



BURNSIDE

Township of King Road Needs Study

**Township of King
2585 King Road
King City ON L7B 1A1**

**R.J. Burnside & Associates Limited
35 Perry Street
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Executive Summary

This Report is the Road Needs Study (RNS) which is comprised of the 10-year paving strategy update, pavement management update and new gravel road paving strategy. The RNS updates the Township of King's (the Township) road inventory, establishes the physical condition of the road network and determines the road maintenance and improvement needs and costs. A general prioritization of the road improvement needs is provided for the Township to help develop 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 and July 2022 for all the assumed roads within the Township's road network. Approximately 350.608 km of roads are inventoried in this study which includes 330.210 km of roads that are assumed by the Township and 20.398 km of roads that have not yet been assumed by the Township. The assumed roads inventoried are comprised of:

- 58.629 km of gravel rural roads.
- 1.373 km of gravel semi-urban roads.
- 25.686 km of surface treatment rural roads.
- 6.714 km of surface treatment semi-urban roads.
- 121.489 km of asphalt rural roads.
- 29.441 km of asphalt semi-urban roads.
- 86.878 km of asphalt urban roads.

Maps of the overall surface types are presented in Appendix A, along with an Excel spreadsheet of the inventory and condition data.

Traffic volume ranges are estimated for the roads in this study, based upon traffic counts provided by the Township, taken at select locations from 2016 to 2021. Traffic volumes for a ten-year horizon period were also estimated, based on growth forecasts in the Township's Transportation Master Plan.

Assessment of Road Needs

A pavement condition index (PCI) was established for each road section, based on rating systems developed by the Ministry of Transportation (MTO). The PCI has been used to assess the improvement requirements for each segment within the road network. An improvement matrix has been developed by R.J. Burnside & Associates Limited (Burnside) for the Township that identifies the appropriate improvement type, considering the condition of the road, roadside environment, surface type, traffic volumes and recommended best practices for the life cycle management of road assets. The lifecycle improvements include routine maintenance, preventive maintenance,

resurfacing, rehabilitation and reconstruction. A Priority Guide Number (PGN) and a Priority Rating Number (PRN) were developed to prioritize improvement needs.

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

- 10 Year Paving Strategy Update.
- Gravel Road Paving Strategy.
- Conduct a Township-wide traffic count study prior to the next RNS.
- Existing gravel or Low Class Bituminous (LCB) roads that may warrant upgrading (i.e., to LCB or High Class Bituminous (HCB) surfaces) have been identified.
- Road sections with the following issues/deficiencies have been identified in this RNS:
 - Potential for deficient sightlines.
 - Less than tolerable (i.e., deficient) road widths
- The total road network needs (i.e., current, today needs) for hardtop roads was determined to be \$26.5 million, and the total need to upgrade the remaining gravel roads was determined to be \$9.7 million.
- It is recommended that the Township establish an annual allowance specifically for applying cost-effective routine and preventive maintenance treatments on existing hardtop roads. Typical crack sealing budgets for similar municipalities are approximately \$180 per centreline km of road, therefore the recommended crack sealing budget for King Township is \$41,000 per annum.
- It is recommended that the Township further review their road maintenance budget to maintain their roads at a higher level of service. The needs over the next five years require a budget of approximately \$4.2 million to make the necessary improvements.
- It is recommended the Township align the road needs study finding, as presented in this report, with its Asset Management Plan. O.Reg 588/17 requires that all municipalities establish a service level for their critical infrastructure by 2025. This will assist with prioritization of road improvements in the next RNS.
- Two intersections along the 8th Concession may have deficient sightlines. It is recommended that the Township complete a detailed sightline analysis study for the intersections of 15th Sideroad and 8th Concession as well as 17th Sideroad and 8th Concession.

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

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1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of King (the Township) to conduct a Road Needs Study (RNS) and develop a 10-year road improvement plan. The road improvement plan includes three categories, the 10 Year Paving Strategy update, the Pavement Improvement Plan and the new Gravel Road Paving Strategy. This RNS updates the Township's road inventory, establishes the physical condition of the road network and determines the road maintenance and improvement needs and costs. A general prioritization of the road improvement needs is provided for the Township to help develop 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 Previous Road Needs Studies and Background Studies

The Township completed two Road Needs Studies in the past, including the 2011 Road Needs Study (2011 Study) and a 2016 Road Needs Study (2016 Study). The previous studies' methodologies were based on the Inventory Manual for Township Roads (Ministry of Transportation, 1991).

A Technical Memorandum (Draft) was completed in 2019 that summarized the results of a Gravel Road Improvement Study (2019 Gravel Study) that was completed for the Township. The 2019 Gravel Study provided an assessment of the costs to improve and resurface the Township's gravel roads.

The Township's 2020 Transportation Master Plan (2020 TMP), dated 2020, was also reviewed and projected growth was considered. In addition, as Burnside has completed various road reconstruction and bridge / culvert Capital Works projects in recent years, these projects were considered in the assessment.

2.0 The Road Study

2.1 Road Inventory

A total of 350.608 km of roads were inventoried as part of this RNS including 330.210 km of roads that have been assumed by the Township, and 20.398 km of roads that have not yet been assumed by the Township. Roads are 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 geographic information system (GIS) and each section has been assigned a unique ID number and GIS reference number. Data related to the road sections are obtained through a 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
- Functional Class
- Minimum Maintenance Class
- Annual Average Daily Traffic: Existing and Projected
- Number of Lanes
- Surface Type: Gravel, High and Low Class Bituminous (asphalt)
- 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
- Calculation of Pavement Condition Index (PCI): based on DMI and RCR, using the Ministry of Transportation (MTO) formulae

