel (75mm)	\$9	7	14	63
RB109	Mulloy Road - Section 163, From: Cameron Road To: Van Camp Road	1.4	100	G - Gravel (75mm)	\$16	8	16	65
RS347	Thibault Ct - Section 315, From: Crump Road #7 To: Dead End	0.6	100	RO1 - Hot Mix Overlay, 1 Lift	\$57	8	15	65
RB229	Dufferin Street - Section 222, From: Dead End To: Cul de Sac	0.32	150	Preventative Maintenance	-	9	18	68
RB037	Thompson Road - Section 14, From: County Road #3 To: County Road #7	7.2	232	G - Gravel (75mm)	\$83	8	16	71
RB091	Levere Road - Section 137, From: County Road #3 To: Dead End	0.7	75	G - Gravel (75mm)	\$8	7	14	64
RB085	Lillico Road - Section 129, From: County Road #43 To: Church Road	1.4	100	G - Gravel (75mm)	\$16	8	16	66
RB086	Lillico Road - Section 130, From: Church Road To: Kerr's Ridge Road	1.2	100	G - Gravel (75mm)	\$14	8	16	66
RB168	Queen Street West - Section 75, From: River Rd To: County Rd #43	0.4	99	Preventative Maintenance	-	8	16	66
RB116	Bailey Road - Section 171, From: Cameron Road To: Development Road	1.8	49	G - Gravel (75mm)	\$21	7	14	62
RB115	Barkley Road - Section 170B, From: County Road #3 To: 0.2km West of County Road #3	0.2	49	G - Gravel (75mm)	\$2	7	14	62
RB112	Brown's Road - Section 166, From: Guy Road To: McIntosh Road	0.5	49	G - Gravel (75mm)	\$6	7	14	62
RB026	Gibeault Road - Section 054, From: Boundary Road To: Dead End	1.3	49	G - Gravel (75mm)	\$15	7	14	62
RB028	Coyne Road - Section 055, From: Gibeault Road To: Connaught Road	1.3	49	G - Gravel (75mm)	\$15	7	14	62
RB087	Blaine Road - Section 131, From: Lillico Road To: Church Road	1.8	75	G - Gravel (75mm)	\$21	8	16	65
RB233	Louise Street - Section 226, From: Church St. To: County Rd #3	0.11	400	Preventative Maintenance	-	10	19	75

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB048	Link Road - Section 69, From: County Road #31 To: Dead End	0.6	49	G - Gravel (75mm)	\$7	8	16	63
RB036	North Wing Road - Section 13, From: County Road #3 To: Thompson Road	2.3	49	G - Gravel (75mm)	\$27	8	16	63
RB165	Boyne Road - Section 48, From: Town Limits To: County Rd #7	9	1000	Preventative Maintenance	-	7	16	80
RS306	Erin Street - Section 290, From: Lori Ln. To: Elizabeth Dr.	0.26	100	Preventative Maintenance	-	9	18	67
RB260	Michael Street - Section 253, From: South St. West To: Streeterpete Rd	0.08	100	Preventative Maintenance	-	9	17	67
RS340	Shellian Ln - Section 308, From: Coleman Cr 1 To: Travis Tr	0.1	100	Preventative Maintenance	-	8	16	67
RS341	Shellian Ln - Section 309, From: County Road 1 To: Coleman Cr	0.1	100	Preventative Maintenance	-	8	16	67
RB261	Streeterpete Road - Section 254, From: Michael St. To: Pauline St.	0.35	100	Preventative Maintenance	-	9	17	67
RS348	Travis Trail - Section 316, From: Coleman Cr To: South End	0.07	100	Preventative Maintenance	-	8	16	67
RS349	Travis Trail - Section 317, From: Kerr's Ridge To: Shellian Ln	0.12	100	Preventative Maintenance	-	8	16	67
RS350	Travis Trail - Section 318, From: Shellian Ln To: Coleman Cr	0.16	100	Preventative Maintenance	-	8	16	67
RS329	Clarence Street - Section 297, From: 150m West of Cass Dr. To: Christine Ln.	0.16	300	Preventative Maintenance	-	10	20	74
RB025	Stevens Road - Section 029, From: Carruthers Road To: Marionville Road	1.7	100	G - Gravel (75mm)	\$20	7	14	68
RB230	Holmes Street - Section 223, From: Dead End East To: Dead End West	0.14	49	Preventative Maintenance	-	8	16	64
RB035	South Wing Road - Section 12, From: County Road #3 To: County Road #3	2.6	49	G - Gravel (75mm)	\$30	8	16	64
RB094	Van Camp Road - Section 142, From: County Road #1 To: Dead End	0.9	49	G - Gravel (75mm)	\$10	8	16	64
RB051	Baker Road - Section 72, From: County Road #31 To: River Road	5.5	71	G - Gravel (75mm)	\$64	8	16	66

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RS330	Coleman Cr - Section 298, From: Shellian Ln To: Travis Tr	0.26	75	<i>Preventative Maintenance</i>	-	8	16	67
RB161	Lafortune Drive - Section 42, From: Old Carriage Lane To: Dead End	0.5	49	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$48	8	15	65
RB162	Lori Elizabeth Street - Section 43, From: La Fortune Drive To: Dead End	0.3	49	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$29	8	15	65
RB214	Wickers Way - Section 208, From: Fred St. To: May St.	0.13	49	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$12	8	15	65
RB118	Nelson Road - Section 173, From: Development Road To: County Road #1	3.7	72	<i>G - Gravel (75mm)</i>	\$43	8	16	67
RB104A	Boundary (Mtn Twp) Road - Section 156A, From: Nation River Rd To: Cameron Road	4.9	43	<i>G - Gravel (75mm)</i>	\$57	8	16	65
RB034	Steen Road - Section 10B, From: County Road #13 To: Thompson Road	1.5	62	<i>G - Gravel (75mm)</i>	\$17	8	16	67
RS334	Fawcett Road - Section 302, From: County Road #31 To: West of County Road #31 (Start of Gravel)	1	75	<i>G - Gravel (75mm)</i>	\$12	8	16	68
RS342	Silver Fox Court - Section 310, From: Rodney Ln To: Cul-De-Sac	0.2	49	<i>Preventative Maintenance</i>	-	8	16	66
RS343	Silver Fox Court - Section 311, From: Rodney Ln To: North End	0.4	49	<i>G - Gravel (75mm)</i>	\$5	8	16	66
RB101	Norton Road - Section 153, From: Van Camp Road To: Pepperville Road	1.2	100	<i>G - Gravel (75mm)</i>	\$14	8	16	70
RB149	Ralph Street - Section 21, From: County Rd #13 To: Hume St.	0.5	250	<i>Preventative Maintenance</i>	-	10	20	75
RB054	Summers Road - Section 79, From: Baker Road To: County Road 43	1.3	19	<i>G - Gravel (75mm)</i>	\$15	8	16	63
RS332	Drew Drive - Section 300, From: Georgian St To: Sandy Row	0.65	200	<i>Preventative Maintenance</i>	-	10	19	74
RB071	Jennings Road - Section 107, From: County Road #43 To: Spruit Road	1.4	49	<i>G - Gravel (75mm)</i>	\$16	8	16	67
RB072	Jennings Road - Section 108, From: Spruit Road To: 0.7km North of Spruit Road	0.7	49	<i>G - Gravel (75mm)</i>	\$8	8	16	67

