BURNSIDE

Road Needs Study

Township of Amaranth
374028 6th Line,
Amaranth, ON, L9W 0M6

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374028 6th Line,
Amaranth, ON, L9W 0M6

R.J. Burnside & Associates Limited
15 Townline
Orangeville ON L9W 3R4 CANADA

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The preparation of this project was carried out with assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them."

Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the Corporation of the Township of Amaranth (Township) to conduct a Road Needs Study (RNS). This RNS provides an inventory of the Township's road network, establishes the physical condition of the roads and determines the road maintenance and improvement needs and costs. A general prioritization of the road needs is provided, together with a recommended ten-year road improvement plan (2023 to 2032), to assist the Township in the development of a multi-year capital plan that will assist the Township in asset management planning.

Inventory of Roads

Road inventory information was collected, and road condition ratings were established in April 2022 for the gravel roads and in September 2022 for the hardtop roads within the Townships' road network. Approximately 249.18 km of roads were inventoried in this study, comprised of:

- 193.903 km of gravel rural roads
- 0.384 km of surface treated semi-urban roads
- 48.083 km of asphalt rural roads
- 4.083 km of asphalt semi-urban roads
- 2.724 km of asphalt urban roads

The full lengths of the boundary roads with Mono Township and with Grand Valley are included in the inventory, while acknowledging that the adjacent municipalities are fully responsible for both maintenance and capital improvements on part of these Townline roads (i.e., 17.904 km).

Maps presenting the overall surface types can be found in Appendix A, along with an Excel spreadsheet of the road network inventory and condition data.

Traffic volume ranges are estimated for the roads in this study, based upon traffic counts taken by Ontario Traffic Inc (OTI) in December 2022.

Assessment of Road Needs

A pavement condition index (PCI) was established for each road segment within the network, based on the rating system developed by the Ontario Ministry of Transportation (MTO). The PCI has been used to assess the improvement requirements for each road segment within the road network, together with functional needs of the road and of local knowledge from Township staff. An improvement matrix has been developed by Burnside for the Township that identifies the appropriate improvement type considering various factors such as the condition of the road, roadside environment, surface type, traffic volumes and recommended best practices for the life cycle management of road

network assets. The lifecycle improvements include routine maintenance, preventative maintenance, resurfacing, rehabilitation and reconstruction. A Priority Guide Number (PGN) and Priority Rating Number (PR) were developed to prioritize improvement needs.

The primary conclusions and recommendations made in this RNS are as follows:

- The conditions and improvement/maintenance needs of the roads are shown on the spreadsheet in Appendix A of this report. The condition needs (i.e., pavement condition index) are shown graphically on a map in Appendix E of this report.
- The estimated total cost of gravel road improvement/maintenance needs in the Township is approximately $10,936,986. This equates to an overall average of approximately $56,868 per km of existing gravel roads (i.e., 192.322 km gravel).
- The estimated total cost of hardtop improvements/maintenance needs in the Township is approximately $4,102,610. This equates to an overall average of approximately $72,158 per km of existing hardtop roads (i.e., 56.856 km hardtop).
- About 70% of the Township's existing hardtop roads are in good/satisfactory condition, about 20% in fair condition and about 10% in poor condition.
- Roads that may warrant upgrading of surface type have been identified, based on traffic volume criteria. Where required, the preferred surface upgrade is to an asphalt surface (i.e., high class bituminous, HCB). Upgrading of surface type may be considered at the time that future rehabilitation work is required to address condition needs.
- Road sections with the following issues/deficiencies in road geometrics have been identified in this RNS:
  - Roads with deficient horizontal or vertical alignments.
  - Roads with less than tolerable road widths
  - Upgrading of road geometrics may be considered at the time that future rehabilitation work is required to address condition needs.
- Based on input from Township staff, this study assumes the following budgets for the development of a road improvement/maintenance program:
  - Approximately $460,000 per annum for gravel road maintenance, consisting of $230,000 for gravel and $230,000 for calcium chloride for dust control.
  - approximately $150,000 per annum for hardtop road improvement/maintenance.
- A ten-year improvement plan is recommended for gravel roads that includes the application of maintenance gravel/calcium application on a 3-year cycle, as shown on the spreadsheet and map in Appendix G. Routine gravel road maintenance (i.e., grading/calcium application) may be applied several times each season and is considered to be responsive and beyond the scope of the improvement/maintenance program outlined in this study.
- A ten-year improvement plan is recommended for hardtop roads that includes resurfacing or rehabilitation or reconstruction, in accordance with the Decision Matrix Model developed for this study, as well as subsequent review and prioritization

analysis. The ten-year improvement model is shown on the spreadsheet and map in Appendix G.

- This study has identified the needs to complete routine maintenance (i.e., crack sealing) and preventive maintenance (i.e., micro surfacing or slurry seal) as a best practice for hardtop roads. It is recommended that the Township establish an annual allowance specifically for applying cost-effective routine and preventative maintenance treatments on existing hardtop roads. Test treatments may be applied to determine a cost/benefit analysis.

Burnside gratefully acknowledges the assistance and contribution of the Township staff in the preparation of this study.

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1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the Township of Amaranth (Township) to conduct a Road Needs Study (RNS) and develop a ten-year road improvement plan. This RNS provides an inventory of the Township's road network, establishes the physical condition of the roads and determines the road maintenance and improvement needs and costs. A general prioritization of the road needs is provided, together with a recommended ten-year road improvement plan (2023 to 2032), to assist the Township in the development of a multi-year capital plan that will assist the Township in asset management planning.

A complete Road Management Plan (RMP) considers the full range of issues that may affect the ongoing maintenance, improvement, and management of a road network, culminating in the completion of a multi-year road improvement plan. Outlined in this report is the 10-year road improvement plan that has been developed by Burnside using the current road conditions, priority rating and traffic volumes of the Township's Road network.

We gratefully acknowledge the assistance and contributions of the Township staff in the preparation of this study.

1.1 Boundary Roads

The Township shares two Townline roads with adjacent municipalities, as follows:

- Amaranth-East Luther Townline – 18.913 km – Amaranth is responsible for the section to the north of 15th Sideroad (10.149 km), while Grand Valley is responsible for the section to the south of 15th Sideroad (8.764 km);
- Mono-Amaranth Townline – 16.445 km – Amaranth is responsible for the section to the north of 20th Sideroad (7.305 km), while Mono Township is responsible for the section to the south of 20th Sideroad (9.14 km). It is noted that the boundary agreement sets the division point at the north limit of Lot 19, however, Mono Township has been maintaining up to the 20th Sideroad and therefore this study assumes that this arrangement will continue in the future.

The responsibilities on the Townline roads include both maintenance and capital works.

The Townline roads have been included in this RNS, even where the Township has boundary road agreements that assign full responsibility (i.e., capital work and maintenance) to the adjacent municipalities. Inclusion of boundary roads that are the responsibility of adjacent municipalities is intended to inform Amaranth on whether there are any road improvement issues that may affect their residents and that should be coordinated with the adjacent municipalities. However, the sections of the Townline

roads that are under the responsibility of the adjacent municipalities have been excluded from the ten-year improvement plan that is identified in this RNS for implementation by Amaranth.

1.2 Previous Planning Studies

It is understood that a RNS has not previously been completed for the Township and therefore this current study is a new study, rather than an update of previous work. Other previous planning study work has been reviewed in the completion of this RNS, including the following:

- Official Plan for the Township of Amaranth; Office Consolidation, June 2018.
- 2019 Development Charges Background Study, Township of Amaranth; Watson & Associates Economists Ltd.; June 20, 2019.
- Township of Amaranth, 2018 Amendment to the 2016 Asset Management Plan; R.J. Burnside & Associates Limited; July 25, 2018.
- Dufferin County Road Network Rationalization Plan; C.C. Tatham & Associates Ltd.; April 21, 2015.

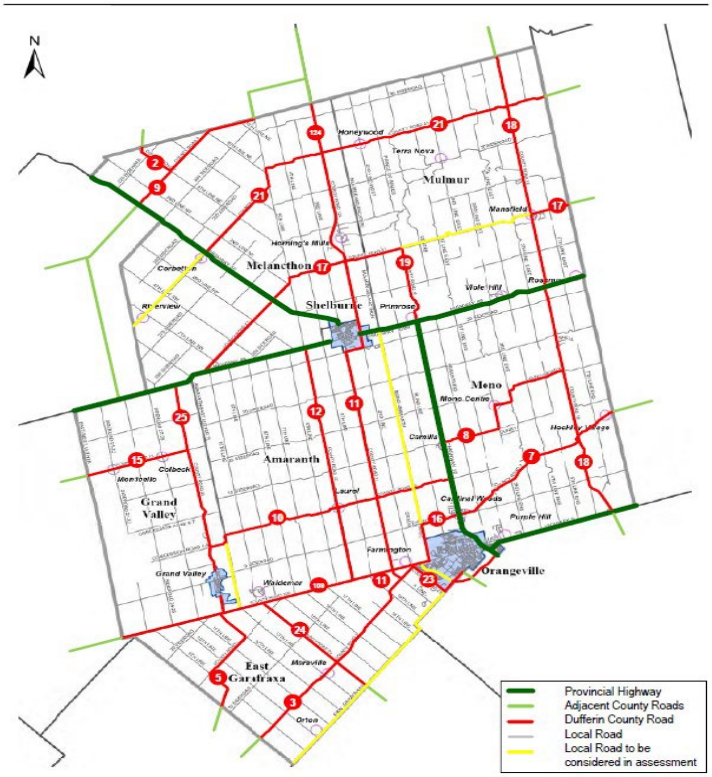
1.3 Impact of Growth Forecasts on Road Network

Growth in the Township will have an impact on the traffic on the road network. Based on the information provided in the *2019 Development Charges Background Study,* it is forecasted that the Township's population is anticipated to increase by about 0.7% per annum between 2019 and 2029 and about 0.25% per annum between 2029 and 2036. About 61% of the population growth is anticipated to be in Waldemar. In addition, it is forecasted that the Township's employment is anticipated to increase by about 8.5% per annum between 2019 and 2029 and about 0.9% per annum between 2029 and 2036. Most of the employment growth is anticipated to be in the southeast corner of the Township, adjacent to Orangeville and County Road 109, as shown in the Township's Official Plan.

1.4 Connectivity Considerations to Provincial Highways and County Roads

The County and Provincial Roads serving the Township are shown on Figure 1, taken from Dufferin County's 2015 Road Network Rationalization Study. Dufferin County Road 11 and County Road 12 provide north-south connectivity, while County Road 10, County Road 109 and Provincial Highway 89 provide east-west connectivity.

Figure 1: Road Network Rationalization



As shown in the above Figure the County's Rationalization Study assessed part of the Amaranth-East Luther Townline (i.e., the part that is under Grand Valley responsibility) and the Mono-Amaranth Townline for potential uploading to County jurisdiction. The assessment in the Rationalization Study applied weightings to various factors to determine a point rating for a road to be considered as a County Road. The factors considered included:

- Urban settlement connector/Upper Tier connector
- Heavy industry service
- Future industry service
- Barrier service
- Traffic speed
- Traffic volume
- Continuity with the County
- Connects to neighbouring County road
- Provides urban bypass function.

Based on these factors, the Mono-Amaranth Townline could be considered for transfer to the County. However, the Rationalization Study recommended that this road remain

as part of the local road network, given that the area is already served by nearby upper tier road (i.e., County Road 11 and Highway 10).

The Rationalization Study also recommended that County Road 12 be considered for transfer to the local municipality, due to the north-south redundancy that it provides to County Road 11. However, County Road 12 continues to remain under the County's jurisdiction and therefore it is assumed that this will remain the case through the time period considered in this current RNS.

It is noted that the Sideroad 20 provides a significant east-west road through the Township and that this road was not identified for review in the County's Rationalization Study. Significant improvements have been made to this road in recent years to continue to maintain this road as part of the Township's road network, however future Rationalization Studies could include this road for jurisdictional review.

2.0 The Road Study

2.1 Road Inventory

A total of 249.178 km of roads were inventoried as part of this study, including 231.274 km under the responsibility of Amaranth, 9.14 km under the responsibility of Mono Township and 8.764 km under the responsibility of Grand Valley. Roads have been identified by their road names and identification numbers and road segments have been identified by reference to their location with respect to intersecting roads. The road database and road inventory mapping are provided in Appendix A for reference purposes.

The database and mapping are fully integrated within a GIS database and each section has been assigned a unique ID number and GIS reference number. Data related to the road sections are obtained through field review of the overall road network including:

- Road ID, Name, From, To
- Length
- Road Width
- Boundary Road
- Roadside Environment: Rural, Semi-urban and Urban
- Platform Width
- Surface Width
- Shoulder Width
- Speed Limit
- Structural Adequacy Rating of the Road
- Distress Manifestation Index (DMI): various types of road distress, with quantification of the density and severity of the distress
- Ride Comfort Rating (RCR): qualitative assessment of ride comfort; and

- Calculation of the Pavement Condition Index (PCI): based on DMI and RCR, using the Ontario Ministry of Transportation (MTO) formulae.

2.2 Functional Road Classification

Based on the road classification definitions and the minimum right-of-way widths as per the Township's Official Plan, the functional classifications of the roads in the network can be defined as follows:

- Arterial Roads: Includes both County and Township roads. Arterial roads serve higher volumes of traffic at moderate to high speeds with limited private access points. These roads also provide vehicular and goods movement. The planned right-off-way for arterial roads has a minimum width of 30 m.
- Urban Collector: These roads are typically located within built-up areas and collect traffic from local roads and connect them to the arterial roads. Collector roads are typically utilized by local traffic with limited through traffic. Private access points can also be permitted along collector roads. The planned right-of-way for urban collector roads is a minimum width of 26 m.
- Rural Collector: These roads are typically located outside of built-up areas and collect regional traffic and interregional traffic from local roads. The primary focus for rural collector roads is to connect local traffic to the arterial road network at higher speeds than urban collector roads. The planned right-of-way for rural collector roads is a minimum width of 26 m.
- Local: These roadways typically serve local traffic with limited through traffic. The primary focus of local roads is to connect local traffic to private access points. The planned right-of-way for local roads is a minimum width of 20 m.

2.3 Traffic Considerations

Traffic volume is an important consideration for determining the road improvement needs for any particular road segment within the road network. Traffic range estimates (Annual Average Daily Traffic, AADT) for each road segment are included in the database in Appendix A. AADT volume ranges are estimated based on the traffic count work completed in December of 2022. Most of the roads within the Townships' network are gravel roads which will experience very little traffic growth over the 10-year period of the proposed road improvement plan in this RNS. Some roads that are in proximity to County Roads, and/or planned development areas may experience some minor traffic growth over the next 10-year period.

The total length of road in the various traffic ranges are summarized in Table 1. The lengths in the 'Total Existing' column include all of the boundary roads (i.e., including the segments for which Mono Township or Grand Valley has 100% responsibility), while the 'Amaranth Responsibility' are only those for which the Township has responsibility.

Table 1: Length of Roads with Various AADT Traffic Ranges

AADT Traffic Range (vpd)	Length of Road in Traffic Range (km)	
	Total Existing (2023)	Amaranth Responsibility
0 – 49	25.280	25.211
50 – 199	156.789	151.117
200 – 499	29.778	26.755
500 – 999	12.475	12.475
1,000 – 1,999	24.856	15.716
Total	249.178	231.274

Traffic volumes and traffic types are also important considerations in establishing the road surface needs for roads within the road network. Consideration may be given to upgrade gravel roads to an asphalt surface, for roads experiencing high traffic volumes, high truck volumes or high truck loading, or where high maintenance is an issue.

Where AADTs exceed 200 vehicles per day (vpd), upgrading of gravel road surfaces to hardtop road surfaces may be considered. For AADTs in the range 200 to 500 vpd upgrading to a low class bituminous (LCB) surface may be considered, whereas upgrading to a high class bituminous (HCB) surface is recommended for AADTs exceeding 500 vpd. The Township has indicated that upgrading of surface type, where required, should be based on establishing HCB surfaces, as opposed to LCB surfaces, due to their local experience. Therefore, the improvement matrix in this RNS assumes that upgrading work will be to an HCB standard.

Truck volumes typically range from a low of 3% on low volume roads (Local roads) to a high of 15% on higher volume roads (Collectors and Arterials). Based on the traffic counts taken by Ontario Traffic Inc (OTI), large vehicle percentages of 0.6 to 5.5% were recorded. It is recommended that future traffic counting work in the Township also delineate truck volumes, particularly if consideration is being made to upgrade the road surface types. For low volume rural roads, this study suggests that surface upgrading may be economical to consider where the percentage of trucks exceed 10% of the AADT and is over 30 Trucks per day.

2.4 Roadside Environment and Road Surface Type

The corresponding roadside environment and surface type for each road segment have been identified in the database presented in Appendix A, with the surface type also illustrated on the map. For the purposes of this study, the roadside environment and surface types have been differentiated as follows:

Roadside Environment

- **Urban Environment:** Reasonably continuous development occurs along the roadway and the roadway cross-section design includes curbs and/or gutters and storm sewers.
- **Semi-Urban Environment**: Reasonably continuous development occurs along the roadway and the roadway cross-section design includes open ditches or swales and does not include curbs and/or gutters, or storm sewers.
- **Rural Environment:** Rural roads which abut scattered rural development, farmland, or undeveloped open space.

Surface Type

- Gravel; and
- High Class Bituminous (HCB, Asphalt).

The roadside environment and road surface types within the Township (i.e., including boundary roads maintained by adjacent municipalities) are summarized in Table 2.

Table 2: Roadside Environment Categorized by Surface Type

Surface Type	Roadside Environment	Length (km)	Percent of Total
Gravel	Rural	193.903	77.82%
LCB	Semi-Urban	0.384	0.15%
HCB	Rural	48.084	19.30%
	Semi-Urban	4.083	1.64%
	Urban	2.724	1.09%
Total		**249.178**	**100%**

Of the 249.178 km of roads inventoried, the roadside environment and surface type breakdowns can be summarised as follows:

- Roadside Environment: 241.987 km rural (97.11%), 4.467 km semi-urban (1.79%) and 2.724 km urban (1.09%).
- Road Surface Types: 193.903 km gravel (77.82%), 0.384 km LCB (0.15%) and 54.890 km HCB (22.03%).

3.0 Methodology and Analysis

This study uses modifications of various procedures for the evaluation of the condition of the roads including the following:

- SP-024 Manual for Condition Rating of Flexible Pavements – Distress Manifestations, Ministry of Transportation, 1989
- SP-025 Manual for Condition Rating of Gravel Surface Roads, Ministry of Transportation, 1989
- The Formulations to Calculate Pavement Condition Indices, Ministry of Transportation, 2007; and
- Inventory Manual for Municipal Roads, Ministry of Transportation, 1991

The inventory has also included the development of GIS mapping, and related database, for the Township's roads.

3.1 Methodology to Establish Pavement Condition Rating and Road Needs

A visual assessment of the road network was completed in the field in April 2022 (review of gravel roads) and September 2022 (review of hardtop roads) to determine the condition rating of the road surface for each road segment. Specific pavement distress ratings were assigned for 15 different distress types for all the hard-top road sections, based generally on the "Flexible Pavement Condition Evaluation Form" developed by the MTO, as illustrated in Figure 2.

Figure 2: Hard-top Road Evaluation Form

HARDTOP PAVEMENT CONDITION EVALUATION FORM

Survey Date: _____ Section ID: _____

Road (Street) Name: _____ Section Length _____ km

Location from: _____ to: _____

Comments:

Ride Comfort Rating (at posted speed)

10	9 8 7	6 5 4	3 2	1
Very Good	Good	Fair	Poor	Very Poor

Pavement				Wi	Severity of Distress (Si)					Density of Distress (Di)				
					Very Slight	Slight	Moderate	Severe	Very Severe	Few	Intermittent	Frequent	Extensive	Throughout
										<10	10-20	20-40	40-80	>80
Surface Defects		Ravelling & loss of surface aggregate	1											
		Flushing	2											
Surface Deformations		Rippling and Shoving	3											
		Wheel Track Rutting	4											
		Distortion	5											
Cracking	Longitudinal Wheel Track	Single and Multiple	6											
		Alligator	7											
	Centreline	Single and Multiple	8											
		Alligator	9											
	Pavement Edge	Single and Multiple	10											
		Alligator	11											
	Transverse	Half, full and multiple	12											
		Alligator	13											
	Longitudinal – meander or mid-lane		14											
	Potholes/Patching		15											

Similar to the condition rating system developed for hard-top roads, Burnside developed the “Gravel Condition Evaluation Form” illustrated in Figure 3. The form incorporates rating schema from the Inventory Manual for Municipal Roads (Ontario Ministry of Transportation, 1991), such as the Structural Adequacy (SA) and Drainage Rating (DR). The various distress types shown in the form have been collected in the field to support the overall Structural Adequacy Rating (scale from 1 to 20). The gravel road condition review also included establishing a Ride Comfort Rating (scale from 1 to 10) and a

Drainage Rating (scale from 1 to 15), as well as providing comments on the specific distress observations (if any) on each gravel road section.

Figure 3: Gravel Road Evaluation Form

GRAVEL CONDITION EVALUATION FORM

Survey Date: _____ Section ID: _____

Road (Street) Name: _____ Section Length _____ km

Location from: _____ to: _____

Comments:

Ride Comfort Rating (at posted speed)

10	9	8	7	6	5	4	3	2	1
Very Good	Good			Fair			Poor		Very Poor

Pavement	Rating	Severity of Distress (Si)					Density of Distress (Di)				
		Very Slight	Slight	Moderate	Severe	Very Severe	Few	Intermittent	Frequent	Extensive	Throughout
							<10	10-20	20-40	40-80	>80
Structural Adequacy (1-20)											
Soft Spots											
Spring Breakup											
Potholes											
Washboarding											
Distortion											
Rutting											

The condition rating is based on a visual review of the severity, extent (density) and weighting of various distress types, as well as a Ride Comfort Rating, which reflects the rideability of the surface. A Distress Manifestation Index (DMI) is calculated using the MTO formulae from the visual distress data collected in the field. The details of the severity and extent of the distress types surveyed are included in the GIS database, which will be provided as part of the deliverables for this project. The condition rating methodology follows the procedures developed by the Ministry of Transportation for flexible pavements and surface-treated pavements (MTO, 1989) and adapted for gravel surface roads.

The calculation of the PCI follows the methods outlined by the MTO for such calculations (MTO, 2007). A PCI has been calculated for each road section according to the following formulae:

Asphalt: $PCI = 13.75 + (9 \times DMI) - (7.5 \times e^{(8.5-RCR)/3.02})$

Gravel or Surface Treatment: $PCI = 12.75 + (9 \times DMI) - (5.5 \times e^{(9.94-RCR)/3.46})$

Where:

- DMI = Distress Manifestation Index, which is a systematic method of classifying and assessing the visible consequences of various surface distress mechanisms. The DMI classifies distress manifestations into various categories which are given a weighing factor (W), and which are classified according to their severity (S) and density (D). A summary of the factors considered is included in Appendix C. The total DMI is obtained by summation of the distress manifestations for the relevant factors and the following formulae:

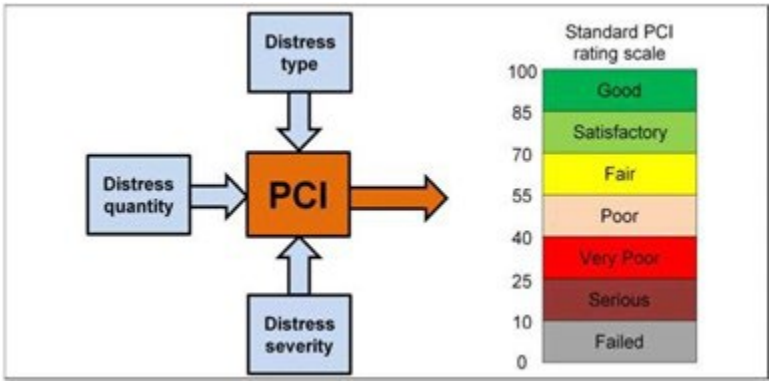
  Asphalt: DMI = 10 x (208 – summation of W x (D+S))/208

  Gravel or Surface Treatment: DMI = 10 x (135 – summation of W x (D+S))/135

RCR = Ride Comfort Rating, which is a subjective ride quality assessment as perceived by the traveling public and which has been determined by the field assessment of the roads.

The qualitative description of the various PCI ranges is shown in Figure 4.

Figure 4: Qualitative Description of PCI Ranges



Based on the above figure, the updated PCI is illustrated on a map in Appendix D and shown in the Excel sheets in Appendix A.

3.1.1 Roads with Poor Condition Ratings

The roads with the poorest condition ratings (PCI<55), which require reconstruction or significant rehabilitation in the “Now” time period is summarized in Table 3.

Table 3: Roads with Poor Condition Ratings (PCI <55)

Road	Surface Type	AADT (vpd)	PCI
25th Sideroad from 9th Line to 8th Line	Gravel	50	14
25th Sideroad from 5th Line to 4th Line	Gravel	29	21
25th Sideroad from 2nd Line to Mono - Amaranth Townline	Gravel	80	25
4th Line from 30th Sideroad to Highway 89	Gravel	50	30
30th Sideroad from 5th Line (Dufferin County Road 12) to 4th Line	Gravel	80	36
Amaranth - East Luther Townline from 20m N. of Con. 10-11 Road (Grand Valley) to 25th Sideroad	Gravel	75	43
Amaranth - East Luther Townline from 5th Sideroad to Dufferin County Road 10	HCB	60	43
15th Sideroad from Amaranth - East Luther Townline to 10th Line	Gravel	150	45
2nd Line from 15th Sideroad to 20th Sideroad	Gravel	80	45
Amaranth - East Luther Townline from Con. 8-9 Road (Grand Valley) to 20th Sideroad	HCB	152	47
30th Sideroad from 6th Line to 5th Line (Dufferin County Road 12)	Gravel	100	48
15th Sideroad from 7th Line to 6th Line	Gravel	34	49
5th Sideroad from Dufferin County Road 11 to 2nd Line	HCB	1032	49
Amaranth - East Luther Townline from 1.5 km N. of 15th Sideroad to Con. 8-9 Road (Grand Valley)	HCB	152	49
Amaranth - East Luther Townline from Dufferin County Road 10 to 15th Sideroad	HCB	80	50
Shannon Court from Dufferin County Road 11 to Cul-de-Sac	HCB	100	50
10th Line from 25th Sideroad to 30th Sideroad	Gravel	60	52
2nd Line from 25th Sideroad to 30th Sideroad	Gravel	80	52
James Street from Evans Avenue to End of James Street	HCB	130	52
10th Line from 15th Sideroad to 20th Sideroad	Gravel	50	53

Road	Surface Type	AADT (vpd)	PCI
6th Line from 0.4 Km N. of County Road 10 to 15th Sideroad	Gravel	70	53
9th Line from 25th Sideroad to 30th Sideroad	Gravel	50	53
Mono-Amaranth Townline from 30th Sideroad to 0.6 Km N. of 30th Sideroad	HCB	1510	53
Woodland Road from Maplewood Dr. to Cul-de-Sac	HCB	90	54
15th Sideroad from 8th Line to 7th Line	Gravel	150	55

3.2 Improvement Types

The road improvement types considered in this study are the following:

- Routine Maintenance (RM) – responsive maintenance. For gravel roads, routine maintenance consists of grading and the application of dust suppressants. For hardtop roads, routine maintenance consists of crack sealing.
- Preventive Maintenance (PM) – micro surfacing or slurry seal. Micro surfacing and slurry seal can prevent water from infiltrating through cracks to the road base which ultimately helps prevent further deterioration of the road base and increases the length of time before more extensive treatments are required. For gravel roads, preventive maintenance consists of applying maintenance gravel (once every 3 years), grading and application of dust suppressants.
  - Routine/Preventive Maintenance can help to delay the need for more extensive rehabilitation or reconstruction. Routine/preventive maintenance is typically done when a road is in good condition.
- Resurface (R) – mill and pave (urban, semi-urban or rural roads)
  - Resurfacing treatments are typically done when a road is in fair condition. Given that the road is in fair condition, resurfacing treatments generally consist of replacing the surface of roadways with minimal (if any) work being done to the road base, aside from patching (where required). Resurfacing treatments mentioned in this RNS are not to be confused with micro-surfacing treatments, which are considered a form of preventive maintenance, which is applied to roads still in good condition with only very minor amounts of cracking.
- Rehabilitation (REH) – pulverize, partial base repair, and 1 or 2 lifts of hot mix asphalt (HMA).
  - More extensive rehabilitation treatments are applied to pavements in poor condition which have deteriorated to a point where full depth replacement of the pavement surface is required to protect the integrity of the underlying granular road base and to delay more extensive work (reconstruction) from being required. Pavement rehabilitation extends the service life of a pavement surface and its load carrying capacity by enhancing its pavement structure. This is

achieved by eliminating the age-related deterioration of the pavement or increasing the thickness of the pavement layers to address any increases in traffic volume.

- Reconstruction (REC) – full depth removal, total base replacement, total curb replacement (if applicable), and one or two lifts of HMA. If grades allow, new base materials may be placed over the existing base, to minimize the extent of removal of the existing road base.
  - Reconstructions are typically done when a road is in very poor condition, or if work is being done to infrastructure beneath the road surface which will require the road to be reconstructed. If pavements are left to deteriorate, they will become weak and lose their structural integrity. As the structural integrity of the road is weakened, the pavement structure will begin to disintegrate, resulting in extensive cracking, rutting and the development of potholes. At this point in the road lifecycle, maintenance, resurfacing, or rehabilitation treatments will not be able to restore the structural integrity of the road structure. Once a minimum condition level is reached, the pavement and road base may require full reconstruction to reestablish the proper base support for the pavement surface. Applying a lesser rehabilitation treatment may result in premature failure of any newly applied pavement surface. Once the pavement degrades below a minimum recommended condition, ongoing maintenance (e.g., pothole patch work) will typically increase significantly and/or safety or user complaints may become a concern. Reconstruction is also required when the pavement needs to be improved, to cater to significant increases in projected traffic volumes or to accommodate road widening.

To determine what improvement types are warranted for certain road sections, the PCI values collected in the field were assigned to the distress trigger value ranges set for the different improvement types. The trigger value ranges set, and the corresponding improvement types are summarized in Table 4, along with the associated benchmark treatment cost estimates. In addition, the forecasted improvement effects resulting from the various life cycle treatments are shown in Table 4 (i.e., the net benefit to PCI values after a certain improvement type is implemented). Specific details on what each improvement type entails are included in Table 4, based not only on the distress trigger ranges but also on the surface type, roadside environment and the traffic volumes.

A map showing the improvement needs for the overall road network is included in Appendix E.

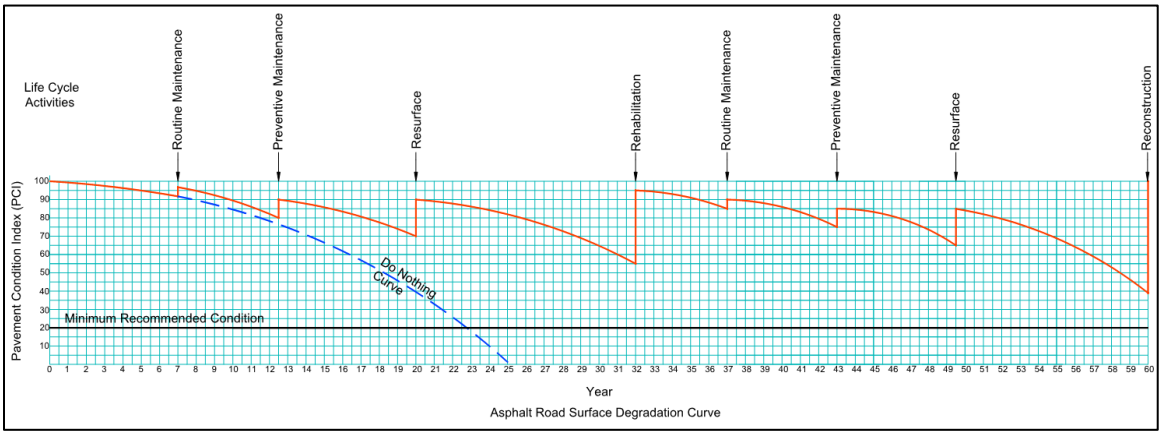
Table 4: Road Improvement Matrix

Improvement	Urban - Hard Top (HCB)			Semi-Urban or Rural - Hard Top (HCB/LCB)					Semi-Urban or Rural – Gravel / Earth				
	Post-Treatment Condition	Any AADT	Distress Triggers	Post-Treatment Condition	AADT>=1000	1000>AADT>=500	AADT<500	Distress Triggers	Post-Treatment Condition	AADT>=500	500>AADT>=200	AADT<200	Distress Triggers
Routine Maintenance (RM)	PCI + 5	Crack Sealing [$0.75 per m^2]	95>PCI>=90	PCI + 5	HCB – Crack Sealing [$0.75 per m^2]			95>PCI>=90	N/A	N/A	N/A	Grading + dust suppressants - (Responsive Maintenance)	GCR>=60
Preventive Maintenance (PM)	PCI + 10	Micro surfacing and minor patching [$6 per m^2]	90>PCI>=80	PCI + 10	Micro-Surfacing [$6 per m^2]	Slurry Seal [$4 per m^2]		90>PCI>=80	N/A	N/A	N/A	Maintenance Gravel (Once Every 3 Years) + Calcium Chloride [$0.55 per m^2]	
Resurface	PCI + 15	Mill + 1 HMA [$21 per m^2]	80>PCI>=60	PCI + 15	1 HMA Overlay + patching + nominal shoulder repair [$20 per m^2]	1 HMA Overlay + patching [$20 per m^2]	1 HMA Overlay + patching + nominal shoulder repair [$20 per m^2]	80>PCI>=60	N/A	1 HMA + nominal base strengthening + nominal ditch repair [$28 per m^2]	1 HMA + nominal base strengthening + nominal ditch repair [$28 per m^2]	N/A	
Rehabilitation (REH)	PCI + 40	Full depth asphalt removal + 2 HMA + spot curb replacement [$40 per m^2]	60>PCI>=40	PCI + 40	Pulverize + Granular A + 2 HMA [$41 per m^2]	Pulverize + Granular A + 1 HMA [$27 per m^2]	Pulverize + Granular A + 1 HMA [$27 per m^2]	60>PCI>=40	N/A	1 HMA + partial base strengthening + nominal ditch repair [$33 per m^2]	1 HMA + partial base strengthening + nominal shoulder/ditch repair [$33 per m^2]	Partial base strengthening + nominal shoulder/ditch repair [$12 per m^2]	60>GCR>=40
Reconstruction (REC)	PCI + 60	Full depth asphalt removal + 2 HMA + total base and curb replacement + nominal storm sewer adjustment [$79 per m^2]	PCI<40	PCI + 60	Full depth removal + 2 HMA + total base replacement + nominal shoulder/ditch repair [$62 per m^2]	Full depth removal + 2 HMA + total base replacement + nominal shoulder/ditch repair [$62 per m^2]	Full depth removal + 1 HMA + total base replacement + nominal shoulder/ditch repair [$48 per m^2]	PCI<40	PCI=100 OR GCR=100	Full depth removal + 1 HMA + total base replacement + nominal shoulder/ditch repair [$48 per m^2]	Full depth removal + 1 HMA + total base replacement + nominal shoulder/ditch repair [$48 per m^2]	Total base replacement + nominal shoulder/ditch repair [$26 per m^2]	GCR<40

3.3 Road Condition Deterioration

Typically, roadways with poor condition ratings are considered maintenance intensive. It is recognized that budget constraints may result in road sections deteriorating to conditions that require more intensive improvements than would be the case if less intensive improvements were implemented earlier in the life cycle of the road. If routine and/or preventive maintenance is applied to a road section prior to the road surface or base being significantly impacted, then the overall life of the road section can be extended, beyond that achievable through a reconstruction/rehabilitation strategy alone, thus optimizing the use of the Township's resources. Figure 5 below illustrates how preventative maintenance extends the useful life of an asphalt (HCB) pavement.