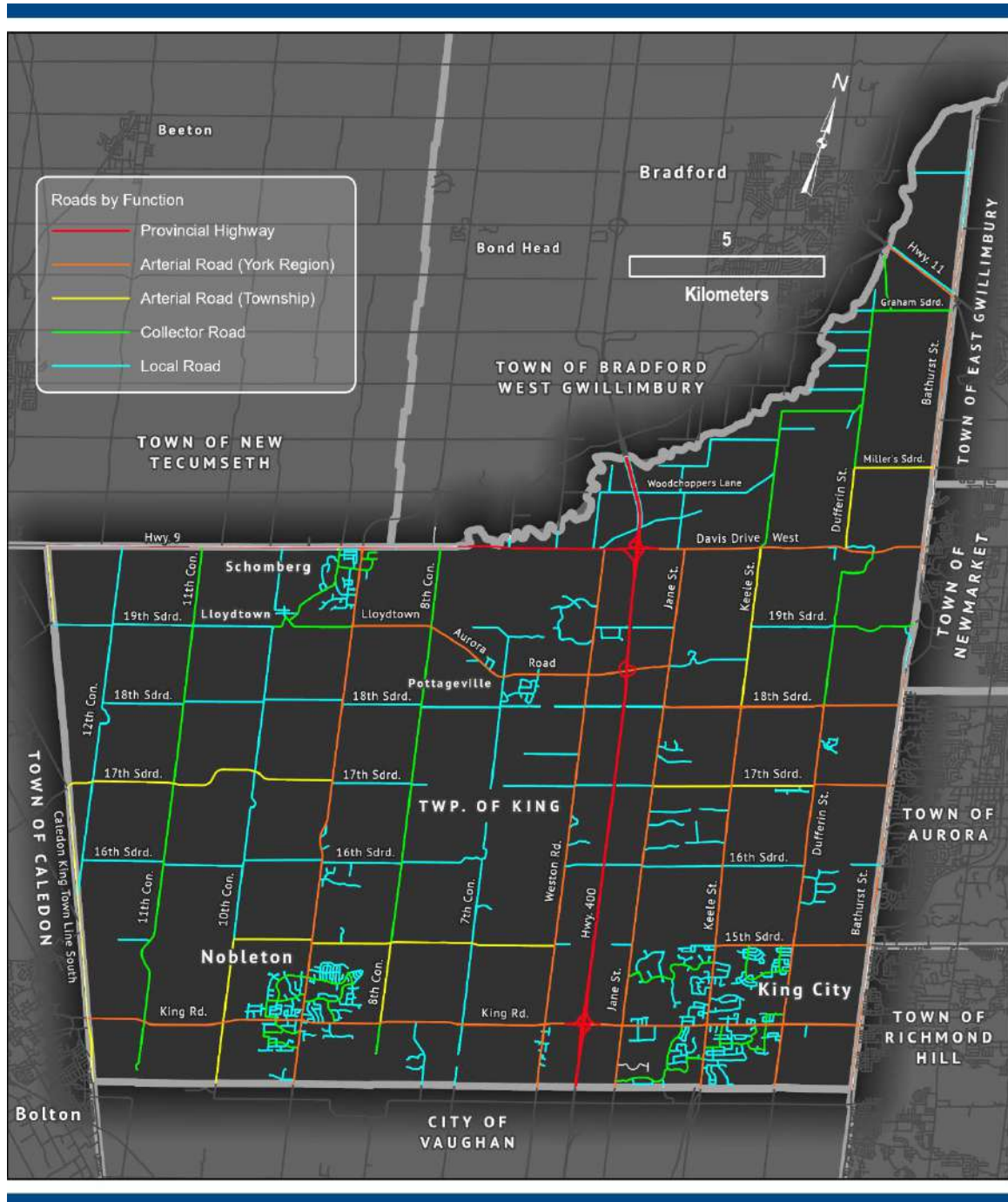
2.2 Functional Road Classifications

Based on the Township's Official Plan, the class of all roads within the Township are defined as follows:

- **Arterial Roads:** Includes both Regional and Township roads. Arterial roads serve higher volumes of intra-urban traffic at moderate to high speeds with limited private access. These roads also provide regional vehicular movement, goods movement, transit priority and active transportation. The planned right-of-way (ROW) width is up to 36 m and may include cycle tracks and multi-use paths.
- **Urban Collector:** These roads collect traffic from local roads and connect them to arterial roads. Urban collector roads are typically used by local traffic with limited through traffic. Private access and on-street parking can also be permitted. The roadway will accommodate pedestrian and cyclist traffic via the provision of sidewalk and cycling facilities. The planned ROW width is 26 m and elements within the cross section will vary depending on environment.
- **Rural Collector:** These roadways are typically located outside the urban areas. Rural collector roads serve regional and interregional vehicular movement at higher speeds. The planned ROW width is 26 m and includes features that assist in goods movement, farming supportive design measures, paved shoulders, and multi-use paths.
- **Urban Local:** Serves local traffic of typically low volumes. Private access is permitted on these roadways and intersections are typically stop or yield controlled. Cyclists may share the roadway with vehicles and pedestrian facilities may vary depending on environment. The planned ROW width is 20 m.
- **Rural Local:** These roadways are typically located outside villages and are similar to urban local roads. The planned right-of-way width is 20 m.

Figure 1 **Error! Reference source not found.** shows the existing generalized road classifications of the Township's roads as listed in Schedule F of the Township's Official Plan.

Figure 1: Existing Road Classification Map



2.3 Traffic Considerations

Traffic volume is an important consideration for determining the road improvement needs for any road segment within the road network. Traffic range estimates for Annual Average Daily Traffic (AADT) for each road section are included in the database in

Appendix A. the AADT volume ranges for this study are estimates based on historical traffic count work completed in 2016, 2020 and 2021 at select locations throughout the road network. Based on the Township's TMP, a growth rate of 2.1% compounded annually was applied for all segments with the exception of local roads from the base year traffic count to the existing year (2022). The estimated 2022 traffic volume ranges are shown graphically on the plan in Appendix B. The same growth rate was used to estimate the 2032 traffic volumes. The volume ranges for 2032 are presented graphically in Appendix B as well.

The lengths of roads that have been assumed by the Township in the various traffic volume ranges are summarized in Table 1.