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB176	Kelso Street - Section 123, From: County Rd #1 To: Dead End	0.1	49	<i>Preventative Maintenance</i>	-	9	18	67
RS338	Lori Lane - Section 306, From: Forward Rd. To: Erin Ave.	0.27	49	<i>Preventative Maintenance</i>	-	9	18	67
RB119	Nelson Road - Section 174, From: County Road #1 To: Dead End	0.2	49	<i>G - Gravel (75mm)</i>	\$2	8	16	67
RB262	Pauline Street - Section 255, From: Streeterpete Rd. To: 45m South of Streeterpete Rd.	0.05	49	<i>Preventative Maintenance</i>	-	9	17	67
RB102	Pepperville Road - Section 154, From: County Road #1 To: Dead End	1.8	49	<i>G - Gravel (75mm)</i>	\$21	8	16	67
RB117	Simzer Road - Section 172, From: Development Road To: Dead End	0.1	49	<i>G - Gravel (75mm)</i>	\$1	8	16	67
RB061	Webb Road - Section 091A, From: Nesbitt Road To: Winchester Springs Road	1.4	15	<i>G - Gravel (75mm)</i>	\$16	8	16	63
RB218	Dufferin Street - Section 212A, From: Centre St. To: Parmalat Entrance	0.04	150	<i>Preventative Maintenance</i>	-	10	19	73
RB275	Water Street - Section 268, From: 220m SE of County Rd #7 To: Dam	0.09	100	<i>Preventative Maintenance</i>	-	9	18	71
RB126	Water Street - Section 269, From Dam To: Dead End	1.3	49	<i>G - Gravel (75mm)</i>	\$15	8	16	68
RB268	William Street - Section 261, From: County Road #7 To: Dead End	0.19	49	<i>Preventative Maintenance</i>	-	9	18	68
RS344	South Nation Way - Section 312, From: Georgian Street To: Drew Drive	0.25	150	<i>Preventative Maintenance</i>	-	10	19	74
RB078	French Settlement Road - Section 115, From: County Rd #1 To: Boundary Rd	3.8	595	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$361	8	15	81
RB154	Merkley Place - Section 26, From: Ralph St. To: Cul de Sac	0.1	49	<i>Preventative Maintenance</i>	-	9	17	69
RB055	Rae Road - Section 80, From: County Road #43 To: River Road	2.4	130	<i>G - Gravel (75mm)</i>	\$28	8	16	74
RB049	Hogoboam Road - Section 70, From: County Road #31 To: Pemberton Road	1.8	75	<i>G - Gravel (75mm)</i>	\$21	8	16	72
RB059	Winchester Springs Road - Section 87, From: Forward Rd To: Gary Rd	2	150	<i>G - Gravel (75mm)</i>	\$23	7	14	75

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB042	Jennings Road - Section 38, From: Armstrong Road To: Dead End	0.3	49	<i>Preventative Maintenance</i>	-	9	18	71
RB081b	Kerrs Ridge Road - Section 125B, From: Development Rd #1 To: Riddell Rd	3.6	150	<i>G - Gravel (75mm)</i>	\$42	8	16	76
RB060	Hollister Road - Section 89, From: County Road #5 To: County Road #31	2.8	100	<i>G - Gravel (75mm)</i>	\$32	8	16	74
RB004	Byers Road- Section 059	0.1	49	<i>Preventative Maintenance</i>	-	10	19	72
RB068	Timmins Road - Section 104, From: Sandy Row Road To: County Road #3	2.1	75	<i>G - Gravel (75mm)</i>	\$24	8	16	74
RB053	River Road - Section 77a, From: River Road at Ball Road To: 2.7 km from Ball Road	1.7	150	<i>G - Gravel (75mm)</i>	\$20	8	16	77
RB123	Sandy Row - Section 191, From: County Road #16 To: Dead End	2.2	49	<i>G - Gravel (75mm)</i>	\$25	8	15	73
RB139	Droppo Road - Section 95B, From: county Road #7 To: 0.5km West of County Road #7	0.5	300	<i>Preventative Maintenance</i>	-	10	19	81
RB044	Benson George Road - Section 46, From: County Road #31 To: Dead End	1.3	49	<i>G - Gravel (75mm)</i>	\$15	8	16	74
RB190	Mill Street - Section 182, From: County Rd #3 To: Bridge St.	0.15	49	<i>Preventative Maintenance</i>	-	10	20	74
RB082	Riddell Road - Section 126, From: Kerrs Ridge Road To: County Road #43	2.9	67	<i>G - Gravel (75mm)</i>	\$33	7	14	77
RB041A	Merkley Road - Section 37, From: Harmony Road To: Armstrong Road	1.5	100	<i>Preventative Maintenance</i>	-	9	18	79
RB146A	Rodney Lane - Section 006, From: Ormond Rd To: Marionville Road	1.4	550	<i>Preventative Maintenance</i>	-	9	18	86
RS335	Forward Road - Section 303, From: Winchester Springs Rd To: Nesbitt Rd	1.35	100	<i>G - Gravel (75mm)</i>	\$16	8	16	80
RB184	Cameron Road - Section 160, From: 0.2km West of Margaret St. To: County Rd #3	0.4	205	<i>Preventative Maintenance</i>	-	9	18	86
RS305	Sherrer Way - Section 289, From: County Road #38 to Dead End.	0.2	49	<i>Preventative Maintenance</i>	-	8	16	82

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB148	Ormond Road - Section 009, From: Rodney Rd To: Bisson Rd	3.2	800	<i>Preventative Maintenance</i>	-	10	20	90
RB018	Ormond Road - Section 10A, From: Bisson Rd To: County Rd #13	3.3	40	<i>G - Gravel (75mm)</i>	\$38	8	16	82
RB223	Centre Street - Section 216, From: Queen St. To: County Rd #3	0.13	494	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$12	8	15	89
RB157	Marionville Road - Section 32, From: Gregoire Road To: Bisson Road	1.3	300	<i>Preventative Maintenance</i>	-	10	19	88
RB169	Forward Road - Section 84, From: County Rd #43 To: 2.8km West of County Rd # 43	2.8	550	<i>Preventative Maintenance</i>	-	10	20	90
RB043A	Armstrong Road - Section 39, From: Dead End To: County Road #31	3.4	49	<i>Preventative Maintenance</i>	-	9	17	85
RB040A	Harmony Road - Section 36, From: County Road #31 To: Dead End	2	67	<i>Preventative Maintenance</i>	-	9	18	86
RB259	South Street - Section 252, From: County Rd #43 To: Main St.	0.56	586	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$53	8	15	91
RS323	Kerrs Ridge Road - Section 291, From: 0.3 km East of County Rd #1 To: Lilico Rd	2.1	250	<i>Preventative Maintenance</i>	-	10	20	90
RB150	Hume Street - Section 22, From: Ralph St. To: County Rd #13	0.25	150	<i>Preventative Maintenance</i>	-	10	20	90
RB279	Albert Street - Section 273, From: Ralph St. To: Queen St. East	0.15	400	<i>Preventative Maintenance</i>	-	8	16	92
RB280	Albert Street - Section 274, From: Queen St. East To: Emma St.	0.18	400	<i>Preventative Maintenance</i>	-	8	16	92
RB232	Christie Lane - Section 225, From: County Rd #3 To: Church St.	0.11	300	<i>Preventative Maintenance</i>	-	8	16	92
RB024	Dagenais Road - Section 020, From: County Road #7 To: Dead End	1.2	49	<i>Preventative Maintenance</i>	-	10	19	89
RB009	Dillabough Road - Section 098	1.1	49	<i>Preventative Maintenance</i>	-	10	19	89
RB285	Church Street - Section 280, From: County Rd #7 To: College St.	0.34	250	<i>Preventative Maintenance</i>	-	8	16	92
RB030	Shay Road - Section 093, From: Forward Road To: Dead End	0.8	49	<i>Preventative Maintenance</i>	-	10	20	90

Road Needs Summary Table – by Program

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB292	George Street - Section 288, From: Victoria St. To: Mill St.	0.08	49	<i>Preventative Maintenance</i>	-	8	16	91
RB289	Mill Street - Section 284, From: College St. To: George St.	0.23	49	<i>Preventative Maintenance</i>	-	8	16	91
RB290	Mill Street - Section 285, From: George St. To: Victoria St.	0.16	49	<i>Preventative Maintenance</i>	-	8	16	91
RB272	King Street - Section 265, From: McMillan St. To: Queen St.	0.27	660	<i>Preventative Maintenance</i>	-	9	18	96
RB249	Hummel Street - Section 242, From: County Rd #7 To: Dead End	0.24	100	<i>Preventative Maintenance</i>	-	9	17	95
RB205	Caleb Street - Section 201, From: County Rd #38 To: Albert St.	0.2	250	<i>Preventative Maintenance</i>	-	10	19	98