Figure 5: Hardtop Road Degradation Curve



3.4 Improvement Costs

The general improvement benchmark unit costs are for budget planning purposes and have been based on theoretical costs per square metre for the applicable recommended improvement standard. Improvement projects are generally completed through a combination of day labour and equipment rental, where required, or through contract work. While these unit costs are considered sufficient for planning purposes, actual costs may vary according to the following factors:

- Site-specific requirements/constraints
- Fluctuations in input costs (such as the price of oil); and
- Budget constraints requiring consideration of lesser standards (such as maintaining vertical profiles to tolerable conditions, rather than design standards, or reducing overall improvements)

It is recommended that standards be reviewed on a project specific basis as budgets are established. Benchmark improvement costs (per square metre) are outlined in

Table 4 and are based on recent data provided by the Township, as well as available unit cost data from similar lower-tier municipalities in Ontario (in terms of location, population, and climate). The improvement types/costs consider surface types, traffic volumes, road conditions and roadside environments and have been developed based on the Township providing all granular required for upgrades/improvements from municipal gravel pits. Since the improvement benchmark costs are estimated on a square metre basis, the improvement costs for any road section will also capture individual road widths. Given that the benchmark costs provided are based on a square metre basis (surface area), the surface area for any gravel roads being upgraded to Hot Mix Asphalt (HMA), that currently have a platform width of less than 8 m, has been adjusted to represent a typical desirable platform width of 8 m.

3.5 Improvement Prioritization

The MTO has developed a Priority Rating (PR) and a Priority Guide Number (PGN) formula (in the *Inventory Manual for Municipal Roads*, 1991) that can be used to prioritize road improvements based on condition ratings, improvement costs and traffic volumes.

The Priority Rating formula used in this RNS is as follows:

$$PR = 0.2\,(100 - CR) \times (AADT + 40)^{1/4}$$

The higher the PR value, the higher the priority of the road section improvement relative to its condition and the traffic it is serving. This formula will help prioritize improvements that are driven by road conditions and high traffic volumes. The intent of this project prioritization method is to initially reduce the Township's backlog of projects, so that future budgets may be allocated to proactively address the full range of life cycle needs within the road network. The PR value for each road is summarized in Appendix A.

It is recommended that the Township adopt a life cycle approach to allocate budgets towards road improvement needs. Project improvements, using a lifecycle management approach may be prioritized using a Priority Guide Number (PGN). Burnside has slightly adjusted MTO's PGN formula, to reflect the condition rating methodologies developed for this study.

The PGN has built-in factors which account for asset management best practices, to strive to recommend the right treatment to the right road at the right time, based on where the road section lies within its life cycle. As described in this RNS, to be most cost-effective, timely expenditures should be made using routine maintenance, preventive maintenance, and resurfacing treatments, rather than allowing further degradation requiring much more costly rehabilitation or reconstruction treatments.

The PGN formula used in this RNS is as follows:

$$PGN = \frac{(100 - \text{Condition Rating}) * \text{TF} * \text{LCF}}{10000 * Road\ Width * (cost\ per\ square\ metre)}$$

where:

- PGN is the Priority Guide Number
- Condition Rating is the PCI, which is a rating out of 100
- TF is the Traffic Factor, which is an estimate of the traffic served over the life cycle of the improvement as follows:
  - routine maintenance TF = (Existing AADT + Yr. 10 AADT) x 0.38
  - preventive maintenance TF = (Existing AADT + Yr. 10 AADT) x 0.42
  - resurfacing TF = (Existing AADT + Yr. 10 AADT) x 0.5
  - rehabilitation or reconstruction TF = Yr. 10 AADT
- LCF is the Life Cycle Factor, which is the typical number of days that is assumed to be added to the pavement life as a result of the treatment, as follows:
  - 0 for routine maintenance treatments
  - 1095 for preventive maintenance treatments
  - 3650 for or resurfacing treatments
  - 7300 for rehabilitation and reconstruction treatments
- Road Width is the surface width of a given road section (in metres)

Like the PR, the higher the PGN value, the higher the priority of the road section improvement relative to its condition, the traffic it is serving and the cost of improving the section to provide the most service to traffic for the dollar expended. This provides a measure of comparison between improvement requirements of any particular road section relative to other road sections. The PGN value for each road is summarized in Appendix A.

In addition to the PR and PGN, a manual override to the priority of roads can be completed based on their required needs to maintain a recommended level of service for the corresponding surface type and/or surface condition. Some minor overrides to the order of priority have been made in the proposed 10-year plan to address condition related needs and/or upgrade needs to better serve the traffic volumes.

3.6 Road Budget Considerations

The Township has allocated approximately $460,000 per annum for gravel road maintenance, consisting of $230,000 for gravel and $230,000 for calcium chloride for dust control. In addition to the budget for gravel work, the Township has allocated approximately $150,000 per annum for asphalt road improvement/maintenance.

4.0 Other Road-Related Needs

In addition to the condition of roads, this study has considered several other road-related needs that may trigger certain improvement requirements for any particular road section. The other needs considered in this RNS include the following:

- Surface Type Needs – based on operational considerations (e.g., hardtop surfaces for urban and semi-urban areas, for sections with high truck traffic or for sections where AADT volumes that justify such surfaces.
- Geometric Needs – including deficiencies in horizontal/vertical alignments or surface/platform widths.
- Drainage Needs – based on the frequency of flooding on the roadway or the adequacy of roadside drainage (such as ditching and brushing).
- Maintenance considerations.
- Coordination with other projects.

It is recommended that these roads be considered independently, rather than collectively. The benefits of this approach include the following:

- Allows for a better integration into a pavement management system, where road condition will form the primary trigger for improvements.
- Provides clarity in establishing the time of needs, reason for improvement, and appropriate response.

The standards associated with the above road needs are based on the criteria outlined in the *Inventory Manual for Municipal Roads* (MTO, February 1991).

4.1 Surface Type Needs

Surface type should be appropriately designed to accommodate the volume of traffic and type of traffic, according to the MTO guidelines (Inventory Manual for Municipal Roads, Ministry of Transportation, 1991) and/or the Template for Life Cycle Road Improvements that has been developed for the Township in this RNS, as follows:

- Gravel Roads are typically tolerable for traffic volumes (AADT) of less than 200 vpd, however, upgrades to a hardtop surface type may be considered if the roadside environment is semi-urban or for road network connectivity/hardtop continuity, subject to budget constraints and desired Level of Service, as detailed in a previous section of this report. To minimize maintenance concerns, it is suggested that the roads that have traffic volumes exceeding 200 vpd may be considered for a hardtop surface (i.e., surface treatment for roads with an AADT of 200 to 500 vpd and asphalt for roads with an AADT over 500 vpd). While a surface treatment surface may be sufficient for roads in the 200 to 500 AADT range, it is our understanding that the Township prefers to upgrade to asphalt surfaces, where an upgrade to surface type is required.

- Asphalt roads may be considered where there is a high percentage of truck traffic, to maximize the road lifecycle.

Upgrading of gravel roads to asphalt may be considered for roads experiencing high truck volumes or high truck loading, or where high maintenance is an issue. As previously outlined, truck volumes typically range from a low of 3% on low volume roads (Local roads) to a high of 15% on higher volume roads (Collectors and Arterials). Based on the traffic counts provided by the Township, large vehicle percentages of 0.9 to 2.4% were recorded. Based on the additional traffic counts taken by OTI, large vehicle percentages of 2.3 to 13.6% were recorded. It is recommended that future traffic counting work in the Township also delineate truck volumes, particularly if consideration is being made to upgrade the road surface types. For low volume rural roads, this study suggests that surface upgrading may be economical to consider where the percentage of trucks exceed 10% of the AADT and is over 30 trucks per day.

The surface type considerations listed above are used as a guide to identify potential surface type needs. A review of the data in Appendix A indicates there are several roads in the Township that presently meet these surface type criteria, as summarized in Table 5. Roads that are planned for upgrading should be reviewed at the detailed design stage, to ensure that the geotechnical conditions and design conditions (e.g., widths, cross section geometry, vertical and horizontal alignments, etc.) are conducive to such upgrading and/or whether additional work is required to achieve the upgrading. If additional work is required, the benchmark costs should be increased to account for any related upgrading required to support the upgraded surface type.

Table 5: Existing Surface Types that May Warrant Upgrading

Road	Road Length (m)	AADT (vpd)
Gravel Roads with AADT > 200 vpd		
2nd Line from 0.6 Km north of County Road 109 to 5th Sideroad	2451	551
7th Line from Dufferin County Road 109 to 5th Sideroad	3073	350
5th Sideroad from 10th Line to 9th Line	1362	300
9th Line from 5th Sideroad to Dufferin County Road 10	3071	295
9th Line from Station Street to 5th Sideroad	1845	295
6th Line from Dufferin County Road 109 to 5th Sideroad	2488	279
5th Sideroad from Dufferin County Road 12 to 4th Line	1351	250
Amaranth - East Luther Townline from Dufferin County Road 109 (Hwy 9) to Grand River Bridge	1795	211
Amaranth - East Luther Townline from Grand River Bridge to Concession Road 2-3	832	211
5th Sideroad from 6th Line to Dufferin County Road 12	1269	208
5th Sideroad from 4th Line to Dufferin County Road 11	1534	200
5th Sideroad from 9th Line to 8th Line	1388	200

As noted in the above table, only one gravel road has AADT volumes exceeding 500 vpd, with the remaining gravel roads having AADT volumes of less than 350 vpd.

Where budgets allow, it is recommended that surface types be upgraded to meet these minimum desirable levels of service for the applicable surface type. However, where budget is the limiting factor, surface type standards may be reduced to tolerable standards, assuming that the road base/structure has been properly designed and constructed with appropriate maintenance applied. Where this lower standard surface type is used, a corresponding reduction in the useful life of that road is likely. In some areas, other constraints (e.g., right-of-way widths, horizontal or vertical curve deficiencies, etc.) may preclude the upgrading of such road sections without first addressing those factors.

4.2 Road Widths

The existing widths for the roads in the network are shown in the inventory in Appendix A. The surface widths shown represent the hard top width (excluding shoulders) for hard top roads, or the platform gravel width (travel lanes plus shoulders)

for gravel roads. Recommended lane widths generally vary with traffic volume and traffic speed for higher volume roads, and according to the type of use for lower volume roads.

Hardtop Road Widths

Minimum tolerable and recommended minimum road widths for hard-top roads have been assessed according to criteria outlined in the Geometric Design Guide for Canadian Roads (Transportation Association of Canada [TAC], June 2017). The surface (i.e., through lane) width requirements for hardtop roads are outlined below in Table 6.

Table 6: Tolerable & Recommended Surface Widths for Hard-Top Roads (Based on Criteria in TAC)

Roadside Environment	Design Speed (km/h)	Road Surface Width (Two-Lane Roadways)			
		Tolerable Lower Limit	Recommended Lower Limit	Recommended Upper Limit	Tolerable Upper Limit
Rural or Semi-Urban	60 or less	5.4 m	6.0 m	7.4 m	8.0 m
	70 to 100	6.5 m	7.0 m	7.4 m	8.0 m
Urban	60 or less	5.4 m	6.0 m	7.4 m	8.0 m
	70 to 100	6.0 m	6.6 m	7.4 m	8.0 m

Note: 1. For rural or semi-urban roadways with a design speed of 70 to 100 km/h, a minimum tolerable surface width of 3.25 m per lane was applied, which is consistent with minimum width criteria for secondary highways with an AADT less than 1,000 vpd outlined in the *Geometric Design Standards for Ontario Highways* (Ministry of Transportation Ontario, 1989).

Only one road (Hornett Lane) has been identified to have a width that is below the tolerable lower limit, as shown in Table 7. This road is a short semi-urban residential road, with low speeds and low traffic volumes; therefore, widening of this road is not considered to be a critical NOW need. It is recommended that the width of this road be increased to meet the recommended minimum lower width limit, as part of any future improvements to address road conditions.

Table 7: Summary of Hard-Top Roads with Deficient Widths

Road	Road Length (m)	Posted Speed (km/h)	AADT (vpd)	Width (m)
Hornett Lane from Menary Drive to Dufferin County Road 10	64	40	60	4.2

Gravel Road Widths

The minimum gravel road surface widths (i.e., platform width, travel width plus shoulders) have been assessed according to the criteria outlined in the Geometric Guidelines for Municipal Roads (Ontario Good Roads Association [OGRA], 1998). The recommended minimum platform width requirements for gravel roads are outlined below in Table 8.

Table 8: Recommended Minimum Platform Widths for Gravel Roads (Based on OGRA)

Design Speed (km/h)	Minimum Platform Width for Varying AADT Traffic Volume Ranges (vpd)				
	<50 vpd	50 – 249 vpd	250 – 399 vpd	400 – 999 vpd	1,000 – 2,000 vpd
80	5.5 m	6.0 m	6.5 m	7.5 m	7.5 m
70				7.0 m	7.0 m
60				6.5 m	6.5 m
50				6.0 m	6.5 m
40				6.0 m	6.0 m

The gravel roads in the Township that have been identified to have widths that currently do not meet the recommended lower width limit are summarized in Table 9.

Table 9: Summary of Gravel Roads with Deficient Widths

Road	Road Length (m)	Posted Speed (km/h)	AADT (vpd)	Width (m)
5th Sideroad from Amaranth - East Luther Townline to 10th Line	101	80	50	5.4
9th Line from 5th Sideroad to Dufferin County Road 10	3071	80	295	5.5

Gravel roads with deficient road widths that are located on roads with very low traffic volumes (i.e., AADT equal to or less than 60 vpd), may not be considered critical (i.e., not justifying widening to address the width deficiency). As shown in Table 9, the

5th Sideroad, from Amaranth-East Luther Townline to 10th Line, has a width of 5.4 m, while the recommended minimum width is 6.0 metres, which is considered to be tolerable, given the low AADT (i.e., 50 vpd).

As shown in Table 9, the 9th Line, from 5th Sideroad to Dufferin County Road 10, has a width of 5.5 m, while the recommended minimum width is 6.5 m. This width deficiency is not considered critical in the short term, considering the traffic volumes, however, it is recommended that the width of this road be upgraded to meet minimum acceptable standards when, or if, this section is rehabilitated or reconstructed to address condition needs.

4.3 Road Alignments

Road alignments are reviewed to determine the number of substandard horizonal/vertical curves and/or substandard gradients and/or substandard stopping sight distances (i.e., resulting from curves near driveway locations). The following criteria have been applied in the determination of alignment deficiencies, based on 80 km/h design speeds:

- Grades >= 8%; or
- Horizontal curves with radius of <= 250 m or stopping sight distances of <= 135 m; or
- Vertical crest curves with sight distances of <= 130 m.

Deficient horizontal curves are defined as those which do not meet design speeds of 10 km/h over posted speeds. However, the *Inventory Manual for Municipal Roads* (MTO, 1991) defines curves as tolerable when they meet design speeds of 5 to 15 km/h below the posted speeds, assuming they have appropriate warning signs.

The rural roads in the Township that have been identified to have alignment deficiencies are summarized in the following Table:

Table 10: Road Segments with Alignment Deficiencies

ID Surface	Road	AADT (vpd)	Gradient Constraints	Vertical Curve Constraints	Horizontal Curve Constraints
0105 HCB	Mono-Amaranth Townline (25th Sideroad to 30th Sideroad)	1510			1
1200 HCB	5th Sideroad (Amaranth-East Luther Townline to 10th Line	399			1
1202 Gravel	5th Sideroad (9th Line to 8th Line)	200			4
0702 Gravel	7th Line (10th Sideroad to 15th Sideroad)	150		3	
2011 Gravel	Grand View Road (County Road 109 to end)	110	1	1	
1402 Gravel	15th Sideroad (9th Line to 8th Line)	100			2
0205 Gravel	2nd Line (25th Sideroad to 30th Sideroad)	80		1	
0403 Gravel	4th Line (15th Sideroad to 20th Sideroad)	65		1	
1404 Gravel	15th Sideroad (7th Line to 6th Line)	34			3

It is recommended that the alignment constraints for the roads noted in Table 10 be improved to meet minimum acceptable standards when, or if, these sections are rehabilitated or reconstructed to address condition needs. Improvements to alignments and/or enhanced warning signage should particularly be considered at the following locations:

- Sections that have the potential for higher speeds (e.g., existing hardtop roads or those roads proposed to be converted to hardtop).
- Sections that have higher traffic volumes and/or experience significant non-local traffic.
- Sections that have a previous history of collisions.

4.4 Road Drainage

Drainage Adequacy ratings (scale of 1 to 15) were estimated based on the conditions observed in the field (i.e., flat crown, high shoulders, deficient ditching, ponding, flooding issues or vegetation encroachment). The ratings provided in the *Inventory Manual for Municipal Roads* (Ministry of Transportation Ontario, 1991) were used as a guide in establishing the Drainage Adequacy ratings. Rating of 11 or below are indicative of roads that may require excessive maintenance to address inadequacies in drainage and/or experience poor drainage conditions that may impede normal traffic movements. The roads that were identified during the field review to have Drainage Adequacy ratings of 11, or below, are summarized in the following Table:

Table 11: Road Segments with Poor Drainage Adequacy Ratings

ID Surface	Road	AADT (vpd)	Drainage Rating (1 to 15 scale)	Drainage Notes
2014 HCB	Hornett Lane (Menary Drive to County Road 10)	60	3	Inadequate drainage
2018 HCB	James Street (Evans Avenue to end of James Street)	130	3	
2026 HCB	Menary Drive (County Road 12 to Hornett Lane)	60	3	Severe ponding; Culverts heaving
1709.3 HCB	30th Sideroad (Devonleigh Drive to County Meadows Drive)	800	4	High shoulders; no ditching
2014 HCB	Henry Street (Evans Street to End)	10	4	
1203 Gravel	5th Sideroad (8th Line to 7th Line)	100	5	Shoulders overgrown
1709.5 HCB	30th Sideroad (County Meadows Drive to Mono-	800	6	

ID Surface	Road	AADT (vpd)	Drainage Rating (1 to 15 scale)	Drainage Notes
	Amaranth Townline)			
1709.4 HCB	30th Sideroad (Country Meadows Drive to Mono Meadows Drive)	800	6	High shoulders
1208 HCB	5th Sideroad (County Road 11 to 2nd Line)	1032	6	Shoulders overgrown
1103.3 HCB	Amaranth - East Luther Townline (Con. 8-9 Road to 20th Sideroad)	152	6	
2036 HCB	Station Street (10th Line to St. John Street)	490	6	
1103.2 HCB	Amaranth - East Luther Townline (1.5 km N. of 15th Sideroad to Con. 8-9 Road)	152	7	
1001 Gravel	10th Line (5th Sideroad to County Road 10)	60	8	Shoulders overgrown
0200.1 HCB	2nd Line (County Road 109 to 0.6 km N. of County Road 109)	551	8	
1202 Gravel	5th Sideroad (9th Line to 8th Line)	200	8	Shoulders overgrown
2040 HCB	Woodland Road (Maplewood Drive to Cul-de-sac)	90	8	

ID Surface	Road	AADT (vpd)	Drainage Rating (1 to 15 scale)	Drainage Notes
1403 Gravel	15th Sideroad (8th Line to 7th Line)	150	9	Shoulders overgrown, ponding
1404 Gravel	15th Sideroad (7th Line to 6th Line)	34	9	
1102.1 HCB	Amaranth - East Luther Townline (County Road 10 to 15th Sideroad)	80	9	Road under Grand Valley responsibility
2012 HCB	Henry Street (Main Street to Evans Street)	240	9	
1206 Gravel	5th Sideroad (County Road 12 to 4th Line)	250	10	Shoulders overgrown
1207 Gravel	5th Sideroad (4th Line to County Road 11)	200	10	Shoulders overgrown
1204 Gravel	5th Sideroad (7th Line to 6th Line)	150	10	
0600.1 HCB	6th Line (County Road 109 to 5th Sideroad)	279	10	
1100.3 HCB	Amaranth - East Luther Townline (Concession Road 2-3 to 5th Sideroad turn-off)	211	10	Road under Grand Valley responsibility
2008 HCB	Devonleigh Drive (30th Sideroad to 30th Sideroad)	240	10	
0106.1 HCB	Mono-Amaranth Townline (30th Sideroad to 0.6 km N. of 30th Sideroad)	1510	10	

ID Surface	Road	AADT (vpd)	Drainage Rating (1 to 15 scale)	Drainage Notes
2038.1 HCB	Station Street (Peter Street to 390 m E. of Peter Street)	570	10	
2037 HCB	Station Street (St. John Street to Peter Street)	590	10	
1209.1 HCB	5th Sideroad (Crago Road to 0.7 km. E. of 2nd Line)	1300	11	Shoulders overgrown
1205 Gravel	5th Sideroad (6th Line to County Road 12)	208	11	Shoulders overgrown
0602.2 Gravel	6th Line (0.4 km. N. of County Road 10 to 15th Sideroad)	70	11	
0603 Gravel	6th Line (15th Sideroad to 20th Sideroad)	65	11	
1000.4 HCB	Amaranth - East Luther Townline (5th Sideroad turn-off to 5th Sideroad)	30	11	Road under Grand Valley responsibility
2001 HCB	Cedar Place (Maplewood Drive to end of Cedar Place)	70	11	
2007 HCB	David Street (Mill Street to Main Street)	85	11	
2019 HCB	Main Street (David Street to Henry Street)	90	11	Shoulders overgrown
2024 HCB	Maplewood Drive	255	11	

ID Surface	Road	AADT (vpd)	Drainage Rating (1 to 15 scale)	Drainage Notes
	(Cedar Place to Sylvanwood Road)			
2022 HCB	Maplewood Drive (Mono-Amaranth Townline to Cedar Place)	290	11	
0105 HCB	Mono-Amaranth Townline (25th Sideroad to 30th Sideroad)	1510	11	Steep sideslopes
2032 HCB	Russel Hill Road (St. John Street to Peter Street)	250	11	
2038.2 HCB	Station Street (390 E. of Peter Street to 9th Line)	570	11	

Where road works are proposed, it is recommended that additional investigations be completed to determine the requirements for drainage improvements for the roads noted in the above Table.

It is understood that the Township completes shoulder maintenance, brushing and ditching on an as-needed basis to respond to complaints or problems that are identified. However, considering the drainage issues that have been identified it is recommended that the Township formalize a pro-active program in these areas, to maximize the useful life of the road assets in the network.

4.5 Maintenance Considerations

Maintenance demands (e.g., low, average, high) are not a primary consideration in the prioritization of road sections for improvements, however this may be a consideration in the decision to upgrade gravel surfaces to hardtop surfaces.

The Level of Service for maintenance of the Township's roads follows the Provincial Minimum Maintenance Standards (O. Reg. 239/02 as amended by O. Reg. 366/18). These regulations prescribe required monitoring of the roads and maintenance response requirements, based on the road's class. The road class is set by its Average Daily Traffic and speed limit. The Township's speed limits range from 40 km/h to 80 km/h in

the rural areas and from 40 km/h to 50 km/h in the built-up areas (i.e., villages), with the resulting maintenance classes summarized in the following Table:

Table 12: Minimum Maintenance Standard Classifications (O.Reg.239/02, May 2018)

Environment	Speed Limit (km/h)	Average Daily Traffic (vpd)	Minimum Maintenance Classification	Length of Road Maintained by Amaranth (km)
Built-Up Areas (Villages)	40	0-49	6	6.410
	50	200-2999	5	0.781
Rural	40	0-49	6	3.013
	50	0-199	6	1.231
		200-2999	5	3.301
	60	50-499	5	14.375
		500-2999	4	4.814
	70	50-199	5	7.325
		200-999	4	6.987
		1000-9999	3	9.949
	80	0-49	6	25.013
		50-999	4	144.206
		1000-4999	3	3.887

In general, gravel roads in the Township maintain an adequate condition through multiple ongoing grading operations throughout the season, with the frequency of grading dependent upon traffic and road condition. Dust suppressant (calcium) is also applied to the gravel roads, as required. Top-up gravel is added to gravel roads at a frequency of approximately 3 years, to replenish the gravel that is lost due to normal maintenance and operations of these roads.

4.6 Coordination with Other Projects

For budget allocation and phasing purposes, coordination with planned bridge projects and other infrastructure projects (land development, drainage, water and sewer, etc.) should be a consideration. Construction detours may also be a consideration in the scheduling/interface of road projects with these other projects.

4.6.1 Coordination with Planned Bridge Improvements

The Township's *2020 Structure Inspection Appraisal Report* (K. Smart Associates Limited, September 2020) was reviewed to identify potential bridge work. A biennial inspection would have been completed in 2020, however this information was not provided. The bridges that were identified for potential work are summarized in Table 13.

Table 13: Planned Bridge Improvements

Road ID Structure No.	Road	Surface	AADT	Notes
0700 Structure 2	7th Line (1.6 km N of CR109)	Gravel	350	Structure damaged in collision in 2020. Structure replaced in 2022 ($763,000).
0800 Structure 3	8th Line (at Lot 3, Conc. 7/8)	Gravel	189	Narrow structure. Major rehabilitation recommended ($215,300).
0900.3 Structure 4	9th Line (at Lot 3 Conc. 8/9)	Gravel	295	Watercourse realignment recommended.
2036 Structure 5	Station Street (50 m E. of Mill Street)	HCB	490	Minor rehabilitation recommended ($207,600).
1000.6 and 1000.7 Structure 6	10th Line (at Lot 4 Conc. 9/10)	HCB	1040	Major rehabilitation work completed in 2020, however further work on expansion joints is recommended.
0702 Structure 10	7th Line (1.9 km N. of CR 10)	Gravel	150	One lane structure. Recommended for replacement. Design work is completed; possible replacement proposed in 2023 ($1,150,000)
1404 Structure 11	15th Sideroad (at Lot 15 Conc. 6)	Gravel	34	One lane structure. Recommended for replacement.
0602.2 Structure 12	6th Line (at Lot 15 Conc. 5/6)	Gravel	70	Narrow structure. Recommended for replacement ($1,150,000).
0603 Structure 13	6th Line (at Lot 16 Conc. 5/6)	Gravel	65	One lane structure. Recommended for replacement or closure ($1,150,000).

As noted in the above Table, most of the structures that require work are on gravel roads, with only 2 structures being on hardtop roads.

The improvements proposed to both structures on the hardtop roads do not require replacement and therefore are not dependent on coordination with roadwork in this area.

Structure 10, which is located on 7th Line (gravel road, AADT 150), is currently being designed for replacement in 2023 or when budgets allow.

Structure 13, which is located on 6th Line (gravel road, AADT 65 vpd) is recommended for replacement or closure. The closure of this structure would result in circuitous traffic to/from the south for the accesses to 8 properties that are located on 6th Line in this area. Conversely the replacement cost is a consideration, considering the relatively low traffic. It is assumed that a future Class Environment Assessment will be completed to confirm the preferred requirement (i.e., replacement versus closure) for this structure.

4.6.2 Coordination with Development Improvements

Dufferin County has commenced a Class Environmental Assessment (EA) for the intersection realignment of Dufferin County Road 109 and 2nd Line. The 2nd Line currently has a hardtop surface from CR190 to about 615 m north (i.e., ID 0200.1). This road continues as a gravel road to the north from this point (i.e., ID 0200.2). If this realignment occurs it is expected that additional traffic may be attracted to follow 2nd Line, as well as 5th Line (i.e., ID 1209.1 and ID 1209.2). Upgrading ID 0200.2 to a hardtop road may be a consideration under such a scenario.

There are various proposed subdivision developments planned for the Township. ACE subdivision and Primrose Estates are proposed to be developed in the northeast corner to the east of Amaranth Mono Townline. ACE subdivision is to be developed south of 30th Sideroad and is proposed to add 840 m to the Township's road network. Primrose Estates is to be developed north of 30th Sideroad and is proposed to add 960 m of road to the Township's road network. Cachet/Centurion is to be developed in the southwest corner of the Township, in the community of Waldemar and will add 2,000 m (2.0 km) of roads to the Township's road network. Hamount Valley is to be developed in the southeast corner of the Township off of County Road 16 and will add 3,400 m (3.4 km) of roads to the Township's road network upon completion. Additionally, Sarah Properties is proposed to be developed in the community of Waldemar to the west of 10th Line. Sarah Properties is proposed to add 2,160 m (2.16 km) of roads to the Township's road network. Upgrading of the current road network as well as planning for future growth should be coordinated with the development of the subdivisions listed above.

5.0 Road Improvement Needs

5.1 Replacement Costs

The replacement cost of a physical asset is the amount it would cost to replace the existing asset with the same (or a similar) asset.

The benchmark improvement costs for “Reconstruction” improvements, as outlined in Table 4, were used to estimate the replacement cost for all roads in the Township. For the purposes of estimating the replacement cost of gravel road sections reviewed in this study, it is assumed that roads will retain their gravel surface (i.e., rather than be upgraded to a hardtop surface). The estimated replacement cost for all roads reviewed in this study are contained in Table 14.

Table 14: Road Asset Replacement Cost

Surface Type	Length of Asset	Replacement Cost
Hard-top Roads	55.274	$22,366,014
Gravel Roads	193.903	$43,963,512
Network Total	249.177	$66,329,525

5.2 Improvement Needs to Address Road Conditions (“Now” Needs)

The improvement needs identified as part of this study are outlined in the Road Improvement Needs spreadsheet in Appendix E, along with an enlarged map of their location. The needs determined are “NOW” needs and are subject to ongoing deterioration, which may require future improvements to be more extensive. For example, a road that currently has a resurface need with a PCI of 65 that cannot be improved for three years due to budget restraints might require rehabilitation in three years (i.e., keeping up with the current road needs and applying lifecycle improvements with reduce the cost of future improvements). The current needs of the Township’s Road network are approximately $15,039,596. A breakdown of the types of improvements in the backlog can be found in Table 15 below. Maps of the PCI evaluation and the suggested improvement types are shown Appendix D And Appendix E respectively.

Table 15: Improvement Backlog Breakdown

Improvement Type		Determined "Now" Needs
Reconstruction	Hard-top	$0
	Gravel	$1,514,500
Rehabilitation	Hard-top	$1,556,654
	Gravel	$3,149,688
Resurface	Hard-top	$2,322,960
Upgrade to Hard-top	Gravel	$5,636,876
Preventive Maintenance	Hard-top	$222,996
	Gravel	$635,922
Total Backlog		**$15,039,596**

5.3 10-Year Road Improvement Plan

A total of 249.18 km of roads were reviewed during this study, including 192.31 km of gravel roads and 56.87 km of hardtop roads. Based on the analysis of the road condition data, and review of the prioritization triggers previously outlined in this report, a ten-year road improvement plan has been developed for the Township's roads. The ten-year plan has been established using the prioritization methodology as well as the budget targets outlined. Minor overrides have been completed for certain roads to ensure they are improved to maintain a desired level of service for the type and volume of traffic they serve.

The ten-year improvement plan has not included costs for the routine maintenance of the gravel roads or for the routine maintenance or preventive maintenance of the hardtop roads. It is assumed that gravel roads will be graded and have dust suppressant measures applied through ongoing reactive maintenance. It is also recommended that routine maintenance (i.e., crack sealing) and preventive maintenance (i.e., micro-surfacing or slurry sealing) of hardtop roads be completed on a reactive basis. A yearly budget could be established for ongoing routine maintenance and preventive maintenance of hardtop roads, to protect the investment that has been made in those assets and length the life cycle before more intensive interventions may be required (i.e., resurfacing, rehabilitation or reconstruction).

6.0 Asset Management and Capital Planning Considerations

As part of this study, a ten-year road improvement plan has been developed to assist the Township in the development of a multi-year capital project plan. It is understood that the Township intends to use the updated condition rating data as input into their ongoing Asset Management and Capital Planning work. The updated GIS database, Excel spreadsheets and mapping assist in this ongoing future work by the Township. Such future work may also require updating traffic data, confirming the

maintenance/improvement needs and costs based on a project-level review and completing risk analysis to establish project priority within budget limitations.

To maintain a current database for Asset Management and Capital Planning purposes, it is recommended that the Township complete regular updates every 3-5 years to update the condition ratings of the road network, to assess ongoing deterioration rates and resulting improvement requirements.