Table 1: Length of Roads with Various AADT Traffic Ranges

AADT Traffic Range (vpd)	Length of Road in Traffic Range (km)	
	Existing (2022)	Year 2032
0 – 49	13.339	11.411
50 – 199	75.965	58.976
200 – 399	70.744	65.636
400 – 999	87.940	96.193
1,000 – 1,999	57.197	54.763
2,000 – 2,999	9.561	23.041
3,000 – 3,999	4.745	7.015
4,000 – 4,999	2.232	2.456
5,000 – 5,999	2.127	2.232
6,000 – 7,999	4.722	4.147
8,000 – 9,999	0	2.702
10,000 – 11,999	1.638	0
12,000 – 14,999	0	1.638
Total	330.210	330.210*

* Future AADT totals will vary based on growth within the Township and additional roads being assumed by the Township.

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

Where traffic volumes exceed 200 vehicles per day (vpd), upgrading of gravel road surfaces to hard top road surfaces may be considered. Similarly, where traffic volumes exceed 400 vpd, upgrading of surface treatment roads to asphalt roads may be considered, per industry practice.

Truck volumes typically range from a low of 3% on low volume residential streets to a high of 15% or more on arterials and collector roads. Information on truck volumes on the Township's roads was not available for this current study. It is recommended that the Township develop a traffic counting program and release a Request for Proposal (RFP) a few months prior to their next RNS update to ensure that the AADT volumes being used are current. Also, it is recommended that any future traffic counting work in the Township distinguish vehicle classifications (i.e., heavy truck volumes) particularly if consideration is being made to upgrade the road's surface type. For low volume rural roads, this study recommends that surface upgrading may be economical to consider where the percentage of trucks exceed 10% of the AADT provided the absolute volume of truck traffic is over 30 trucks per day.

2.4 Roadside Environment and Surface Type

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

Roadside Environment

- **Urban Environment:** Reasonably continuous development occurs along the roadway and the roadway design includes curbs and/or gutters and storm sewers.
- **Semi-Urban Environment:** Reasonably continuous development occurs along the roadway and the roadway 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 land.

Surface Type

- Gravel
- Low Class Bituminous (LCB, Surface Treatment)
- High Class Bituminous (HCB, Asphalt)

The roadside environment and road surface types within the Township are summarized in Table 2.

Table 2: Roadside Environment Categorized by Surface Type

Surface Type	Roadside Environment	Length (km)	Percent of Total
Gravel	Rural	58.629	17.755%
	Semi-Urban	1.373	0.416%
LCB	Rural	25.686	7.779%
	Semi-Urban	6.714	2.033%
HCB	Rural	121.489	36.791%
	Semi-Urban	29.441	8.916%
	Urban	86.878	26.310%
Total		330.210	100%

Of the 330.210 km of roads inventoried, the roadside environments and surface types are summarized as follows:

- Roadside Environment: 205.804 km rural (62.325%), 37.528 km semi-urban (11.365%) and 86.878 km urban (26.310%).
- Road Surface Type: 60.002 km gravel (18.171%), 32.400 km LCB (9.812%), and 237.808 km HCB (72.017%).

3.0 Methodology

This study uses various Ministry of Transportation Ontario (MTO) 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-021 Manual for Condition Rating of Surface-Treated 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.
- Inventory Manual for Municipal Roads, Ministry of Transportation, 1991.

In addition to using the above manuals for condition evaluation, this study also uses the MTO prioritization methodology (Priority Rating and Priority Guide Number). This study uses the MTO methodology for all aspects of the project as these are the most commonly used methodologies for RNSs in Ontario and are based on technical inputs.

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

3.1 Hardtop Surface Paving Program and Pavement Management

3.1.1 Desktop Review

Burnside completed a desktop review of the background information provided by the Township to facilitate the field work and project setup prior to any field collection commencing. The following tasks were part of the desktop review to initiate this project.

The previous RNS reports (2011 Study & 2016 Study) were reviewed to determine the methodology used, tasks completed and the procedures that were used. Additionally, the previous reports were reviewed to determine how roads were identified (i.e., unique identifier for that study, Municipal ID, Road Name, etc.).

The 2020 Paving Strategy was reviewed to become familiar with the recommendations of the previous report and the 10-year capital improvement plan. The review of the 2020 study also allowed Burnside to become familiar with the Township's approach to road improvements and their progress over the previous 2 years.

The Township's 2020 Transportation Master Plan (TMP) was reviewed to determine the annual growth rate that is projected for the Township's roads.

Historical traffic volumes (AADTs) were reviewed to determine any areas of the Township's road network that was missing and would need attention (i.e., traffic volume forecasting/estimating or data collection). Based on the review of the 2020 TMP, a growth rate of 2.1% per annum (i.e., annual traffic growth) was determined.

The Township's Official Plan was also reviewed to determine the road classification descriptions as they apply to King, as well as to determine the existing road classification for each road segment within the Township.

Setup of a GIS linked field collection application that can be used on a tablet or phone using Arc GIS products (Survey 123, Field Maps, etc.). As part of this task, a GIS database for this study was created and the Township's road network was imported to determine what data was missing. This GIS application was created to link the data being collected in the field to the GIS database.

Review of relevant, and current road improvement cost data/information for Ontario was completed to determine unit costs for the components of the various types of improvements proposed in this study. This unit cost data was then used during detailed analysis of the proposed improvement types to determine a cost per m² for each improvement (i.e., cost per m² to reconstruct an asphalt road).

3.1.2 Visual Condition Survey

A visual assessment of the Township's hardtop road network took place in July 2022, to determine the condition rating of the road surface. Specific pavement distress ratings (i.e., Severity and Density) were assigned for 15 different distress types for hardtop road sections, based generally on the "Flexible Pavement Condition Evaluation Form" developed by the Ministry of Transportation.

The severity of a distress can be simply defined as how bad the distress is (i.e., slight cracking). The Severity of a distress is based on a scale of engineering judgement from previous experience and contains five levels. The five levels of severity are Very Slight, Slight, Moderate, Severe and Very Severe.

The density of the distress is also assigned which can be defined as the extent of the issues (i.e., how frequent the distress is present on the road). Like the severity, density is also based on engineering judgement from experience and contains five levels. The five levels of density are Few, Intermittent, Frequent, Extensive and Throughout.

As mentioned above, the review of hardtop roads requires 15 different distress types to be assigned to the road segment. The 15 distress types for hardtop roads consist of the following.