Appendix C

Road Needs Summary Table – by Structural Adequacy

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
NOW Needs								
RB294	Droppo Road - Section 95 A, From: 0.3km East of Forward Road To: 0.5km West of County Road #7	1.7	300	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$260	3	4	40
RS339	Nesbitt Road - Section 307, From: Webb Rd To: Forward Rd	3.7	150	<i>Convert LCB to HCB</i>	\$542	4	5	46
RB160	Old Carriage Lane - Section 41, From: Forest Hill Rd. To: County Rd #31	1	277	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$442	6	7	53
RB257	Industrial Drive - Section 250, From: Queen St To: Railroad Crossing	0.4	202	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$177	5	7	50
RB074	Allen Road - Section 111, From: Belmeade Road To: French Settlement Road (Unmaintained)	1.1	49	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$168	3	4	39
RS337	Industrial Ave - Section 305, From: County Rd #31 To: Dead End	0.06	100	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$27	4	5	46
RB083	Spruit Road - Section 127, From: Development Road To: 2.6km East of Development Road	2.6	100	<i>Recon G - Full Reconstruction 6m Gravel Road</i>	\$398	5	6	46
RB159	Forest Hill Road - Section 40, From: County Rd #31 To: Dead End	0.6	200	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$265	6	7	53
RB175	Christina Crescent - Section 122, From: St. John's St. To: St. John St.	0.3	75	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$133	5	4	47
RB250	John Street - Section 243, From: County Rd #7 To: Francis St.	0.15	75	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$66	5	6	48
RB202	Beach Street - Section 198, From: County Rd #3 To: Victoria St.	0.14	100	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$62	5	7	51
RB015	Marionville Road - Section 035, From: Spruce Dr To: County Rd #31	1.2	269	<i>Convert LCB to HCB</i>	\$176	4	5	60
RB258	Brannen Drive - Section 251, From: Industrial Dr. To: 75m East of Industrial Dr.	0.08	49	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$35	5	7	47
RB062	Nesbitt Road - Section 92, From: Forward Road To: Dead End	0.3	49	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$133	4	5	47
RB174	St. John's - Section 121, From: County Rd #1 To: Dead End	0.3	49	<i>Recon 1S - Full Reconstruction + 1 Lift</i>	\$133	5	4	47

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB081a	Kerrs Ridge Road Section 125A, From: Lilico Rd to: Development Rd	1.2	250	Convert LCB to HCB	\$176	4	5	61
RB256	Harper Street - Section 249, From: Railroad Crossing To: Cul de Sac	0.21	49	Recon 1S - Full Reconstruction + 1 Lift	\$93	5	7	48
RB251	John Street - Section 244, From: Francis St. To: Dead End	0.08	49	Recon 1S - Full Reconstruction + 1 Lift	\$35	5	6	48
RB057	Forward Road S - Section 85, From: 1.1km North of Nation Valley Rd To: Nation Valley Rd	1.1	150	Convert LCB to HCB	\$161	4	5	58
RB153	McConnell Court - Section 25, From: Hume St. To: Cul de Sac	0.1	49	Recon 1S - Full Reconstruction + 1 Lift	\$44	6	7	49
RB140	Development Road - Section 134, From: Kerrs Ridge Rd To: County Rd #43	2.7	399	Convert LCB to HCB	\$395	6	7	66
RB197	Sandy Row Road - Section 193, From: 2.9km West of County Rd #16 To: County Rd #1	1.2	422	Recon 1R - Full Reconstruction + 1 Lift	\$530	5	7	67
RB110	Fawcett Road - Section 164, From: County Road 38 To: West of County Road #31 (Start of Gravel)	2	75	Convert LCB to HCB	\$293	5	7	54
RB039B	Marionville Road - Section 34B, From: 1.8km West of Rodney Lane To: Spruce Drive	0.63	200	Convert LCB to HCB	\$92	5	6	62
RB178	Development Road - Section 135, From: County Rd #43 To: County Rd #3	6.85	399	Recon 1R - Full Reconstruction + 1 Lift	\$3,027	6	7	68
RB106	Cameron Road - Section 158, From: County Rd #1 To: Development Rd	3.7	205	Convert LCB to HCB	\$542	5	7	63
RB172	Loughlin Ridge Road - Section 118, From: Boundary Rd To: County Rd # 1	3.9	245	Recon 1R - Full Reconstruction + 1 Lift	\$1,724	6	7	67
RB136	Nation Valley Road - Section 82, From: River Rd To: 1.0km East of River Rd	1	117	Convert LCB to HCB	\$146	5	7	63
RB090	Levere Road - Section 136, From: Development Road To: County Rd #3	3.8	72	Convert LCB to HCB	\$556	5	7	60
RB158	Bisson Road - Section 33, From: Marionville Rd To: Ormond Rd	1.5	100	Convert LCB to HCB	\$220	5	6	64

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB301	Belmeade Road - Section 110, From: County Road #1 To: Dead End	1.7	150	Convert LCB to HCB	\$249	6	7	67
RB137	Nation Valley Road - Section 83, From: 1.0km East of River Rd To: Forward Road	4.5	117	Convert LCB to HCB	\$659	5	7	66
RB166	Falcone Lane - Section 68, From: County Road #43 To: Cul de Sac	0.4	49	Recon 1R - Full Reconstruction + 1 Lift	\$177	5	7	63
RB019A	Crump Road - Section 058A, From: Laneway (1.6 km West) To: Dead End	2	49	Convert LCB to HCB	\$293	5	7	66
1 - 5 Year Needs								
RB240	Clarence Street - Section 233, From: County Rd #38 To: Louise St.	0.13	968	PP1 - Pulverize and Pave 1 Lift	\$22	6	10	55
RB247	York Street - Section 240, From: County rod #38 To: Hospital Entrance	0.14	528	PP1 - Pulverize and Pave 1 Lift	\$24	6	9	51
RB207	Clarence Street - Section 203A, From: County Rd #38 To: Albert St.	0.2	400	PP1 - Pulverize and Pave 1 Lift	\$34	5	8	52
RS325	Albert Street - Section 293, From: Main St. To: Victoria St.	0.21	400	PP1 - Pulverize and Pave 1 Lift	\$35	5	8	53
RB213	Fred Street - Section 207, From: County Rd #38 To: Community Centre	0.36	389	PP1 - Pulverize and Pave 1 Lift	\$61	6	9	53
RB177	Kerrs Ridge Road - Section 124, From: County Rd #43 To: 0.3km East of County Rd #1	0.7	334	PP1 - Pulverize and Pave 1 Lift	\$118	6	8	54
RB221	Centre Street - Section 214 , From: North St. To: Dufferin St.	0.11	200	PP1 - Pulverize and Pave 1 Lift	\$19	6	9	51
RB235	Church Street - Section 228, From: Cass St. To: 61m West of Cass St.	0.06	400	PP1 - Pulverize and Pave 1 Lift	\$10	6	11	58
RB198	Anne Street - Section 194, From: County Rd #38 To: Sesame St.	0.18	200	Convert LCB to HCB	\$26	6	9	52
RB147	Ormond Road - Section 008, From: County Rd 31 To: Rodney Rd	2.6	979	Recon 1R - Full Reconstruction + 1 Lift	\$1,149	5	8	67
RB144	Dawley Drive - Section 001, From: County Rd #3 To: County Rd #43	0.5	250	PP1 - Pulverize and Pave 1 Lift	\$84	6	10	55
RB265	Thompson Road - Section 258, From: Faubert Ave. To: Cul de Sac	0.33	200	PP1 - Pulverize and Pave 1 Lift	\$56	6	8	54

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB181	Clark Road - Section 146, From: County Rd #1 To: 0.9km West of County Rd#1	0.9	244	PP1 - Pulverize and Pave 1 Lift	\$152	6	11	57
RB192	Drew Drive - Section 184, From: Sandy Row Rd. To: Georgian St.	0.3	200	PP1 - Pulverize and Pave 1 Lift	\$51	6	11	58
RB171	Boundary (Mtn Twp) Road - Section 117, From: Loughlin Ridge Rd To: County Rd #43	1.1	520	Recon 1R - Full Reconstruction + 1 Lift	\$486	6	10	67
RB271	McMillan Street - Section 264, From: County Rd #7 To: King St.	0.12	150	Convert LCB to HCB	\$18	6	11	57
RB194	Nationview Drive - Section 186, From: Sandy Row Rd To: Francis Rd	0.3	110	PP1 - Pulverize and Pave 1 Lift	\$51	6	10	55
RB193	Georgian Street - Section 185, From: Drew Drive. To: South Nation Way	0.15	150	PP1 - Pulverize and Pave 1 Lift	\$25	6	11	58
RB248	Howard Street - Section 241, From: County Rd #7 To: Dead End	0.23	100	PP1 - Pulverize and Pave 1 Lift	\$39	6	10	55
RB210	York Court - Section 205, From: Albert Street To: Cul de Sac	0.18	49	PP1 - Pulverize and Pave 1 Lift	\$30	6	9	50
RB075A	Allen Road - Section 112, French Settlement Road to Loughlin Road	2.8	88	Convert LCB to HCB	\$410	6	10	55
RB134	River Road - Section 76, From: Queen St. West To: 1.0km West of Queen St.	1	150	Convert LCB to HCB	\$146	6	9	60
RB053b	River Road - Section 77b, From: 1.0km West of Queen Street To: Nation Valley Rd	2.8	150	Convert LCB to HCB	\$410	6	9	60
RB185	Margaret Street - Section 162A, From: Cameron Street To: Sullivan Street	0.1	49	PP1 - Pulverize and Pave 1 Lift	\$17	6	10	52
RB186	Sarah Street - Section 162B, From: Sullivan Street To: County Road #3	0.1	49	PP1 - Pulverize and Pave 1 Lift	\$17	6	10	52
RB226	Whitney Street - Section 219, From: County Rd #3 To: Dead End	0.11	49	PP1 - Pulverize and Pave 1 Lift	\$19	6	10	52
RB200	Quart Court - Section 196, From: Sesame St. To: Cul de Sac	0.09	49	PP1 - Pulverize and Pave 1 Lift	\$15	6	10	53
RB163	Bridle Path - Section 44, From: Old Carriage Lane To: Dead End	0.2	75	PP1 - Pulverize and Pave 1 Lift	\$34	6	10	56