Appendix A

Road Inventory Maps and Table

16.5°E°

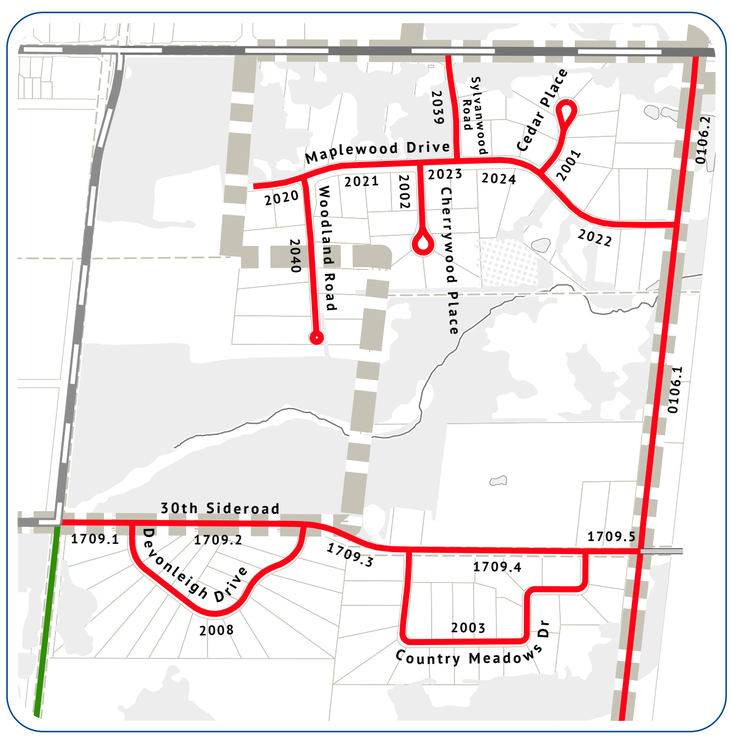
0 500 1,000 1,500 2,000
Metres
1:30,000 (Main Map)

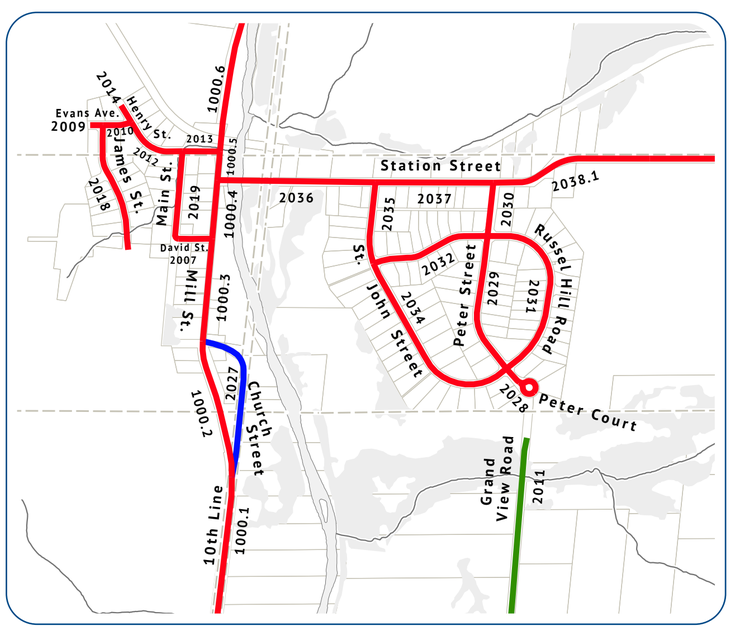
Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS
UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Highway 89
TWP. OF MELANCTHON
TWP. OF AMARANTH
Jessopville
Maple Grove
Victoria St.
TOWN OF SHELBURNE
TWP. OF AMARANTH
30th Sideroad
Sideroad
Amaranth - East Luther Townline
10th Line
9th Line
8th Line
7th Line
6th Line
County Road 12
4th Line
County Road 11
2nd Line
Mono-Amaranth Townline
25th Sideroad
20th Sideroad
Campania
Blacks Corners
Crombies
Bridge Removed
TOWN OF GRAND VALLEY
TWP. OF AMARANTH
15th Sideroad
Whittington
TWP. OF AMARANTH
TOWN OF MONO
Amaranth East Luther Townline is maintained by the Town of Grand Valley from County Road 109 to 15th Sideroad.
Mono Amaranth Townline is maintained by the Town of Mono from 5th Sideroad to 20th Sideroad.
County Road 10
Bowling Green
Laurel
Menary Dr.
2026
Waldemar
Station St.
2034
Grand River
Grand View Rd.
2011
Shannon Ct.
2033
Farmington
5th Sideroad
TWP. OF AMARANTH
TWP. OF EAST GARAFRAXA
TWP. OF AMARANTH
TOWN OF ORANGEVILLE

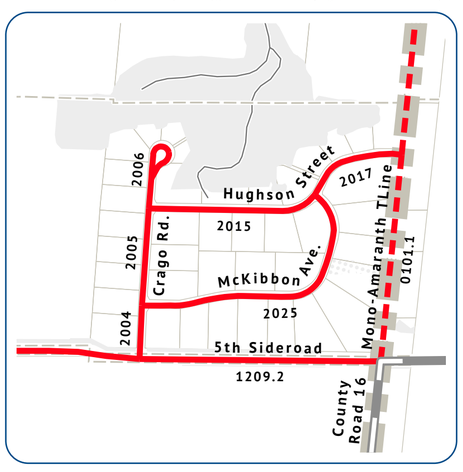
Locations of Interest
- Gravel Pit
- Gravel Pit Entrance
- Municipal Office
- Municipal Works Yard
- School

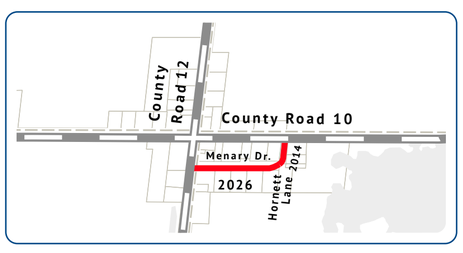
Road Surface Material
- High Class Bitumen Surface
- High Class Bitumen Surface (Maintained by Adjacent Municipality)
- Low Class Bitumen Surface
- Gravel Surface
- Gravel Surface (Maintained by Adjacent Municipality)





0 500 1,000
Metres
1:10,000 (All Inset Maps)





Drawn By: PS
Checked By: EM
Client: Township of Amaranth
Project: Roads Needs Study 2022
Project Number: 300055179
Date: 2023/05/24

Road Surface Type & Inventory

Appendix A

Appendix A - Road Inventory (Sorted by Road Name)

Municipal ID	Asset or PSAB ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	AADT Count Method	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)
1004	3396	10th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	3085	7.00	9.10	28074
1006	3394	10th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	35	Estimate	1120	6.00	7.80	8736
1002	3398	10th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3081	6.30	8.10	24956
1000.6	3154, 3155	10th Line	Henry Street	Grand River Bridge	Amaranth (Rural)	No	5	High Class Bituminous	Rural	50 km/h	01000-01999	1040	Estimate	1093	7.00	10.00	7651
1000.1	2404	10th Line	Dufferin County Road 109	Church Street	Amaranth (Rural)	No	5	High Class Bituminous	Rural	50 km/h	01000-01999	1285	Estimate	467	7.00	11.00	3269
1000.7	2423, 3512	10th Line	Grand River Bridge	5th Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01999	1040	Estimate	760	7.00	10.00	5320
1001	3399	10th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3080	5.60	6.60	20328
1005	3395	10th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3087	7.40	9.00	27783
1003	3397	10th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	3091	6.20	8.00	24728
1401	3166	15th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	100	Estimate	1377	5.20	7.20	9914
1402	3167	15th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	100	Estimate	1423	4.60	6.50	9250
1409	3517	15th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	100	Estimate	1401	7.20	9.90	13870
1408	3516	15th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	66	Actual Count	1258	6.60	7.60	9561
1407	3515	15th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1517	5.90	7.20	10922
1406	3171	15th Sideroad	5th Line (Dufferin County Road 12)	4th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	100	Estimate	1317	5.80	7.00	9219
1405	3170	15th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	1301	6.10	8.50	11059
1400	3165	15th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	150	Estimate	1304	5.50	7.60	9910
1404	3169	15th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	34	Actual Count	1784	5.00	6.40	11418
1403	3168	15th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	150	Estimate	1320	6.60	10.70	14124
1503	2371	20th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	70 km/h	00500-00999	650	Estimate	1329	7.00	9.00	9303
1502	2392, 2402	20th Sideroad	9th Line	0.6 Km E. of 9th Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	70 km/h	00500-00999	500	Estimate	1371	7.00	9.00	9597
1501	2370	20th Sideroad	10th Sideroad	9th Sideroad	Amaranth (Rural)	No	3	High Class Bituminous	Rural	90 km/h	00200-00499	350	Estimate	1380	7.00	9.00	9660
1500	2369	20th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	70 km/h	00200-00499	289	Actual Count	1319	7.00	8.00	9233
1504	2372	20th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	70 km/h	00500-00999	650	Actual Count	1701	7.00	9.50	11907
1505	2373	20th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	4	High Class Bituminous	Rural	70 km/h	00500-00999	650	Estimate	1267	7.00	9.50	8869
1506		20th Sideroad	5th Line	4th Line	Amaranth (Rural)	No	5	High Class Bituminous	Rural	70 km/h	00050-00199	80	Estimate	1303	7.00	11.00	9121
1507	2375	20th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	5	High Class Bituminous	Rural	70 km/h	00050-00199	100	Estimate	1518	7.00	11.00	10626
1509	2377	20th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	3	High Class Bituminous	Rural	70 km/h	01000-01999	1227	Actual Count	1389	7.00	10.00	9723
1508		20th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	3	High Class Bituminous	Rural	70 km/h	01000-01999	1150	Estimate	1255	7.00	10.00	8785
1602	3411	25th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	1395	6.10	8.30	11579
1606	3183	25th Sideroad	5th Line	4th Line	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	29	Actual Count	1290	7.00	9.50	12255
1609	3199	25th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1384	8.30	10.20	14117
1601	3410	25th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	1384	5.40	6.70	9273
1600	3409	25th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	1324	6.00	7.40	9798
1603	3412	25th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	1323	5.70	6.90	9129
1604	3239	25th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	1721	6.90	9.10	15661
1605	3416	25th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	1277	5.90	7.50	9578
1608		25th Sideroad	0.1 Km E. of County Road 11	2nd Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	75	Actual Count	1243	9.00	11.30	14046
1607		25th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	1526	6.60	8.20	12513
0203	3252	2nd Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3045	8.10	10.30	31364
0204	3253	2nd Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3059	8.10	9.60	29366
0202		2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3045	8.00	9.60	29232
0201	3249	2nd Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	150	Actual Count	3049	7.50	9.70	29575
0200.1	2464	2nd Line	Dufferin County Road 109	0.6 Km N. of County Road 109	Farmington	No	5	High Class Bituminous	Rural	50 km/h	00500-00999	551	Actual Count	624	7.00	8.50	4368
0200.2	3193	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	Amaranth (Rural)	No	3	Gravel	Rural	80 km/h	00500-00999	551	Estimate	2451	8.40	10.80	26471
0205	3254	2nd Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00050-00199	80	Estimate	3102	8.60	12.00	37224
1706	3181	30th Sideroad	5th Line (Dufferin County Road 12)	4th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1267	5.80	7.30	9249
1700	2358	30th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	1342	6.50	8.10	10870
1701	2359	30th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	1389	6.70	9.90	13751
1702	2357	30th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	1406	5.60	7.30	10264
1703	2356	30th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1348	5.30	7.30	9840
1705	3238	30th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	100	Estimate	1224	6.40	8.00	9792
1704	3415	30th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1671	5.70	6.90	11530
1707	3256	30th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1489	6.80	8.00	11912
1709.1	2431	30th Sideroad	2nd Line (Dufferin County Road 11)	Devonleigh Drive	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00500-00999	800	Estimate	176	7.00	10.00	1232
1709.2	2431	30th Sideroad	Devonleigh Drive	Devonleigh Drive	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00500-00999	800	Estimate	406	7.00	10.00	2842
1709.5		30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00500-00999	800	Estimate	130	6.60	8.50	858
1709.4	2406	30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00500-00999	800	Estimate	418	7.00	8.00	2926
1709.3	2431	30th Sideroad	Devonleigh Drive	Country Meadows Dr	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00500-00999	800	Estimate	258	7.00	8.50	1806
0406	3245	4th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	1151	7.20	9.60	11050
0404	3418	4th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3054	7.50	9.00	27486
0405	4281	4th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	3084	6.30	10.10	31148
0403	2386, 2387	4th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	65	Estimate	3072	6.80	9.90	30413
0402	3248	4th Line	10th Sideroad	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3054	6.70	8.70	26570
0400	3246	4th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	150	Estimate	3078	6.90	9.50	29241
0401	3247	4th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3054	6.90	9.00	27486
1208	2439	5th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01999	1032	Actual Count	1271	7.00	10.00	8897
1209.2	2403	5th Sideroad	Crago Road	Mono - Amaranth Townline (Dufferin County Road 16)	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01999	1550	Estimate	571	7.00	10.00	3997
1209.1	2393	5th Sideroad	Crago Road	0.7 Km E. of 2nd Line	Amaranth (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01999	1300	Estimate	824	7.00	10.00	5768
1201	3400	5th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00200-00499	300	Estimate	1362	7.50	8.50	11577
1204		5th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00050-00199	150	Estimate	1729	7.50	8.50	14697
1203	3406	5th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00050-00199	100	Estimate	1276	7.70	8.70	11101
1200		5th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	101	5.00	5.40	545
1200	2470	5th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00200-00499	399	Actual Count	1346	7.00	11.00	9422
1206	3240	5th Sideroad	Dufferin County Road 12	4th Line	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00200-00499	250	Estimate	1351	6.60	7.50	10133
1205	3241	5th Sideroad	8th Line	Dufferin County Road 12	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00200-00499	208	Actual Count	1269	8.00	9.00	11421
1207	3242	5th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00200-00499	200	Estimate	1534	8.00	9.00	13806
1202	3404	5th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	5	Gravel	Rural	60 km/h	00200-00499	200	Estimate	1388	6.70	7.70	10688
0600.2	3231	6th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00200-00499	279	Estimate	2488	7.00	10.00	24880
0606	3237	6th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	30	Estimate	1199	7.00	9.10	10911
0605	3236	6th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	55	Estimate	3172	7.40	9.00	28548
0604	3235	6th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3069	6.40	7.90	24245
0600.1	3510	6th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	4	High Class Bituminous	Rural	80 km/h	00200-00499	279	Actual Count	467	7.00	9.00	3269
0601	3232	6th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	65	Estimate	3051	5.50	7.90	24103
0602.1	2461	6th Line	Dufferin County Road 10	0.4 Km N. of County Road 10	Laurel	No	6	High Class Bituminous	Rural	50 km/h	00050-00199	70	Estimate	450	6.00	7.60	2700
0603	3234	6th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	65	Actual Count	3079	6.40	8.40	25864
0602.2	3233	6th Line	0.4 Km N. of County Road 10	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	70	Actual Count	2606	5.40	7.00	18242
0700	3227	7th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00200-00499	350	Estimate	3073	6.70	10.00	30730
0703.1	3230	7th Line	15th Sideroad	End (Willow Brook)	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	35	Estimate	2142	6.20	8.70	18635
0703.2		7th Line	20th Sideroad	End (Willow Brook)	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	85	Actual Count	897	4.00	8.70	7804
0706	3414	7th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	128	Estimate	1125	6.30	7.20	8100
0705	2330	7th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	128	Estimate	3085	7.00	11.00	33935
0704	3413	7th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	128	Actual Count	3087	6.50	9.00	27783
0702	3229	7th Line	10th Sideroad	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	150	Estimate	3062	6.00	8.70	26639
0701	3228	7th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3165	6.70	9.30	29435
0803	3226	8th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	3056	6.20	6.70	20475
0804	3180	8th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	3071	5.60	8.40	25796
0806	3176	8th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1115	7.60	9.80	10927
0805	3178	8th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3066	5.70	8.20	25141
0802	3225	8th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	60	Estimate	3067	6.20	8.30	25456
0801	3403	8th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3093	6.20	8.00	24744
0800	3405	8th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	189	Actual Count	3137	7.10	10.10	31684
0901	3402	9th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00200-00499	295	Estimate	3071	5.00	5.50	16891
0900.3	3401	9th Line	Station Street	5th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00200-00499	295	Actual Count	1845	6.30	10.00	18450
0904	3179	9th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	3088	5.70	8.20	25322
0903	2318	9th Line	0.3 Km S. of 20th Sideroad	20th Sideroad	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	20	Estimate	299	5.40	9.40	2811
0906	3175	9th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	6	Gravel	Rural	80 km/h	00000-00049	30	Estimate	1123	5.90	8.00	8984
0902	3408	9th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	3087	6.90	10.00	30870
0900.1	3514	9th Line	Dufferin County Road 109	Station Street	Amaranth (Rural)	No	-1	High Class Bituminous	Rural	Non-Applicable	00500-00999	605	Estimate	165	7.00	9.00	1155
0900.2	2314	9th Line	Dufferin County Road 109	Station Street	Amaranth (Rural)	No	3	High Class Bituminous	Rural	80 km/h	00500-00999	605	Estimate	1052	7.00	10.00	7364
0905	3177	9th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	4	Gravel	Rural	80 km/h	00050-00199	50	Estimate	3083	6.10	7.50	23123
1104.2	3391	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00050-00199	75	Estimate	1638	6.10	8.60	14087
1101.2	3149	Amaranth - East Luther Townline	2.36km N. of 5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	Yes	5	High Class Bituminous	Rural	60 km/h	00050-00199	60	Estimate	147	7.00	10.00	1029
1103.3	2471	Amaranth - East Luther Townline	Con. 8-9 Road (Grand Valley)	20th Sideroad	Amaranth (Rural)	Yes	5	Gravel	Rural	70 km/h	00050-00199	152	Actual Count	1363	7.00	8.00	10904
1103.2	3153	Amaranth - East Luther Townline	1.5 km N. of 15th Sideroad	Con. 8-9 Road (Grand Valley)	Amaranth (Rural)	Yes	5	Gravel	Rural	70 km/h	00050-00199	152	Estimate	218	7.00	8.00	1744
1102.1	3151	Amaranth - East Luther Townline	Dufferin County Road 10	0.1km N. of County Road 10	Amaranth (Rural)	Yes	5	High Class Bituminous	Rural	60 km/h	00050-00199	80	Estimate	106	7.00	10.00	742
1100.1	2459	Amaranth - East Luther Townline	Dufferin County Road 109 (Hwy 9)	Grand River Bridge	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00200-00499	211	Estimate	1795	7.00	10.00	17950

Appendix A - Road Inventory (Sorted by Road Name)

Municipal ID	Asset or PSAB ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	AADT Count Method	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)
1100.3		Amaranth - East Luther Townline	Grand River Bridge	Concession Road 2-3	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00200-00499	211	Actual Count	832	7.00	10.00	8320
1103.1	3390	Amaranth - East Luther Townline	15th Sideroad	1.5 km N. of 15th Sideroad	Amaranth (Rural)	Yes	5	Gravel	Rural	70 km/h	00050-00199	152	Estimate	1492	5.70	9.50	14174
1102.3		Amaranth - East Luther Townline	Con. 6-7 Road (Grand Valley)	15th Sideroad	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	1046	5.70	8.10	8473
1102.2	2454	Amaranth - East Luther Townline	0.1km N. of County Road 10	Con. 6-7 Road (Grand Valley)	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00050-00199	80	Estimate	2012	6.50	8.70	17504
1105.1		Amaranth - East Luther Townline	25th Sideroad	Con. 12-13 Road (Grand Valley)	Amaranth (Rural)	Yes	6	Gravel	Rural	80 km/h	00000-00049	28	Actual Count	1052	6.00	12.90	13571
1104.1	2380, 2385	Amaranth - East Luther Townline	20th Sideroad	20m N. of Con. 10-11 Road (Grand Valley)	Amaranth (Rural)	Yes	5	High Class Bituminous	Rural	70 km/h	00050-00199	75	Estimate	1431	7.00	9.00	10017
1105.2	3392	Amaranth - East Luther Townline	Con. 12-13 Road (Grand Valley)	30th Sideroad	Amaranth (Rural)	Yes	6	Gravel	Rural	80 km/h	00000-00049	28	Estimate	2028	5.10	7.20	14602
1106	3393	Amaranth - East Luther Townline	30th Sideroad	Highway 89	Amaranth (Rural)	Yes	6	Gravel	Rural	80 km/h	00000-00049	40	Estimate	927	7.00	10.70	9919
1100.3	2460	Amaranth - East Luther Townline	Concession Road 2-3	5th Sideroad (Turn-Off)	Amaranth (Rural)	Yes	5	High Class Bituminous	Rural	60 km/h	00200-00499	211	Estimate	269	7.50	10.00	2018
1101.1	2453	Amaranth - East Luther Townline	5th Sideroad	2.36km N. of 5th Sideroad	Amaranth (Rural)	Yes	4	Gravel	Rural	80 km/h	00050-00199	140	Estimate	2361	6.50	9.20	21721
1000.4		Amaranth - East Luther Townline	5th Sideroad (Turn-Off)	5th Sideroad	Amaranth (Rural)	Yes	6	High Class Bituminous	Rural	80 km/h	00000-00049	30	Estimate	69	7.50	9.00	518
1100.2		Amaranth - East Luther Townline	Grand River South Bank	Grand River North Bank	Amaranth (Rural)	Yes	4	High Class Bituminous	Rural	80 km/h	00200-00499	211	Actual Count	127	11.00	11.00	1397
2001	2308	Cedar Place	Maplewood Drive	End of Cedar Place	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00050-00199	70	Estimate	283	7.00	10.00	1981
2002	2307	Cherrywood Place	Maplewood Drive	End of Cherrywood Drive	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00050-00199	60	Estimate	306	7.00	10.00	2142
1000.2	2424	Church Street	10th Line	Mill Street	Amaranth (Rural)	No	5	High Class Bituminous	Semi-Urban	50 km/h	01000-01999	1280	Estimate	331	7.00	8.00	2317
2003	5062, 5063	Country Meadows Dr	30th Sideroad	30th Sideroad	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	230	Estimate	832	7.00	9.00	5824
2006	2395	Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	220	Estimate	260	7.00	10.00	1820
2004		Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	220	Estimate	127	6.80	9.00	864
2005	2395	Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00200-00499	220	Estimate	230	7.00	11.00	1610
2007	2458	David Street	Mill Street	Main Street	Waldemar	No	6	High Class Bituminous	Rural	40 km/h	00050-00199	85	Estimate	79	6.50	8.50	514
2008	2450	Devonleigh Drive	30th Sideroad	30th Sideroad	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	240	Estimate	638	7.00	7.00	4466
2010	2427	Evans Avenue	James Street	Henry Street	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	170	Estimate	68	7.00	7.00	476
2009	2426	Evans Avenue	James Street	End	Waldemar	No	6	High Class Bituminous	Rural	40 km/h	00000-00049	20	Estimate	30	8.00	8.00	240
2011	2305	Grand View Road	Dufferin County Road 109	End of Grand View Road	Amaranth (Rural)	No	6	Gravel	Rural	50 km/h	00050-00199	110	Estimate	781	6.30	10.00	7810
2013	2414	Henry Street	Mill Street	Main Street	Waldemar	No	6	High Class Bituminous	Rural	40 km/h	00200-00499	295	Estimate	89	7.00	7.00	623
2012	2413	Henry Street	Main Street	Evans Street	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00200-00499	240	Estimate	151	6.70	6.70	1012
2041	2412	Henry Street	Evans Street	End	Waldemar	No	6	High Class Bituminous	Rural	40 km/h	00000-00049	10	Estimate	47	7.00	7.00	329
2014	2408	Hornett Lane	Menary Drive	Dufferin County Road 10	Laurel	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-00199	60	Estimate	64	4.20	4.20	269
2017		Hughson Street	Crago Road	Amaranth/Mono Townline	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-00199	180	Estimate	247	7.00	10.00	1729
2015	2396	Hughson Street	Crago Road	Amaranth/Mono Townline	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00050-00199	180	Estimate	404	7.00	10.00	2828
2018	2447	James Street	Evans Avenue	End of James Street	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	130	Estimate	306	6.70	6.70	2050
2019	2451	Main Street	David Street	Henry Street	Waldemar	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-00199	90	Estimate	213	6.50	6.50	1385
2020	2400	Maplewood Drive	Woodland Road	End of Maplewood Drive	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00000-00049	40	Estimate	121	7.00	10.00	847
2021	2401	Maplewood Drive	Cherrywood Place	Woodland Road	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00200-00499	200	Estimate	280	7.00	10.00	1960
2023	2428	Maplewood Drive	Sylvanwood Road	Cherrywood Place	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	280	Estimate	89	7.00	10.00	623
2024	2429	Maplewood Drive	Cedar Place	Sylvanwood Road	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00200-00499	255	Estimate	203	7.00	10.00	1421
2022	2430	Maplewood Drive	Mono - Amaranth Townline	Cedar Place	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	290	Estimate	369	7.00	10.00	2583
2025	2306	Mckibbon Avenue	Crago Road	Hughson Street	Estate Sub-Division	No	6	High Class Bituminous	Rural	40 km/h	00050-00199	140	Estimate	658	7.00	10.50	4606
2026	2407	Menary Drive	Dufferin County Road 12	Hornett Lane	Amaranth (Rural)	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-00199	60	Estimate	213	6.20	6.20	1321
1000.5	2422	Mill Street	David Street	Station Street	Waldemar	No	5	High Class Bituminous	Urban	50 km/h	01000-01999	1305	Estimate	68	6.70	6.70	456
1000.4	2399	Mill Street	David Street	Station Street	Waldemar	No	5	High Class Bituminous	Urban	50 km/h	01000-01999	1305	Estimate	139	6.00	6.00	834
1000.3	2425	Mill Street	Church Street	David Street	Waldemar	No	5	High Class Bituminous	Urban	50 km/h	01000-01999	1280	Estimate	243	6.00	6.00	1458
2027	2448	Mill Street	Church Street	Church Street	Waldemar	No	6	Low Class Bituminous	Semi-Urban	40 km/h	00050-00199	90	Estimate	384	6.00	6.00	2304
0106.2	2432	Mono-Amaranth Townline	0.6 Km N. of 30th Sideroad	Highway 89	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1510	Estimate	411	7.00	8.00	2877
0106.1	2475	Mono-Amaranth Townline	30th Sideroad	0.6 Km N. of 30th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1510	Estimate	778	7.00	9.00	5446
0105	3200, 3258	Mono-Amaranth Townline	25th Sideroad	30th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1510	Estimate	3060	8.70	8.50	26622
0103	3201, 3152, 2477	Mono-Amaranth Townline	15th Sideroad	20th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1472	Estimate	3056	7.00	10.00	21392
0104.1	3202, 3259	Mono-Amaranth Townline	20th Sideroad	Bridge N. of 20th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1510	Actual Count	1847	7.00	7.80	12929
0104.1	3202, 3259	Mono-Amaranth Townline	Bridge N. of 20th Sideroad	25th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1510	Actual Count	1208	7.00	7.80	8456
0102	2351	Mono-Amaranth Townline	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1433	Actual Count	3040	7.00	10.00	21280
0101.2	2466	Mono-Amaranth Townline	Hughson Street	Dufferin County Road 10	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1564	Actual Count	2553	7.00	10.00	17871
0101.1	2465	Mono-Amaranth Townline	5th Sideroad	Hughson Street	Amaranth (Rural)	Yes	3	High Class Bituminous	Rural	70 km/h	01000-01999	1744	Estimate	491	7.00	10.00	3437
2028	3044	Peter Court	Peter Street	End of Peter Court	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	70	Estimate	156	8.00	6.00	1248
2030	2421	Peter Street	St. John Street	Russel Hill Road	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	165	Estimate	127	6.30	6.30	800
2029	2420	Peter Street	Russel Hill Road	Peter Street / Peter Court	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	165	Estimate	337	8.00	8.00	2696
2032	2419	Russel Hill Road	St. John Street	Peter Street	Waldemar	No	6	High Class Bituminous	Rural	40 km/h	00200-00499	250	Estimate	283	8.00	8.00	2264
2031	2418	Russel Hill Road	Peter Street / Peter Court	Peter Street	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00050-00199	180	Estimate	454	8.00	8.00	3632
2033	2409	Shannon Court	Dufferin County Road 11	Cul-de-Sac	Farmington	No	4	High Class Bituminous	Rural	80 km/h	00050-00199	100	Estimate	666	8.00	10.00	5328
2035	2416	St. John Street	Station Street	Russel Hill Road	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00200-00499	470	Estimate	194	8.00	8.00	1552
2034	2417	St. John Street	Russel Hill Road	Peter Street	Waldemar	No	6	High Class Bituminous	Urban	40 km/h	00200-00499	265	Estimate	481	8.00	8.00	3848
2038.2	2405	Station Street	390m E. of Peter Street	9th Line	Amaranth (Rural)	No	5	High Class Bituminous	Rural	50 km/h	00500-00999	570	Estimate	464	7.00	8.50	3248
2038.1	2415	Station Street	Peter Street	390m E. of Peter Street	Waldemar	No	3	High Class Bituminous	Rural	80 km/h	00500-00999	570	Estimate	384	7.00	8.50	2688
2037	2398	Station Street	St. John Street	Peter Street	Waldemar	No	5	High Class Bituminous	Rural	50 km/h	00500-00999	590	Estimate	279	7.00	8.00	1953
2036	2397	Station Street	10th Line	St. John Street	Waldemar	No	5	High Class Bituminous	Rural	50 km/h	00200-00499	490	Estimate	374	7.00	8.00	2618
2039	2304	Sylvanwood Road	Highway 89	Maplewood Drive	Estate Sub-Division	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00499	280	Estimate	262	7.00	7.00	1834
2040	2452	Woodland Road	Maplewood Dr.	Cul-de-Sac	Not Recorded	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-00199	90	Estimate	438	7.00	10.00	3066

BURNSIDE

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Appendix B

AADT Map

16.5°E°

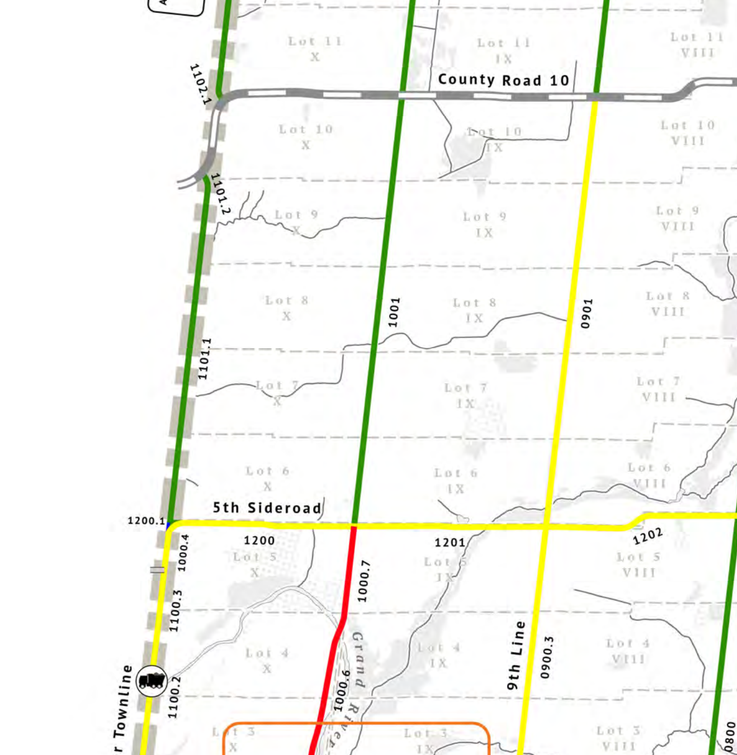
0 500 1,000 1,500 2,000
Metres
1:30,000 (Main Map)

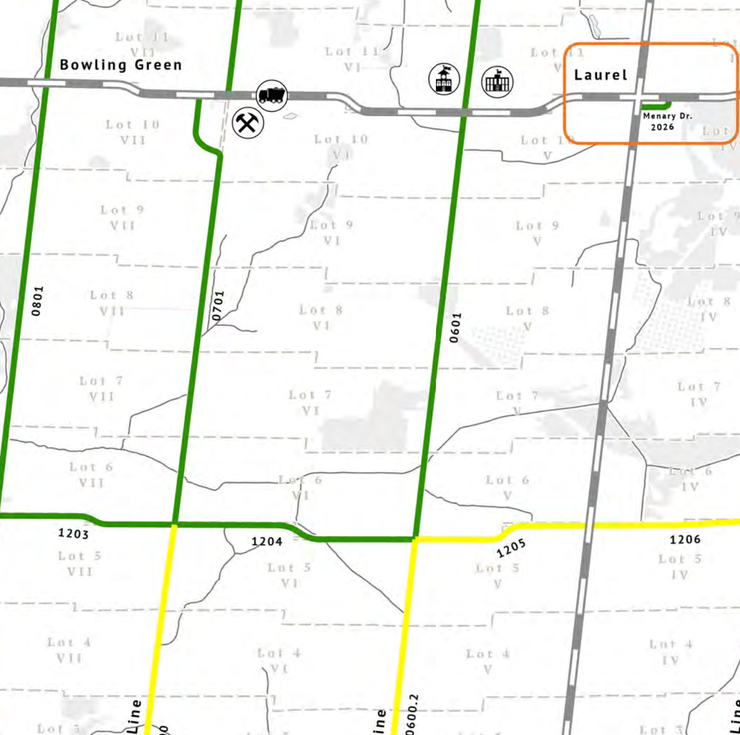
Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS
UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Highway 89
TWP. OF MELANCTHON
TWP. OF AMARANTH
Jessopville
Maple Grove
Victoria St.
TOWN OF SHELBURNE
30th Sideroad
Amaranth - East Luther Townline
10th Line
9th Line
8th Line
7th Line
6th Line
County Road 12
4th Line
County Road 11
2nd Line
Mono-Amaranth Townline
25th Sideroad
TOWN OF GRAND VALLEY
TWP. OF AMARANTH
20th Sideroad
Campania
Blacks Corners
Crombies
Bridge Removed
15th Sideroad
Whittington
TOWN OF MONO
Amaranth East Luther Townline is maintained by the Town of Grand Valley from County Road 109 to 15th Sideroad.
Mono Amaranth Townline is maintained by the Town of Mono from 5th Sideroad to 20th Sideroad.
County Road 10
Bowling Green
Laurel
Menary Dr. 2026
5th Sideroad
Farmington
Waldemar
Station St.
Grand View Rd.
Shannon Ct. 2033
TWP. OF AMARANTH
TWP. OF EAST GARAFRAXA
TOWN OF ORANGEVILLE