Distress 1: Ravelling and Loss of Surface Aggregate

Ravelling and surface aggregate loss is a surface defect and consists of the pavement surface breaking up with small pockmarks where the surface aggregate is lost from. This surface distress can be caused by a lack of bond between the asphalt and the underlying binder. Surface aggregate loss can also be caused by poor asphalt content and/or high air voids in the asphalt. Figure 2 below is an example of ID ORRD-0103 (10th Concession between 16th Sideroad and 2.05 km North) where very slight, intermittent surface aggregate loss was detected.

Figure 2: Ravelling and Aggregate Loss Example



Distress 2: Flushing

Flushing is a surface defect that consists of the asphalt cement (binding content in the asphalt mixture) on the asphalt surface. Flushing is most likely to occur in the wheel tracks during hot weather. Flushing can be caused by high asphalt cement content in the asphalt mix relative to the voids. During hot days, asphalt cements expand and fills any air voids present in the asphalt surface, if the air voids are too low and the road is prone to high traffic volumes, flushing is likely to occur. Figure 3 below is an example of ID ORRD-0053 (11th Concession between 16th Sideroad and 17th Sideroad) where slight, frequent asphalt cement flushing was detected.

Figure 3: Flushing Example**Distress 3: Rippling and Shoving**

Rippling and shoving is a surface deformation that consists of waves in the pavement surface. Rippling is where regular transverse waves are present, and shoving is where single or multiple waves are located transversely along the road. Rippling and shoving can be caused by poor construction practices, heavy traffic on steep grade changes (downgrade or upgrade), low stability in the asphalt mixture or an unstable granular base. Figure 4 below is an example of ID ORRD-0012 (19th Sideroad between King-Newmarket boundary and Old Bathurst Street) where severe, few rippling and shoving was detected.

Figure 4: Rippling and Shoving Example**Distress 4: Wheel Track Rutting**

Wheel track rutting is a surface deformation that can be defined as longitudinal depressions in the form of a single or double wheel in the wheel path of a lane. Wheel track rutting is a result of deformation due to frequent load combined with pavement material displacement. Some causes of wheel track rutting include, poorly compacted asphalt lifts, unstable granular base, unstable shoulder material or allowing traffic onto a hot asphalt mat before letting it cool. Figure 5 below is an example of ID ORRD-0053 (11th Concession between 16th Sideroad and 17th Sideroad) where severe, intermittent wheel track rutting was detected.

Figure 5: Wheel Track Rutting Example**Distress 5: Distortion**

Distortion is also a surface deformation and can be defined as any deviation of the pavement surface from its original shape (other than described under rippling or shoving). Usually distortions result from settlement, slope failure or volumes changes due to moisture change. Some of the possible causes of distortion include, Lack of subgrade support, roadside embankment slope failure, improper maintenance or culvert failures. Figure 6 below is an example of ID ORRD-0194 (8th Concession between 17th Sideroad and 17th Sideroad) where severe, few distortions were detected.

Figure 6: Distortion Example

Distress 6: Longitudinal Wheel Track Cracking (Single or Multiple)

Longitudinal wheel track cracking can be defined as cracks that follow a path approximately parallel to the centre line of the road and located near or at the centre of the wheel path. Possible causes of longitudinal wheel track cracking are overloaded vehicles while the pavement is at the weakest (early spring) and/or fatigue failure of thin asphalt. Figure 7 below is an example of ID ORRD-0055 (17th Sideroad between 12th Concession and Caledon King Townline South) where severe, frequent wheel track cracking was detected.

Figure 7: Wheel Track Cracking Example**Distress 7: Longitudinal Wheel Track Cracking (Alligator)**

Longitudinal wheel track alligator cracking can be defined as, as network of polygon cracks in the form of an alligator pattern that follow a path approximately parallel to the centre line of the road and located near or at the centre of the wheel path. Possible causes of longitudinal wheel track alligator cracking are, insufficient bearing support and/or poor base drainage and stiff or brittle asphalt mixes at cold temperatures. Figure 8 below is an example of ID ORRD-0103 (10th Concession between 16th Sideroad and 2.06 km North) where severe, few wheel track alligator cracking was detected.

Figure 8: Wheel Track Alligator Cracking Example**Distress 8: Centreline Cracking (Single or Multiple)**

Centreline cracking can be defined as single or multiple cracks that have occurred in the pavement surface that are located at or near the centreline of the roadway. Some possible causes of centreline cracking are, poor longitudinal joint construction, variable granular depths due to constructing lanes separately and/or moisture changes. Figure 9 below is an example of ID BRRD-0001 (Kettleby Road between Keele Street and Lorne Avenue) where moderate, intermittent centreline cracking was detected.

Figure 9: Centreline Cracking Example**Distress 9: Centreline Cracking (Alligator)**

Centreline alligator cracking can be defined as a network of polygon cracks that have formed the pattern of alligator skin and are located at or near the centreline of the roadway. Some possible causes for centreline alligator cracking are insufficient bearing support and/or poor base drainage and stiff or brittle asphalt mixes at cold temperatures. Figure 10 below is an example of ID ORRD-0103 (10th Concession between 16th Sideroad and 2.06 km North) where severe, few centreline alligator cracking was detected.

Figure 10: Centreline Alligator Cracking Example**Distress 10: Pavement Edge Cracking (Single or Multiple)**

Pavement edge cracking can be defined as cracks that are parallel to extending out from the pavement lane edge. Pavement edge cracks can either be fairly continuous/straight or consist of crescent shaped cracks. Possible causes of pavement edge cracking are frost action, insufficient bearing support and/or excessive traffic loading at the edge of the pavement, poor drainage along the road edge/shoulder, pavement edge line painted in the wrong place, allowing traffic to travel on the edge of the pavement/shoulder. Figure 11 below is an example of ID ORRD-0135 (Jane Street between Woodchoppers Lane and Edward Avenue) where slight, frequent pavement edge cracking was detected.