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB220	North Street - Section 213B, From: 70m East of Centre St.	0.05	49	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$8	6	10	54
RB195	Francis Street - Section 187, From: Nationview Rd To: Nationview Rd	0.3	75	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$51	6	10	57
RB196	Nation River Road - Section 188, From: County Road #3 To: Boundary Road	3.6	316	<i>Convert LCB to HCB</i>	\$527	6	10	68
RB014A	Gray Road - Section 064, From: 0.3km W of Helmer Road To: 0.7km E of Helmer Road	1	200	<i>Convert LCB to HCB</i>	\$146	6	11	65
RB001	Loucks Road - Section 062	0.3	100	<i>Recon 1R - Full Reconstruction + 1 Lift</i>	\$133	6	8	62
RB170	Winchester Springs Road - Section 88, From: Gary Rd To: County Rd #31	2.9	155	<i>Recon 1R - Full Reconstruction + 1 Lift</i>	\$1,282	6	9	66
RB010	Maple Ridge Road - Section 065	2.7	200	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$456	6	11	68
RB069A	Guy Road - Section 105, From: County Road #3 To: Pemberton Road	3.7	152	<i>Convert LCB to HCB</i>	\$542	6	11	66
RB225	Alexander Street - Section 218, From: County Rd #3/Main To: Dead End	0.23	175	<i>Recon 1R - Full Reconstruction + 1 Lift</i>	\$102	6	10	68
RB135	River Road - Section 78, From: Nation Valley Rd To: County Rd #31	3.8	148	<i>Convert LCB to HCB</i>	\$556	6	10	69
RS351	Van Camp Road - Section 319, From: Development Rd To: County Rd #3	3.7	250	<i>Convert LCB to HCB</i>	\$542	6	11	73
RB099	Shaw Road - Section 152A, From: Boundary Rd To: County Rd #43	3.9	150	<i>Convert LCB to HCB</i>	\$571	6	10	70
RB096	Clark Road - Section 148, From: Railroad Crossing To: Boundary Rd	2.7	100	<i>Convert LCB to HCB</i>	\$395	5	9	69
RB167	Queensway Road - Section 74, From: County Road #43 To: River Road	0.3	75	<i>Recon 1R - Full Reconstruction + 1 Lift</i>	\$133	6	10	69
RB005	St. Mary's Road - Section 096	0.4	49	<i>Convert LCB to HCB</i>	\$59	5	9	68
RB284	Queen Street East - Section 278, From: King St. To: County Rd #7	0.12	1069	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$20	6	11	83
RB029A	Kittle Road - Section 057, From: County Road #7 To: Boyne Road	3.7	68	<i>Convert LCB to HCB</i>	\$542	6	10	70
RS327	Baker Road - Section 295, From: Pemberton Road To: County Road #31	1.8	75	<i>Recon 1R - Full Reconstruction + 1 Lift</i>	\$795	6	10	71

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB006A	Loucks Road - Section 061	3	75	<i>Convert LCB to HCB</i>	\$439	6	10	71
RB224	Gladstone Street - Section 217, From: County Rd #3 To: Dead End	0.35	332	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$338	6	9	79
RB288	College Street - Section 283, From: Church St. To: Mill St.	0.54	400	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$522	6	9	80
RS324	Albert Street - Section 292, From: Clarence St To: Sesame St.	0.37	400	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$357	6	10	82
RB277	Casselman Street - Section 271, From: Water St. To: Ralph St.	0.09	150	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$87	6	8	80
RB203	Victoria Street - Section 199, From: Albert St. To: Cul de Sac	0.34	100	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$328	6	10	81
RB281	Emma Street - Section 275, From: Dead End To: Albert St.	0.08	49	<i>Recon 2U - Full Reconstruction + 2 Lifts</i>	\$77	6	8	80
RB274	Water Street - Section 267, From: County Rd #7 To: 220m SE of County Rd #7	0.22	100	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$37	6	11	83
6 - 10 Year Needs								
RB286	College Street - Section 281, From: South St. West To: May St.	0.18	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$38	7	13	58
RB287	College Street - Section 282, From: Mary St. To: Church St.	0.35	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$74	7	13	58
RB238	Victoria Street - Section 231, From: 205m East of Church St. To: Louise St.	0.21	400	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$35	7	12	58
RB246A	May Street - Section 239, From: County Rd #38 To: Hospital Entrance	0.14	412	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$30	7	13	59
RB239	Victoria Street - Section 232, From: Louise St. To: County Rd #38	0.14	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$30	7	13	59
RB241	Clarence Street - Section 234, From: Louise St. To: 100m West of Cass Dr.	0.27	450	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$57	7	13	61
RB209	York Street - Section 204, From: St. Lawrence St. To: Albert Street	0.18	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$38	7	13	58
RB245	Fred Street - Section 238, From: Community Centre To: Christie Lane	0.24	273	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$51	7	14	60
RB152	Alyssa Cr. Section 24, From: County Road #7 to Thomas Drive around Alyssa Cr. To Thomas Drive	0.75	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$127	6	12	58

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB228	Annable Road - Section 221, From: Dufferin St. To: Howatd St.	0.2	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$42	7	14	59
RB264	Faubert Avenue - Section 257, From: South St. To: Thompson Rd	0.37	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$63	6	12	59
RB269	Mary Street - Section 262, From: County Rd #7 To: College St.	0.32	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$68	7	13	59
RB151	Thomas Dr - Section 23, From: Alyssa Cr. To: Moffat St/Cty Rd 7.	0.25	100	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$42	6	12	56
RB299	Maple Street - Section 178, From: Lough Road To: Scott Street	0.4	100	<i>Convert LCB to HCB</i>	\$59	7	13	57
RB252	Francis Street - Section 245, From: John St. To: Joseph St.	0.07	75	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$12	6	12	55
RB253	Francis Street - Section 246, From: Joseph St. To: County Rd #37	0.13	75	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$22	6	12	55
RB244	Henderson Crescent - Section 237, From: Louise St. To: Louise St.	0.31	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$66	7	14	61
RB188	Church Street - Section 180, From: County Rd #3 To: Maple St.	0.1	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$21	7	13	58
RB211	May Street - Section 206A, From: County Rd #38 To: Albert St.	0.2	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$42	6	13	56
RB155	Steinburg Court - Section 27, From: Ralph St. To: Cul de Sac	0.2	49	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$34	7	12	57
RB255	Joseph Street - Section 248, From: Francis St. To: Harper St.	0.12	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$25	7	13	62
RB243	Louise Street - Section 236, From: York St. To: Dead End	0.36	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$76	7	14	62
RS352	Wintonia Dr. - Section 320, From: St Lawrence St. To: James St.	0.25	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$53	7	13	63
RB125	North Street - Section 213A, From: Centre Street To: 70m East of Centre Street	0.07	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$15	7	13	59
RB199	Sesame Street - Section 195, From: Albert St. To: Dead End	0.3	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$63	7	14	59
RB145	Cayer Road - Section 003, From: County Rd #3 To: Castor River	1.8	668	<i>Convert LCB to HCB</i>	\$264	7	13	76