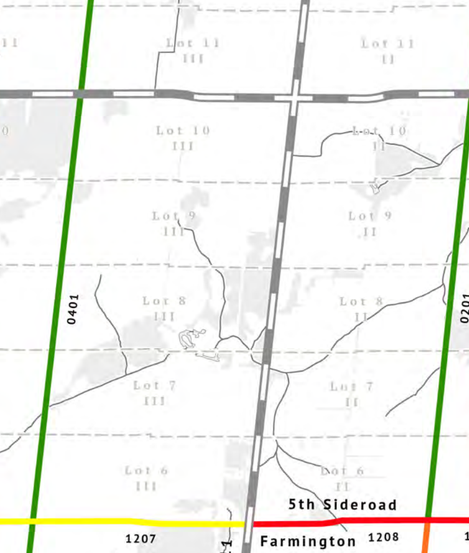
Locations of Interest
- Gravel Pit Entrance
- Municipal Office
- Municipal Works Yard
- School

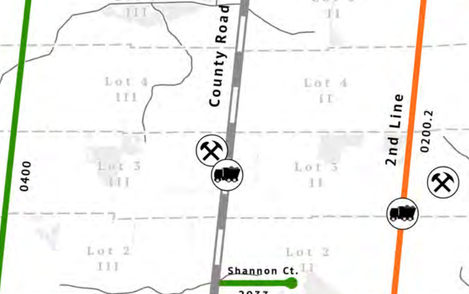
AADT Range
- 0-49 AADT
- 50-199 AADT
- 200-499 AADT
- 500-999 AADT
- 1000-1999 AADT





0 500 1,000
Metres
1:10,000 (All Inset Maps)





Drawn By: PS
Checked By: EM
Client: Township of Amaranth
Project: Roads Needs Study 2022
Project Number: 300055179
Date: 2023/04/05

Annual Average Daily Traffic (AADT)

Appendix B

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Appendix C

Distress Factors for Road Conditions Assessment

APPENDIX C
Distress Factors for Road Condition Assessment
Calculation of Distress Manifestation Index (DMI) and Pavement Condition Index (PCI)

Weighting Factors

Distress Manfestation For Asphalt Roads	Weighting Factor (W)	Distress Manifestation For Surface Treated Roads	Weighting Factor (W)	Distress Manifestation For Gravel Roads	Weighting Factor (W)
Ravelling and course aggesgate loss	3.0	Cover Aggregate Loss	3.0	Flat/reversse crown	2.0
Flushing	1.5	Flushing	2.0	Loose gravel	1.5
Rippling and showing	1.0	Rippling and Shoving	2.0	Dust	0.5
Wheel track rutting	3.0	Wheel track rutting	3.0	Break-up	3.0
Distortion	3.0	Distortion	3.0	Washboarding	1.0
Longitundinal wheel track - single/multiple cracking	1.5	Streaking	1.0	Rutting	3.0
Longitundinal wheel track - alligator cracking	3.0	Alligator Cracking	3.0	Distortion	3.0
Centerline - single/multiple cracking	0.5	Edge Cracking	1.0	Potholes	2.0
Centerline - alligator cracking	2.0	Edge Break	2.0		
Pavement edge - single/multiple cracking	0.5	Transverse Cracking	0.5		
Pavement edge - alligator cracking	1.5	Longitudinal Cracking	1.0		
Transverse - singel/multiple cracking	1.0	Potholing	1.0		
Transverse - alligator cracking	3.0				
Longitudinal, meander and midlane cracking	1.0				
Random cracking	0.5				

Density Factors

Density of Distress Asphalt or Gravel Roads)	Density Factor (D)
Few (<10%)	0.5
Intermittent (10 to 20%)	1.0
Frequent (20 to 40%)	2.0
Extensive (40 to 80%)	3.0
Throughout (>80%)	4.0

Severity Factors

Severity of Distress (Asphalt or Gravel Roads)	Severity Factor (S)
Very Slight	0.5
Slight	1.0
Moderate	2.0
Severe	3.0
Very Severe	4.0

Ride Condtion Rating Factors

Ride Condition Rating (RCR)	Factor
Very Poor	1
Poor	2 to 3
Fair	4 to 6
Good	7 to 9
Very Good	10

Empirical Formulae For Calculation of Distress Manifestation Index (DMI)

Surface Type	Formulae For Distress Manifestation Index (DMI)
Asphalt	DMI = 10 x (208 - summation of W x (D+S))/208
Surface Treatment or Gravel or Earth	DMI = 10 x (135 - summation of W x (D+S))/135

Empirical Formulae For Calculation of Pavement Condition Index (PCI)

Surface Type	Formulae For Pavement Condition Index (PCI)
Asphalt	$PCI = 13.75 + (9 \times DMI) - (7.5 \times e^{(8.5-RCR)/3.02})$
Surface Treatment or Gravel or Earth	$PCI = 12.75 + (9 \times DMI) - (5.5 \times e^{(9.94-RCR)/3.46})$

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Appendix D

Pavement Condition Index (PCI) Map

16.5°E°

0 500 1,000 1,500 2,000
Metres
1:30,000 (Main Map)

Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS
UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Highway 89
TWP. OF MELANCTHON
TWP. OF AMARANTH
Jessopville
Maple Grove
TOWN OF SHELBURNE
TWP. OF AMARANTH
Victoria St.
30th Sideroad
25th Sideroad
20th Sideroad
15th Sideroad
Amaranth - East Luther Townline
10th Line
9th Line
8th Line
7th Line
6th Line
4th Line
2nd Line
Mono-Amaranth Townline
County Road 12
County Road 11
TOWN OF GRAND VALLEY
TWP. OF AMARANTH
Campania
Blacks Corners
Crombies
Bridge Removed
TWP. OF AMARANTH
TOWN OF MONO
Whittington
Amaranth East Luther Townline is maintained by the Town of Grand Valley from County Road 109 to 15th Sideroad.
Mono Amaranth Townline is maintained by the Town of Mono from 5th Sideroad to 20th Sideroad.
County Road 10
Bowling Green
Laurel
Menary Dr. 2026
Waldemar
Station St. 2033.2
Grand River
Grand View Rd. 2011
Shannon Ct. 2033
Farmington
5th Sideroad
TWP. OF AMARANTH
TWP. OF EAST GARAFRAXA
TOWN OF ORANGEVILLE

Locations of Interest
- Gravel Pit
- Gravel Pit Entrance
- Municipal Office
- Municipal Works Yard
- School

Pavement/Gravel Condition Rating
- Good Condition (PCI >= 85)
- Satisfactory Condition (PCI 84-70)
- Fair Condition (PCI 69-55)
- Poor Condition (PCI 54-40)
- Very Poor Condition (PCI 39-25)
- Serious Condition (PCI 24-10)

Maplewood Drive
Woodland Road
Cherrywood Place
Sylvanwood Road
Cedar Place
Devonleigh Drive
Country Meadows Dr

Evans Ave. 2009
Henry St.
James St.
Main St.
Mill St.
Station Street
David St. 2007
St. John Street
Peter Street
Russel Hill Road
Peter Court
Church Street
Grand View Road

Hughson Street
McKibbon Ave.
Crago Rd.
Mono-Amaranth TLine

County Road 12
County Road 10
Menary Dr. 2026
Hornett Lane 2014

0 500 1,000
Metres
1:10,000 (All Inset Maps)

Drawn By: PS
Checked By: EM
Client: Township of Amaranth
Project: Roads Needs Study 2022
Project Number: 300055179
Date: 2023/05/24

Pavement/Gravel Condition Index

Appendix D

BURNSIDE

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Appendix E

Road Condition Improvement Needs, Map and Table

16.5°E°

0 500 1,000 1,500 2,000
Metres
1:30,000 (Main Map)

Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS
UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Highway 89
Jessopville
TWP. OF MELANCTHON
TWP. OF AMARANTH
Highway 89
Victoria St.
TOWN OF SHELBURNE
TWP. OF AMARANTH
30th Sideroad
Maple Grove
Amaranth - East Luther Townline
10th Line
9th Line
8th Line
7th Line
6th Line
County Road 12
4th Line
County Road 11
2nd Line
Mono-Amaranth Townline
25th Sideroad
20th Sideroad
Campania
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Crombies
Bridge Removed
TOWN OF GRAND VALLEY
TWP. OF AMARANTH
15th Sideroad
Whittington
TWP. OF AMARANTH
TOWN OF MONO
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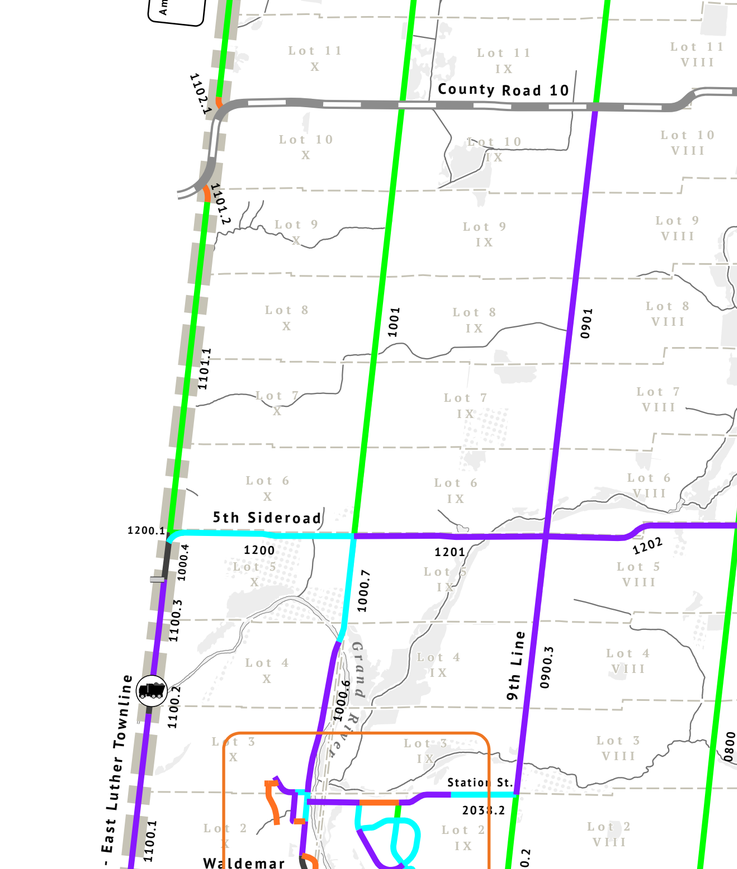
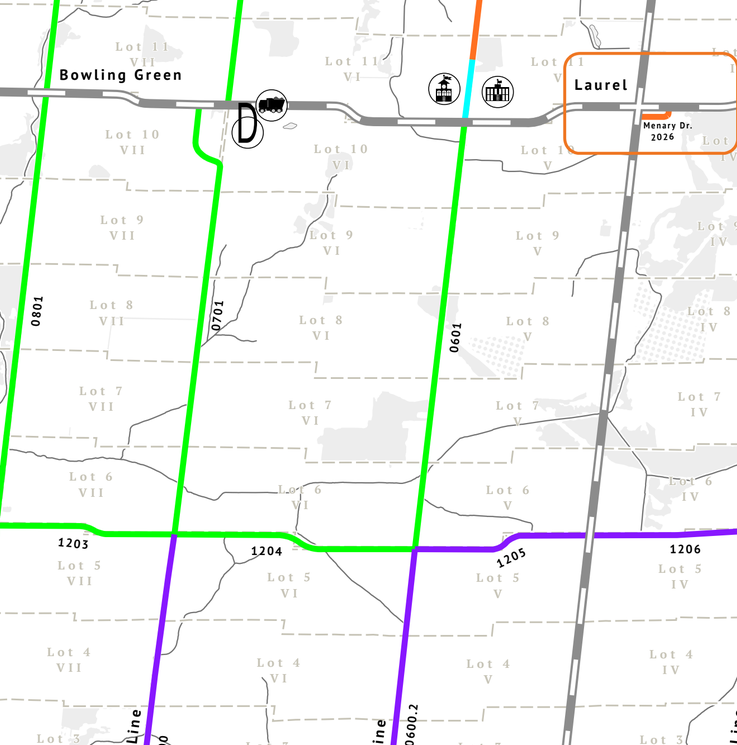
Mono Amaranth Townline is maintained by the Town of Mono from 5th Sideroad to 20th Sideroad.
County Road 10
Bowling Green
Laurel
Menary Dr.
2026
5th Sideroad
Farmington
Waldemar
Station St.
Grand River
Grand View Rd.
Shannon Ct.
2033
TWP. OF AMARANTH
TWP. OF EAST GARAFRAXA
TOWN OF ORANGEVILLE

Locations of Interest
- Gravel Pit
- Gravel Pit Entrance
- Municipal Office
- Municipal Works Yard
- School

Road Improvement Needs
- Reconstruction
- Rehabilitation
- Resurface
- Preventive Maintenance
- Routine Maintenance
- No Maintenance Required





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Metres
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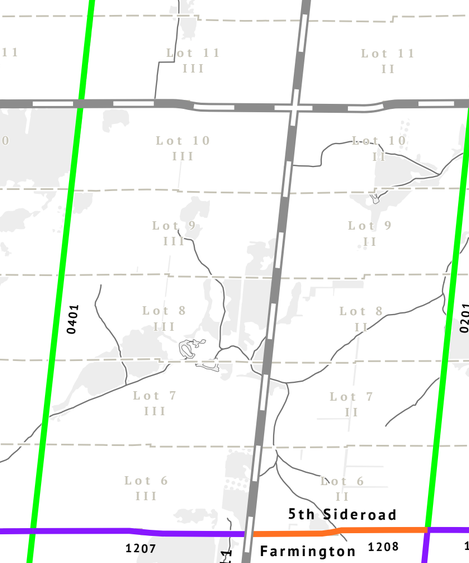

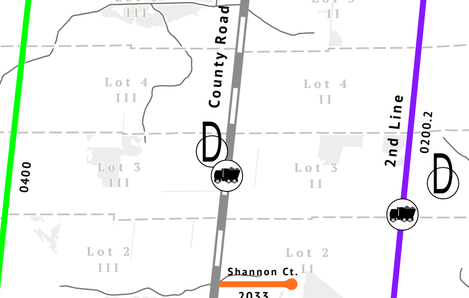

Drawn By: PS
Checked By: EM
Client: Township of Amaranth
Project: Roads Needs Study 2022
Project Number: 300055179
Date: 2023/05/29

Road Improvement Needs

Appendix E

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Asset or PSAB ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	Distress Manifestation Index (DMI)	Pavement Condition Index (PCI)	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost ($/m²)
1602	3411	25th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	Gravel	Rural	50	3	4	4.67	14	Serious Condition	53	29.4	1395	6.10	8.30	11579	Reconstruction	$301,054.00	$26.00
1606	3183	25th Sideroad	5th Line	4th Line	Amaranth (Rural)	No	Gravel	Rural	29	3	5	5.44	21	Serious Condition	46	13.7	1290	7.00	9.50	12255	Reconstruction	$318,630.00	$26.00
1609	3199	25th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	Gravel	Rural	80	3	9	5.85	25	Very Poor Condition	50	33.4	1384	8.30	10.20	14117	Reconstruction	$367,042.00	$26.00
0406	3245	4th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	50	3	13	6.5	30	Very Poor Condition	43	20.7	1151	7.20	9.60	11050	Reconstruction	$287,300.00	$26.00
1706	3181	30th Sideroad	5th Line (Dufferin County Road 12)	4th Line	Amaranth (Rural)	No	Gravel	Rural	80	4	11	5.93	36	Very Poor Condition	42	39.8	1267	5.80	7.30	9249	Reconstruction	$240,474.00	$26.00
1104.2	3391	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	75	4	13	6.81	43	Poor Condition	37	63.3	1638	6.10	8.60	14087	Rehabilitation	$169,044.00	$12.00
1101.2	3149	Amaranth - East Luther Townline	2.36km N. of 5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	Yes	High Class Bituminous	Rural	60	4	2	6.95	43	Poor Condition	36	46.8	147	7.00	10.00	1029	Rehabilitation	$0.00	$0.00
1400	3165	15th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	Gravel	Rural	150	5	0	6.15	45	Poor Condition	41	138.7	1304	5.50	7.60	9910	Rehabilitation	$118,920.00	$12.00
0203	3252	2nd Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	80	5	13	6.11	45	Poor Condition	36	54.6	3045	8.10	10.30	31364	Rehabilitation	$376,368.00	$12.00
1705	3238	30th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	Gravel	Rural	100	4	11	7.33	48	Poor Condition	36	83	1224	6.40	8.00	9792	Rehabilitation	$117,504.00	$12.00
1404	3169	15th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	Gravel	Rural	34	5	0	6.56	49	Poor Condition	30	34.4	1784	5.00	6.40	11418	Rehabilitation	$137,016.00	$12.00
1208	2439	5th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	High Class Bituminous	Rural	1032	6	3	5.79	49	Poor Condition	58	339.6	1271	7.00	10.00	8897	Rehabilitation	$364,777.00	$41.00
1102.1	3151	Amaranth - East Luther Townline	Dufferin County Road 10	0.1km N. of County Road 10	Amaranth (Rural)	Yes	High Class Bituminous	Rural	80	4	2	7.69	50	Poor Condition	33	54.8	106	7.00	10.00	742	Rehabilitation	$0.00	$0.00
2033	2409	Shannon Court	Dufferin County Road 11	Cul-de-Sac	Farmington	No	High Class Bituminous	Rural	100	4	3	7.76	50	Poor Condition	34	59.9	666	8.00	10.00	5328	Rehabilitation	$143,856.00	$27.00
1005	3395	10th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	6	13	6.3	52	Poor Condition	30	40.9	3087	7.40	9.00	27783	Rehabilitation	$333,396.00	$12.00
0205	3254	2nd Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	80	5	10	6.94	52	Poor Condition	32	40.9	3102	8.60	12.00	37224	Rehabilitation	$446,688.00	$12.00
2018	2447	James Street	Evans Avenue	End of James Street	Waldemar	No	High Class Bituminous	Urban	130	6	3	6.18	52	Poor Condition	35	35.7	306	6.70	6.70	2050	Rehabilitation	$82,000.00	$40.00
1003	3397	10th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	50	6	13	6.37	53	Poor Condition	29	37.5	3091	6.20	8.00	24728	Rehabilitation	$296,736.00	$12.00
0602.2	3233	6th Line	0.4 Km N. of County Road 10	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	70	5	0	7.07	53	Poor Condition	30	60	2606	5.40	7.00	18242	Rehabilitation	$218,904.00	$12.00
0905	3177	9th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	50	5	14	7.04	53	Poor Condition	29	40	3083	6.10	7.50	23123	Rehabilitation	$277,476.00	$12.00
0106.1	2475	Mono-Amaranth Townline	30th Sideroad	0.6 Km N. of 30th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1510	6	2	6.32	53	Poor Condition	59	458	778	7.00	9.00	5446	Rehabilitation	$223,286.00	$41.00
2040	2452	Woodland Road	Maplewood Dr.	Cul-de-Sac	Not Recorded	No	High Class Bituminous	Semi-Urban	90	7	2	5.87	54	Poor Condition	31	56.7	438	7.00	10.00	3066	Rehabilitation	$82,782.00	$27.00
1403	3168	15th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	Gravel	Rural	150	5	0	7.26	55	Fair Condition	33	80.6	1320	6.60	10.70	14124	Rehabilitation	$169,488.00	$12.00
1707	3256	30th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	Gravel	Rural	80	5	14	7.37	56	Fair Condition	29	56.2	1489	6.80	8.00	11912	Rehabilitation	$142,944.00	$12.00
1600	3409	25th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	Gravel	Rural	40	6	15	6.87	57	Fair Condition	26	29.7	1324	6.00	7.40	9798	Rehabilitation	$117,576.00	$12.00
1209.2	2403	5th Sideroad	Crago Road	Mono - Amaranth Townline (Dufferin County Road 16)	Amaranth (Rural)	No	High Class Bituminous	Rural	1550	6	5	6.73	57	Fair Condition	54	430.2	571	7.00	10.00	3997	Rehabilitation	$163,877.00	$41.00
2007	2458	David Street	Mill Street	Main Street	Waldemar	No	High Class Bituminous	Rural	85	4	2	8.46	57	Fair Condition	29	53.7	79	6.50	8.50	514	Rehabilitation	$13,878.00	$27.00
2026	2407	Menary Drive	Dufferin County Road 12	Hornett Lane	Amaranth (Rural)	No	High Class Bituminous	Semi-Urban	60	5	2	7.61	58	Fair Condition	27	38.9	213	6.20	6.20	1321	Rehabilitation	$35,667.00	$27.00
2027	2448	Mill Street	Church Street	Church Street	Waldemar	No	Low Class Bituminous	Semi-Urban	90	5	2	7.63	58	Fair Condition	28	60.4	384	6.00	6.00	2304	Rehabilitation	$62,208.00	$27.00
2037	2398	Station Street	St. John Street	Peter Street	Waldemar	No	High Class Bituminous	Rural	590	5	3	7.62	58	Fair Condition	42	271.8	279	7.00	8.00	1953	Rehabilitation	$52,731.00	$27.00
1603	3412	25th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	Gravel	Rural	40	6	14	7.04	59	Fair Condition	25	30.4	1323	5.70	6.90	9129	Rehabilitation	$109,548.00	$12.00
1703	2356	30th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	Gravel	Rural	80	5	13	7.72	59	Fair Condition	27	57.4	1348	5.30	7.30	9840	Rehabilitation	$118,080.00	$12.00
2010	2427	Evans Avenue	James Street	Henry Street	Waldemar	No	High Class Bituminous	Urban	170	6	2	6.9	59	Fair Condition	31	38.2	68	7.00	7.00	476	Rehabilitation	$19,040.00	$40.00
2009	2426	Evans Avenue	James Street	End	Waldemar	No	High Class Bituminous	Rural	20	5	2	7.69	59	Fair Condition	23	9.8	30	8.00	8.00	240	Rehabilitation	$6,480.00	$27.00
2014	2408	Hornett Lane	Menary Drive	Dufferin County Road 10	Laurel	No	High Class Bituminous	Semi-Urban	60	5	16	7.67	59	Fair Condition	26	56.1	64	4.20	4.20	269	Rehabilitation	$7,263.00	$27.00
1604	3239	25th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	Gravel	Rural	40	6	0	7.3	61	Fair Condition	23	27.2	1721	6.90	9.10	15661	Preventative Maintenance	$8,613.55	$0.55
2041	2412	Henry Street	Evans Street	End	Waldemar	No	High Class Bituminous	Rural	10	6	3	7.19	61	Fair Condition	21	1.7	47	7.00	7.00	329	Resurface	$6,580.00	$20.00
2038.1	2415	Station Street	Peter Street	390m E. of Peter Street	Waldemar	No	High Class Bituminous	Rural	570	6	3	7.12	61	Fair Condition	39	59.5	384	7.00	8.50	2688	Resurface	$53,760.00	$20.00
0202		2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	Amaranth (Rural)	No	Gravel	Rural	80	7	14	6.85	62	Fair Condition	25	50.3	3045	8.00	9.60	29232	Preventative Maintenance	$16,077.60	$0.55
0703.1	3230	7th Line	15th Sideroad	End (Willow Brook)	Amaranth (Rural)	No	Gravel	Rural	35	6	4	7.37	62	Fair Condition	22	24.1	2142	6.20	8.70	18635	Preventative Maintenance	$10,249.25	$0.55
0104.1	3202, 3259	Mono-Amaranth Townline	20th Sideroad	Bridge N. of 20th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1510	6	3	7.24	62	Fair Condition	48	153.5	1847	7.00	7.80	12929	Resurface	$258,580.00	$20.00
0104.2	3202, 3259	Mono-Amaranth Townline	Bridge N. of 20th Sideroad	25th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1510	6	3	7.24	62	Fair Condition	48	153.5	1208	7.00	7.80	8456	Resurface	$169,120.00	$20.00
2036	2397	Station Street	10th Line	St. John Street	Waldemar	No	High Class Bituminous	Rural	490	6	2	7.31	62	Fair Condition	36	83	374	7.00	8.00	2618	Resurface	$52,360.00	$20.00
0201	3249	2nd Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	150	6	14	7.53	63	Fair Condition	27	90.9	3049	7.50	9.70	29575	Preventative Maintenance	$16,266.25	$0.55
0700	3227	7th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	350	8	17	6.63	63	Fair Condition	33	30.3	3073	6.70	10.00	30730	Resurface	$860,440.00	$28.00
0703.2		7th Line	20th Sideroad	End (Willow Brook)	Amaranth (Rural)	No	Gravel	Rural	85	8	6	6.63	63	Fair Condition	25	57.3	897	4.00	8.70	7804	Preventative Maintenance	$4,292.20	$0.55
0706	3414	7th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	128	6	20	7.48	63	Fair Condition	27	104.6	1125	6.30	7.20	8100	Preventative Maintenance	$4,455.00	$0.55
0803	3226	8th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	50	6	16	7.52	63	Fair Condition	23	43.9	3056	6.20	6.70	20475	Preventative Maintenance	$11,261.25	$0.55
1607		25th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	Gravel	Rural	40	6	14	7.63	64	Fair Condition	22	27.9	1526	6.60	8.20	12513	Preventative Maintenance	$6,882.15	$0.55
0200.1	2464	2nd Line	Dufferin County Road 109	0.6 Km N. of County Road 109	Farmington	No	High Class Bituminous	Rural	551	6	5	7.52	64	Fair Condition	36	53	624	7.00	8.50	4368	Resurface	$87,360.00	$20.00
0806	3176	8th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	80	6	16	7.59	64	Fair Condition	24	46.7	1115	7.60	9.80	10927	Preventative Maintenance	$6,009.85	$0.55
0204	3253	2nd Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	7	14	7.27	65	Fair Condition	22	34.8	3059	8.10	9.60	29366	Preventative Maintenance	$16,151.30	$0.55
0403	2386, 2387	4th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	65	6	0	7.7	65	Fair Condition	22	36.4	3072	6.80	9.90	30413	Preventative Maintenance	$16,727.15	$0.55
0606	3237	6th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	30	6	20	7.74	65	Fair Condition	20	18.3	1199	7.00	9.10	10911	Preventative Maintenance	$6,001.05	$0.55
2020	2400	Maplewood Drive	Woodland Road	End of Maplewood Drive	Estate Sub-Division	No	High Class Bituminous	Rural	40	5	4	8.35	65	Fair Condition	21	6.2	121	7.00	10.00	847	Resurface	$16,940.00	$20.00
1002	3398	10th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	7	18	7.37	66	Fair Condition	22	40	3081	6.30	8.10	24956	Preventative Maintenance	$13,725.80	$0.55
1608		25th Sideroad	0.1 Km E. of County Road 11	2nd Line	Amaranth (Rural)	No	Gravel	Rural	75	6	15	7.85	66	Fair Condition	22	35.7	1243	9.00	11.30	14046	Preventative Maintenance	$7,725.30	$0.55
0401	3247	4th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	80	6	0	7.81	66	Fair Condition	23	48	3054	6.90	9.00	27486	Preventative Maintenance	$15,117.30	$0.55
1209.1	2393	5th Sideroad	Crago Road	0.7 Km E. of 2nd Line	Amaranth (Rural)	No	High Class Bituminous	Rural	1300	6	7	7.67	66	Fair Condition	41	118.3	824	7.00	10.00	5768	Resurface	$115,360.00	$20.00
1105.1		Amaranth - East Luther Townline	25th Sideroad	Con. 12-13 Road (Grand Valley)	Amaranth (Rural)	Yes	Gravel	Rural	28	6	20	7.87	66	Fair Condition	20	11.6	1052	6.00	12.90	13571	Preventative Maintenance	$7,464.05	$0.55
2019	2451	Main Street	David Street	Henry Street	Waldemar	No	High Class Bituminous	Semi-Urban	90	6	7	7.72	66	Fair Condition	23	14.7	213	6.50	6.50	1385	Resurface	$27,700.00	$20.00
0600.2	3231	6th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	279	7	18	7.41	67	Fair Condition	28	21.6	2488	7.00	10.00	24880	Resurface	$696,640.00	$28.00
0904	3179	9th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	50	6	16	7.98	67	Fair Condition	20	32	3088	5.70	8.20	25322	Preventative Maintenance	$13,927.10	$0.55
0903	2318	9th Line	0.3 Km S. of 20th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	20	7	13	7.48	67	Fair Condition	18	11.2	299	5.40	9.40	2811	Preventative Maintenance	$1,546.05	$0.55
2002	2307	Cherrywood Place	Maplewood Drive	End of Cherrywood Drive	Estate Sub-Division	No	High Class Bituminous	Rural	60	6	5	7.87	67	Fair Condition	21	8.8	306	7.00	10.00	2142	Resurface	$42,840.00	$20.00
0101.2	2466	Mono-Amaranth Townline	Hughson Street	Dufferin County Road 10	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1564	7	9	7.33	67	Fair Condition	42	138.1	2553	7.00	10.00	17871	Resurface	$0.00	$0.00
1509	2377	20th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	High Class Bituminous	Rural	1227	8	8	6.97	68	Fair Condition	38	105.1	1389	7.00	10.00	9723	Resurface	$194,460.00	$20.00
0802	3225	8th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	7	14	7.56	68	Fair Condition	20	36.8	3067	6.20	8.30	25456	Preventative Maintenance	$14,000.80	$0.55
0900.3	3401	9th Line	Station Street	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	295	8	16	7.22	68	Fair Condition	27	22.1	1845	6.30	10.00	18450	Resurface	$516,600.00	$28.00
1102.2	2454	Amaranth - East Luther Townline	0.1km N. of County Road 10	Con. 6-7 Road (Grand Valley)	Amaranth (Rural)	Yes	Gravel	Rural	80	9	15	6.96	68	Fair Condition	21	46.7	2012	6.50	8.70	17504	Preventative Maintenance	$9,627.20	$0.55
1001	3399	10th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	60	7	0	7.67	69	Fair Condition	20	44.8	3080	5.60	6.60	20328	Preventative Maintenance	$11,180.40	$0.55
0601	3232	6th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	65	6	17	8.13	69	Fair Condition	20	40.4	3051	5.50	7.90	24103	Preventative Maintenance	$13,256.65	$0.55
0805	3178	8th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	6	16	8.22	70	Satisfactory Condition	19	34.9	3066	5.70	8.20	25141	Preventative Maintenance	$13,827.55	$0.55
0400	3246	4th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	150	7	0	7.85	71	Satisfactory Condition	22	72.7	3078	6.90	9.50	29241	Preventative Maintenance	$16,082.55	$0.55
2001	2308	Cedar Place	Maplewood Drive	End of Cedar Place	Estate Sub-Division	No	High Class Bituminous	Rural	70	6	7	8.27	71	Satisfactory Condition	19	9	283	7.00	10.00	1981	Resurface	$39,620.00	$20.00
0105	3200, 3258	Mono-Amaranth Townline	25th Sideroad	30th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1510	8	11	7.32	71	Satisfactory Condition	36	94.3	3060	8.70	8.50	26622	Resurface	$532,440.00	$20.00
1103.3	2471	Amaranth - East Luther Townline	Con. 8-9 Road (Grand Valley)	20th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	152	4	2	7.4	72	Satisfactory Condition	39	110.2	1363	7.00	8.00	9541	Routine Maintenance	$0.00	$0.00
1103.2	3153	Amaranth - East Luther Townline	1.5 km N. of 15th Sideroad	Con. 8-9 Road (Grand Valley)	Amaranth (Rural)	Yes	Gravel	Rural	152	4	2	7.6	72	Satisfactory Condition	38	106	218	7.00	8.00	1526	Routine Maintenance	$0.00	$0.00
1004	3396	10th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	50	7	17	8	72	Satisfactory Condition	17	24.4	3085	7.00	9.10	28074	Preventative Maintenance	$15,440.70	$0.55
1402	3167	15th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	Gravel	Rural	100	7	0	8.05	72	Satisfactory Condition	19	68.4	1423	4.60	6.50	9250	Preventative Maintenance	$5,087.50	$0.55
0605	3236	6th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	55	7	17	7.96	72	Satisfactory Condition	17	27.1	3172	7.40	9.00	28548	Preventative Maintenance	$15,701.40	$0.55
2012	2413	Henry Street	Main Street	Evans Street	Waldemar	No	High Class Bituminous	Urban	240	6	9	8.38	72	Satisfactory Condition	23	17.9	151	6.70	6.70	1012	Resurface	$20,240.00	$20.00
1508		20th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	High Class Bituminous	Rural	1150	8	6	7.57	73	Satisfactory Condition	32	83.1	1255	7.00	10.00	8785	Resurface	$175,700.00	$20.00
0404	3418	4th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	7	0	8.11	73	Satisfactory Condition	17	28.6	3054	7.50	9.00	27486	Preventative Maintenance	$15,117.30	$0.55
0704	3413	7th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	128	7	20	8.11	73	Satisfactory Condition	19	61.1	3087	6.50	9.00	27783	Preventative Maintenance	$15,280.65	$0.55
0702	3229	7th Line	10th Sideroad	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	150	6	16	8.57	73	Satisfactory Condition	20	74	3062	6.00	8.70	26639	Preventative Maintenance	$14,651.45	$0.55
0603	3234	6th Line	15th Sideroad	20th Sideroad	Amaranth (Rural)	No	Gravel	Rural	65	7	0	8.19	74	Satisfactory Condition	17	31.8	3079	6.40	8.40	25864	Preventative Maintenance	$14,225.20	$0.55
1101.1	2453	Amaranth - East Luther Townline	5th Sideroad	2.36km N. of 5th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	140	9	20	7.56	74	Satisfactory Condition	19	62.9	2361	6.50	9.20	21721	Preventative Maintenance	$11,946.55	$0.55
1000.3	2425	Mill Street	Church Street	David Street	Waldemar	No	High Class Bituminous	Urban	1280	7	17	8.01	74	Satisfactory Condition	31	98.9	243	6.00	6.00	1458	Resurface	$29,160.00	$20.00
0106.2	2432	Mono-Amaranth Townline	0.6 Km N. of 30th Sideroad	Highway 89	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1510	7	9	8.05	74	Satisfactory Condition	33	105	411	7.00	8.00	2877	Resurface	$57,540.00	$20.00
0402	3248	4th Line	10th Sideroad	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	80	7	0	8.3	75	Satisfactory Condition	17	36.5	3054	6.70	8.70	26570	Preventative Maintenance	$14,613.50	$0.55
0600.1	3510	6th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	High Class Bituminous	Rural	279	8	10	7.77	75	Satisfactory Condition	21	31.1	467	7.00	9.00	3269	Resurface	$65,380.00	$20.00
0800	3405	8th Line	Dufferin County Road 109	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	189	7	14	8.37	75	Satisfactory Condition	19	74.3	3137	7.10	10.10	31684	Preventative Maintenance	$17,426.20	$0.55
0902	3408	9th Line	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	No	Gravel	Rural	80	8	15	7.96	75	Satisfactory Condition	17	31.8	3087	6.90	10.00	30870	Preventative Maintenance	$16,978.50	$0.55
1700	2358	30th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	Gravel	Rural	50	8	18	8.11	76	Satisfactory Condition	15	23.5	1342	6.50	8.10	10870	Preventative Maintenance	$5,978.50	$0.55
1704	3415	30th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	Gravel	Rural	80	6	16	8.89	76	Satisfactory Condition	16	44.2	1671	5.70	6.90	11530	Preventative Maintenance	$6,341.50	$0.55
1207	3242	5th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	Gravel	Rural	200	6	0	8.93	76	Satisfactory Condition	19	12.5	1534	8.00	9.00	13806	Resurface	$386,568.00	$28.00
1103.1	3390	Amaranth - East Luther Townline	15th Sideroad	1.5 km N. of 15th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	152	8	0	8.05	76	Satisfactory Condition	18	61	1492	5.70	9.50	14174	Preventative Maintenance	$7,795.70	$0.55
1106	3393	Amaranth - East Luther Townline	30th Sideroad	Highway 89	Amaranth (Rural)	Yes	Gravel	Rural	40	9	15	7.81	76	Satisfactory Condition	14	14.3	927	7.00	10.70	9919	Preventative Maintenance	$5,455.45	$0.55
1006	3394	10th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	35	8	18	8.19	77	Satisfactory Condition	14	16.3	1120	6.00	7.80	8736	Preventative Maintenance	$4,804.80	$0.55
1401	3166	15th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	Gravel	Rural	100	8	0	8.26	77	Satisfactory Condition	16	50.8	1377	5.20	7.20	9914	Preventative Maintenance	$5,452.70	$0.55
0405	4281	4th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	40	7	0	8.56	77	Satisfactory Condition	14	14.5	3084	6.30	10.10	31148	Preventative Maintenance	$17,131.40	$0.55
1105.2	3392	Amaranth - East Luther Townline	Con. 12-13 Road (Grand Valley)	30th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	28	8	0	8.22	77	Satisfactory Condition	13	14	2028	5.10	7.20	14602	Preventative Maintenance	$8,031.10	$0.55
2008	2450	Devonleigh Drive	30th Sideroad	30th Sideroad	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	240	6	11	8.94	77	Satisfactory Condition	19	24.6	638	7.00	7.00	4466	Resurface	$89,320.00	$20.00
1605	3416	25th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	Gravel	Rural	60	7	15	8.7	78	Satisfactory Condition	14	28	1277	5.90	7.50	9578	Preventative Maintenance	$5,267.90	$0.55
1701	2359	30th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	Gravel	Rural	50	7	19	8.63	78	Satisfactory Condition	14	17.7	1389	6.70	9.90	13751	Preventative Maintenance	$7,563.05	$0.55
1702	2357	30th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	Gravel	Rural	60	7	17	8.67	78	Satisfactory Condition	14	28.7	1406	5.60	7.30	10264	Preventative Maintenance	$5,645.20	$0.55
1709.4	2406	30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	Amaranth (Rural)	No	High Class Bituminous	Rural	800	7	15	8.5	78	Satisfactory Condition	24	47.1	418	7.00	8.00	2926	Resurface	$58,520.00	$20.00
0804	3180	8th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	40	7	18	8.7	78	Satisfactory Condition	13	16.6	3071	5.60	8.40	25796	Preventative Maintenance	$14,187.80	$0.55
0901	3402	9th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	295	8	18	8.3	78	Satisfactory Condition	19	27.6	3071	5.00	5.50	16891	Resurface	$472,948.00	$28.00
1000.6	3154, 3155	10th Line	Henry Street	Grand River Bridge	Amaranth (Rural)	No	High Class Bituminous	Rural	1040	7	16	8.57	79	Satisfactory Condition	24	58.4	1093	7.00	10.00	7651	Resurface	$153,020.00	$20.00
0604	3235	6th Line	20th Sideroad	25th Sideroad	Amaranth (Rural)	No	Gravel	Rural	60	8	18	8.42	79	Satisfactory Condition	13	25.3	3069	6.40	7.90	24245	Preventative Maintenance	$13,334.75	$0.55
2011	2305	Grand View Road	Dufferin County Road 109	End of Grand View Road	Amaranth (Rural)	No	Gravel	Rural	110	8	18	8.44	79	Satisfactory Condition	15	36.7	781	6.30	10.00	7810	Preventative Maintenance	$4,295.50	$0.55
0101.1	2465	Mono-Amaranth Townline	5th Sideroad	Hughson Street	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1744	8	10	8.23	79	Satisfactory Condition	27	98	491	7.00	10.00	3437	Resurface	$0.00	$0.00
2034	2417	St. John Street	Russel Hill Road	Peter Street	Waldemar	No	High Class Bituminous	Urban	265	7	10	8.59	79	Satisfactory Condition	18	12.4	481	8.00	8.00	3848	Resurface	$76,960.00	$20.00
1709.5		30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	Amaranth (Rural)	No	High Class Bituminous	Rural	800	7	11	8.7	80	Satisfactory Condition	22	97.7	130	6.60	8.50	858	Preventative Maintenance	$3,432.00	$4.00
1206	3240	5th Sideroad	Dufferin County Road 12	4th Line	Amaranth (Rural)	No	Gravel	Rural	250	8	0	8.52	80	Satisfactory Condition	17	15.6	1351	6.60	7.50	10133	Resurface	$283,724.00	$28.00
0906	3175	9th Line	30th Sideroad	Highway 89	Amaranth (Rural)	No	Gravel	Rural	30	7	18	8.9	80	Satisfactory Condition	12	11.9	1123	5.90	8.00	8984	Preventative Maintenance	$4,941.20	$0.55
1405	3170	15th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	Gravel	Rural	50	8	0	8.64	81	Satisfactory Condition	12	17.8	1301	6.10	8.50	11059	Preventative Maintenance	$6,082.45	$0.55
0705	2330	7th Line	25th Sideroad	30th Sideroad	Amaranth (Rural)	No	Gravel	Rural	128	8	20	8.7	81	Satisfactory Condition	14	35.2	3085	7.00	11.00	33935	Preventative Maintenance	$18,664.25	$0.55
0103	3201, 3152, 2477	Mono-Amaranth Townline	15th Sideroad	20th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1472	8	18	8.49	81	Satisfactory Condition	24	107.4	3056	7.00	10.00	21392	Preventative Maintenance	$0.00	$0.00
2032	2419	Russel Hill Road	St. John Street	Peter Street	Waldemar	No	High Class Bituminous	Rural	250	7	13	8.82	81	Satisfactory Condition	16	23.9	283	8.00	8.00	2264	Preventative Maintenance	$9,056.00	$4.00
0200.2	3193	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	Amaranth (Rural)	No	Gravel	Rural	551	8	18	8.81	82	Satisfactory Condition	18	14.3	2451	8.40	10.80	26471	Resurface	$741,188.00	$28.00
0701	3228	7th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	80	9	20	8.46	82	Satisfactory Condition	12	24.6	3165	6.70	9.30	29435	Preventative Maintenance	$16,189.25	$0.55
2029	2420	Peter Street	Russel Hill Road	Peter Street / Peter Court	Waldemar	No	High Class Bituminous	Urban	165	7	12	8.97	82	Satisfactory Condition	14	10	337	8.00	8.00	2696	Preventative Maintenance	$16,176.00	$6.00
2031	2418	Russel Hill Road	Peter Street / Peter Court	Peter Street	Waldemar	No	High Class Bituminous	Urban	180	7	12	8.94	82	Satisfactory Condition	14	10.9	454	8.00	8.00	3632	Preventative Maintenance	$21,792.00	$6.00
1601	3410	25th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	Gravel	Rural	60	8	18	8.9	83	Satisfactory Condition	11	24.2	1384	5.40	6.70	9273	Preventative Maintenance	$5,100.15	$0.55
1200		5th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	Gravel	Rural	50	9	20	8.56	83	Satisfactory Condition	10	25	101	5.00	5.40	545	Preventative Maintenance	$299.75	$0.55
0602.1	2461	6th Line	Dufferin County Road 10	0.4 Km N. of County Road 10	Laurel	No	High Class Bituminous	Rural	70	7	11	9.17	84	Satisfactory Condition	10	7.5	450	6.00	7.60	2700	Preventative Maintenance	$10,800.00	$4.00
0801	3403	8th Line	5th Sideroad	Dufferin County Road 10	Amaranth (Rural)	No	Gravel	Rural	80	8	16	9	84	Satisfactory Condition	11	25.4	3093	6.20	8.00	24744	Preventative Maintenance	$13,609.20	$0.55
0900.1	3514	9th Line	Dufferin County Road 109	Station Street	Amaranth (Rural)	No	High Class Bituminous	Rural	605	8	13	8.77	84	Satisfactory Condition	16	55.8	165	7.00	9.00	1155	Preventative Maintenance	$4,620.00	$4.00
1102.3		Amaranth - East Luther Townline	Con. 6-7 Road (Grand Valley)	15th Sideroad	Amaranth (Rural)	Yes	Gravel	Rural	80	9	20	8.67	84	Satisfactory Condition	11	25.1	1046	5.70	8.10	8473	Preventative Maintenance	$4,660.15	$0.55
2028	3044	Peter Court	Peter Street	End of Peter Court	Waldemar	No	High Class Bituminous	Urban	70	7	12	9.19	84	Satisfactory Condition	10	3.8	156	8.00	6.00	1248	Preventative Maintenance	$7,488.00	$6.00
2038.2	2405	Station Street	390m E. of Peter Street	9th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	570	9	12	8.56	84	Satisfactory Condition	16	52.5	464	7.00	8.50	3248	Preventative Maintenance	$12,992.00	$4.00
1000.7	2423, 3512	10th Line	Grand River Bridge	5th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	1040	7	15	9.28	85	Good Condition	17	59.9	760	7.00	10.00	5320	Preventative Maintenance	$31,920.00	$6.00
1203	3406	5th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	Gravel	Rural	100	8	0	9.13	85	Good Condition	10	27.4	1276	7.70	8.70	11101	Preventative Maintenance	$6,105.55	$0.55
1200	2470	5th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	399	8	18	8.94	85	Good Condition	14	34.5	1346	7.00	11.00	9422	Preventative Maintenance	$37,688.00	$4.00
1205	3241	5th Sideroad	6th Line	Dufferin County Road 12	Amaranth (Rural)	No	Gravel	Rural	208	9	0	8.85	85	Good Condition	12	8.1	1269	8.00	9.00	11421	Resurface	$319,788.00	$28.00
2021	2401	Maplewood Drive	Cherrywood Place	Woodland Road	Estate Sub-Division	No	High Class Bituminous	Rural	200	8	13	8.89	85	Good Condition	12	17.2	280	7.00	10.00	1960	Preventative Maintenance	$7,840.00	$4.00
1000.5	2422	Mill Street	David Street	Station Street	Waldemar	No	High Class Bituminous	Urban	1305	7	14	9.26	85	Good Condition	18	78.5	68	6.70	6.70	456	Preventative Maintenance	$2,736.00	$6.00
1000.4	2399	Mill Street	David Street	Station Street	Waldemar	No	High Class Bituminous	Urban	1305	7	15	9.24	85	Good Condition	18	87.7	139	6.00	6.00	834	Preventative Maintenance	$5,004.00	$6.00
1709.1	2431	30th Sideroad	2nd Line (Dufferin County Road 11)	Devonleigh Drive	Amaranth (Rural)	No	High Class Bituminous	Rural	800	8	16	9.02	86	Good Condition	15	64.5	176	7.00	10.00	1232	Preventative Maintenance	$4,928.00	$4.00