Figure 11: Pavement Edge Cracking Example**Distress 11: Pavement Edge Cracking (Alligator)**

Pavement edge alligator cracking can be defined as a network of polygon cracks that have formed the pattern of alligator skin and are located at or near the edge of the pavement surface. Some possible causes of pavement edge alligator cracking are insufficient bearing support and/or poor base drainage and stiff or brittle asphalt mixes at cold temperatures. Figure 12 below is an example of ID BRRD-0001 (Kettleby Road between Keele Street and Lorne Avenue) where severe, extensive pavement edge alligator cracking was detected.

Figure 12: Pavement Edge Alligator Cracking Example**Distress 12: Transverse Cracking (Half, Full or Single/Multiple)**

Transverse cracking can be defined as cracks that follow a course or path approximately at right angles to the pavement centreline and are often regularly spaced along the length of the road. Possible causes of transverse cracks are natural shrinkage caused by low temperatures, frost action, and/or low temperature susceptibility of asphalt cement in asphalt mixes. Figure 13 below is an example of ID ORRD-0055 (17th Sideroad between 12th Concession and Caledon King Townline South) where moderate, throughout transverse cracking was detected.

Figure 13: Transverse Cracking Example**Distress 13: Transverse Cracking (Alligator)**

Transverse alligator cracking can be defined as a network of polygon cracks that have formed the pattern of alligator skin and are located at right angles to the roadway centreline. Some possible causes of pavement edge alligator cracking are insufficient bearing support and/or poor base drainage and stiff or brittle asphalt mixes at cold temperatures. Figure 14 below is an example of ID ORRD-0165.1 (12th Concession between Caledon King Townline and 120 m North of Caledon King Townline) where moderate, few transverse alligator cracking was detected.

Figure 14: Transverse Alligator Cracking Example

Distress 14: Longitudinal Meander or Mid-Lane Cracking

Longitudinal meander or mid-lane cracking can be defined as cracking that is usually quite long in length and wanders from edge to edge of the pavement or a crack that is usually straight and parallel to the centreline of the road. Possible causes of longitudinal meander or mid-lane cracking are frost action (greater heave at the centreline than at the edges), poor construction practices and/or faulty construction equipment resulting in a weak plane that fails due to thermal shrinkage. Figure 15 below is an example of ID ORRD-0124 (Graham Sideroad between Bathurst Street and Pumphouse Road) where moderate, intermittent mid-lane cracking was detected.

Figure 15: Mid-Lane Cracking Example**Distress 15: Potholing and Patching**

Potholing and patching can be defined as a section of a road segment that has had potholes occur and are currently there or have been patched. Potholes are voids in the roadway surface where pieces of the pavement have become dislodged. Potholes occur when the ground water expands and contracts after the water has entered the road base. Figure 16 below is an example of ID ORRD-0234 (Bathurst Street between Queensville Sideroad West and Hochreiter Road) where moderate, intermittent potholing and patching was detected.

Figure 16: Potholing and Patching Example**Completed Hardtop Road Evaluation Page**

For the completion of the field collection of the condition data, the severity and density of each distress is assigned on the “Flexible Pavement Condition Evaluation Form” developed by the Ministry of Transportation. Below in Figure 17 is an example of a completed evaluation from for ID ORRD-0105 (19th Sideroad between Hodgson Avenue and Hodgson Avenue) which currently yields a PCI of 54 (poor condition) and warrants a rehabilitation improvement.

The previous RNS reports (2011 Study & 2016 Study) were reviewed to determine the methodology used, tasks completed and the procedures that were used. Additionally, the previous reports were reviewed to determine how roads were identified (i.e., unique identifier for that study, Municipal ID, Road Name, etc.).

The 2020 Paving Strategy was reviewed to become familiar with the recommendations of the previous report and the 10-year capital improvement plan. The review of the 2020 study also allowed Burnside to become familiar with the Township's approach to road improvements and their progress over the previous two years.

The Township's 2020 Transportation Master Plan (TMP) was reviewed to determine the annual growth rate that is projected for the Township's roads.

Review of the Technical Memorandum (Draft) that was completed in 2019 to summarize the results of a Gravel Road Improvement Study (2019 Gravel Study) that was completed for the Township. The 2019 Gravel Study provided an assessment of the costs to improve and resurface the Township's gravel roads.

Historical traffic volumes (AADTs) were reviewed to determine any areas of the Township's road network that was missing and would need attention (i.e., traffic volume forecasting/estimating or data collection). Based on the review of the 2020 TMP, a growth rate of 2.1% per annum (i.e., annual traffic growth) was determined.

The Township's Official Plan was also reviewed to determine the road classification descriptions as they apply to King, as well as to determine the existing road classification for each road segment within the Township.

Setup of a GIS linked field collection application that can be used on a tablet or phone using Arc GIS products (Survey 123, Field Maps, etc.). As part of this task, a GIS database for this study was created and the Township's road network was imported to determine what data was missing. This GIS application was created to link the data being collected in the field to the GIS database.

Review of relevant, and current road improvement cost data/information for Ontario was completed to determine unit costs for the components of the various types of improvements proposed in this study. This unit cost data was then used during detailed analysis of the proposed improvement types to determine a cost per m² for each improvement (i.e., cost per m² to pave/convert a gravel road to an asphalt road).

3.2.2 Visual Condition Survey

A visual assessment of the Township's gravel road network took place in April 2022, to determine the condition rating of the road surface. Specific pavement distress ratings (i.e., Severity and Density) were assigned for 6 different distress types for gravel road

sections, based generally on the “Gravel Condition Evaluation Form” developed by the Ministry of Transportation.

The severity of a distress can be simply defined as how bad the distress is (i.e., slight cracking). The Severity of a distress is based on a scale of engineering judgement from previous experience and contains five levels. The five levels of severity are; Very Slight, Slight, Moderate, Severe and Very Severe.

The density of the distress is also assigned which can be defined as the extent of the issues (i.e., how frequent the distress is present on the road). Like the severity, density is also based on engineering judgement from past experience and contains five levels. The five levels of density are; Few, Intermittent, Frequent, Extensive and Throughout.

As mentioned above, the review of hardtop roads requires 6 different distress types to be assigned to the road segment. The 6 distress types for hardtop roads consist of the following.