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB129	Cayer Road - Section 004, From: Castor River To: County Rd #13	2.5	668	Convert LCB to HCB	\$366	7	13	76
RB039	Marionville Road - Section 34, From: Bisson Road To: Rodney Lane	3.09	200	Convert LCB to HCB	\$452	7	13	69
RB003	Frood Corners Road - Section 060	0.15	49	RMP1 - Mill & Pave, 1 Lift	\$32	7	14	61
RB206	MacDonald Crescent - Section 202, From: Clarence St. To: Cul de Sac	0.13	49	RMP1 - Mill & Pave, 1 Lift	\$27	7	14	61
RB173	Maurice Street - Section 120, From: County Rd #1 To: Cul de Sac	0.3	49	RMP1 - Mill & Pave, 1 Lift	\$63	7	13	61
RB156	Mill Street - Section 28, From: County Rd #13 To: County Rd #13	0.25	49	RMP1 - Mill & Pave, 1 Lift	\$53	8	14	61
RB215	Queen Street East - Section 209, From: County Rd #3 To: Dead End	0.18	49	RMP1 - Mill & Pave, 1 Lift	\$38	8	14	62
RB073A	Belmeade Road - Section 110, From: County Road #31 To: County Road #1	10.1	360	Convert LCB to HCB	\$1,479	7	12	74
RB039A	Marionville Road - Section 34A, From: Rodney Lane To: 1.8 km West of Rodney Lane	1.8	200	Convert LCB to HCB	\$264	7	13	72
RB017	Liscumb Road - Section 002, From: County Rd # 43 To: County Rd #3	2.3	438	Convert LCB to HCB	\$337	7	13	77
RB132	Cloverdale Road - Section 45, From: County Road #31 To: Dead End	1.3	100	RMP1 - Mill & Pave, 1 Lift	\$275	7	14	70
RB011	Spruce Drive - Section 007, From: Marionville Rd To: Ormond Rd	1.3	250	Convert LCB to HCB	\$190	7	13	75
RB058	Forward Road S - Section 86, From: Nation Valley Road To: Nesbitt Rd	1.7	149	Convert LCB to HCB	\$249	7	12	74
RB088A	Church Road - Section 132, From: County Road #43 To: Development Road	3.7	237	Convert LCB to HCB	\$542	7	14	77
RB187	Lough Road - Section 177, From: Section #176 South To: County Rd #3	0.4	152	RMP1 - Mill & Pave, 1 Lift	\$85	7	13	75
RB105A	McIntyre Road - Section 157, From: Boundary Road To: Cameron Road	2.8	150	Convert LCB to HCB	\$410	7	13	76
RB019	Crump Road - Section 058, From: County Road #7 To: Thibault Ct	0.2	175	RMP1 - Mill & Pave, 1 Lift	\$42	7	14	77

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB189	Bank Street - Section 181, From: Maple St. To: County Rd #3	0.1	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$21	7	13	73
RB084	Spruit Road - Section 128, From: 2.6km East of Development Road To: County Road #31	5	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$1,058	7	13	76
RB021	Carruthers Road - Section 019, From County Rd #32 To: County Rd #7	4	100	<i>Convert LCB to HCB</i>	\$586	7	14	77
RB182	Clark Road - Section 147, From: 0.9km West of County Rd #1 To: Railroad Crossing	0.6	100	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$127	7	14	77
RB300	Scott Street - Section 179, From: County Road 3 To: Maple Street	0.5	49	<i>Convert LCB to HCB</i>	\$73	7	13	75
RB222	Centre Street - Section 215, From: Dufferin St. To: Queen St.	0.09	494	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$19	7	13	85
RB164	Boyne Road - Section 47, From: Ottawa St. To: Town Limits	0.3	1810	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$63	8	14	90
RB212	May Street - Section 206B, From: Albert St. To: Dead End	0.3	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$63	7	13	85
RB291	Victoria Street - Section 287, From: County Rd #7 To: College St.	0.34	422	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$72	7	14	87
RB266	South Street East - Section 259, From: County Rd #7 To: Dead End	0.23	150	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$39	6	12	84
RB204	Victoria Street - Section 200, From: Albert St. To: County Rd #38	0.2	250	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$42	7	13	86
RB283	Queen Street East - Section 277, From: Albert St. To: King St.	0.07	400	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$15	7	14	88
RB254	Joseph Street - Section 247, From: County Rd #7 To: Francis St.	0.21	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$44	7	13	86
RB267	Riverside Drive - Section 260, From: South St. East To: South St. East	0.28	49	<i>PP1 - Pulverize and Pave 1 Lift</i>	\$47	6	12	84
RB282	Emma Street - Section 276, From: Albert St. To: County Rd #7	0.19	150	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$40	7	13	87
RB278	Ralph Street - Section 272, From: King St. To: Albert St.	0.11	200	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$23	7	14	88
RB276	Casselmann Street - Section 270, From: Water St. To: Dead End	0.02	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$4	7	14	88

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB127	Gillard's Lane - Section 279, From: County Road #7 To: Dead End	0.03	49	<i>RMP1 - Mill & Pave, 1 Lift</i>	\$6	7	14	88
No Identified Need (Preservation & Regular Resurfacing Strategies / or LCB-to-HCB conversion)								
RB111	Gypsy Lane - Section 165, From: County Road #31 To: County Road #38	2.1	200	<i>G - Gravel (75mm)</i>	\$24	6	10	52
RB236	Church Street - Section 229, From: 61m West of Cass St. To: Christie Ln	0.41	400	<i>Preventative Maintenance</i>	-	8	16	63
RB243A	Louise Street - Section 236A, From: Victoria St. To: York St. (220M)	0.21	400	<i>Preventative Maintenance</i>	-	8	16	64
RB124	Sandy Row - Section 192, From: County Road #16 To: 1.2km East of County Road #1	2.9	400	<i>G - Gravel (75mm)</i>	\$33	8	15	65
RB191	Bridge Street - Section 183, From: County Rd #3 To: Sandy Row Rd	0.5	350	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$48	8	15	65
RB076	Observatory Road - Section 113, From: County Road #1 To: Allen Road (unmaintained)	0.6	49	<i>G - Gravel (75mm)</i>	\$7	6	8	50
RS326	Albert Street - Section 294, From: Victoria St. To: Clarence St.	0.11	400	<i>Preventative Maintenance</i>	-	9	18	67
RB296	Jennings Road - Section 109, From: 0.7km North of Spruit Road To: 0.3km South of Armstrong Road	4.15	49	<i>G - Gravel (75mm)</i>	\$48	5	10	51
RB297	McIntosh Road - Section 167, From: Pemberton Road To: 2.5km West of Pemberton Road	2.7	49	<i>G - Gravel (75mm)</i>	\$31	5	8	51
RB114	Moore Road - Section 169, From: Timmins Road To: County Road #3	2	49	<i>G - Gravel (75mm)</i>	\$23	7	14	51
RB217	Gordon Street - Section 211, From: Centre St. To: Parmalat Entrance	0.04	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$4	8	15	62
RB298	Barkley Road - Section 170A, From: Bailey Road To: 0.2km West of County Road #3	1.3	49	<i>G - Gravel (75mm)</i>	\$15	6	10	52
RB093	Levere Road - Section 139, From: Development Road To: Dead End	0.1	75	<i>G - Gravel (75mm)</i>	\$1	6	12	55