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Asset or PSAB ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	Distress Manifestation Index (DMI)	Pavement Condition Index (PCI)	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost ($/m²)
2035	2416	St. John Street	Station Street	Russel Hill Road	Waldemar	No	High Class Bituminous	Urban	470	7	13	9.4	86	Good Condition	13	22.1	194	8.00	8.00	1552	Preventative Maintenance	$9,312.00	$6.00
1204		5th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	Gravel	Rural	150	9	0	9.05	87	Good Condition	10	36.4	1729	7.50	8.50	14697	Preventative Maintenance	$8,083.35	$0.55
1202	3404	5th Sideroad	9th Line	8th Line	Amaranth (Rural)	No	Gravel	Rural	200	8	0	9.27	87	Good Condition	10	7.9	1388	6.70	7.70	10688	Resurface	$299,264.00	$28.00
1100.3		Amaranth - East Luther Townline	Grand River Bridge	Concession Road 2-3	Amaranth (Rural)	Yes	Gravel	Rural	211	7	0	9.63	87	Good Condition	10	6.4	832	7.00	10.00	8320	Resurface	$232,960.00	$28.00
2024	2429	Maplewood Drive	Cedar Place	Sylvanwood Road	Estate Sub-Division	No	High Class Bituminous	Rural	255	8	12	9.07	87	Good Condition	11	19.1	203	7.00	10.00	1421	Preventative Maintenance	$5,684.00	$4.00
2022	2430	Maplewood Drive	Mono - Amaranth Townline	Cedar Place	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	290	8	17	9.12	87	Good Condition	11	21.7	369	7.00	10.00	2583	Preventative Maintenance	$10,332.00	$4.00
2039	2304	Sylvanwood Road	Highway 89	Maplewood Drive	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	280	8	10	9.09	87	Good Condition	11	21	262	7.00	7.00	1834	Preventative Maintenance	$7,336.00	$4.00
1709.2	2431	30th Sideroad	Devonleigh Drive	Devonleigh Drive	Amaranth (Rural)	No	High Class Bituminous	Rural	800	9	16	8.97	88	Good Condition	13	55.3	406	7.00	10.00	2842	Preventative Maintenance	$11,368.00	$4.00
2013	2414	Henry Street	Mill Street	Main Street	Waldemar	No	High Class Bituminous	Rural	295	8	15	9.25	88	Good Condition	10	20.4	89	7.00	7.00	623	Preventative Maintenance	$2,492.00	$4.00
1201	3400	5th Sideroad	10th Line	9th Line	Amaranth (Rural)	No	Gravel	Rural	300	9	0	9.27	89	Good Condition	9	9.1	1362	7.50	8.50	11577	Resurface	$324,156.00	$28.00
0102	2351	Mono-Amaranth Townline	Dufferin County Road 10	15th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	1433	9	19	9.06	89	Good Condition	14	60.5	3040	7.00	10.00	21280	Preventative Maintenance	$0.00	$0.00
1409	3517	15th Sideroad	2nd Line	Mono - Amaranth Townline	Amaranth (Rural)	No	Gravel	Rural	100	7	0	10	90	Good Condition	7	16	1401	7.20	9.90	13870	Preventative Maintenance	$7,628.50	$0.55
1408	3516	15th Sideroad	Dufferin County Road 11	2nd Line	Amaranth (Rural)	No	Gravel	Rural	66	7	0	10	90	Good Condition	6	13.7	1258	6.60	7.60	9561	Preventative Maintenance	$5,258.55	$0.55
1407	3515	15th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	Gravel	Rural	80	7	0	10	90	Good Condition	7	17.7	1517	5.90	7.20	10922	Preventative Maintenance	$6,007.10	$0.55
1406	3171	15th Sideroad	5th Line (Dufferin County Road 12)	4th Line	Amaranth (Rural)	No	Gravel	Rural	100	7	0	10	90	Good Condition	7	22.7	1317	5.80	7.00	9219	Preventative Maintenance	$5,070.45	$0.55
1709.3	2431	30th Sideroad	Devonleigh Drive	Country Meadows Dr	Amaranth (Rural)	No	High Class Bituminous	Rural	800	8	16	9.45	90	Good Condition	11	-1	258	7.00	8.50	1806	Preventative Maintenance	$0.00	$0.00
2023	2428	Maplewood Drive	Sylvanwood Road	Cherrywood Place	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	280	8	15	9.48	90	Good Condition	8	-1	89	7.00	10.00	623	Preventative Maintenance	$0.00	$0.00
2030	2421	Peter Street	St. John Street	Russel Hill Road	Waldemar	No	High Class Bituminous	Urban	165	8	18	9.41	90	Good Condition	8	-1	127	6.30	6.30	800	Preventative Maintenance	$0.00	$0.00
1100.1	2459	Amaranth - East Luther Townline	Dufferin County Road 109 (Hwy 9)	Grand River Bridge	Amaranth (Rural)	Yes	Gravel	Rural	211	9	20	9.56	92	Good Condition	6	4	1795	7.00	10.00	17950	Resurface	$502,600.00	$28.00
1501	2370	20th Sideroad	10th Sideroad	9th Sideroad	Amaranth (Rural)	No	High Class Bituminous	Rural	350	10	14	9.42	94	Good Condition	5	-1	1380	7.00	9.00	9660	Preventative Maintenance	$0.00	$0.00
1500	2369	20th Sideroad	Amaranth - East Luther Townline	10th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	289	10	19	9.42	94	Good Condition	5	-1	1319	7.00	8.00	9233	Preventative Maintenance	$0.00	$0.00
0900.2	2314	9th Line	Dufferin County Road 109	Station Street	Amaranth (Rural)	No	High Class Bituminous	Rural	605	10	16	9.42	94	Good Condition	6	-1	1052	7.00	10.00	7364	Preventative Maintenance	$0.00	$0.00
1100.2		Amaranth - East Luther Townline	Grand River South Bank	Grand River North Bank	Amaranth (Rural)	Yes	High Class Bituminous	Rural	211	8	0	10	95	Good Condition	4	-1	127	11.00	11.00	1397	No Maintenance Required	$0.00	$0.00
2004		Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	220	9	20	9.78	95	Good Condition	4	-1	127	6.80	9.00	864	No Maintenance Required	$0.00	$0.00
1000.1	2404	10th Line	Dufferin County Road 109	Church Street	Amaranth (Rural)	No	High Class Bituminous	Rural	1285	9	19	9.88	96	Good Condition	5	-1	467	7.00	11.00	3269	No Maintenance Required	$0.00	$0.00
1100.3	2460	Amaranth - East Luther Townline	Concession Road 2-3	5th Sideroad (Turn-Off)	Amaranth (Rural)	Yes	High Class Bituminous	Rural	211	10	18	9.64	96	Good Condition	3	-1	269	7.50	10.00	2018	No Maintenance Required	$0.00	$0.00
1000.2	2424	Church Street	10th Line	Mill Street	Amaranth (Rural)	No	High Class Bituminous	Semi-Urban	1280	9	18	9.88	96	Good Condition	5	-1	331	7.00	8.00	2317	No Maintenance Required	$0.00	$0.00
2006	2395	Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	220	10	19	9.66	96	Good Condition	3	-1	260	7.00	10.00	1820	No Maintenance Required	$0.00	$0.00
1104.1	2380, 2385	Amaranth - East Luther Townline	20th Sideroad	20m N. of Con. 10-11 Road (Grand Valley)	Amaranth (Rural)	Yes	High Class Bituminous	Rural	75	10	20	9.78	97	Good Condition	2	-1	1431	7.00	9.00	10017	No Maintenance Required	$0.00	$0.00
2005	2396	Crago Road	5th Sideroad	End of Culdesac	Estate Sub-Division	No	High Class Bituminous	Rural	220	10	20	9.74	97	Good Condition	2	-1	230	7.00	11.00	1610	No Maintenance Required	$0.00	$0.00
2017		Hughson Street	Crago Road	Amaranth/Mono Townline	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	180	10	19	9.78	97	Good Condition	2	-1	247	7.00	10.00	1729	No Maintenance Required	$0.00	$0.00
2015	2396	Hughson Street	Crago Road	Amaranth/Mono Townline	Estate Sub-Division	No	High Class Bituminous	Rural	180	10	19	9.78	97	Good Condition	2	-1	404	7.00	10.00	2828	No Maintenance Required	$0.00	$0.00
2025	2306	Mckibbon Avenue	Crago Road	Hughson Street	Estate Sub-Division	No	High Class Bituminous	Rural	140	10	19	9.71	97	Good Condition	2	-1	658	7.00	10.50	4606	No Maintenance Required	$0.00	$0.00
1502	2392, 2402	20th Sideroad	9th Line	0.6 Km E. of 9th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	500	10	20	9.82	98	Good Condition	2	-1	1371	7.00	9.00	9597	No Maintenance Required	$0.00	$0.00
1504	2372	20th Sideroad	7th Line	6th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	650	10	19	9.88	98	Good Condition	2	-1	1701	7.00	9.50	11907	No Maintenance Required	$0.00	$0.00
1507	2375	20th Sideroad	4th Line	Dufferin County Road 11	Amaranth (Rural)	No	High Class Bituminous	Rural	100	10	20	9.86	98	Good Condition	1	-1	1518	7.00	11.00	10626	No Maintenance Required	$0.00	$0.00
2003	5062, 5063	Country Meadows Dr	30th Sideroad	30th Sideroad	Estate Sub-Division	No	High Class Bituminous	Semi-Urban	230	10	18	9.82	98	Good Condition	2	-1	832	7.00	9.00	5824	No Maintenance Required	$0.00	$0.00
1503	2371	20th Sideroad	8th Line	7th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	650	10	20	10	99	Good Condition	1	-1	1329	7.00	9.00	9303	No Maintenance Required	$0.00	$0.00
1505	2373	20th Sideroad	6th Line	5th Line (Dufferin County Road 12)	Amaranth (Rural)	No	High Class Bituminous	Rural	650	10	20	10	99	Good Condition	1	-1	1267	7.00	9.50	8869	No Maintenance Required	$0.00	$0.00
1506		20th Sideroad	5th Line	4th Line	Amaranth (Rural)	No	High Class Bituminous	Rural	80	10	20	10	99	Good Condition	1	-1	1303	7.00	11.00	9121	No Maintenance Required	$0.00	$0.00
1000.4		Amaranth - East Luther Townline	5th Sideroad (Turn-Off)	5th Sideroad	Amaranth (Rural)	Yes	High Class Bituminous	Rural	30	10	20	10	99	Good Condition	1	-1	69	7.50	9.00	518	No Maintenance Required	$0.00	$0.00

BURNSIDE

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Appendix F

Benchmark Unit Cost Breakdown

Unit Costs	Units	Unit Cost
Granular A	t	$18.00
Granular B	t	$14.40
Asphalt	t	$120.00
50 mm HL8	m2	$14.70
50mm HL4	m2	$14.70
40mm HL3	m2	$11.76
Earth Excavation	m3	$15.00
Milling	m2	$4.00
Pulverizing	m2	$2.00
Asphalt Removal	m2	$5.00
Microsurfacing	m2	$6.00
Crack Sealing	m2	$0.75
Catch Basin/Manhole Adjustments	m2	$2.00
Crack Sealing + Patching	m2	$1.50
Maintenance Gravel + Calcium Chloride*	m2	$0.55
Curb and Gutter Replacement	m2	$16.00
Tack Coat	m2	$0.40
Gravel Shoulders (50mm Depth)	m2	$1.35
Nominal Ditch Repairs	m2	$0.50
FibreMat	m2	$7.00
Single Surface Treatment	m2	$5.00
Double Surface Treatment	m2	$9.00
Triple Surface Treatment	m2	$13.50
Improve Grades and Sightlines**	m2	$85.00

* Maintenance gravel and calcium chloride are material costs only. Road preparation and grading are assumed to be by Township forces.

** The extent of grade and/or sightline improvement requirements (if any) may vary widely from section-to-section. The unit cost shown is general, and any specific road section costs must be assessed at the project-level.

Urban HCB Resurfacing								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Milling					m2		$4.00	$4.00
Tack Coat					m2		$0.40	$0.40
HL4 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Contingencies	10%							$1.91
							Total =	$21.01

Semi-Urban or Rural HCB/LCB Resurfacing								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Gravel Shoulders			50		m2		$1.35	$1.35
Crack Sealing + Patching					m2		$1.50	$1.50
Tack Coat					m2		$0.40	$0.40
HL4 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Contingencies	10%							$1.80
							Total =	$19.75

Urban HCB Rehabilitation								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Curb and Gutter Replacement	15%				m2		$16.00	$2.40
Catch Basin/Manhole Adjustments					m2	30	$2.00	$2.00
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Tack Coat					m2		$0.40	$0.40
HL3 Asphalt			40	0.098t/m2	m2		$11.76	$11.76
Contingencies	10%							$3.63
							Total =	$39.89

30 structures per km at $450 each

Semi-Urban or Rural HCB/LCB Rehabilitation AADT>=1000								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Pulverizing					m2		$2.00	$2.00
Granular A	50%		150		m2		$6.48	$6.48
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Tack Coat					m2		$0.40	$0.40
HL4 Asphalt			40	0.098t/m2	m2		$11.76	$11.76
Gravel Shoulders			90		m2		$2.42	$2.42
Contingencies	10%							$3.78
					m2			
							Total =	$41.54

Semi-Urban or Rural HCB/LCB Rehabilitation AADT<1000								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Pulverizing					m2		$2.00	$2.00
Granular A	50%		150		m2		$6.48	$6.48
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Gravel Shoulders			90		m2		$1.35	$1.35
Contingencies	10%							$2.45
							Total =	$26.98

Urban HCB Reconstruction								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Earth Excavation			450		m2		$6.75	$6.75
Granular A			150		m2		$6.48	$6.48
Granular B			300		m2		$8.64	$8.64
Curb and Gutter Replacement					m2		$16.00	$16.00
Catch Basin/Manhole Adjustments					m2	30	$2.00	$2.00
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Tack Coat					m2		$0.40	$0.40
HL3 Asphalt			40	0.098t/m2	m2		$11.76	$11.76
Contingencies	10%							$7.17
							Total =	$78.90

30 structures per km at $450 each

Semi-Urban or Rural HCB/LCB Reconstruction AADT>=500								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Earth Excavation			450		m2		$6.75	$6.75
Granular A			150		m2		$6.48	$6.48
Granular B			300		m2		$8.64	$8.64
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Tack Coat					m2		$0.40	$0.40
HL3 Asphalt			40	0.098t/m2	m2		$11.76	$11.76
Gravel Shoulders			90		m2		$2.42	$2.42
Nominal Ditch Repairs					m2		$0.50	$0.50
Contingencies	10%							$5.67
							Total =	$62.32

Semi-Urban or Rural HCB/LCB Reconstruction AADT<500								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Earth Excavation			450		m2		$6.75	$6.75
Granular A			150		m2		$6.48	$6.48
Granular B			300		m2		$8.64	$8.64
HL8 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Gravel Shoulders			50		m2		$1.35	$1.35
Nominal Ditch Repairs					m2		$0.50	$0.50
Contingencies	10%							$4.34
							Total =	$47.76

Semi-Urban or Rural Gravel Reconstruction AADT>=500 - To 1 HMA								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Earth Excavation			450		m2		$6.75	$6.75
Granular A			150		m2		$6.48	$6.48
Granular B			300		m2		$8.64	$8.64
HL4 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Gravel Shoulders			50		m2		$1.35	$1.35
Nominal Ditch Repairs					m2		$0.50	$0.50
Contingencies	10%							$4.34
							Total =	$47.76

Gravel Road Reconstruction AADT>=200 - To Gravel Surface								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Earth Excavation			450		m2		$6.75	$6.75
Granular A			150		m2		$6.48	$6.48
Granular B			300		m2		$8.64	$8.64
Nominal Ditch Repairs					m2		$0.50	$0.50
Gravel Shoulders			50		m2		$1.35	$1.35
Contingencies	10%							$2.37
							Total =	$26.09

Semi-Urban or Rural Gravel Rehabilitation AADT>=500 - To 1 HMA								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Asphalt Removal					m2		$5.00	$5.00
Earth Excavation			150		m2		$2.25	$2.25
Granular A			150		m2		$6.48	$6.48
HL4 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Gravel Shoulders			50		m2		$1.35	$1.35
Nominal Ditch Repairs					m2		$0.50	$0.50
Contingencies	10%							$3.03
							Total =	$33.31

Gravel Road Rehabilitation AADT<200 - To Gravel Surface								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Earth Excavation			150		m2		$2.25	$2.25
Granular A			150		m2		$6.48	$6.48
Nominal Ditch Repairs					m2		$0.50	$0.50
Gravel Shoulders			50		m2		$1.35	$1.35
Contingencies	10%							$1.06
							Total =	$11.64

Semi-Urban or Rural Gravel AADT>=500 - Resurface to 1 HMA								
Item	**Amount**	**Width (m)**	**Depth (mm)**	**Conversion Factor**	**Unit**	**Quantity**	**Unit Cost**	**Cost/m2**
Pulverize					m2		$2.00	$2.00
Granular A	50%		150		m2		$6.48	$6.48
HL4 Asphalt			50	0.1225t/m2	m2		$14.70	$14.70
Gravel Shoulders			50		m2		$1.35	$1.35
Nominal Ditch Repairs					m2		$0.50	$0.50
Contingencies	10%							$2.50
							Total =	$27.53

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix G

10-Year Road Improvement Plan

16.5°E°

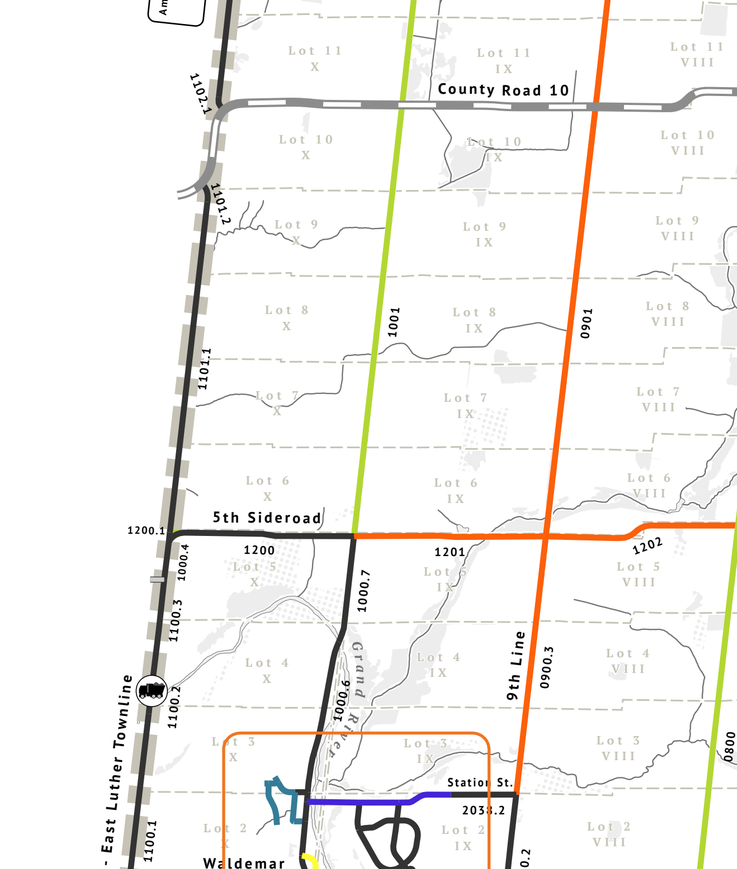
0 500 1,000 1,500 2,000
Metres
1:30,000 (Main Map)

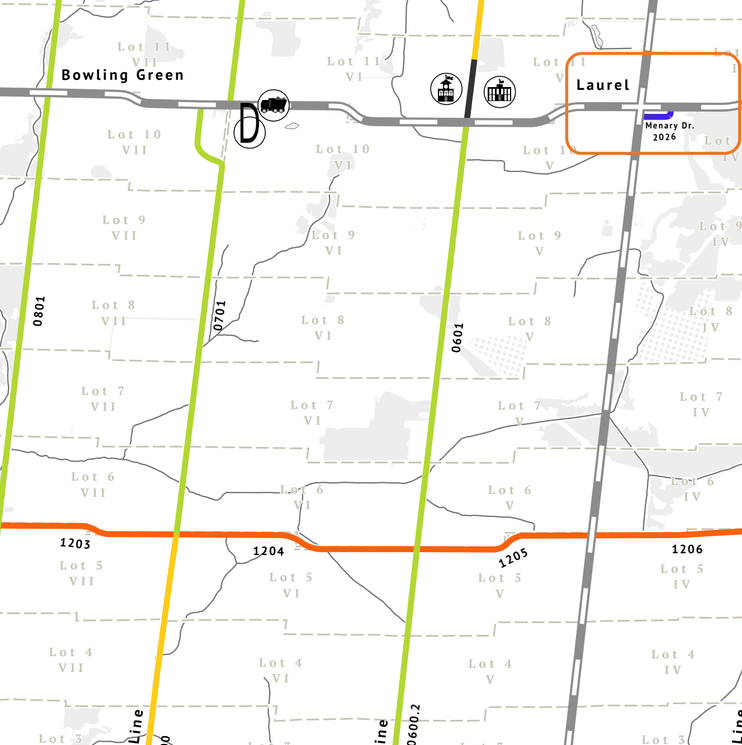
Datum: North American 1983 CSRS
Coord. System: NAD 1983 CSRS
UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960