Distress 1: Soft Spots

Soft spots occurring along a gravel road can be defined as areas of the road surface and/or subgrade that have been made weak due to poor drainage of the road surface and the road base. Figure 18 below is an example of ID ORRD-0144 (Elmpine Trail between Mill Road and West end) where moderate, few soft spots were detected.

Figure 18: Soft Spot Example



Distress 2: Spring Breakup

Spring breakup can be defined as extremely soft or muddy road surface conditions as a result of melting snow/ice and frost. Spring breakup is likely to occur in March and April but is subject to the winter conditions/thawing timeframe. Figure 19 below is an example of ID ORRD-0134 (Spruce Hill Road between 300m East of Jane Street and East end) where moderate, few spring breakup was detected.

Figure 19: Spring Breakup Example



Distress 3: Potholing

Potholing can be defined as small depressions or voids in the road surface which are caused by excessive moisture content, poor drainage and/or poorly graded aggregate. Figure 20 below is an example of 12th Concession where severe, frequent potholes were detected.

Figure 20: Potholing Example**Distress 4: Washboarding**

Washboarding can be defined as a series of ridges and/or depressions across the road surface that are caused by lack of surface cohesion. The lack of surface cohesion can be a result of loss of fines in the road surface which usually result in very dry conditions within the road surface. Figure 21 below is an example of washboarding on a gravel road. This distress was not picked up severe enough in King Township for it to be clear/visible in photos, therefore this example photo will provide better context as to what washboarding is.

Figure 21: Washboarding Example (Photo from King Not Available)**Distress 5: Distortion**

Distortion is a surface deformation and can be defined as any deviation of the road surface from its original shape. Usually distortions result from settlement, slope failure or volumes changes due to moisture change. Some of the possible causes of distortion include, Lack of subgrade support, roadside embankment slope failure, improper maintenance or culvert failures. Figure 22 below is an example of ID ORRD-0200 (Lipchey Road between Keele Street and East end) where slight, intermittent distortion was detected.

Figure 22: Distortion Example**Distress 6: Rutting**

Rutting is a surface deformation that can be defined as longitudinal depressions in the form of a single or double wheel in the wheel path of a lane. Wheel track rutting is a result of deformation due to frequent load combined with surface material displacement. Some causes of wheel track rutting include poorly compacted road base material, unstable granular base or unstable shoulder material. Figure 23 below is an example of ID ORRD-0200 (Lipchey Road between Keele Street and East end) where severe, intermittent rutting was detected.

Figure 23: Rutting Example**Completed Gravel Road Evaluation Page**

For the completion of the field collection of the condition data, the severity and density of each distress is assigned on the "Gravel Condition Evaluation Form" developed by the Ministry of Transportation. Below in Figure 24 is an example of a completed evaluation from for ID ORRD-0239 (18th Sideroad from Jane Street to west end) which is currently scheduled to be upgraded to an asphalt surface in Year 1 of the 10-year plan (2023).

Figure 24: Completed Gravel Evaluation Form

GRAVEL CONDITION EVALUATION FORM

Survey Date: 2022-04-13 Section ID: ORRD-0239
 Road (Street) Name: 18th sideroad Section Length: 0.952 km
 Location from: Jane Street to: West end.
 Comments: Severe rutting. To be upgraded from gravel in 2023

Ride Comfort Rating (at posted speed)

Ride Comfort Rating (at posted speed)					Severity of Distress (Si)					Density of Distress (Di)														
10	9	8	7	6	5	4	3	2	1	Very Slight	Slight	Moderate	Severe	Very Severe	Few	Intermittent	Frequent	Extensive	Throughout					
															<10	10-20	20-40	40-80	>80					
Very Good					Good					Fair					Poor					Very Poor				
Pavement					Rating																			
Structural Adequacy (1-20)					17																			
Soft Spots										X					X									
Spring Breakup																								
Potholes										X					X									
Washboarding																								
Distortion																								
Rutting										X					X									
Drainage Adequacy (1-15)					15																			

4.0 Analysis

4.1 Hardtop Surface Program and Pavement Management

4.1.1 Pavement Condition Index

Based on the distress types determined during the condition survey and using the Ministry of Transportation (MTO) formulae, 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 MTO formulae, from the visual distress data collected in the field. The condition rating methodology follows the procedures developed by the MTO for flexible pavements and surface-treated pavements (MTO, 1989).

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:

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

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

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 weighting 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:

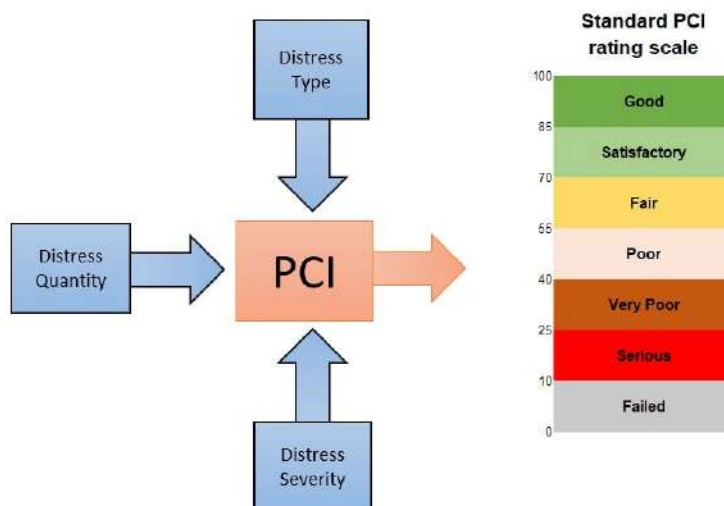
$$\text{Asphalt: DMI} = 10 \times (208 - \text{summation of } W \times (D+S))/208$$

$$\text{Surface Treatment: DMI} = 10 \times (135 - \text{summation of } W \times (D+S))/135$$

- 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 25.

Figure 25: Qualitative Description of PCI Ranges



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Based on the above methodology/procedure, the updated PCI for each road segment is illustrated on a map in Appendix D and shown in the excel spreadsheets in Appendix A.