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RS328	Christie Lane - Section 296, From: Fred St. To: Church St.	0.75	300	<i>Preventative Maintenance</i>	-	9	17	66
RB208	Clarence Street - Section 203B, From: Albert St. To: Dead End	0.22	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$21	8	15	63
RB237	Victoria Street - Section 230, From: Church St. To: 205m East of Church St.	0.21	200	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$20	8	15	63
RS336	Fred Street - Section 304, From: County Rd #38 To: Dead End (East)	0.45	273	<i>Preventative Maintenance</i>	-	9	17	66
RB066	Baldwin Road - Section 102A, From: Sandy Row Road To: 0.1km South of Sandy Row Road	0.1	49	<i>G - Gravel (75mm)</i>	\$1	6	12	54
RB295	Baldwin Road - Section 102B, From: 0.1km South of Sandy Row Road To: Kirkwood Road	1.8	49	<i>G - Gravel (75mm)</i>	\$21	6	12	54
RS345	Steen Road - Section 313, From: Thompson Road To: County Road #3	1.5	49	<i>G - Gravel (75mm)</i>	\$17	6	12	54
RB108	Sullivan Street - Section 161, From: County Rd #3 To: Margaret St.	0.2	49	<i>G - Gravel (75mm)</i>	\$2	6	12	54
RB227	Howard Street - Section 220, From: County Rd #3 To: Dufferin St.	0.23	223	<i>Preventative Maintenance</i>	-	8	16	65
RB270	Armstrong Place - Section 263, From: Mary St. To: Cul de Sac	0.11	386	<i>Preventative Maintenance</i>	-	9	18	69
RB234	Church Street - Section 227, From: County Rd #38 To: Cass St.	0.25	500	<i>Preventative Maintenance</i>	-	9	18	71
RB242	Cass Crescent - Section 235, From: Clarence St. To: Victoria St.	0.2	400	<i>Preventative Maintenance</i>	-	9	18	70
RB092	Crowder Road - Section 138, From: County Road #43 To: Levere Road	2.5	100	<i>G - Gravel (75mm)</i>	\$29	8	16	61
RB070	Cass Bridge Road - Section 106, From: Pemberton Road To: County Road #31	2.6	49	<i>G - Gravel (75mm)</i>	\$30	8	16	57
RB020	Kyle Road - Section 018, From: County Road #13 To: Carruthers Road	1.3	75	<i>G - Gravel (75mm)</i>	\$15	7	14	60
RS346	Tabitha Crescent - Section 314, From: Lori Ln. To: Lori Ln.	0.48	100	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$46	8	15	62

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB180	Van Allen Street - Section 144, From: County Rd #1 To: Dead End	0.2	100	RO1 - Hot Mix Overlay, 1 Lift	\$19	8	15	62
RB064	Pemberton Road - Section 100, From: County Road #43 To: Sandy Row Road	4	115	G - Gravel (75mm)	\$46	7	14	63
RB263	Martin Street - Section 256, From: Streeterpete Rd. To: South St.	0.08	200	Preventative Maintenance	-	9	17	67
RB067	Kirkwood Road - Section 103, From: County Road #5 To: Sandy Row Road	1.5	50	G - Gravel (75mm)	\$17	6	12	58
RB063	Lafleur Road - Section 99, From: County Road #3 To: Thompson Road	1.6	75	G - Gravel (75mm)	\$18	7	14	61
RB179A	Simms Street - Section 143, From: County Rd #1 To: Clarke Rd	0.4	100	Preventative Maintenance	-	8	16	63
RB231	Bailey Avenue - Section 224, From: Holmes St. To: County Rd #3	0.39	150	Preventative Maintenance	-	8	16	66
RB120	Lough Road - Section 175, From: Peppermill Rd To: Cameron Rd	0.3	150	G - Gravel (75mm)	\$3	8	16	66
RB045	Boundary (Win-Fin Twp) Road - Section 50, From: County Road #9 To: Dead End	0.9	49	G - Gravel (75mm)	\$10	7	14	59
RB013	Helmer Road - Section 063, From: Maple Ridge Road To: gray Road	1	49	G - Gravel (75mm)	\$12	7	14	59
RB056	Nation Valley Road - Section 81, From: Bridge Westerly To: Dead End	1	49	G - Gravel (75mm)	\$12	7	14	59
RB032	Webb Road - Section 091B, From: Nesbitt Road To: Dead End	1.1	49	G - Gravel (75mm)	\$13	7	14	59
RB002	Kelly Road - Section 056, From: Connaught Rd To: County Rd #9	1.2	100	G - Gravel (75mm)	\$14	8	16	64
RB113	McIntosh Road - Section 168, From: County Road #3 To: 2.5km West of Pemberton Road	2.5	100	G - Gravel (75mm)	\$29	8	16	64
RB065	Sandy Row Road - Section 101, From: Pemberton Road To: Closed Bridge	4.7	250	G - Gravel (75mm)	\$54	7	14	70
RB216	Queen Street East - Section 210, From: County Rd #3 To: Centre St.	0.19	400	Preventative Maintenance	-	10	19	73

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB089	Development Road - Section 133, From: Kerr's Ridge Rd To: Dead End	0.2	49	G - Gravel (75mm)	\$2	7	14	60
RS333	Elizabeth Drive - Section 301, From: Erin Ave. To: Forward Rd.	0.26	150	Preventative Maintenance	-	9	18	67
RB121	Lough Road - Section 176, From: Cameron Road To: 0.4km North of County Road #3	2.4	150	G - Gravel (75mm)	\$28	8	16	67
RS331	Country Lane - Section 299, From: Armstrong Rd To: Lafortunate Dr	0.63	275	Preventative Maintenance	-	9	18	71
RB027	McLaughlin Road - Section 017, From: Coulthart Road To: County Road #13	1.5	75	G - Gravel (75mm)	\$17	7	14	63
RB052	Ball Road - Section 73, From: River Road To: County Road #43	0.8	77	G - Gravel (75mm)	\$9	7	14	63
RB109	Mulloy Road - Section 163, From: Cameron Road To: Van Camp Road	1.4	100	G - Gravel (75mm)	\$16	8	16	65
RS347	Thibault Ct - Section 315, From: Crump Road #7 To: Dead End	0.6	100	RO1 - Hot Mix Overlay, 1 Lift	\$57	8	15	65
RB229	Dufferin Street - Section 222, From: Dead End To: Cul de Sac	0.32	150	Preventative Maintenance	-	9	18	68
RB037	Thompson Road - Section 14, From: County Road #3 To: County Road #7	7.2	232	G - Gravel (75mm)	\$83	8	16	71
RB091	Levere Road - Section 137, From: County Road #3 To: Dead End	0.7	75	G - Gravel (75mm)	\$8	7	14	64
RB085	Lillico Road - Section 129, From: County Road #43 To: Church Road	1.4	100	G - Gravel (75mm)	\$16	8	16	66
RB086	Lillico Road - Section 130, From: Church Road To: Kerr's Ridge Road	1.2	100	G - Gravel (75mm)	\$14	8	16	66
RB168	Queen Street West - Section 75, From: River Rd To: County Rd #43	0.4	99	Preventative Maintenance	-	8	16	66
RB116	Bailey Road - Section 171, From: Cameron Road To: Development Road	1.8	49	G - Gravel (75mm)	\$21	7	14	62
RB115	Barkley Road - Section 170B, From: County Road #3 To: 0.2km West of County Road #3	0.2	49	G - Gravel (75mm)	\$2	7	14	62
RB112	Brown's Road - Section 166, From: Guy Road To: McIntosh Road	0.5	49	G - Gravel (75mm)	\$6	7	14	62

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB026	Gibeault Road - Section 054, From: Boundary Road To: Dead End	1.3	49	G - Gravel (75mm)	\$15	7	14	62
RB028	Coyne Road - Section 055, From: Gibeault Road To: Connaught Road	1.3	49	G - Gravel (75mm)	\$15	7	14	62
RB087	Blaine Road - Section 131, From: Lillico Road To: Church Road	1.8	75	G - Gravel (75mm)	\$21	8	16	65
RB233	Louise Street - Section 226, From: Church St. To: County Rd #3	0.11	400	Preventative Maintenance	-	10	19	75
RB048	Link Road - Section 69, From: County Road #31 To: Dead End	0.6	49	G - Gravel (75mm)	\$7	8	16	63
RB036	North Wing Road - Section 13, From: County Road #3 To: Thompson Road	2.3	49	G - Gravel (75mm)	\$27	8	16	63
RB165	Boyne Road - Section 48, From: Town Limits To: County Rd #7	9	1000	Preventative Maintenance	-	7	16	80
RS306	Erin Street - Section 290, From: Lori Ln. To: Elizabeth Dr.	0.26	100	Preventative Maintenance	-	9	18	67
RB260	Michael Street - Section 253, From: South St. West To: Streeterpete Rd	0.08	100	Preventative Maintenance	-	9	17	67
RS340	Shellian Ln - Section 308, From: Coleman Cr 1 To: Travis Tr	0.1	100	Preventative Maintenance	-	8	16	67
RS341	Shellian Ln - Section 309, From: County Road 1 To: Coleman Cr	0.1	100	Preventative Maintenance	-	8	16	67
RB261	Streeterpete Road - Section 254, From: Michael St. To: Pauline St.	0.35	100	Preventative Maintenance	-	9	17	67
RS348	Travis Trail - Section 316, From: Coleman Cr To: South End	0.07	100	Preventative Maintenance	-	8	16	67
RS349	Travis Trail - Section 317, From: Kerr's Ridge To: Shellian Ln	0.12	100	Preventative Maintenance	-	8	16	67
RS350	Travis Trail - Section 318, From: Shellian Ln To: Coleman Cr	0.16	100	Preventative Maintenance	-	8	16	67
RS329	Clarence Street - Section 297, From: 150m West of Cass Dr. To: Christine Ln.	0.16	300	Preventative Maintenance	-	10	20	74
RB025	Stevens Road - Section 029, From: Carruthers Road To: Marionville Road	1.7	100	G - Gravel (75mm)	\$20	7	14	68