Highway 89
Jessopville
TWP. OF MELANCTHON
TWP. OF AMARANTH
Highway 89
Victoria St.
TOWN OF SHELBURNE
TWP. OF AMARANTH
30th Sideroad
Maple Grove
Amaranth - East Luther Townline
10th Line
9th Line
8th Line
7th Line
6th Line
County Road 12
4th Line
County Road 11
2nd Line
Mono-Amaranth Townline
25th Sideroad
20th Sideroad
Campania
Blacks Corners
Crombies
Bridge Removed
TOWN OF GRAND VALLEY
TWP. OF AMARANTH
TWP. OF AMARANTH
TOWN OF MONO
15th Sideroad
Whittington
Amaranth East Luther Townline is maintained by the Town of Grand Valley from County Road 109 to 15th Sideroad.
Mono Amaranth Townline is maintained by the Town of Mono from 5th Sideroad to 20th Sideroad.
County Road 10
Bowling Green
Laurel
Menary Dr. 2026
County Road 10
Mono-Amaranth Townline
5th Sideroad
Farmington
Waldemar
Station St. 2033.2
Grand River
Grand View Rd. 2011
10th Line
9th Line
8th Line
7th Line
6th Line
4th Line
County Road 11
2nd Line
County Road 16
Shannon Ct. 2033
TWP. OF AMARANTH
TOWN OF ORANGEVILLE
TWP. OF AMARANTH
TWP. OF EAST GARAFRAXA

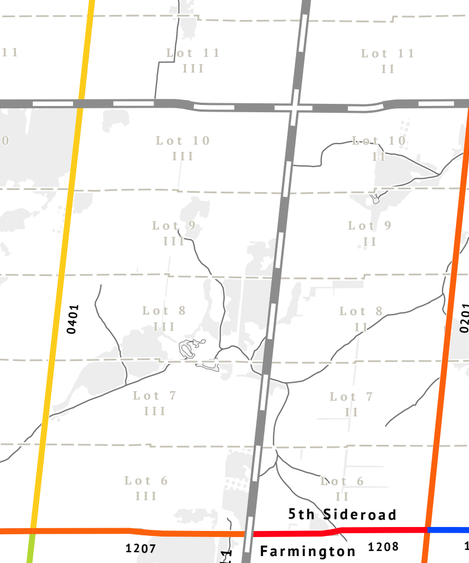
Locations of Interest
- Gravel Pit
- Gravel Pit Entrance
- Municipal Office
- Municipal Works Yard
- School

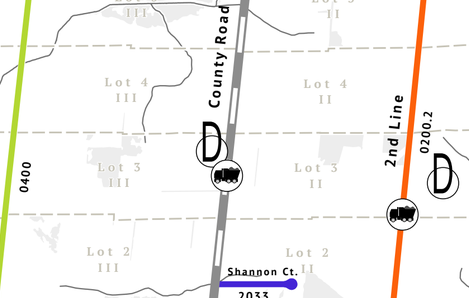
Ten Year Improvement Plan by Years
- Year 1
- Years 1,4,7,10
- Year 2
- Years 2,5,8
- Year 3
- Years 3,6,9
- Year 4
- Year 5
- Year 6
- Year 7
- Year 8
- Year 9
- No Maintenence Required in Ten Year Time Frame





0 500 1,000
Metres
1:10,000 (All Inset Maps)





Drawn By: PS
Checked By: EM
Client: Township of Amaranth
Project: Roads Needs Study 2022
Project Number: 300055179
Date: 2023/05/24

Ten Year Improvement Plan

Appendix G

Appendix G - 10-Year Road Improvement Plan

Municipal ID	Community	Name	Name From	Name To	Boundary Road	Surface Material	Ride Comfort Rating (RCR)	PCI	PCI Class	Structural Adequacy (1-20)	Priority Guide Number (PGN)	Priority Rating (PR)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)	Roadside Environment	AADT	Proposed Lifecycle Improvement	Improvement Cost	Bench Mark Cost ($/m²)	Adj. Lifecycle Improvement	Adj. Improvement Cost	Adj. Bench Mark Cost ($/m²)	Comments
Year 1 (2023)																									
1208	Amaranth (Rural)	5th Sideroad	Dufferin County Road 11	2nd Line	No	High Class Bituminous	6	49	Poor Condition	3	340	58	1271	7.00	10.00	8897	Rural	1032	Rehabilitation	$364,777.00	$41.00	Rehabilitation	$364,777.00	$41.00	
0104.1	Amaranth (Rural)	Mono-Amaranth Townline	20th Sideroad	Bridge N. of 20th Sideroad	Yes	High Class Bituminous	6	62	Fair Condition	3	154	48	600	7.00	7.80	4200	Rural	1510	Resurface	$84,000.00	$20.00	Rehabilitation	$172,200.00	$41.00	
1602	Amaranth (Rural)	25th Sideroad	9th Line	8th Line	No	Gravel	3	14	Serious Condition	4	29	53	1395	6.10	8.30	11579	Rural	50	Reconstruction	$301,054.00	$26.00	Preventive Maintenance	$6,368.45	$0.55	Topped up in 2020
1609	Amaranth (Rural)	25th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	3	25	Very Poor Condition	9	33	50	1384	8.30	10.20	14117	Rural	80	Reconstruction	$367,042.00	$26.00	Preventive Maintenance	$7,764.35	$0.55	Topped up in 2020
1606	Amaranth (Rural)	25th Sideroad	5th Line	4th Line	No	Gravel	3	21	Serious Condition	5	14	46	1290	7.00	9.50	12255	Rural	29	Reconstruction	$318,630.00	$26.00	Preventive Maintenance	$6,740.25	$0.55	Topped up in 2020
0406	Amaranth (Rural)	4th Line	30th Sideroad	Highway 89	No	Gravel	3	30	Very Poor Condition	13	21	43	1151	7.20	9.60	11050	Rural	50	Reconstruction	$287,300.00	$26.00	Preventive Maintenance	$6,077.50	$0.55	Topped up in 2020
1104.2	Amaranth (Rural)	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Yes	Gravel	4	43	Poor Condition	13	63	37	1638	6.10	8.60	14087	Rural	75	Rehabilitation	$169,044.00	$12.00	Preventive Maintenance	$7,747.85	$0.55	Topped up in 2020
0201	Amaranth (Rural)	2nd Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	63	Fair Condition	14	91	27	3049	7.50	9.70	29575	Rural	150	Preventative Maintenance	$16,266.25	$0.55	Preventive Maintenance	$16,266.25	$0.55	Topped up in 2020
0900.3	Amaranth (Rural)	9th Line	Station Street	5th Sideroad	No	Gravel	8	68	Fair Condition	16	22	27	1845	6.30	10.00	18450	Rural	295	Resurface	$516,600.00	$28.00	Preventive Maintenance	$10,147.50	$0.55	Topped up in 2019 & 2020
1600	Amaranth (Rural)	25th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	6	57	Fair Condition	15	30	26	1324	6.00	7.40	9798	Rural	40	Rehabilitation	$117,576.00	$12.00	Preventive Maintenance	$5,388.90	$0.55	Topped up in 2020
0202	Amaranth (Rural)	2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	No	Gravel	7	62	Fair Condition	14	50	25	3045	8.00	9.60	29232	Rural	80	Preventative Maintenance	$16,077.60	$0.55	Preventive Maintenance	$16,077.60	$0.55	Topped up in 2020
1608	Amaranth (Rural)	25th Sideroad	0.1 Km E. of County Road 11	2nd Line	No	Gravel	6	66	Fair Condition	15	36	22	1243	9.00	11.30	14046	Rural	75	Preventative Maintenance	$7,725.30	$0.55	Preventive Maintenance	$7,725.30	$0.55	Topped up in 2020
1607	Amaranth (Rural)	25th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	64	Fair Condition	14	28	22	1526	6.60	8.20	12513	Rural	40	Preventative Maintenance	$6,882.15	$0.55	Preventive Maintenance	$6,882.15	$0.55	Topped up in 2020
0606	Amaranth (Rural)	6th Line	30th Sideroad	Highway 89	No	Gravel	6	65	Fair Condition	20	18	20	1199	7.00	9.10	10911	Rural	30	Preventative Maintenance	$6,001.05	$0.55	Preventive Maintenance	$6,001.05	$0.55	Topped up in 2020
1207	Amaranth (Rural)	5th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	76	Satisfactory Condition	0	13	19	1534	8.00	9.00	13806	Rural	200	Resurface	$386,568.00	$28.00	Preventive Maintenance	$7,593.30	$0.55	Topped up in 2020
0901	Amaranth (Rural)	9th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	78	Satisfactory Condition	18	28	19	3071	5.00	5.50	16891	Rural	295	Resurface	$472,948.00	$28.00	Preventive Maintenance	$9,290.05	$0.55	Topped up in 2019 & 2020
0200.2	Amaranth (Rural)	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	No	Gravel	8	82	Satisfactory Condition	18	14	18	2451	8.40	10.80	26471	Rural	551	Resurface	$741,188.00	$28.00	Preventive Maintenance	$14,559.05	$0.55	Topped up in 2020
1103.1	Amaranth (Rural)	Amaranth - East Luther Townline	15th Sideroad	1.5 km N. of 15th Sideroad	Yes	Gravel	8	76	Satisfactory Condition	0	61	18	1492	5.70	9.50	14174	Rural	152	Preventative Maintenance	$7,795.70	$0.55	Preventive Maintenance	$7,795.70	$0.55	Topped up in 2020
0404	Amaranth (Rural)	4th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	0	29	17	3054	7.50	9.00	27486	Rural	60	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	Topped up in 2020
1206	Amaranth (Rural)	5th Sideroad	Dufferin County Road 12	4th Line	No	Gravel	8	80	Satisfactory Condition	0	16	17	1351	6.60	7.50	10133	Rural	250	Resurface	$283,724.00	$28.00	Preventive Maintenance	$5,573.15	$0.55	Topped up in 2020
0605	Amaranth (Rural)	6th Line	25th Sideroad	30th Sideroad	No	Gravel	7	72	Satisfactory Condition	17	27	17	3172	7.40	9.00	28548	Rural	55	Preventative Maintenance	$15,701.40	$0.55	Preventive Maintenance	$15,701.40	$0.55	Topped up in 2020
0902	Amaranth (Rural)	9th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	8	75	Satisfactory Condition	15	32	17	3087	6.90	10.00	30870	Rural	80	Preventative Maintenance	$16,978.50	$0.55	Preventive Maintenance	$16,978.50	$0.55	Topped up in 2020
0405	Amaranth (Rural)	4th Line	25th Sideroad	30th Sideroad	No	Gravel	7	77	Satisfactory Condition	0	15	14	3084	6.30	10.10	31148	Rural	40	Preventative Maintenance	$17,131.40	$0.55	Preventive Maintenance	$17,131.40	$0.55	Topped up in 2020
0604	Amaranth (Rural)	6th Line	20th Sideroad	25th Sideroad	No	Gravel	8	79	Satisfactory Condition	18	25	13	3069	6.40	7.90	24245	Rural	60	Preventative Maintenance	$13,334.75	$0.55	Preventive Maintenance	$13,334.75	$0.55	Topped up in 2020
1205	Amaranth (Rural)	5th Sideroad	6th Line	Dufferin County Road 12	No	Gravel	9	85	Good Condition	0	8	12	1269	8.00	9.00	11421	Rural	208	Resurface	$319,788.00	$28.00	Preventive Maintenance	$6,281.55	$0.55	Topped up in 2020
1601	Amaranth (Rural)	25th Sideroad	10th Line	9th Line	No	Gravel	8	83	Satisfactory Condition	18	24	11	1384	5.40	6.70	9273	Rural	60	Preventative Maintenance	$5,100.15	$0.55	Preventive Maintenance	$5,100.15	$0.55	Topped up in 2020
1202	Amaranth (Rural)	5th Sideroad	9th Line	8th Line	No	Gravel	8	87	Good Condition	0	8	10	1388	6.70	7.70	10688	Rural	200	Resurface	$299,264.00	$28.00	Preventive Maintenance	$5,878.40	$0.55	Topped up in 2020
1204	Amaranth (Rural)	5th Sideroad	7th Line	6th Line	No	Gravel	9	87	Good Condition	0	36	10	1729	7.50	8.50	14697	Rural	150	Preventative Maintenance	$8,083.35	$0.55	Preventive Maintenance	$8,083.35	$0.55	Topped up in 2020
1203	Amaranth (Rural)	5th Sideroad	8th Line	7th Line	No	Gravel	8	85	Good Condition	0	27	10	1276	7.70	8.70	11101	Rural	100	Preventative Maintenance	$6,105.55	$0.55	Preventive Maintenance	$6,105.55	$0.55	Topped up in 2020
1201	Amaranth (Rural)	5th Sideroad	10th Line	9th Line	No	Gravel	9	89	Good Condition	0	9	9	1362	7.50	8.50	11577	Rural	300	Resurface	$324,156.00	$28.00	Preventive Maintenance	$6,367.35	$0.55	Topped up in 2020
1400	Amaranth (Rural)	15th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	5	45	Poor Condition	0	139	41	1304	5.50	7.60	9910	Rural	150	Rehabilitation	$118,920.00	$12.00	Preventive Maintenance	$5,450.50	$0.55	
0203	Amaranth (Rural)	2nd Line	15th Sideroad	20th Sideroad	No	Gravel	5	45	Poor Condition	13	55	36	3045	8.10	10.30	31364	Rural	80	Rehabilitation	$376,368.00	$12.00	Preventive Maintenance	$17,250.20	$0.55	
1403	Amaranth (Rural)	15th Sideroad	8th Line	7th Line	No	Gravel	5	55	Fair Condition	0	81	33	1320	6.60	10.70	14124	Rural	150	Rehabilitation	$169,488.00	$12.00	Preventive Maintenance	$7,768.20	$0.55	
												Asphalt Total	1871									Asphalt Total	$536,977.00		
												Gravel Total	59531									Gravel Total	$294,547.00		
												Year 1 Total	61402									Year 1 Total	$831,524.00		
Year 2 (2024)																									
1103.2	Amaranth (Rural)	Amaranth - East Luther Townline	1.5 km N. of 15th Sideroad	Con. 8-9 Road (Grand Valley)	Yes	Gravel	4	72	Satisfactory Condition	2	106	38	218	7.00	8.00	1744	Rural	152	Routine Maintenance	$0.00	$0.00	Resurface	$48,832.00	$28.00	Upgrade surface type to asphalt
1103.3	Amaranth (Rural)	Amaranth - East Luther Townline	Con. 8-9 Road (Grand Valley)	20th Sideroad	Yes	Gravel	4	72	Satisfactory Condition	2	110	39	1363	7.00	8.00	10904	Rural	152	Routine Maintenance	$0.00	$0.00	Resurface	$305,312.00	$28.00	Upgrade surface type to asphalt
1706	Amaranth (Rural)	30th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	4	36	Very Poor Condition	11	40	42	1267	5.80	7.30	9249	Rural	80	Reconstruction	$240,474.00	$26.00	Preventive Maintenance	$5,086.95	$0.55	Topped up in 2021
1705	Amaranth (Rural)	30th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	4	48	Poor Condition	11	83	36	1224	6.40	8.00	9792	Rural	100	Rehabilitation	$117,504.00	$12.00	Preventive Maintenance	$5,385.60	$0.55	Topped up in 2021
1707	Amaranth (Rural)	30th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	5	56	Fair Condition	14	56	29	1489	6.80	8.00	11912	Rural	80	Rehabilitation	$142,944.00	$12.00	Preventive Maintenance	$6,551.60	$0.55	Topped up in 2021
1703	Amaranth (Rural)	30th Sideroad	8th Line	7th Line	No	Gravel	5	59	Fair Condition	13	57	27	1348	5.30	7.30	9840	Rural	80	Rehabilitation	$118,080.00	$12.00	Preventive Maintenance	$5,412.00	$0.55	Topped up in 2021
0706	Amaranth (Rural)	7th Line	30th Sideroad	Highway 89	No	Gravel	6	63	Fair Condition	20	105	27	1125	6.30	7.20	8100	Rural	128	Preventative Maintenance	$4,455.00	$0.55	Preventive Maintenance	$4,455.00	$0.55	Topped up in 2019 & 2021
0806	Amaranth (Rural)	8th Line	30th Sideroad	Highway 89	No	Gravel	6	64	Fair Condition	16	47	24	1115	7.60	9.80	10927	Rural	80	Preventative Maintenance	$6,009.85	$0.55	Preventive Maintenance	$6,009.85	$0.55	Topped up in 2021
0401	Amaranth (Rural)	4th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	66	Fair Condition	0	48	23	3054	6.90	9.00	27486	Rural	80	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	Topped up in 2019 & 2021
0403	Amaranth (Rural)	4th Line	15th Sideroad	20th Sideroad	No	Gravel	6	65	Fair Condition	0	36	22	3072	6.80	9.90	30413	Rural	65	Preventative Maintenance	$16,727.15	$0.55	Preventive Maintenance	$16,727.15	$0.55	Topped up in 2021
0704	Amaranth (Rural)	7th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	20	61	19	3087	6.50	9.00	27783	Rural	128	Preventative Maintenance	$15,280.65	$0.55	Preventive Maintenance	$15,280.65	$0.55	Topped up in 2019 & 2021
0805	Amaranth (Rural)	8th Line	25th Sideroad	30th Sideroad	No	Gravel	6	70	Satisfactory Condition	16	35	19	3066	5.70	8.20	25141	Rural	60	Preventative Maintenance	$13,827.55	$0.55	Preventive Maintenance	$13,827.55	$0.55	Topped up in 2021
0402	Amaranth (Rural)	4th Line	10th Sideroad	15th Sideroad	No	Gravel	7	75	Satisfactory Condition	0	37	17	3054	6.70	8.70	26570	Rural	80	Preventative Maintenance	$14,613.50	$0.55	Preventive Maintenance	$14,613.50	$0.55	Topped up in 2019 & 2021
1704	Amaranth (Rural)	30th Sideroad	7th Line	6th Line	No	Gravel	6	76	Satisfactory Condition	16	44	16	1671	5.70	6.90	11530	Rural	80	Preventative Maintenance	$6,341.50	$0.55	Preventive Maintenance	$6,341.50	$0.55	Topped up in 2021
1700	Amaranth (Rural)	30th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	8	76	Satisfactory Condition	18	24	15	1342	6.50	8.10	10870	Rural	50	Preventative Maintenance	$5,978.50	$0.55	Preventive Maintenance	$5,978.50	$0.55	Topped up in 2021
1701	Amaranth (Rural)	30th Sideroad	10th Line	9th Line	No	Gravel	7	78	Satisfactory Condition	19	18	14	1389	6.70	9.90	13751	Rural	50	Preventative Maintenance	$7,563.05	$0.55	Preventive Maintenance	$7,563.05	$0.55	Topped up in 2021
1702	Amaranth (Rural)	30th Sideroad	9th Line	8th Line	No	Gravel	7	78	Satisfactory Condition	17	29	14	1406	5.60	7.30	10264	Rural	60	Preventative Maintenance	$5,645.20	$0.55	Preventive Maintenance	$5,645.20	$0.55	Topped up in 2021
0705	Amaranth (Rural)	7th Line	25th Sideroad	30th Sideroad	No	Gravel	8	81	Satisfactory Condition	20	35	14	3085	7.00	11.00	33935	Rural	128	Preventative Maintenance	$18,664.25	$0.55	Preventive Maintenance	$18,664.25	$0.55	Topped up in 2019 & 2021
0804	Amaranth (Rural)	8th Line	20th Sideroad	25th Sideroad	No	Gravel	7	78	Satisfactory Condition	18	17	13	3071	5.60	8.40	25796	Rural	40	Preventative Maintenance	$14,187.80	$0.55	Preventive Maintenance	$14,187.80	$0.55	Topped up in 2021
0700	Amaranth (Rural)	7th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	8	63	Fair Condition	17	30	33	3073	6.70	10.00	30730	Rural	350	Resurface	$860,440.00	$28.00	Preventive Maintenance	$16,901.50	$0.55	
0205	Amaranth (Rural)	2nd Line	25th Sideroad	30th Sideroad	No	Gravel	5	52	Poor Condition	10	41	32	3102	8.60	12.00	37224	Rural	80	Rehabilitation	$446,688.00	$12.00	Preventive Maintenance	$20,473.20	$0.55	
1005	Amaranth (Rural)	10th Line	25th Sideroad	30th Sideroad	No	Gravel	6	52	Poor Condition	13	41	30	3087	7.40	9.00	27783	Rural	60	Rehabilitation	$333,396.00	$12.00	Preventive Maintenance	$15,280.65	$0.55	
1404	Amaranth (Rural)	15th Sideroad	7th Line	6th Line	No	Gravel	5	49	Poor Condition	0	34	30	1784	5.00	6.40	11418	Rural	34	Rehabilitation	$137,016.00	$12.00	Preventive Maintenance	$6,279.90	$0.55	
0602.2	Amaranth (Rural)	6th Line	0.4 Km N. of County Road 10	15th Sideroad	No	Gravel	5	53	Poor Condition	0	60	30	2606	5.40	7.00	18242	Rural	70	Rehabilitation	$218,904.00	$12.00	Preventive Maintenance	$10,033.10	$0.55	
1603	Amaranth (Rural)	25th Sideroad	8th Line	7th Line	No	Gravel	6	59	Fair Condition	14	30	25	1323	5.70	6.90	9129	Rural	40	Rehabilitation	$109,548.00	$12.00	Preventive Maintenance	$5,020.95	$0.55	
0703.2	Amaranth (Rural)	7th Line	20th Sideroad	End (Willow Brook)	No	Gravel	8	63	Fair Condition	6	57	25	897	4.00	8.70	7804	Rural	85	Preventative Maintenance	$4,292.20	$0.55	Preventive Maintenance	$4,292.20	$0.55	
1604	Amaranth (Rural)	25th Sideroad	7th Line	6th Line	No	Gravel	6	61	Fair Condition	0	27	23	1721	6.90	9.10	15661	Rural	40	Preventative Maintenance	$8,613.55	$0.55	Preventive Maintenance	$8,613.55	$0.55	
0803	Amaranth (Rural)	8th Line	15th Sideroad	20th Sideroad	No	Gravel	6	63	Fair Condition	16	44	23	3056	6.20	6.70	20475	Rural	50	Preventative Maintenance	$11,261.25	$0.55	Preventive Maintenance	$11,261.25	$0.55	
0204	Amaranth (Rural)	2nd Line	20th Sideroad	25th Sideroad	No	Gravel	7	65	Fair Condition	14	35	22	3059	8.10	9.60	29366	Rural	60	Preventative Maintenance	$16,151.30	$0.55	Preventive Maintenance	$16,151.30	$0.55	
												Asphalt Total	1581									Asphalt Total	$354,144.00		
												Gravel Total	58573									Gravel Tota	$281,155.05		
												Year 2 Total	60154									Year 2 Total	$635,299.05		
Year 3 (2025)																									
2027	Waldemar	Mill Street	Church Street	Church Street	No	Low Class Bituminous	5	58	Fair Condition	2	60	28	384	6.00	6.00	2304	Semi-Urban	90	Rehabilitation	$62,208.00	$27.00	Rehabilitation	$62,208.00	$27.00	
2040	Not Recorded	Woodland Road	Maplewood Dr.	Cul-de-Sac	No	High Class Bituminous	7	54	Poor Condition	2	57	31	438	7.00	10.00	3066	Semi-Urban	90	Rehabilitation	$82,782.00	$27.00	Rehabilitation	$82,782.00	$27.00	
2020	Estate Sub-Division	Maplewood Drive	Woodland Road	End of Maplewood Drive	No	High Class Bituminous	5	65	Fair Condition	4	6	21	121	7.00	10.00	847	Rural	40	Resurface	$16,940.00	$20.00	Rehabilitation	$22,869.00	$27.00	
2001	Estate Sub-Division	Cedar Place	Maplewood Drive	End of Cedar Place	No	High Class Bituminous	6	71	Satisfactory Condition	7	9	19	283	7.00	10.00	1981	Rural	70	Resurface	$39,620.00	$20.00	Rehabilitation	$53,487.00	$27.00	
1003	Amaranth (Rural)	10th Line	15th Sideroad	20th Sideroad	No	Gravel	6	53	Poor Condition	13	38	29	3091	6.20	8.00	24728	Rural	50	Rehabilitation	$296,736.00	$12.00	Preventive Maintenance	$13,600.40	$0.55	Topped up in 2019
0905	Amaranth (Rural)	9th Line	25th Sideroad	30th Sideroad	No	Gravel	5	53	Poor Condition	14	40	29	3083	6.10	7.50	23123	Rural	50	Rehabilitation	$277,476.00	$12.00	Preventive Maintenance	$12,717.65	$0.55	Topped up in 2019
0600.2	Amaranth (Rural)	6th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	67	Fair Condition	18	22	28	2488	7.00	10.00	24880	Rural	279	Resurface	$696,640.00	$28.00	Preventive Maintenance	$13,684.00	$0.55	Topped up in 2019
1002	Amaranth (Rural)	10th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	66	Fair Condition	18	40	22	3081	6.30	8.10	24956	Rural	60	Preventative Maintenance	$13,725.80	$0.55	Preventive Maintenance	$13,725.80	$0.55	Topped up in 2019
0400	Amaranth (Rural)	4th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	71	Satisfactory Condition	0	73	22	3078	6.90	9.50	29241	Rural	150	Preventative Maintenance	$16,082.55	$0.55	Preventive Maintenance	$16,082.55	$0.55	Topped up in 2019
0601	Amaranth (Rural)	6th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	69	Fair Condition	17	40	20	3051	5.50	7.90	24103	Rural	65	Preventative Maintenance	$13,256.65	$0.55	Preventive Maintenance	$13,256.65	$0.55	Topped up in 2019
0702	Amaranth (Rural)	7th Line	10th Sideroad	15th Sideroad	No	Gravel	6	73	Satisfactory Condition	16	74	20	3062	6.00	8.70	26639	Rural	150	Preventative Maintenance	$14,651.45	$0.55	Preventive Maintenance	$14,651.45	$0.55	Topped up in 2019
0904	Amaranth (Rural)	9th Line	20th Sideroad	25th Sideroad	No	Gravel	6	67	Fair Condition	16	32	20	3088	5.70	8.20	25322	Rural	50	Preventative Maintenance	$13,927.10	$0.55	Preventive Maintenance	$13,927.10	$0.55	Topped up in 2019
1105.1	Amaranth (Rural)	Amaranth - East Luther Townline	25th Sideroad	Con. 12-13 Road (Grand Valley)	Yes	Gravel	6	66	Fair Condition	20	12	20	1052	6.00	12.90	13571	Rural	28	Preventative Maintenance	$7,464.05	$0.55	Preventive Maintenance	$7,464.05	$0.55	Topped up in 2019
1106	Amaranth (Rural)	Amaranth - East Luther Townline	30th Sideroad	Highway 89	Yes	Gravel	9	76	Satisfactory Condition	15	14	14	927	7.00	10.70	9919	Rural	40	Preventative Maintenance	$5,455.45	$0.55	Preventive Maintenance	$5,455.45	$0.55	Topped up in 2019
1105.2	Amaranth (Rural)	Amaranth - East Luther Townline	Con. 12-13 Road (Grand Valley)	30th Sideroad	Yes	Gravel	8	77	Satisfactory Condition	0	14	13	2028	5.10	7.20	14602	Rural	28	Preventative Maintenance	$8,031.10	$0.55	Preventive Maintenance	$8,031.10	$0.55	Topped up in 2019
0701	Amaranth (Rural)	7th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	9	82	Satisfactory Condition	20	25	12	3165	6.70	9.30	29435	Rural	80	Preventative Maintenance	$16,189.25	$0.55	Preventive Maintenance	$16,189.25	$0.55	Topped up in 2019
0906	Amaranth (Rural)	9th Line	30th Sideroad	Highway 89	No	Gravel	7	80	Satisfactory Condition	18	12	12	1123	5.90	8.00	8984	Rural	30	Preventative Maintenance	$4,941.20	$0.55	Preventive Maintenance	$4,941.20	$0.55	Topped up in 2019
0703.1	Amaranth (Rural)	7th Line	15th Sideroad	End (Willow Brook)	No	Gravel	6	62	Fair Condition	4	24	22	2142	6.20	8.70	18635	Rural	35	Preventative Maintenance	$10,249.25	$0.55	Preventive Maintenance	$10,249.25	$0.55	
1001	Amaranth (Rural)	10th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	7	69	Fair Condition	0	45	20	3080	5.60	6.60	20328	Rural	60	Preventative Maintenance	$11,180.40	$0.55	Preventive Maintenance	$11,180.40	$0.55	
0802	Amaranth (Rural)	8th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	68	Fair Condition	14	37	20	3067	6.20	8.30	25456	Rural	60	Preventative Maintenance	$14,000.80	$0.55	Preventive Maintenance	$14,000.80	$0.55	
1402	Amaranth (Rural)	15th Sideroad	9th Line	8th Line	No	Gravel	7	72	Satisfactory Condition	0	68	19	1423	4.60	6.50	9250	Rural	100	Preventative Maintenance	$5,087.50	$0.55	Preventive Maintenance	$5,087.50	$0.55	
0800	Amaranth (Rural)	8th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	75	Satisfactory Condition	14	74	19	3137	7.10	10.10	31684	Rural	189	Preventative Maintenance	$17,426.20	$0.55	Preventive Maintenance	$17,426.20	$0.55	
0903	Amaranth (Rural)	9th Line	0.3 Km S. of 20th Sideroad	20th Sideroad	No	Gravel	7	67	Fair Condition	13	11	18	299	5.40	9.40	2811	Rural	20	Preventative Maintenance	$1,546.05	$0.55	Preventive Maintenance	$1,546.05	$0.55	
0603	Amaranth (Rural)	6th Line	15th Sideroad	20th Sideroad	No	Gravel	7	74	Satisfactory Condition	0	32	17	3079	6.40	8.40	25864	Rural	65	Preventative Maintenance	$14,225.20	$0.55	Preventive Maintenance	$14,225.20	$0.55	
1401	Amaranth (Rural)	15th Sideroad	10th Line	9th Line	No	Gravel	8	77	Satisfactory Condition	0	51	16	1377	5.20	7.20	9914	Rural	100	Preventative Maintenance	$5,452.70	$0.55	Preventive Maintenance	$5,452.70	$0.55	
2011	Amaranth (Rural)	Grand View Road	Dufferin County Road 109	End of Grand View Road	No	Gravel	8	79	Satisfactory Condition	18	37	15	781	6.30	10.00	7810	Rural	110	Preventative Maintenance	$4,295.50	$0.55	Preventive Maintenance	$4,295.50	$0.55	
1006	Amaranth (Rural)	10th Line	30th Sideroad	Highway 89	No	Gravel	8	77	Satisfactory Condition	18	16	14	1120	6.00	7.80	8736	Rural	35	Preventative Maintenance	$4,804.80	$0.55	Preventive Maintenance	$4,804.80	$0.55	
1605	Amaranth (Rural)	25th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	7	78	Satisfactory Condition	15	28	14	1277	5.90	7.50	9578	Rural	60	Preventative Maintenance	$5,267.90	$0.55	Preventive Maintenance	$5,267.90	$0.55	
1405	Amaranth (Rural)	15th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	8	81	Satisfactory Condition	0	18	12	1301	6.10	8.50	11059	Rural	50	Preventative Maintenance	$6,082.45	$0.55	Preventive Maintenance	$6,082.45	$0.55	
0801	Amaranth (Rural)	8th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	84	Satisfactory Condition	16	25	11	3093	6.20	8.00	24744	Rural	80	Preventative Maintenance	$13,609.20	$0.55	Preventive Maintenance	$13,609.20	$0.55	
1200.1	Amaranth (Rural)	5th Sideroad	Amaranth - East Luther Townline	100m E. of Amaranth - East Luther Townline	No	Gravel	9	83	Satisfactory Condition	20	25	10	101	5.00	5.40	545	Rural	50	Preventative Maintenance	$299.75	$0.55	Preventive Maintenance	$299.75	$0.55	
1409	Amaranth (Rural)	15th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	7	90	Good Condition	0	16	7	1401	7.20	9.90	13870	Rural	100	Preventative Maintenance	$7,628.50	$0.55	Preventive Maintenance	$7,628.50	$0.55	
1407	Amaranth (Rural)	15th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	7	90	Good Condition	0	18	7	1517	5.90	7.20	10922	Rural	80	Preventative Maintenance	$6,007.10	$0.55	Preventive Maintenance	$6,007.10	$0.55	
1406	Amaranth (Rural)	15th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	7	90	Good Condition	0	23	7	1317	5.80	7.00	9219	Rural	100	Preventative Maintenance	$5,070.45	$0.55	Preventive Maintenance	$5,070.45	$0.55	
1408	Amaranth (Rural)	15th Sideroad	Dufferin County Road 11	2nd Line	No	Gravel	7	90	Good Condition	0	14	6	1258	6.60	7.60	9561	Rural	66	Preventative Maintenance	$5,258.55	$0.55	Preventive Maintenance	$5,258.55	$0.55	
												Asphalt Total	1226									Asphalt Total	$221,346.00		
												Gravel Total	63087									Gravel Tota	$291,218.95		
												Year 3 Total	64313									Year 3 Total	$512,564.95		
Year 4 (2026)																									
1509	Amaranth (Rural)	20th Sideroad	2nd Line	Mono - Amaranth Townline	No	High Class Bituminous	8	68	Fair Condition	8	105	38	1389	7.00	10.00	9723	Rural	1227	Resurface	$194,460.00	$20.00	Resurface	$194,460.00	$20.00	
1602	Amaranth (Rural)	25th Sideroad	9th Line	8th Line	No	Gravel	3	14	Serious Condition	4	29	53	1395	6.10	8.30	11579	Rural	50	Reconstruction	$301,054.00	$26.00	Preventive Maintenance	$6,368.45	$0.55	
1609	Amaranth (Rural)	25th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	3	25	Very Poor Condition	9	33	50	1384	8.30	10.20	14117	Rural	80	Reconstruction	$367,042.00	$26.00	Preventive Maintenance	$7,764.35	$0.55	
1606	Amaranth (Rural)	25th Sideroad	5th Line	4th Line	No	Gravel	3	21	Serious Condition	5	14	46	1290	7.00	9.50	12255	Rural	29	Reconstruction	$318,630.00	$26.00	Preventive Maintenance	$6,740.25	$0.55	
0406	Amaranth (Rural)	4th Line	30th Sideroad	Highway 89	No	Gravel	3	30	Very Poor Condition	13	21	43	1151	7.20	9.60	11050	Rural	50	Reconstruction	$287,300.00	$26.00	Preventive Maintenance	$6,077.50	$0.55	
1104.2	Amaranth (Rural)	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Yes	Gravel	4	43	Poor Condition	13	63	37	1638	6.10	8.60	14087	Rural	75	Rehabilitation	$169,044.00	$12.00	Preventive Maintenance	$7,747.85	$0.55	
0201	Amaranth (Rural)	2nd Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	63	Fair Condition	14	91	27	3049	7.50	9.70	29575	Rural	150	Preventative Maintenance	$16,266.25	$0.55	Preventive Maintenance	$16,266.25	$0.55	
0900.3	Amaranth (Rural)	9th Line	Station Street	5th Sideroad	No	Gravel	8	68	Fair Condition	16	22	27	1845	6.30	10.00	18450	Rural	295	Resurface	$516,600.00	$28.00	Preventive Maintenance	$10,147.50	$0.55	
1600	Amaranth (Rural)	25th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	6	57	Fair Condition	15	30	26	1324	6.00	7.40	9798	Rural	40	Rehabilitation	$117,576.00	$12.00	Preventive Maintenance	$5,388.90	$0.55	
0202	Amaranth (Rural)	2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	No	Gravel	7	62	Fair Condition	14	50	25	3045	8.00	9.60	29232	Rural	80	Preventative Maintenance	$16,077.60	$0.55	Preventive Maintenance	$16,077.60	$0.55	
1608	Amaranth (Rural)	25th Sideroad	0.1 Km E. of County Road 11	2nd Line	No	Gravel	6	66	Fair Condition	15	36	22	1243	9.00	11.30	14046	Rural	75	Preventative Maintenance	$7,725.30	$0.55	Preventive Maintenance	$7,725.30	$0.55	
1607	Amaranth (Rural)	25th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	64	Fair Condition	14	28	22	1526	6.60	8.20	12513	Rural	40	Preventative Maintenance	$6,882.15	$0.55	Preventive Maintenance	$6,882.15	$0.55	
0606	Amaranth (Rural)	6th Line	30th Sideroad	Highway 89	No	Gravel	6	65	Fair Condition	20	18	20	1199	7.00	9.10	10911	Rural	30	Preventative Maintenance	$6,001.05	$0.55	Preventive Maintenance	$6,001.05	$0.55	
1207	Amaranth (Rural)	5th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	76	Satisfactory Condition	0	13	19	1534	8.00	9.00	13806	Rural	200	Resurface	$386,568.00	$28.00	Preventive Maintenance	$7,593.30	$0.55	
0901	Amaranth (Rural)	9th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	78	Satisfactory Condition	18	28	19	3071	5.00	5.50	16891	Rural	295	Resurface	$472,948.00	$28.00	Preventive Maintenance	$9,290.05	$0.55	
0200.2	Amaranth (Rural)	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	No	Gravel	8	82	Satisfactory Condition	18	14	18	2451	8.40	10.80	26471	Rural	551	Resurface	$741,188.00	$28.00	Preventive Maintenance	$14,559.05	$0.55	
1103.1	Amaranth (Rural)	Amaranth - East Luther Townline	15th Sideroad	1.5 km N. of 15th Sideroad	Yes	Gravel	8	76	Satisfactory Condition	0	61	18	1492	5.70	9.50	14174	Rural	152	Preventative Maintenance	$7,795.70	$0.55	Preventive Maintenance	$7,795.70	$0.55	
0404	Amaranth (Rural)	4th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	0	29	17	3054	7.50	9.00	27486	Rural	60	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	
1206	Amaranth (Rural)	5th Sideroad	Dufferin County Road 12	4th Line	No	Gravel	8	80	Satisfactory Condition	0	16	17	1351	6.60	7.50	10133	Rural	250	Resurface	$283,724.00	$28.00	Preventive Maintenance	$5,573.15	$0.55	
0605	Amaranth (Rural)	6th Line	25th Sideroad	30th Sideroad	No	Gravel	7	72	Satisfactory Condition	17	27	17	3172	7.40	9.00	28548	Rural	55	Preventative Maintenance	$15,701.40	$0.55	Preventive Maintenance	$15,701.40	$0.55	
0902	Amaranth (Rural)	9th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	8	75	Satisfactory Condition	15	32	17	3087	6.90	10.00	30870	Rural	80	Preventative Maintenance	$16,978.50	$0.55	Preventive Maintenance	$16,978.50	$0.55	
0405	Amaranth (Rural)	4th Line	25th Sideroad	30th Sideroad	No	Gravel	7	77	Satisfactory Condition	0	15	14	3084	6.30	10.10	31148	Rural	40	Preventative Maintenance	$17,131.40	$0.55	Preventive Maintenance	$17,131.40	$0.55	
0604	Amaranth (Rural)	6th Line	20th Sideroad	25th Sideroad	No	Gravel	8	79	Satisfactory Condition	18	25	13	3069	6.40	7.90	24245	Rural	60	Preventative Maintenance	$13,334.75	$0.55	Preventive Maintenance	$13,334.75	$0.55	
1205	Amaranth (Rural)	5th Sideroad	6th Line	Dufferin County Road 12	No	Gravel	9	85	Good Condition	0	8	12	1269	8.00	9.00	11421	Rural	208	Resurface	$319,788.00	$28.00	Preventive Maintenance	$6,281.55	$0.55	
1601	Amaranth (Rural)	25th Sideroad	10th Line	9th Line	No	Gravel	8	83	Satisfactory Condition	18	24	11	1384	5.40	6.70	9273	Rural	60	Preventative Maintenance	$5,100.15	$0.55	Preventive Maintenance	$5,100.15	$0.55	
1202	Amaranth (Rural)	5th Sideroad	9th Line	8th Line	No	Gravel	8	87	Good Condition	0	8	10	1388	6.70	7.70	10688	Rural	200	Resurface	$299,264.00	$28.00	Preventive Maintenance	$5,878.40	$0.55	
1204	Amaranth (Rural)	5th Sideroad	7th Line	6th Line	No	Gravel	9	87	Good Condition	0	36	10	1729	7.50	8.50	14697	Rural	150	Preventative Maintenance	$8,083.35	$0.55	Preventive Maintenance	$8,083.35	$0.55	
1203	Amaranth (Rural)	5th Sideroad	8th Line	7th Line	No	Gravel	8	85	Good Condition	0	27	10	1276	7.70	8.70	11101	Rural	100	Preventative Maintenance	$6,105.55	$0.55	Preventive Maintenance	$6,105.55	$0.55	
1201	Amaranth (Rural)	5th Sideroad	10th Line	9th Line	No	Gravel	9	89	Good Condition	0	9	9	1362	7.50	8.50	11577	Rural	300	Resurface	$324,156.00	$28.00	Preventive Maintenance	$6,367.35	$0.55	
1400	Amaranth (Rural)	15th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	5	45	Poor Condition	0	139	41	1304	5.50	7.60	9910	Rural	150	Rehabilitation	$118,920.00	$12.00	Preventive Maintenance	$5,450.50	$0.55	