There are 22 hardtop roads in the township with poor condition Ratings (PCI<55), which currently require significant rehabilitation or full reconstruction. If sufficient budget is available to replace these roads, then these roads should be completed as soon as feasible as the roads currently sit in a state of disrepair that is not favoured by the level of service that should be provided. These roads (like the others) are subject to ongoing deterioration and will continue to degrade passed the state they are currently in. Table 3 below summarizes the 22 roads that have a poor condition rating and should be replace as soon as feasible.

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

Municipal ID	Road Segment	Surface Type	AADT (vpd)	PCI	Improvement Cost
KRRD-0032	McKellar Lane, from Kingscross Drive to End (Cul-de-Sac)	HCB	0-49	36	\$102,744.00
KRRD-0105	Kingsworth Road, from Westgate Circle to Blueberry Lane	HCB	200-399	40	\$270,864.00
SRRD-0053	Magnum Drive, from Proctor Road to End (Cul-de-Sac)	LCB	1,000-1,999	41	\$200,925.00
ORRD-0195	Holancin Road, from Highway 9 to 2nd Concession	LCB	50-199	42	\$721,656.00
KRRD-0148	Station Road, from Burton Grove to West Street	HCB	1,000-1,999	44	\$64,440.00
ORRD-0236	16th Sideroad, from Highway 400 Overpass to Weston Road	HCB	1,000-1,999	47	\$504,525.00
KRRD-0005	Manitou Drive, from Kingscross Drive to Fork	HCB	50-199	47	\$299,088.00
KRRD-0073	Westgate Boulevard, from Jane Street to Westgate Circle	HCB	200-399	48	\$112,320.00
ORRD-0128	Strawberry Lane, from Keele Street to Aileen Avenue	HCB	400-999	49	\$570,899.00
KRRD-0093	Chelsea Lane, from Fork to End (West Cul-de-Sac)	HCB	0-49	50	\$140,832.00
ORRD-0025	16th Sideroad, from 8th Concession to Trainor Court	HCB	400-999	51	\$415,961.00
KRRD-0043	Westgate Circle, from Kingsworth Road to Westgate Boulevard	HCB	400-999	51	\$6,272.00
KRRD-0031	Blueberry Lane, from Kingsworth Road to End (Cul-de-Sac)	HCB	50-199	52	\$122,976.00
KRRD-0047	Chelsea Lane, from Kingscross Drive to Fork	HCB	0-49	52	\$66,600.00
ORRD-0098	Hilda Road, from Diana Drive to End (Cul-de-Sac)	HCB	50-199	52	\$164,016.00
ORRD-0178	16th Sideroad, from Trainor Court to Highway 27	HCB	400-999	53	\$236,670.00
KRRD-0060	Keri Court, from Kingscross Drive to End (Cul-de-Sac)	HCB	0-49	53	\$49,220.00

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Municipal ID	Road Segment	Surface Type	AADT (vpd)	PCI	Improvement Cost
BRRD-0001	Kettleby Road, from Keele Street to Lorne Avenue	HCB	1,000-1,999	53	\$461,531.00
ORRD-0105	19th Sideroad, from Hodgson Avenue to Hodgson Avenue	LCB	400-999	54	\$127,764.00
ORRD-0065	Rupke Road, from Highway 9 to End (Canal)	LCB	200-399	54	\$127,788.00
KRRD-0059	Chelsea Lane, from Fork to End (East Cul-de-Sac)	HCB	50-199	55	\$120,096.00
KRRD-0077	Kingsworth Road, from Blueberry Lane to Watch Hill Road	HCB	200-399	55	\$137,816.00
Total Cost					\$5,025,003.00

4.1.2 Surface Type Needs

The surface type of a roadway should be appropriately designed to accommodate the volume and type of traffic. According to the MTO guidelines (*Inventory Manual for Municipal Roads, Ministry of Transportation, 1991*), upgrading of surface treated roads to asphalt may be considered for roads experiencing high truck volumes or high truck loading, AADT values higher than 400 vpd or where high maintenance is an issue. For low volume rural roads, it is suggested that surface upgrading may be economical where the percentage of trucks exceed 10% of the AADT and is over 30 trucks per day.

Gravel roads are typically suitable for low truck traffic and AADT values of less than 200vpd. Typically, surface treated roads are recommended for roadways that have an AADT between 200 and 400 vpd, with asphalt recommended for roads with AADTs higher than 400 vpd.

Truck volumes typically range from a low of 3% on low volume residential streets to a high of 15% or more on arterials and collector roads. Information on truck volumes on the Township's roads was not available for this current study.

Based on the above surface type considerations, a review of the data in Appendix A indicates that there are several roads in the Township that presently meet these surface type criteria, as summarized in Table 4.

Table 4: Existing Surface Treated Roads That May Warrant Upgrading

Road	Road Length (m)	AADT (vpd)	Rationale for Upgrade
LCB with AADT > 1,000 vpd			
11th Concession, from 16th Sideroad to 17th Sideroad	2012	1534	Traffic Volume
17th Sideroad, from Highway 27 to 10 th Concession	2053	3000	Traffic Volume

Road	Road Length (m)	AADT (vpd)	Rationale for Upgrade
17th Sideroad, from 10th Concession to 1.4 km W. of 10th Concession	1441	2898	Traffic Volume
17th Sideroad, from 1.4 km W. of 10 th Concession to 11th Concession	839	2898	Traffic Volume
17th Sideroad, from 11th Concession to 12th Concession	2090	2743	Traffic Volume
Magnum Drive, from Proctor Road to End (Cul-de-Sac)	367	1092	Traffic Volume
8th Concession, from 15th Sideroad to 16th Sideroad	2054	1010	Traffic Volume

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

4.1.3 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. 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.

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 hard-top roads are outlined below in Table 5.

Table 5: Tolerable and Recommended Surface Widths for Hardtop 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

Roadside Environment	Design Speed (km/h)	Road Surface Width (Two-Lane Roadways)			
		Tolerable Lower Limit	Recommended Lower Limit	Recommended Upper Limit	Tolerable Upper Limit
	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).

The hardtop 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 6.