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB230	Holmes Street - Section 223, From: Dead End East To: Dead End West	0.14	49	Preventative Maintenance	-	8	16	64
RB035	South Wing Road - Section 12, From: County Road #3 To: County Road #3	2.6	49	G - Gravel (75mm)	\$30	8	16	64
RB094	Van Camp Road - Section 142, From: County Road #1 To: Dead End	0.9	49	G - Gravel (75mm)	\$10	8	16	64
RB051	Baker Road - Section 72, From: County Road #31 To: River Road	5.5	71	G - Gravel (75mm)	\$64	8	16	66
RS330	Coleman Cr - Section 298, From: Shellian Ln To: Travis Tr	0.26	75	Preventative Maintenance	-	8	16	67
RB161	Lafortune Drive - Section 42, From: Old Carriage Lane To: Dead End	0.5	49	RO1 - Hot Mix Overlay, 1 Lift	\$48	8	15	65
RB162	Lori Elizabeth Street - Section 43, From: La Fortune Drive To: Dead End	0.3	49	RO1 - Hot Mix Overlay, 1 Lift	\$29	8	15	65
RB214	Wickers Way - Section 208, From: Fred St. To: May St.	0.13	49	RO1 - Hot Mix Overlay, 1 Lift	\$12	8	15	65
RB118	Nelson Road - Section 173, From: Development Road To: County Road #1	3.7	72	G - Gravel (75mm)	\$43	8	16	67
RB104A	Boundary (Mtn Twp) Road - Section 156A, From: Nation River Rd To: Cameron Road	4.9	43	G - Gravel (75mm)	\$57	8	16	65
RB034	Steen Road - Section 10B, From: County Road #13 To: Thompson Road	1.5	62	G - Gravel (75mm)	\$17	8	16	67
RS334	Fawcett Road - Section 302, From: County Road #31 To: West of County Road #31 (Start of Gravel)	1	75	G - Gravel (75mm)	\$12	8	16	68
RS342	Silver Fox Court - Section 310, From: Rodney Ln To: Cul-De-Sac	0.2	49	Preventative Maintenance	-	8	16	66
RS343	Silver Fox Court - Section 311, From: Rodney Ln To: North End	0.4	49	G - Gravel (75mm)	\$5	8	16	66
RB101	Norton Road - Section 153, From: Van Camp Road To: Pepperville Road	1.2	100	G - Gravel (75mm)	\$14	8	16	70
RB149	Ralph Street - Section 21, From: County Rd #13 To: Hume St.	0.5	250	Preventative Maintenance	-	10	20	75

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB054	Summers Road - Section 79, From: Baker Road To: County Road 43	1.3	19	G - Gravel (75mm)	\$15	8	16	63
RS332	Drew Drive - Section 300, From: Georgian St To: Sandy Row	0.65	200	Preventative Maintenance	-	10	19	74
RB071	Jennings Road - Section 107, From: County Road #43 To: Spruit Road	1.4	49	G - Gravel (75mm)	\$16	8	16	67
RB072	Jennings Road - Section 108, From: Spruit Road To: 0.7km North of Spruit Road	0.7	49	G - Gravel (75mm)	\$8	8	16	67
RB176	Kelso Street - Section 123, From: County Rd #1 To: Dead End	0.1	49	Preventative Maintenance	-	9	18	67
RS338	Lori Lane - Section 306, From: Forward Rd. To: Erin Ave.	0.27	49	Preventative Maintenance	-	9	18	67
RB119	Nelson Road - Section 174, From: County Road #1 To: Dead End	0.2	49	G - Gravel (75mm)	\$2	8	16	67
RB262	Pauline Street - Section 255, From: Streeterpete Rd. To: 45m South of Streeterpete Rd.	0.05	49	Preventative Maintenance	-	9	17	67
RB102	Pepperville Road - Section 154, From: County Road #1 To: Dead End	1.8	49	G - Gravel (75mm)	\$21	8	16	67
RB117	Simzer Road - Section 172, From: Development Road To: Dead End	0.1	49	G - Gravel (75mm)	\$1	8	16	67
RB061	Webb Road - Section 091A, From: Nesbitt Road To: Winchester Springs Road	1.4	15	G - Gravel (75mm)	\$16	8	16	63
RB218	Dufferin Street - Section 212A, From: Centre St. To: Parmalat Entrance	0.04	150	Preventative Maintenance	-	10	19	73
RB275	Water Street - Section 268, From: 220m SE of County Rd #7 To: Dam	0.09	100	Preventative Maintenance	-	9	18	71
RB126	Water Street - Section 269, From Dam To: Dead End	1.3	49	G - Gravel (75mm)	\$15	8	16	68
RB268	William Street - Section 261, From: County Road #7 To: Dead End	0.19	49	Preventative Maintenance	-	9	18	68
RB100A	Hyndman Road - Section 152B, From: County Road #43 To: West Boundary	3.9	150	Convert LCB to HCB	\$571	8	15	74

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RS344	South Nation Way - Section 312, From: Georgian Street To: Drew Drive	0.25	150	<i>Preventative Maintenance</i>	-	10	19	74
RB077A	French Settlement Road - Section 114, From: County Rd #1 To: East End	2	595	<i>Convert LCB to HCB</i>	\$293	8	15	81
RB078	French Settlement Road - Section 115, From: County Rd #1 To: Boundary Rd	3.8	595	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$361	8	15	81
RB154	Merkley Place - Section 26, From: Ralph St. To: Cul de Sac	0.1	49	<i>Preventative Maintenance</i>	-	9	17	69
RB055	Rae Road - Section 80, From: County Road #43 To: River Road	2.4	130	<i>G - Gravel (75mm)</i>	\$28	8	16	74
RB049	Hogoboam Road - Section 70, From: County Road #31 To: Pemberton Road	1.8	75	<i>G - Gravel (75mm)</i>	\$21	8	16	72
RB059	Winchester Springs Road - Section 87, From: Forward Rd To: Gary Rd	2	150	<i>G - Gravel (75mm)</i>	\$23	7	14	75
RB050	Boundary (Mtn Twp) Road - Section 71, From: French Settlement Road. To: Loughlin Ridge.	0.9	520	<i>Convert LCB to HCB</i>	\$132	8	15	81
RB104	Boundary (Mtn Twp) Road - Section 156, From: Cameron Road To: Dead End	0.24	49	<i>Convert LCB to HCB</i>	\$35	9	18	71
RB042	Jennings Road - Section 38, From: Armstrong Road To: Dead End	0.3	49	<i>Preventative Maintenance</i>	-	9	18	71
RB081b	Kerrs Ridge Road - Section 125B, From: Development Rd #1 To: Riddell Rd	3.6	150	<i>G - Gravel (75mm)</i>	\$42	8	16	76
RB060	Hollister Road - Section 89, From: County Road #5 To: County Road #31	2.8	100	<i>G - Gravel (75mm)</i>	\$32	8	16	74
RB130	Rodney Lane - Section 005, From: County Rd #13 To: Ormond Rd	1.4	532	<i>Convert LCB to HCB</i>	\$205	8	16	82
RB004	Byers Road- Section 059	0.1	49	<i>Preventative Maintenance</i>	-	10	19	72
RB068	Timmins Road - Section 104, From: Sandy Row Road To: County Road #3	2.1	75	<i>G - Gravel (75mm)</i>	\$24	8	16	74
RB053	River Road - Section 77a, From: River Road at Ball Road To: 2.7 km from Ball Road	1.7	150	<i>G - Gravel (75mm)</i>	\$20	8	16	77