Appendix G - 10-Year Road Improvement Plan

Municipal ID	Community	Name	Name From	Name To	Boundary Road	Surface Material	Ride Comfort Rating (RCR)	PCI	PCI Class	Structural Adequacy (1-20)	Priority Guide Number (PGN)	Priority Rating (PR)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)	Roadside Environment	AADT	Proposed Lifecycle Improvement	Improvement Cost	Bench Mark Cost ($/m²)	Adj. Lifecycle Improvement	Adj. Improvement Cost	Adj. Bench Mark Cost ($/m²)	Comments
0203	Amaranth (Rural)	2nd Line	15th Sideroad	20th Sideroad	No	Gravel	5	45	Poor Condition	13	55	36	3045	8.10	10.30	31364	Rural	80	Rehabilitation	$376,368.00	$12.00	Preventive Maintenance	$17,250.20	$0.55	
1403	Amaranth (Rural)	15th Sideroad	8th Line	7th Line	No	Gravel	5	55	Fair Condition	0	81	33	1320	6.60	10.70	14124	Rural	150	Rehabilitation	$169,488.00	$12.00	Preventive Maintenance	$7,768.20	$0.55	
												Asphalt Total	1389									Asphalt Total	$194,460.00		
												Gravel Total	59531									Gravel Tota	$294,547.00		
												Year 4 Total	60920									Year 4 Total	$489,007.00		
												Year 5 (2027)													
2018	Waldemar	James Street	Evans Avenue	End of James Street	No	High Class Bituminous	6	52	Poor Condition	3	36	35	306	6.70	6.70	2050	Urban	130	Rehabilitation	$82,000.00	$40.00	Rehabilitation	$82,000.00	$40.00	
2010	Waldemar	Evans Avenue	James Street	Henry Street	No	High Class Bituminous	6	59	Fair Condition	2	38	31	68	7.00	7.00	476	Urban	170	Rehabilitation	$19,040.00	$40.00	Rehabilitation	$19,040.00	$40.00	
2007	Waldemar	David Street	Mill Street	Main Street	No	High Class Bituminous	4	57	Fair Condition	2	54	29	79	6.50	8.50	514	Rural	85	Rehabilitation	$13,878.00	$27.00	Rehabilitation	$13,878.00	$27.00	
2009	Waldemar	Evans Avenue	James Street	End	No	High Class Bituminous	5	59	Fair Condition	2	10	23	30	8.00	8.00	240	Rural	20	Rehabilitation	$6,480.00	$27.00	Rehabilitation	$6,480.00	$27.00	
2012	Waldemar	Henry Street	Main Street	Evans Street	No	High Class Bituminous	6	72	Satisfactory Condition	9	18	23	151	6.70	6.70	1012	Urban	240	Resurface	$21,252.00	$21.00	Resurface	$21,252.00	$21.00	
2019	Waldemar	Main Street	David Street	Henry Street	No	High Class Bituminous	6	66	Fair Condition	7	15	23	213	6.50	6.50	1385	Semi-Urban	90	Resurface	$27,700.00	$20.00	Resurface	$27,700.00	$20.00	
2041	Waldemar	Henry Street	Evans Street	End	No	High Class Bituminous	6	61	Fair Condition	3	2	21	47	7.00	7.00	329	Rural	10	Resurface	$6,580.00	$20.00	Resurface	$6,580.00	$20.00	
1706	Amaranth (Rural)	30th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	4	36	Very Poor Condition	11	40	42	1267	5.80	7.30	9249	Rural	80	Reconstruction	$240,474.00	$26.00	Preventive Maintenance	$5,086.95	$0.55	
1705	Amaranth (Rural)	30th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	4	48	Poor Condition	11	83	36	1224	6.40	8.00	9792	Rural	100	Rehabilitation	$117,504.00	$12.00	Preventive Maintenance	$5,385.60	$0.55	
1707	Amaranth (Rural)	30th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	5	56	Fair Condition	14	56	29	1489	6.80	8.00	11912	Rural	80	Rehabilitation	$142,944.00	$12.00	Preventive Maintenance	$6,551.60	$0.55	
1703	Amaranth (Rural)	30th Sideroad	8th Line	7th Line	No	Gravel	5	59	Fair Condition	13	57	27	1348	5.30	7.30	9840	Rural	80	Rehabilitation	$118,080.00	$12.00	Preventive Maintenance	$5,412.00	$0.55	
0706	Amaranth (Rural)	7th Line	30th Sideroad	Highway 89	No	Gravel	6	63	Fair Condition	20	105	27	1125	6.30	7.20	8100	Rural	128	Preventative Maintenance	$4,455.00	$0.55	Preventive Maintenance	$4,455.00	$0.55	
0806	Amaranth (Rural)	8th Line	30th Sideroad	Highway 89	No	Gravel	6	64	Fair Condition	16	47	24	1115	7.60	9.80	10927	Rural	80	Preventative Maintenance	$6,009.85	$0.55	Preventive Maintenance	$6,009.85	$0.55	
0401	Amaranth (Rural)	4th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	66	Fair Condition	0	48	23	3054	6.90	9.00	27486	Rural	80	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	
0403	Amaranth (Rural)	4th Line	15th Sideroad	20th Sideroad	No	Gravel	6	65	Fair Condition	0	36	22	3072	6.80	9.90	30413	Rural	65	Preventative Maintenance	$16,727.15	$0.55	Preventive Maintenance	$16,727.15	$0.55	
0704	Amaranth (Rural)	7th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	20	61	19	3087	6.50	9.00	27783	Rural	128	Preventative Maintenance	$15,280.65	$0.55	Preventive Maintenance	$15,280.65	$0.55	
0805	Amaranth (Rural)	8th Line	25th Sideroad	30th Sideroad	No	Gravel	6	70	Satisfactory Condition	16	35	19	3066	5.70	8.20	25141	Rural	60	Preventative Maintenance	$13,827.55	$0.55	Preventive Maintenance	$13,827.55	$0.55	
0402	Amaranth (Rural)	4th Line	10th Sideroad	15th Sideroad	No	Gravel	7	75	Satisfactory Condition	0	37	17	3054	6.70	8.70	26570	Rural	80	Preventative Maintenance	$14,613.50	$0.55	Preventive Maintenance	$14,613.50	$0.55	
1704	Amaranth (Rural)	30th Sideroad	7th Line	6th Line	No	Gravel	6	76	Satisfactory Condition	16	44	16	1671	5.70	6.90	11530	Rural	80	Preventative Maintenance	$6,341.50	$0.55	Preventive Maintenance	$6,341.50	$0.55	
1700	Amaranth (Rural)	30th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	8	76	Satisfactory Condition	18	24	15	1342	6.50	8.10	10870	Rural	50	Preventative Maintenance	$5,978.50	$0.55	Preventive Maintenance	$5,978.50	$0.55	
1701	Amaranth (Rural)	30th Sideroad	10th Line	9th Line	No	Gravel	7	78	Satisfactory Condition	19	18	14	1389	6.70	9.90	13751	Rural	50	Preventative Maintenance	$7,563.05	$0.55	Preventive Maintenance	$7,563.05	$0.55	
1702	Amaranth (Rural)	30th Sideroad	9th Line	8th Line	No	Gravel	7	78	Satisfactory Condition	17	29	14	1406	5.60	7.30	10264	Rural	60	Preventative Maintenance	$5,645.20	$0.55	Preventive Maintenance	$5,645.20	$0.55	
0705	Amaranth (Rural)	7th Line	25th Sideroad	30th Sideroad	No	Gravel	8	81	Satisfactory Condition	20	35	14	3085	7.00	11.00	33935	Rural	128	Preventative Maintenance	$18,664.25	$0.55	Preventive Maintenance	$18,664.25	$0.55	
0804	Amaranth (Rural)	8th Line	20th Sideroad	25th Sideroad	No	Gravel	7	78	Satisfactory Condition	18	17	13	3071	5.60	8.40	25796	Rural	40	Preventative Maintenance	$14,187.80	$0.55	Preventive Maintenance	$14,187.80	$0.55	
0700	Amaranth (Rural)	7th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	8	63	Fair Condition	17	30	33	3073	6.70	10.00	30730	Rural	350	Resurface	$860,440.00	$28.00	Preventive Maintenance	$16,901.50	$0.55	
0205	Amaranth (Rural)	2nd Line	25th Sideroad	30th Sideroad	No	Gravel	5	52	Poor Condition	10	41	32	3102	8.60	12.00	37224	Rural	80	Rehabilitation	$446,688.00	$12.00	Preventive Maintenance	$20,473.20	$0.55	
1005	Amaranth (Rural)	10th Line	25th Sideroad	30th Sideroad	No	Gravel	6	52	Poor Condition	13	41	30	3087	7.40	9.00	27783	Rural	60	Rehabilitation	$333,396.00	$12.00	Preventive Maintenance	$15,280.65	$0.55	
1404	Amaranth (Rural)	15th Sideroad	7th Line	6th Line	No	Gravel	5	49	Poor Condition	0	34	30	1784	5.00	6.40	11418	Rural	34	Rehabilitation	$137,016.00	$12.00	Preventive Maintenance	$6,279.90	$0.55	
0602.2	Amaranth (Rural)	6th Line	0.4 Km N. of County Road 10	15th Sideroad	No	Gravel	5	53	Poor Condition	0	60	30	2606	5.40	7.00	18242	Rural	70	Rehabilitation	$218,904.00	$12.00	Preventive Maintenance	$10,033.10	$0.55	
1603	Amaranth (Rural)	25th Sideroad	8th Line	7th Line	No	Gravel	6	59	Fair Condition	14	30	25	1323	5.70	6.90	9129	Rural	40	Rehabilitation	$109,548.00	$12.00	Preventive Maintenance	$5,020.95	$0.55	
0703.2	Amaranth (Rural)	7th Line	20th Sideroad	End (Willow Brook)	No	Gravel	8	63	Fair Condition	6	57	25	897	4.00	8.70	7804	Rural	85	Preventative Maintenance	$4,292.20	$0.55	Preventive Maintenance	$4,292.20	$0.55	
1604	Amaranth (Rural)	25th Sideroad	7th Line	6th Line	No	Gravel	6	61	Fair Condition	0	27	23	1721	6.90	9.10	15661	Rural	40	Preventative Maintenance	$8,613.55	$0.55	Preventive Maintenance	$8,613.55	$0.55	
0803	Amaranth (Rural)	8th Line	15th Sideroad	20th Sideroad	No	Gravel	6	63	Fair Condition	16	44	23	3056	6.20	6.70	20475	Rural	50	Preventative Maintenance	$11,261.25	$0.55	Preventive Maintenance	$11,261.25	$0.55	
0204	Amaranth (Rural)	2nd Line	20th Sideroad	25th Sideroad	No	Gravel	7	65	Fair Condition	14	35	22	3059	8.10	9.60	29366	Rural	60	Preventative Maintenance	$16,151.30	$0.55	Preventive Maintenance	$16,151.30	$0.55	
												Asphalt Total	894									Asphalt Total	$176,930.00		
												Gravel Total	58573									Gravel Tota	$281,155.05		
												Year 5 Total	59467									Year 5 Total	$458,085.05		
												Year 6 (2028)													
1209.2	Amaranth (Rural)	5th Sideroad	Crago Road	Mono - Amaranth Townline (Dufferin County Road 16)	No	High Class Bituminous	6	57	Fair Condition	5	430	54	571	7.00	10.00	3997	Rural	1550	Rehabilitation	$163,877.00	$41.00	Rehabilitation	$163,877.00	$41.00	
1209.1	Amaranth (Rural)	5th Sideroad	Crago Road	0.7 Km E. of 2nd Line	No	High Class Bituminous	6	66	Fair Condition	7	118	41	824	7.00	10.00	5768	Rural	1300	Resurface	$115,360.00	$20.00	Resurface	$115,360.00	$20.00	
1003	Amaranth (Rural)	10th Line	15th Sideroad	20th Sideroad	No	Gravel	6	53	Poor Condition	13	38	29	3091	6.20	8.00	24728	Rural	50	Rehabilitation	$296,736.00	$12.00	Preventive Maintenance	$13,600.40	$0.55	
0905	Amaranth (Rural)	9th Line	25th Sideroad	30th Sideroad	No	Gravel	5	53	Poor Condition	14	40	29	3083	6.10	7.50	23123	Rural	50	Rehabilitation	$277,476.00	$12.00	Preventive Maintenance	$12,717.65	$0.55	
0600.2	Amaranth (Rural)	6th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	67	Fair Condition	18	22	28	2488	7.00	10.00	24880	Rural	279	Resurface	$696,640.00	$28.00	Preventive Maintenance	$13,684.00	$0.55	
1002	Amaranth (Rural)	10th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	66	Fair Condition	18	40	22	3081	6.30	8.10	24956	Rural	60	Preventative Maintenance	$13,725.80	$0.55	Preventive Maintenance	$13,725.80	$0.55	
0400	Amaranth (Rural)	4th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	71	Satisfactory Condition	0	73	22	3078	6.90	9.50	29241	Rural	150	Preventative Maintenance	$16,082.55	$0.55	Preventive Maintenance	$16,082.55	$0.55	
0601	Amaranth (Rural)	6th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	69	Fair Condition	17	40	20	3051	5.50	7.90	24103	Rural	65	Preventative Maintenance	$13,256.65	$0.55	Preventive Maintenance	$13,256.65	$0.55	
0702	Amaranth (Rural)	7th Line	10th Sideroad	15th Sideroad	No	Gravel	6	73	Satisfactory Condition	16	74	20	3062	6.00	8.70	26639	Rural	150	Preventative Maintenance	$14,651.45	$0.55	Preventive Maintenance	$14,651.45	$0.55	
0904	Amaranth (Rural)	9th Line	20th Sideroad	25th Sideroad	No	Gravel	6	67	Fair Condition	16	32	20	3088	5.70	8.20	25322	Rural	50	Preventative Maintenance	$13,927.10	$0.55	Preventive Maintenance	$13,927.10	$0.55	
1105.1	Amaranth (Rural)	Amaranth - East Luther Townline	25th Sideroad	Con. 12-13 Road (Grand Valley)	Yes	Gravel	6	66	Fair Condition	20	12	20	1052	6.00	12.90	13571	Rural	28	Preventative Maintenance	$7,464.05	$0.55	Preventive Maintenance	$7,464.05	$0.55	
1106	Amaranth (Rural)	Amaranth - East Luther Townline	30th Sideroad	Highway 89	Yes	Gravel	9	76	Satisfactory Condition	15	14	14	927	7.00	10.70	9919	Rural	40	Preventative Maintenance	$5,455.45	$0.55	Preventive Maintenance	$5,455.45	$0.55	
1105.2	Amaranth (Rural)	Amaranth - East Luther Townline	Con. 12-13 Road (Grand Valley)	30th Sideroad	Yes	Gravel	8	77	Satisfactory Condition	0	14	13	2028	5.10	7.20	14602	Rural	28	Preventative Maintenance	$8,031.10	$0.55	Preventive Maintenance	$8,031.10	$0.55	
0701	Amaranth (Rural)	7th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	9	82	Satisfactory Condition	20	25	12	3165	6.70	9.30	29435	Rural	80	Preventative Maintenance	$16,189.25	$0.55	Preventive Maintenance	$16,189.25	$0.55	
0906	Amaranth (Rural)	9th Line	30th Sideroad	Highway 89	No	Gravel	7	80	Satisfactory Condition	18	12	12	1123	5.90	8.00	8984	Rural	30	Preventative Maintenance	$4,941.20	$0.55	Preventive Maintenance	$4,941.20	$0.55	
0703.1	Amaranth (Rural)	7th Line	15th Sideroad	End (Willow Brook)	No	Gravel	6	62	Fair Condition	4	24	22	2142	6.20	8.70	18635	Rural	35	Preventative Maintenance	$10,249.25	$0.55	Preventive Maintenance	$10,249.25	$0.55	
1001	Amaranth (Rural)	10th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	7	69	Fair Condition	0	45	20	3080	5.60	6.60	20328	Rural	60	Preventative Maintenance	$11,180.40	$0.55	Preventive Maintenance	$11,180.40	$0.55	
0802	Amaranth (Rural)	8th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	68	Fair Condition	14	37	20	3067	6.20	8.30	25456	Rural	60	Preventative Maintenance	$14,000.80	$0.55	Preventive Maintenance	$14,000.80	$0.55	
1402	Amaranth (Rural)	15th Sideroad	9th Line	8th Line	No	Gravel	7	72	Satisfactory Condition	0	68	19	1423	4.60	6.50	9250	Rural	100	Preventative Maintenance	$5,087.50	$0.55	Preventive Maintenance	$5,087.50	$0.55	
0800	Amaranth (Rural)	8th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	75	Satisfactory Condition	14	74	19	3137	7.10	10.10	31684	Rural	189	Preventative Maintenance	$17,426.20	$0.55	Preventive Maintenance	$17,426.20	$0.55	
0903	Amaranth (Rural)	9th Line	0.3 Km S. of 20th Sideroad	20th Sideroad	No	Gravel	7	67	Fair Condition	13	11	18	299	5.40	9.40	2811	Rural	20	Preventative Maintenance	$1,546.05	$0.55	Preventive Maintenance	$1,546.05	$0.55	
0603	Amaranth (Rural)	6th Line	15th Sideroad	20th Sideroad	No	Gravel	7	74	Satisfactory Condition	0	32	17	3079	6.40	8.40	25864	Rural	65	Preventative Maintenance	$14,225.20	$0.55	Preventive Maintenance	$14,225.20	$0.55	
1401	Amaranth (Rural)	15th Sideroad	10th Line	9th Line	No	Gravel	8	77	Satisfactory Condition	0	51	16	1377	5.20	7.20	9914	Rural	100	Preventative Maintenance	$5,452.70	$0.55	Preventive Maintenance	$5,452.70	$0.55	
2011	Amaranth (Rural)	Grand View Road	Dufferin County Road 109	End of Grand View Road	No	Gravel	8	79	Satisfactory Condition	18	37	15	781	6.30	10.00	7810	Rural	110	Preventative Maintenance	$4,295.50	$0.55	Preventive Maintenance	$4,295.50	$0.55	
1006	Amaranth (Rural)	10th Line	30th Sideroad	Highway 89	No	Gravel	8	77	Satisfactory Condition	18	16	14	1120	6.00	7.80	8736	Rural	35	Preventative Maintenance	$4,804.80	$0.55	Preventive Maintenance	$4,804.80	$0.55	
1605	Amaranth (Rural)	25th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	7	78	Satisfactory Condition	15	28	14	1277	5.90	7.50	9578	Rural	60	Preventative Maintenance	$5,267.90	$0.55	Preventive Maintenance	$5,267.90	$0.55	
1405	Amaranth (Rural)	15th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	8	81	Satisfactory Condition	0	18	12	1301	6.10	8.50	11059	Rural	50	Preventative Maintenance	$6,082.45	$0.55	Preventive Maintenance	$6,082.45	$0.55	
0801	Amaranth (Rural)	8th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	84	Satisfactory Condition	16	25	11	3093	6.20	8.00	24744	Rural	80	Preventative Maintenance	$13,609.20	$0.55	Preventive Maintenance	$13,609.20	$0.55	
1200	Amaranth (Rural)	5th Sideroad	Amaranth - East Luther Townline	100m E. of Amaranth - East Luther Townline	No	Gravel	9	83	Satisfactory Condition	20	25	10	101	5.00	5.40	545	Rural	50	Preventative Maintenance	$299.75	$0.55	Preventive Maintenance	$299.75	$0.55	
1409	Amaranth (Rural)	15th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	7	90	Good Condition	0	16	7	1401	7.20	9.90	13870	Rural	100	Preventative Maintenance	$7,628.50	$0.55	Preventive Maintenance	$7,628.50	$0.55	
1407	Amaranth (Rural)	15th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	7	90	Good Condition	0	18	7	1517	5.90	7.20	10922	Rural	80	Preventative Maintenance	$6,007.10	$0.55	Preventive Maintenance	$6,007.10	$0.55	
1406	Amaranth (Rural)	15th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	7	90	Good Condition	0	23	7	1317	5.80	7.00	9219	Rural	100	Preventative Maintenance	$5,070.45	$0.55	Preventive Maintenance	$5,070.45	$0.55	
1408	Amaranth (Rural)	15th Sideroad	Dufferin County Road 11	2nd Line	No	Gravel	7	90	Good Condition	0	14	6	1258	6.60	7.60	9561	Rural	66	Preventative Maintenance	$5,258.55	$0.55	Preventive Maintenance	$5,258.55	$0.55	
												Asphalt Total	1395									Asphalt Total	$279,237.00		
												Gravel Total	63087									Gravel Tota	$291,218.95		
												Year 6 Total	64482									Year 6 Total	$570,455.95		
												Year 7 (2029)													
2036	Waldemar	Station Street	10th Line	St. John Street	No	High Class Bituminous	6	62	Fair Condition	2	83	36	374	7.00	8.00	2618	Rural	490	Resurface	$52,360.00	$20.00	Rehabilitation	$70,686.00	$27.00	
2037	Waldemar	Station Street	St. John Street	Peter Street	No	High Class Bituminous	5	58	Fair Condition	3	272	42	279	7.00	8.00	1953	Rural	590	Rehabilitation	$52,731.00	$27.00	Rehabilitation	$52,731.00	$27.00	
2038.1	Waldemar	Station Street	Peter Street	390m E. of Peter Street	No	High Class Bituminous	6	61	Fair Condition	3	60	39	384	7.00	8.50	2688	Rural	570	Resurface	$53,760.00	$20.00	Rehabilitation	$72,576.00	$27.00	
2033	Farmington	Shannon Court	Dufferin County Road 11	Cul-de-Sac	No	High Class Bituminous	4	50	Poor Condition	3	60	34	666	8.00	10.00	5328	Rural	100	Rehabilitation	$143,856.00	$27.00	Rehabilitation	$143,856.00	$27.00	
2026	Amaranth (Rural)	Menary Drive	Dufferin County Road 12	Hornett Lane	No	High Class Bituminous	5	58	Fair Condition	2	39	27	213	6.20	6.20	1321	Semi-Urban	60	Rehabilitation	$35,667.00	$27.00	Rehabilitation	$35,667.00	$27.00	
2014	Laurel	Hornett Lane	Menary Drive	Dufferin County Road 10	No	High Class Bituminous	5	59	Fair Condition	16	56	26	64	4.20	4.20	269	Semi-Urban	60	Rehabilitation	$7,263.00	$27.00	Rehabilitation	$7,263.00	$27.00	
1602	Amaranth (Rural)	25th Sideroad	9th Line	8th Line	No	Gravel	3	14	Serious Condition	4	29	53	1395	6.10	8.30	11579	Rural	50	Reconstruction	$301,054.00	$26.00	Preventive Maintenance	$6,368.45	$0.55	
1609	Amaranth (Rural)	25th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	3	25	Very Poor Condition	9	33	50	1384	8.30	10.20	14117	Rural	80	Reconstruction	$367,042.00	$26.00	Preventive Maintenance	$7,764.35	$0.55	
1606	Amaranth (Rural)	25th Sideroad	5th Line	4th Line	No	Gravel	3	21	Serious Condition	5	14	46	1290	7.00	9.50	12255	Rural	29	Reconstruction	$318,630.00	$26.00	Preventive Maintenance	$6,740.25	$0.55	
0406	Amaranth (Rural)	4th Line	30th Sideroad	Highway 89	No	Gravel	3	30	Very Poor Condition	13	21	43	1151	7.20	9.60	11050	Rural	50	Reconstruction	$287,300.00	$26.00	Preventive Maintenance	$6,077.50	$0.55	
1104.2	Amaranth (Rural)	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Yes	Gravel	4	43	Poor Condition	13	63	37	1638	6.10	8.60	14087	Rural	75	Rehabilitation	$169,044.00	$12.00	Preventive Maintenance	$7,747.85	$0.55	
0201	Amaranth (Rural)	2nd Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	63	Fair Condition	14	91	27	3049	7.50	9.70	29575	Rural	150	Preventative Maintenance	$16,266.25	$0.55	Preventive Maintenance	$16,266.25	$0.55	
0900.3	Amaranth (Rural)	9th Line	Station Street	5th Sideroad	No	Gravel	8	68	Fair Condition	16	22	27	1845	6.30	10.00	18450	Rural	295	Resurface	$516,600.00	$28.00	Preventive Maintenance	$10,147.50	$0.55	
1600	Amaranth (Rural)	25th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	6	57	Fair Condition	15	30	26	1324	6.00	7.40	9798	Rural	40	Rehabilitation	$117,576.00	$12.00	Preventive Maintenance	$5,388.90	$0.55	
0202	Amaranth (Rural)	2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	No	Gravel	7	62	Fair Condition	14	50	25	3045	8.00	9.60	29232	Rural	80	Preventative Maintenance	$16,077.60	$0.55	Preventive Maintenance	$16,077.60	$0.55	
1608	Amaranth (Rural)	25th Sideroad	0.1 Km E. of County Road 11	2nd Line	No	Gravel	6	66	Fair Condition	15	36	22	1243	9.00	11.30	14046	Rural	75	Preventative Maintenance	$7,725.30	$0.55	Preventive Maintenance	$7,725.30	$0.55	
1607	Amaranth (Rural)	25th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	64	Fair Condition	14	28	22	1526	6.60	8.20	12513	Rural	40	Preventative Maintenance	$6,882.15	$0.55	Preventive Maintenance	$6,882.15	$0.55	
0606	Amaranth (Rural)	6th Line	30th Sideroad	Highway 89	No	Gravel	6	65	Fair Condition	20	18	20	1199	7.00	9.10	10911	Rural	30	Preventative Maintenance	$6,001.05	$0.55	Preventive Maintenance	$6,001.05	$0.55	
1207	Amaranth (Rural)	5th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	76	Satisfactory Condition	0	13	19	1534	8.00	9.00	13806	Rural	200	Resurface	$386,568.00	$28.00	Preventive Maintenance	$7,593.30	$0.55	
0901	Amaranth (Rural)	9th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	78	Satisfactory Condition	18	28	19	3071	5.00	5.50	16891	Rural	295	Resurface	$472,948.00	$28.00	Preventive Maintenance	$9,290.05	$0.55	
0200.2	Amaranth (Rural)	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	No	Gravel	8	82	Satisfactory Condition	18	14	18	2451	8.40	10.80	26471	Rural	551	Resurface	$741,188.00	$28.00	Preventive Maintenance	$14,559.05	$0.55	
1103.1	Amaranth (Rural)	Amaranth - East Luther Townline	15th Sideroad	1.5 Km N. of 15th Sideroad	Yes	Gravel	8	76	Satisfactory Condition	0	61	18	1492	5.70	9.50	14174	Rural	152	Preventative Maintenance	$7,795.70	$0.55	Preventive Maintenance	$7,795.70	$0.55	
0404	Amaranth (Rural)	4th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	0	29	17	3054	7.50	9.00	27486	Rural	60	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	
1206	Amaranth (Rural)	5th Sideroad	Dufferin County Road 12	4th Line	No	Gravel	8	80	Satisfactory Condition	0	16	17	1351	6.60	7.50	10133	Rural	250	Resurface	$283,724.00	$28.00	Preventive Maintenance	$5,573.15	$0.55	
0605	Amaranth (Rural)	6th Line	25th Sideroad	30th Sideroad	No	Gravel	7	72	Satisfactory Condition	17	27	17	3172	7.40	9.00	28548	Rural	55	Preventative Maintenance	$15,701.40	$0.55	Preventive Maintenance	$15,701.40	$0.55	
0902	Amaranth (Rural)	9th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	8	75	Satisfactory Condition	15	32	17	3087	6.90	10.00	30870	Rural	80	Preventative Maintenance	$16,978.50	$0.55	Preventive Maintenance	$16,978.50	$0.55	
0405	Amaranth (Rural)	4th Line	25th Sideroad	30th Sideroad	No	Gravel	7	77	Satisfactory Condition	0	15	14	3084	6.30	10.10	31148	Rural	40	Preventative Maintenance	$17,131.40	$0.55	Preventive Maintenance	$17,131.40	$0.55	
0604	Amaranth (Rural)	6th Line	20th Sideroad	25th Sideroad	No	Gravel	8	79	Satisfactory Condition	18	25	13	3069	6.40	7.90	24245	Rural	60	Preventative Maintenance	$13,334.75	$0.55	Preventive Maintenance	$13,334.75	$0.55	
1205	Amaranth (Rural)	5th Sideroad	6th Line	Dufferin County Road 12	No	Gravel	9	85	Good Condition	0	8	12	1269	8.00	9.00	11421	Rural	208	Resurface	$319,788.00	$28.00	Preventive Maintenance	$6,281.55	$0.55	
1601	Amaranth (Rural)	25th Sideroad	10th Line	9th Line	No	Gravel	8	83	Satisfactory Condition	18	24	11	1384	5.40	6.70	9273	Rural	60	Preventative Maintenance	$5,100.15	$0.55	Preventive Maintenance	$5,100.15	$0.55	
1202	Amaranth (Rural)	5th Sideroad	9th Line	8th Line	No	Gravel	8	87	Good Condition	0	8	10	1388	6.70	7.70	10688	Rural	200	Resurface	$299,264.00	$28.00	Preventive Maintenance	$5,878.40	$0.55	
1204	Amaranth (Rural)	5th Sideroad	7th Line	6th Line	No	Gravel	9	87	Good Condition	0	36	10	1729	7.50	8.50	14697	Rural	150	Preventative Maintenance	$8,083.35	$0.55	Preventive Maintenance	$8,083.35	$0.55	
1203	Amaranth (Rural)	5th Sideroad	8th Line	7th Line	No	Gravel	8	85	Good Condition	0	27	10	1276	7.70	8.70	11101	Rural	100	Preventative Maintenance	$6,105.55	$0.55	Preventive Maintenance	$6,105.55	$0.55	
1201	Amaranth (Rural)	5th Sideroad	10th Line	9th Line	No	Gravel	9	89	Good Condition	0	9	9	1362	7.50	8.50	11577	Rural	300	Resurface	$324,156.00	$28.00	Preventive Maintenance	$6,367.35	$0.55	
1400	Amaranth (Rural)	15th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	5	45	Poor Condition	0	139	41	1304	5.50	7.60	9910	Rural	150	Rehabilitation	$118,920.00	$12.00	Preventive Maintenance	$5,450.50	$0.55	
0203	Amaranth (Rural)	2nd Line	15th Sideroad	20th Sideroad	No	Gravel	5	45	Poor Condition	13	55	36	3045	8.10	10.30	31364	Rural	80	Rehabilitation	$376,368.00	$12.00	Preventive Maintenance	$17,250.20	$0.55	
1403	Amaranth (Rural)	15th Sideroad	8th Line	7th Line	No	Gravel	5	55	Fair Condition	0	81	33	1320	6.60	10.70	14124	Rural	150	Rehabilitation	$169,488.00	$12.00	Preventive Maintenance	$7,768.20	$0.55	
												Asphalt Total	1980									Asphalt Total	$382,779.00		
												Gravel Total	59531									Gravel Total	$294,547.00		
												Year 7 Total	61511									Year 7 Total	$677,326.00		
												Year 8 (2030)													
0106.1	Amaranth (Rural)	Mono-Amaranth Townline	30th Sideroad	0.6 Km N. of 30th Sideroad	Yes	High Class Bituminous	6	53	Poor Condition	2	458	59	778	7.00	9.00	5446	Rural	1510	Rehabilitation	$223,286.00	$41.00	Rehabilitation	$223,286.00	$41.00	
0106.2	Amaranth (Rural)	Mono-Amaranth Townline	0.6 Km N. of 30th Sideroad	Highway 89	Yes	High Class Bituminous	7	74	Satisfactory Condition	9	105	33	411	7.00	8.00	2877	Rural	1510	Resurface	$57,540.00	$20.00	Resurface	$57,540.00	$20.00	
1706	Amaranth (Rural)	30th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	4	36	Very Poor Condition	11	40	42	1267	5.80	7.30	9249	Rural	80	Reconstruction	$240,474.00	$26.00	Preventive Maintenance	$5,086.95	$0.55	
1705	Amaranth (Rural)	30th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	4	48	Poor Condition	11	83	36	1224	6.40	8.00	9792	Rural	100	Rehabilitation	$117,504.00	$12.00	Preventive Maintenance	$5,385.60	$0.55	
1707	Amaranth (Rural)	30th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	5	56	Fair Condition	14	56	29	1489	6.80	8.00	11912	Rural	80	Rehabilitation	$142,944.00	$12.00	Preventive Maintenance	$6,551.60	$0.55	
1703	Amaranth (Rural)	30th Sideroad	8th Line	7th Line	No	Gravel	5	59	Fair Condition	13	57	27	1348	5.30	7.30	9840	Rural	80	Rehabilitation	$118,080.00	$12.00	Preventive Maintenance	$5,412.00	$0.55	
0706	Amaranth (Rural)	7th Line	30th Sideroad	Highway 89	No	Gravel	6	63	Fair Condition	20	105	27	1125	6.30	7.20	8100	Rural	128	Preventative Maintenance	$4,455.00	$0.55	Preventive Maintenance	$4,455.00	$0.55	
0806	Amaranth (Rural)	8th Line	30th Sideroad	Highway 89	No	Gravel	6	64	Fair Condition	16	47	24	1115	7.60	9.80	10927	Rural	80	Preventative Maintenance	$6,009.85	$0.55	Preventive Maintenance	$6,009.85	$0.55	
0401	Amaranth (Rural)	4th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	66	Fair Condition	0	48	23	3054	6.90	9.00	27486	Rural	80	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	
0403	Amaranth (Rural)	4th Line	15th Sideroad	20th Sideroad	No	Gravel	6	65	Fair Condition	0	36	22	3072	6.80	9.90	30413	Rural	65	Preventative Maintenance	$16,727.15	$0.55	Preventive Maintenance	$16,727.15	$0.55	
0704	Amaranth (Rural)	7th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	20	61	19	3087	6.50	9.00	27783	Rural	128	Preventative Maintenance	$15,280.65	$0.55	Preventive Maintenance	$15,280.65	$0.55	
0805	Amaranth (Rural)	8th Line	25th Sideroad	30th Sideroad	No	Gravel	6	70	Satisfactory Condition	16	35	19	3066	5.70	8.20	25141	Rural	60	Preventative Maintenance	$13,827.55	$0.55	Preventive Maintenance	$13,827.55	$0.55	
0402	Amaranth (Rural)	4th Line	10th Sideroad	15th Sideroad	No	Gravel	7	75	Satisfactory Condition	0	37	17	3054	6.70	8.70	26570	Rural	80	Preventative Maintenance	$14,613.50	$0.55	Preventive Maintenance	$14,613.50	$0.55	
1704	Amaranth (Rural)	30th Sideroad	7th Line	6th Line	No	Gravel	6	76	Satisfactory Condition	16	44	16	1671	5.70	6.90	11530	Rural	80	Preventative Maintenance	$6,341.50	$0.55	Preventive Maintenance	$6,341.50	$0.55	
1700	Amaranth (Rural)	30th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	8	76	Satisfactory Condition	18	24	15	1342	6.50	8.10	10870	Rural	50	Preventative Maintenance	$5,978.50	$0.55	Preventive Maintenance	$5,978.50	$0.55	
1701	Amaranth (Rural)	30th Sideroad	10th Line	9th Line	No	Gravel	7	78	Satisfactory Condition	19	18	14	1389	6.70	9.90	13751	Rural	50	Preventative Maintenance	$7,563.05	$0.55	Preventive Maintenance	$7,563.05	$0.55	
1702	Amaranth (Rural)	30th Sideroad	9th Line	8th Line	No	Gravel	7	78	Satisfactory Condition	17	29	14	1406	5.60	7.30	10264	Rural	60	Preventative Maintenance	$5,645.20	$0.55	Preventive Maintenance	$5,645.20	$0.55	
0705	Amaranth (Rural)	7th Line	25th Sideroad	30th Sideroad	No	Gravel	8	81	Satisfactory Condition	20	35	14	3085	7.00	11.00	33935	Rural	128	Preventative Maintenance	$18,664.25	$0.55	Preventive Maintenance	$18,664.25	$0.55	