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB123	Sandy Row - Section 191, From: County Road #16 To: Dead End	2.2	49	G - Gravel (75mm)	\$25	8	15	73
RB139	Droppo Road - Section 95B, From: county Road #7 To: 0.5km West of County Road #7	0.5	300	Preventative Maintenance	-	10	19	81
RB044	Benson George Road - Section 46, From: County Road #31 To: Dead End	1.3	49	G - Gravel (75mm)	\$15	8	16	74
RB190	Mill Street - Section 182, From: County Rd #3 To: Bridge St.	0.15	49	Preventative Maintenance	-	10	20	74
RB082	Riddell Road - Section 126, From: Kerrs Ridge Road To: County Road #43	2.9	67	G - Gravel (75mm)	\$33	7	14	77
RB041A	Merkley Road - Section 37, From: Harmony Road To: Armstrong Road	1.5	100	Preventative Maintenance	-	9	18	79
RB133	Boundary (Win-Fin Twp) Road - Section 53, From: 1.6km North of Gibeault Road To: County Road #13	1.9	277	Convert LCB to HCB	\$278	9	18	83
RB146A	Rodney Lane - Section 006, From: Ormond Rd To: Marionville Road	1.4	550	Preventative Maintenance	-	9	18	86
RS335	Forward Road - Section 303, From: Winchester Springs Rd To: Nesbitt Rd	1.35	100	G - Gravel (75mm)	\$16	8	16	80
RB079	Boundary (Mtn Twp) Road - Section 116, From: Belmeade Rd To: French Settlement Road	3.7	520	Convert LCB to HCB	\$542	9	18	86
RB098A	West Boundary Road - Section 150, From: Clarke Road To: N. Flesher Crescent	3.3	100	Convert LCB to HCB	\$483	8	15	81
RB097B	Ronson Road - Section 145, From: Boundary Rd To: Dead End	0.7	49	Convert LCB to HCB	\$103	9	18	79
RB046A	Boundary (Win-Fin Twp) Road - Section 51, From: County Road #9 To: Gibeault Road	2.4	277	Convert LCB to HCB	\$351	9	18	85
RB047	Boundary (Win-Fin Twp) Road - Section 52, From: Gibeault Rd To: 1.6km North of Gibeault Rd	1.6	277	Convert LCB to HCB	\$234	9	18	85

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB143	Irish Headline Road - Section 190, From: County Rd #1 To: County Rd #16	4	200	Convert LCB to HCB	\$586	9	17	84
RB080	Loughlin Ridge Road - Section 118, From: County Rd # 1 To: East End	1.9	75	Convert LCB to HCB	\$278	8	16	81
RB012	Belanger Road - Section 066, From: County Rd #43 To: Maple Ridge Rd	0.6	392	Convert LCB to HCB	\$88	9	19	87
RB016	Belanger Road - Section 067, From: Maple Ridge Rd To: Boyne Rd	2.7	392	Convert LCB to HCB	\$395	9	19	87
RB142	Van Camp Road - Section 141, From: Development Rd To: County Rd #1	3.7	245	Convert LCB to HCB	\$542	9	18	86
RB007	Connaught Road - Section 049	4	241	Convert LCB to HCB	\$586	9	18	86
RB138	Nesbitt Road - Section 90, From: County Rd #31 To: Webb Rd	1.4	153	Convert LCB to HCB	\$205	9	18	85
RB103	Cameron Road - Section 155, From: County Road #1 To: Boundary Road	3.7	205	Convert LCB to HCB	\$542	9	18	86
RB107	Cameron Road - Section 159, From: Development Rd To: 0.2km West of Margaret St.	2.9	205	Convert LCB to HCB	\$425	9	18	86
RB184	Cameron Road - Section 160, From: 0.2km West of Margaret St. To: County Rd #3	0.4	205	Preventative Maintenance	-	9	18	86
RS305	Sherrer Way - Section 289, From: County Road #38 to Dead End.	0.2	49	Preventative Maintenance	-	8	16	82
RB148	Ormond Road - Section 009, From: Rodney Rd To: Bisson Rd	3.2	800	Preventative Maintenance	-	10	20	90
RB018	Ormond Road - Section 10A, From: Bisson Rd To: County Rd #13	3.3	40	G - Gravel (75mm)	\$38	8	16	82
RB223	Centre Street - Section 216, From: Queen St. To: County Rd #3	0.13	494	RO1 - Hot Mix Overlay, 1 Lift	\$12	8	15	89
RB008	Limerick Road - Section 097	4.4	76	Convert LCB to HCB	\$644	9	16	84
RB031A	McMillan Road - Section 094, From: Forward Road To: County Road #7	1.8	150	Convert LCB to HCB	\$264	10	19	86
RB122	Wallace Road - Section 189, From: Boundary with South Dundas	0.1	100	Convert LCB to HCB	\$15	9	18	85

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB157	Marionville Road - Section 32, From: Gregoire Road To: Bisson Road	1.3	300	<i>Preventative Maintenance</i>	-	10	19	88
RB169	Forward Road - Section 84, From: County Rd #43 To: 2.8km West of County Rd # 43	2.8	550	<i>Preventative Maintenance</i>	-	10	20	90
RB043A	Armstrong Road - Section 39, From: Dead End To: County Road #31	3.4	49	<i>Preventative Maintenance</i>	-	9	17	85
RB095	Ronson Road - Section 145, From: Simms St To: Dead End	2.1	75	<i>Convert LCB to HCB</i>	\$308	9	18	86
RB023	Marionville Road - Section 031, From: Stevens Rd To: County Rd #7	2.8	250	<i>Convert LCB to HCB</i>	\$410	10	19	89
RB131	Coulthart Road - Section 15, From: County Rd #7 To: 3.0km East of County Rd #7	3	67	<i>Convert LCB to HCB</i>	\$439	9	18	86
RB038	Coulthart Road - Section 16, From: 3.0km East of County Rd #7 To: Boundary Rd	1	67	<i>Convert LCB to HCB</i>	\$146	9	18	86
RB040A	Harmony Road - Section 36, From: County Road #31 To: Dead End	2	67	<i>Preventative Maintenance</i>	-	9	18	86
RB259	South Street - Section 252, From: County Rd #43 To: Main St.	0.56	586	<i>RO1 - Hot Mix Overlay, 1 Lift</i>	\$53	8	15	91
RB022	Marionville Road - Section 030, From: County Rd #32 To: Stevens Rd	1.5	217	<i>Convert LCB to HCB</i>	\$220	10	19	89
RS323	Kerrs Ridge Road - Section 291, From: 0.3 km East of County Rd #1 To: Lilico Rd	2.1	250	<i>Preventative Maintenance</i>	-	10	20	90
RB150	Hume Street - Section 22, From: Ralph St. To: County Rd #13	0.25	150	<i>Preventative Maintenance</i>	-	10	20	90
RB279	Albert Street - Section 273, From: Ralph St. To: Queen St. East	0.15	400	<i>Preventative Maintenance</i>	-	8	16	92
RB280	Albert Street - Section 274, From: Queen St. East To: Emma St.	0.18	400	<i>Preventative Maintenance</i>	-	8	16	92
RB232	Christie Lane - Section 225, From: County Rd #3 To: Church St.	0.11	300	<i>Preventative Maintenance</i>	-	8	16	92
RB024	Dagenais Road - Section 020, From: County Road #7 To: Dead End	1.2	49	<i>Preventative Maintenance</i>	-	10	19	89
RB009	Dillabough Road - Section 098	1.1	49	<i>Preventative Maintenance</i>	-	10	19	89

Road Needs Summary Table – by Structural Adequacy

Sect. No.	Road Name	Length (km)	AADT	Preliminary Improvement Type Recommendation	Cost (x1000)	Surface Condition	Structural Adequacy	Condition Rating
RB285	Church Street - Section 280, From: County Rd #7 To: College St.	0.34	250	<i>Preventative Maintenance</i>	-	8	16	92
RB030	Shay Road - Section 093, From: Forward Road To: Dead End	0.8	49	<i>Preventative Maintenance</i>	-	10	20	90
RB292	George Street - Section 288, From: Victoria St. To: Mill St.	0.08	49	<i>Preventative Maintenance</i>	-	8	16	91
RB289	Mill Street - Section 284, From: College St. To: George St.	0.23	49	<i>Preventative Maintenance</i>	-	8	16	91
RB290	Mill Street - Section 285, From: George St. To: Victoria St.	0.16	49	<i>Preventative Maintenance</i>	-	8	16	91
RB272	King Street - Section 265, From: McMillan St. To: Queen St.	0.27	660	<i>Preventative Maintenance</i>	-	9	18	96
RB249	Hummel Street - Section 242, From: County Rd #7 To: Dead End	0.24	100	<i>Preventative Maintenance</i>	-	9	17	95
RB205	Caleb Street - Section 201, From: County Rd #38 To: Albert St.	0.2	250	<i>Preventative Maintenance</i>	-	10	19	98