Appendix G - 10-Year Road Improvement Plan

Municipal ID	Community	Name	Name From	Name To	Boundary Road	Surface Material	Ride Comfort Rating (RCR)	PCI	PCI Class	Structural Adequacy (1-20)	Priority Guide Number (PGN)	Priority Rating (PR)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m²)	Roadside Environment	AADT	Proposed Lifecycle Improvement	Improvement Cost	Bench Mark Cost ($/m²)	Adj. Lifecycle Improvement	Adj. Improvement Cost	Adj. Bench Mark Cost ($/m²)	Comments
0804	Amaranth (Rural)	8th Line	20th Sideroad	25th Sideroad	No	Gravel	7	78	Satisfactory Condition	18	17	13	3071	5.60	8.40	25796	Rural	40	Preventative Maintenance	$14,187.80	$0.55	Preventive Maintenance	$14,187.80	$0.55	
0700	Amaranth (Rural)	7th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	8	63	Fair Condition	17	30	33	3073	6.70	10.00	30730	Rural	350	Resurface	$860,440.00	$28.00	Preventive Maintenance	$16,901.50	$0.55	
0205	Amaranth (Rural)	2nd Line	25th Sideroad	30th Sideroad	No	Gravel	5	52	Poor Condition	10	41	32	3102	8.60	12.00	37224	Rural	80	Rehabilitation	$446,688.00	$12.00	Preventive Maintenance	$20,473.20	$0.55	
1005	Amaranth (Rural)	10th Line	25th Sideroad	30th Sideroad	No	Gravel	6	52	Poor Condition	13	41	30	3087	7.40	9.00	27783	Rural	60	Rehabilitation	$333,396.00	$12.00	Preventive Maintenance	$15,280.65	$0.55	
1404	Amaranth (Rural)	15th Sideroad	7th Line	6th Line	No	Gravel	5	49	Poor Condition	0	34	30	1784	5.00	6.40	11418	Rural	34	Rehabilitation	$137,016.00	$12.00	Preventive Maintenance	$6,279.90	$0.55	
0602.2	Amaranth (Rural)	6th Line	0.4 Km N. of County Road 10	15th Sideroad	No	Gravel	5	53	Poor Condition	0	60	30	2606	5.40	7.00	18242	Rural	70	Rehabilitation	$218,904.00	$12.00	Preventive Maintenance	$10,033.10	$0.55	
1603	Amaranth (Rural)	25th Sideroad	8th Line	7th Line	No	Gravel	6	59	Fair Condition	14	30	25	1323	5.70	6.90	9129	Rural	40	Rehabilitation	$109,548.00	$12.00	Preventive Maintenance	$5,020.95	$0.55	
0703.2	Amaranth (Rural)	7th Line	20th Sideroad	End (Willow Brook)	No	Gravel	8	63	Fair Condition	6	57	25	897	4.00	8.70	7804	Rural	85	Preventative Maintenance	$4,292.20	$0.55	Preventive Maintenance	$4,292.20	$0.55	
1604	Amaranth (Rural)	25th Sideroad	7th Line	6th Line	No	Gravel	6	61	Fair Condition	0	27	23	1721	6.90	9.10	15661	Rural	40	Preventative Maintenance	$8,613.55	$0.55	Preventive Maintenance	$8,613.55	$0.55	
0803	Amaranth (Rural)	8th Line	15th Sideroad	20th Sideroad	No	Gravel	6	63	Fair Condition	16	44	23	3056	6.20	6.70	20475	Rural	50	Preventative Maintenance	$11,261.25	$0.55	Preventive Maintenance	$11,261.25	$0.55	
0204	Amaranth (Rural)	2nd Line	20th Sideroad	25th Sideroad	No	Gravel	7	65	Fair Condition	14	35	22	3059	8.10	9.60	29366	Rural	60	Preventative Maintenance	$16,151.30	$0.55	Preventive Maintenance	$16,151.30	$0.55	
												Asphalt Total	1189									Asphalt Total	$280,826.00		
												Gravel Total	58573									Gravel Total	$281,155.05		
												Year 8 Total	59762									Year 8 Total	$561,981.05		
												Year 9 (2031)													
0200.1	Farmington	2nd Line	Dufferin County Road 109	0.6 Km N. of County Road 109	No	High Class Bituminous	6	64	Fair Condition	5	53	36	624	7.00	8.50	4368	Rural	551	Resurface	$87,360.00	$20.00	Resurface	$87,360.00	$20.00	
1709.4	Amaranth (Rural)	30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	No	High Class Bituminous	7	78	Satisfactory Condition	15	47	24	418	7.00	8.00	2926	Rural	800	Resurface	$58,520.00	$20.00	Resurface	$58,520.00	$20.00	
1709.5	Amaranth (Rural)	30th Sideroad	Country Meadows Dr	Mono _ Amaranth Townline	No	High Class Bituminous	7	80	Satisfactory Condition	11	98	22	130	6.60	8.50	858	Rural	800	Preventative Maintenance	$3,432.00	$4.00	Resurface	$17,160.00	$20.00	
1709.3	Amaranth (Rural)	30th Sideroad	Devonleigh Drive	Country Meadows Dr	No	High Class Bituminous	8	90	Good Condition	16	-1	11	258	7.00	8.50	1806	Rural	800	Routine Maintenance	$0.00	$0.00	Resurface	$36,120.00	$20.00	
1003	Amaranth (Rural)	10th Line	15th Sideroad	20th Sideroad	No	Gravel	6	53	Poor Condition	13	38	29	3091	6.20	8.00	24728	Rural	50	Rehabilitation	$296,736.00	$12.00	Preventive Maintenance	$13,600.40	$0.55	
0905	Amaranth (Rural)	9th Line	25th Sideroad	30th Sideroad	No	Gravel	5	53	Poor Condition	14	40	29	3083	6.10	7.50	23123	Rural	50	Rehabilitation	$277,476.00	$12.00	Preventive Maintenance	$12,717.65	$0.55	
0600.2	Amaranth (Rural)	6th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	67	Fair Condition	18	22	28	2488	7.00	10.00	24880	Rural	279	Resurface	$696,640.00	$28.00	Preventive Maintenance	$13,684.00	$0.55	
1002	Amaranth (Rural)	10th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	66	Fair Condition	18	40	22	3081	6.30	8.10	24956	Rural	60	Preventative Maintenance	$13,725.80	$0.55	Preventive Maintenance	$13,725.80	$0.55	
0400	Amaranth (Rural)	4th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	71	Satisfactory Condition	0	73	22	3078	6.90	9.50	29241	Rural	150	Preventative Maintenance	$16,082.55	$0.55	Preventive Maintenance	$16,082.55	$0.55	
0601	Amaranth (Rural)	6th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	69	Fair Condition	17	40	20	3051	5.50	7.90	24103	Rural	65	Preventative Maintenance	$13,256.65	$0.55	Preventive Maintenance	$13,256.65	$0.55	
0702	Amaranth (Rural)	7th Line	10th Sideroad	15th Sideroad	No	Gravel	6	73	Satisfactory Condition	16	74	20	3052	6.00	8.70	26639	Rural	150	Preventative Maintenance	$14,651.45	$0.55	Preventive Maintenance	$14,651.45	$0.55	
0904	Amaranth (Rural)	9th Line	20th Sideroad	25th Sideroad	No	Gravel	6	67	Fair Condition	16	32	20	3088	5.70	8.20	25322	Rural	50	Preventative Maintenance	$13,927.10	$0.55	Preventive Maintenance	$13,927.10	$0.55	
1105.1	Amaranth (Rural)	Amaranth - East Luther Townline	25th Sideroad	Con. 12-13 Road (Grand Valley)	Yes	Gravel	6	66	Fair Condition	20	12	20	1052	6.00	12.90	13571	Rural	28	Preventative Maintenance	$7,464.05	$0.55	Preventive Maintenance	$7,464.05	$0.55	
1106	Amaranth (Rural)	Amaranth - East Luther Townline	30th Sideroad	Highway 89	Yes	Gravel	9	76	Satisfactory Condition	15	14	14	927	7.00	10.70	9919	Rural	40	Preventative Maintenance	$5,455.45	$0.55	Preventive Maintenance	$5,455.45	$0.55	
1105.2	Amaranth (Rural)	Amaranth - East Luther Townline	Con. 12-13 Road (Grand Valley)	30th Sideroad	Yes	Gravel	8	77	Satisfactory Condition	0	14	13	2028	5.10	7.20	14602	Rural	28	Preventative Maintenance	$8,031.10	$0.55	Preventive Maintenance	$8,031.10	$0.55	
0701	Amaranth (Rural)	7th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	9	82	Satisfactory Condition	20	25	12	3165	6.70	9.30	29435	Rural	80	Preventative Maintenance	$16,189.25	$0.55	Preventive Maintenance	$16,189.25	$0.55	
0906	Amaranth (Rural)	9th Line	30th Sideroad	Highway 89	No	Gravel	7	80	Satisfactory Condition	18	12	12	1123	5.90	8.00	8984	Rural	30	Preventative Maintenance	$4,941.20	$0.55	Preventive Maintenance	$4,941.20	$0.55	
0703.1	Amaranth (Rural)	7th Line	15th Sideroad	End (Willow Brook)	No	Gravel	6	62	Fair Condition	4	24	22	2142	6.20	8.70	18635	Rural	35	Preventative Maintenance	$10,249.25	$0.55	Preventive Maintenance	$10,249.25	$0.55	
1001	Amaranth (Rural)	10th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	7	69	Fair Condition	0	45	20	3080	5.60	6.60	20328	Rural	60	Preventative Maintenance	$11,180.40	$0.55	Preventive Maintenance	$11,180.40	$0.55	
0802	Amaranth (Rural)	8th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	7	68	Fair Condition	14	37	20	3067	6.20	8.30	25456	Rural	60	Preventative Maintenance	$14,000.80	$0.55	Preventive Maintenance	$14,000.80	$0.55	
1402	Amaranth (Rural)	15th Sideroad	9th Line	8th Line	No	Gravel	7	72	Satisfactory Condition	0	68	19	1423	4.60	6.50	9250	Rural	100	Preventative Maintenance	$5,087.50	$0.55	Preventive Maintenance	$5,087.50	$0.55	
0800	Amaranth (Rural)	8th Line	Dufferin County Road 109	5th Sideroad	No	Gravel	7	75	Satisfactory Condition	14	74	19	3137	7.10	10.10	31684	Rural	189	Preventative Maintenance	$17,426.20	$0.55	Preventive Maintenance	$17,426.20	$0.55	
0903	Amaranth (Rural)	9th Line	0.3 Km S. of 20th Sideroad	20th Sideroad	No	Gravel	7	67	Fair Condition	13	11	18	299	5.40	9.40	2811	Rural	20	Preventative Maintenance	$1,546.05	$0.55	Preventive Maintenance	$1,546.05	$0.55	
0603	Amaranth (Rural)	6th Line	15th Sideroad	20th Sideroad	No	Gravel	7	74	Satisfactory Condition	0	32	17	3079	6.40	8.40	25864	Rural	65	Preventative Maintenance	$14,225.20	$0.55	Preventive Maintenance	$14,225.20	$0.55	
1401	Amaranth (Rural)	15th Sideroad	10th Line	9th Line	No	Gravel	8	77	Satisfactory Condition	0	51	16	1377	5.20	7.20	9914	Rural	100	Preventative Maintenance	$5,452.70	$0.55	Preventive Maintenance	$5,452.70	$0.55	
2011	Amaranth (Rural)	Grand View Road	Dufferin County Road 109	End of Grand View Road	No	Gravel	8	79	Satisfactory Condition	18	37	15	781	6.30	10.00	7810	Rural	110	Preventative Maintenance	$4,295.50	$0.55	Preventive Maintenance	$4,295.50	$0.55	
1006	Amaranth (Rural)	10th Line	30th Sideroad	Highway 89	No	Gravel	8	77	Satisfactory Condition	18	16	14	1120	6.00	7.80	8736	Rural	35	Preventative Maintenance	$4,804.80	$0.55	Preventive Maintenance	$4,804.80	$0.55	
1605	Amaranth (Rural)	25th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	7	78	Satisfactory Condition	15	28	14	1277	5.90	7.50	9578	Rural	60	Preventative Maintenance	$5,267.90	$0.55	Preventive Maintenance	$5,267.90	$0.55	
1405	Amaranth (Rural)	15th Sideroad	6th Line	5th Line (Dufferin County Road 12)	No	Gravel	8	81	Satisfactory Condition	0	18	12	1301	6.10	8.50	11059	Rural	50	Preventative Maintenance	$6,082.45	$0.55	Preventive Maintenance	$6,082.45	$0.55	
0801	Amaranth (Rural)	8th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	84	Satisfactory Condition	16	25	11	3093	6.20	8.00	24744	Rural	80	Preventative Maintenance	$13,609.20	$0.55	Preventive Maintenance	$13,609.20	$0.55	
1200	Amaranth (Rural)	5th Sideroad	Amaranth - East Luther Townline	100m E. of Amaranth - East Luther Townline	No	Gravel	9	83	Satisfactory Condition	20	25	10	101	5.00	5.40	545	Rural	50	Preventative Maintenance	$299.75	$0.55	Preventive Maintenance	$299.75	$0.55	
1409	Amaranth (Rural)	15th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	7	90	Good Condition	0	16	7	1401	7.20	9.90	13870	Rural	100	Preventative Maintenance	$7,628.50	$0.55	Preventive Maintenance	$7,628.50	$0.55	
1407	Amaranth (Rural)	15th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	7	90	Good Condition	0	18	7	1517	5.90	7.20	10922	Rural	80	Preventative Maintenance	$6,007.10	$0.55	Preventive Maintenance	$6,007.10	$0.55	
1406	Amaranth (Rural)	15th Sideroad	5th Line (Dufferin County Road 12)	4th Line	No	Gravel	7	90	Good Condition	0	23	7	1317	5.80	7.00	9219	Rural	100	Preventative Maintenance	$5,070.45	$0.55	Preventive Maintenance	$5,070.45	$0.55	
1408	Amaranth (Rural)	15th Sideroad	Dufferin County Road 11	2nd Line	No	Gravel	7	90	Good Condition	0	14	6	1258	6.60	7.60	9561	Rural	66	Preventative Maintenance	$5,258.55	$0.55	Preventive Maintenance	$5,258.55	$0.55	
												Asphalt Total	1430									Asphalt Total	$199,160.00		
												Gravel Total	63087									Gravel Total	$291,218.95		
												Year 9 Total	64517									Year 9 Total	$490,378.95		
												Year 10 (2032)													
1508	Amaranth (Rural)	20th Sideroad	Dufferin County Road 11	2nd Line	No	High Class Bituminous	8	73	Satisfactory Condition	6	83	32	1255	7.00	10.00	8785	Rural	1150	Resurface	$175,700.00	$20.00	Resurface	$175,700.00	$20.00	
1602	Amaranth (Rural)	25th Sideroad	9th Line	8th Line	No	Gravel	3	14	Serious Condition	4	29	53	1395	6.10	8.30	11579	Rural	50	Reconstruction	$301,054.00	$26.00	Preventive Maintenance	$6,368.45	$0.55	
1609	Amaranth (Rural)	25th Sideroad	2nd Line	Mono - Amaranth Townline	No	Gravel	3	25	Very Poor Condition	9	33	50	1384	8.30	10.20	14117	Rural	80	Reconstruction	$367,042.00	$26.00	Preventive Maintenance	$7,764.35	$0.55	
1606	Amaranth (Rural)	25th Sideroad	5th Line	4th Line	No	Gravel	3	21	Serious Condition	5	14	46	1290	7.00	9.50	12255	Rural	29	Reconstruction	$318,630.00	$26.00	Preventive Maintenance	$6,740.25	$0.55	
0406	Amaranth (Rural)	4th Line	30th Sideroad	Highway 89	No	Gravel	3	30	Very Poor Condition	13	21	43	1151	7.20	9.60	11050	Rural	50	Reconstruction	$287,300.00	$26.00	Preventive Maintenance	$6,077.50	$0.55	
1104.2	Amaranth (Rural)	Amaranth - East Luther Townline	20m N. of Con. 10-11 Road (Grand Valley)	25th Sideroad	Yes	Gravel	4	43	Poor Condition	13	63	37	1638	6.10	8.60	14087	Rural	75	Rehabilitation	$169,044.00	$12.00	Preventive Maintenance	$7,747.85	$0.55	
0201	Amaranth (Rural)	2nd Line	5th Sideroad	Dufferin County Road 10	No	Gravel	6	63	Fair Condition	14	91	27	3049	7.50	9.70	29575	Rural	150	Preventative Maintenance	$16,266.25	$0.55	Preventive Maintenance	$16,266.25	$0.55	
0900.3	Amaranth (Rural)	9th Line	Station Street	5th Sideroad	No	Gravel	8	68	Fair Condition	16	22	27	1845	6.30	10.00	18450	Rural	295	Resurface	$516,600.00	$28.00	Preventive Maintenance	$10,147.50	$0.55	
1600	Amaranth (Rural)	25th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	6	57	Fair Condition	15	30	26	1324	6.00	7.40	9798	Rural	40	Rehabilitation	$117,576.00	$12.00	Preventive Maintenance	$5,388.90	$0.55	
0202	Amaranth (Rural)	2nd Line	10th Sideroad	1.9 Km N. of 10th Sideroad	No	Gravel	7	62	Fair Condition	14	60	25	3045	8.00	9.60	29232	Rural	80	Preventative Maintenance	$16,077.60	$0.55	Preventive Maintenance	$16,077.60	$0.55	
1608	Amaranth (Rural)	25th Sideroad	0.1 Km E. of County Road 11	2nd Line	No	Gravel	6	66	Fair Condition	15	36	22	1243	9.00	11.30	14046	Rural	75	Preventative Maintenance	$7,725.30	$0.55	Preventive Maintenance	$7,725.30	$0.55	
1607	Amaranth (Rural)	25th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	64	Fair Condition	14	28	22	1526	6.60	8.20	12513	Rural	40	Preventative Maintenance	$6,882.15	$0.55	Preventive Maintenance	$6,882.15	$0.55	
0606	Amaranth (Rural)	6th Line	30th Sideroad	Highway 89	No	Gravel	6	65	Fair Condition	20	18	20	1199	7.00	9.10	10911	Rural	30	Preventative Maintenance	$6,001.05	$0.55	Preventive Maintenance	$6,001.05	$0.55	
1207	Amaranth (Rural)	5th Sideroad	4th Line	Dufferin County Road 11	No	Gravel	6	76	Satisfactory Condition	0	13	19	1534	8.00	9.00	13806	Rural	200	Resurface	$386,568.00	$28.00	Preventive Maintenance	$7,593.30	$0.55	
0901	Amaranth (Rural)	9th Line	5th Sideroad	Dufferin County Road 10	No	Gravel	8	78	Satisfactory Condition	18	28	19	3071	5.00	5.50	16891	Rural	295	Resurface	$472,948.00	$28.00	Preventive Maintenance	$9,290.05	$0.55	
0200.2	Amaranth (Rural)	2nd Line	0.6 Km N. of County Road 109	5th Sideroad	No	Gravel	8	82	Satisfactory Condition	18	14	18	2451	8.40	10.80	26471	Rural	551	Resurface	$741,188.00	$28.00	Preventive Maintenance	$14,559.05	$0.55	
1103.1	Amaranth (Rural)	Amaranth - East Luther Townline	15th Sideroad	1.5 km N. of 15th Sideroad	Yes	Gravel	8	76	Satisfactory Condition	0	61	18	1492	5.70	9.50	14174	Rural	152	Preventative Maintenance	$7,795.70	$0.55	Preventive Maintenance	$7,795.70	$0.55	
0404	Amaranth (Rural)	4th Line	20th Sideroad	25th Sideroad	No	Gravel	7	73	Satisfactory Condition	0	29	17	3054	7.50	9.00	27486	Rural	60	Preventative Maintenance	$15,117.30	$0.55	Preventive Maintenance	$15,117.30	$0.55	
1206	Amaranth (Rural)	5th Sideroad	Dufferin County Road 12	4th Line	No	Gravel	8	80	Satisfactory Condition	16	16	17	1351	6.00	7.50	10133	Rural	250	Resurface	$283,724.00	$28.00	Preventive Maintenance	$5,573.15	$0.55	
0605	Amaranth (Rural)	6th Line	25th Sideroad	30th Sideroad	No	Gravel	7	72	Satisfactory Condition	17	27	17	3172	7.40	9.00	28548	Rural	55	Preventative Maintenance	$15,701.40	$0.55	Preventive Maintenance	$15,701.40	$0.55	
0902	Amaranth (Rural)	9th Line	Dufferin County Road 10	15th Sideroad	No	Gravel	8	75	Satisfactory Condition	15	32	17	3087	6.90	10.00	30870	Rural	80	Preventative Maintenance	$16,978.50	$0.55	Preventive Maintenance	$16,978.50	$0.55	
0405	Amaranth (Rural)	4th Line	25th Sideroad	30th Sideroad	No	Gravel	7	77	Satisfactory Condition	11	15	14	3084	6.30	10.10	31148	Rural	40	Preventative Maintenance	$17,131.40	$0.55	Preventive Maintenance	$17,131.40	$0.55	
0604	Amaranth (Rural)	6th Line	20th Sideroad	25th Sideroad	No	Gravel	8	79	Satisfactory Condition	18	25	13	3069	6.40	7.90	24245	Rural	60	Preventative Maintenance	$13,334.75	$0.55	Preventive Maintenance	$13,334.75	$0.55	
1205	Amaranth (Rural)	5th Sideroad	6th Line	Dufferin County Road 12	No	Gravel	9	85	Good Condition	0	8	12	1269	8.00	9.00	11421	Rural	208	Resurface	$319,788.00	$28.00	Preventive Maintenance	$6,281.55	$0.55	
1601	Amaranth (Rural)	25th Sideroad	10th Line	9th Line	No	Gravel	8	83	Satisfactory Condition	18	24	11	1384	5.40	6.70	9273	Rural	60	Preventative Maintenance	$5,100.15	$0.55	Preventive Maintenance	$5,100.15	$0.55	
1202	Amaranth (Rural)	5th Sideroad	9th Line	8th Line	No	Gravel	8	87	Good Condition	0	8	10	1388	6.70	7.70	10688	Rural	200	Resurface	$299,264.00	$28.00	Preventive Maintenance	$5,878.40	$0.55	
1204	Amaranth (Rural)	5th Sideroad	7th Line	6th Line	No	Gravel	9	87	Good Condition	0	36	10	1729	7.50	8.50	14697	Rural	150	Preventative Maintenance	$8,083.35	$0.55	Preventive Maintenance	$8,083.35	$0.55	
1203	Amaranth (Rural)	5th Sideroad	8th Line	7th Line	No	Gravel	8	85	Good Condition	0	27	10	1276	7.70	8.70	11101	Rural	100	Preventative Maintenance	$6,105.55	$0.55	Preventive Maintenance	$6,105.55	$0.55	
1201	Amaranth (Rural)	5th Sideroad	10th Line	9th Line	No	Gravel	9	89	Good Condition	0	9	9	1362	7.50	8.50	11577	Rural	300	Resurface	$324,156.00	$28.00	Preventive Maintenance	$6,367.35	$0.55	
1400	Amaranth (Rural)	15th Sideroad	Amaranth - East Luther Townline	10th Line	No	Gravel	5	45	Poor Condition	0	139	41	1304	5.50	7.60	9910	Rural	150	Rehabilitation	$118,920.00	$12.00	Preventive Maintenance	$5,450.50	$0.55	
0203	Amaranth (Rural)	2nd Line	15th Sideroad	20th Sideroad	No	Gravel	5	45	Poor Condition	13	55	36	3045	8.10	10.30	31364	Rural	80	Rehabilitation	$376,368.00	$12.00	Preventive Maintenance	$17,250.20	$0.55	
1403	Amaranth (Rural)	15th Sideroad	8th Line	7th Line	No	Gravel	5	55	Fair Condition	0	81	33	1320	6.60	10.70	14124	Rural	150	Rehabilitation	$169,488.00	$12.00	Preventive Maintenance	$7,768.20	$0.55	
												Asphalt Total	1255									Asphalt Total	$175,700.00		
												Gravel Total	59531									Gravel Total	$294,547.00		
												Year 10 Total	60786									Year 10 Total	$470,247.00		

R.J. Burnside & Associates Limited