Table 6: Summary of Hardtop Roads with Deficient Widths

Road	Road Length (m)	Posted Speed (km/h)	AADT (vpd)	Width (m)
Spring Street, from Weston Road to End (West)	65	50	26	3.5
Lorne Avenue, from Kettleby Road to 165 m N. of Kettleby Road	167	40	94	4.0
Laskay Lane, from Weston Road to End (East)	147	50	26	4.2
Old Church Road, from Weston Road to End (East)	194	50	26	4.5
Rebellion Way, from Queen Street to End (North)	102	50	22	4.5
Victoria Street, from Queen Street to End East	133	50	81	4.5
16th Sideroad, from Bathurst Street to End (West)	753	40	25	5.0
19th Sideroad, from Hodgson Avenue to Weston Road	167	50	244	5.0
Queen Street, from Rebellion Way to 10th Concession	247	50	231	5.0
Centre Street, from Rebellion Way to End (West)	211	50	23	5.0
Edwards Mill Lane, from Church Street to End (North)	54	50	15	5.0
7th Concession, from Lloyd's Lane to 19th Sideroad	376	50	126	5.1
7th Concession, from Lloydtown/Aurora Road to Lloyd's Lane	1023	50	727	5.1
Dearbourne Avenue, from Keele Street to End (West)	747	40	113	5.1
Centre Street, from Church Street to Rebellion Way	351	50	53	5.2

The roads identified in the above table are low speed roadways that are experiencing low traffic volumes. While the widths in the above noted road segments are less than ideal, these width deficiencies are not considered critical in the short term. It is recommended that the widths on these roads be increased to meet recommended standards as part of any future improvement works.

4.1.4 Road Safety Review

During the field inspection, it was observed that two intersections along 8th Concession currently may have deficient sightlines. The intersection of 15th Sideroad and 8th Concession, as well as the intersection of 17th Sideroad and 8th Concession were determined to have possible sightline obstructions resulting in safety concerns. It is recommended the Township should complete a detailed sightline analysis study for both intersections.

4.1.5 Improvement Types

The different improvement types that are proposed in this study are listed below. These improvement types cover the full lifecycle of the road assets and require the Township to keep up with the road maintenance to prevent leaving the roads until they slip into a more extensive category like Rehabilitation or Reconstruction.

Routine Maintenance (RM):

Routine maintenance for hardtop roads consists of crack sealing. Routine maintenance (i.e., crack sealing) decreases further crack deterioration by preventing moisture damage to the pavement structure and it often adds approximately 3 to 5 years to the lifespan of a roadway. Routine maintenance can help delay the need for more extensive rehabilitation or reconstruction and Routine/preventive maintenance is typically done when a road is in good condition but is starting to show slight deficiencies.

Preventive Maintenance (PM):

Preventive maintenance for hardtop roads consists of the application of slurry seal or micro surfacing. Preventive Maintenance can help to delay the need for more extensive rehabilitation or reconstruction. Preventive maintenance is typically done when a road is in good condition but is starting to show slight deficiencies. Micro-surfacing or 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.

Resurfacing (R):

For urban roads or semi urban/rural roads with higher traffic volumes, this study proposes that the resurfacing improvement consist of milling and paving (shave and

pave). For semi urban/rural roads that experience low traffic volumes, the resurfacing improvement proposed in this study is full depth removal + 1 (50 mm) lift of hot mix asphalt (HMA). During the planning process, it should be determined if the low-speed semi urban/rural roads that are being planned currently have one or two lifts of asphalt. If it is determined that the low-speed semi urban/rural roads have more than one lift of asphalt, milling and paving may be chosen as this is a cheaper alternative than removing all the existing asphalt.

For this study, the resurfacing category has been split into two subcategories, 6 to 10 years and 1 to 5 years. This timeline is to indicate how long the Township has before significant rehabilitation is required (i.e., sufficient budget is not available). To represent this difference in the costing shown in the improvement matrix, the resurface 1 to 5 year indicates full depth removal as the pavement distresses have most likely made it through to the road base. It should be noted that this more expensive resurfacing does not include all actions that would be taken under rehabilitation, therefore repairing the road while it still warrants this category will allow the Township to save money.

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, but minimal (if any) work is done to the base of the road, 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 preventative maintenance, which is applied to roads still in good condition with only very minor amounts of cracking.

Rehabilitation (REH):

For urban roads, rehabilitation consists of full depth removal + 2 (50 mm) lifts of HMA and spot curb replacements. For semi urban or rural roads, rehabilitation consists of pulverizing the existing surface and spreading a thin lift of granular A over the pulverized base to add stability to the road base and then installing 2 (50 mm) lifts of 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 base and to delay more extensive reconstruction being required. Pavement rehabilitation extends the service life of a pavement 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 pavement layers to address increases in traffic volume.

Reconstruction (REC):

For urban roads, reconstruction consists of full depth removal, full depth base replacement (dig out and replace) + 2 (50 mm) lifts of HMA and full curb replacement.

For semi urban/rural roads, reconstruction consists of full depth removal, full depth base replacement (dig out and replace) + 2 (50 mm) lifts of HMA and nominal shoulder/ditch repairs.

Reconstructions are typically done when a road is in very poor condition, or if work is being done on infrastructure beneath a road which will require that the road be reconstructed. If pavements are left to deteriorate, they become weak and lose their structural integrity. As its structural capacity is weakened, a pavement will begin to disintegrate, resulting in extensive cracking, rutting and potholes being developed. At this point, maintenance, resurfacing, or rehabilitation treatments will not be able to restore its structural integrity. 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. 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., filling of potholes) 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.

Determining Improvement Needs:

To determine the improvement types that are warranted for certain road sections, the PCI values collected in the field were assigned to the distress trigger value ranges set for different improvement types. The trigger value ranges set for each improvement type are summarized in Table 7 along with estimated benchmark treatment costs. In addition, the forecasted improvement effects resulting from the various life cycle treatments are shown in Table 7 (i.e., the net benefit to the PCI values after a certain improvement type is implemented). The net benefit that is presented as a result of implementing a given improvement type is to represent that maintaining the condition of roads and performing routine and preventive maintenance will lengthen the lifecycle of a road segment (i.e., performing crack sealing will help extend the useful life of a road segment).

Table 7: Hardtop Road Improvement Matrix

Improvement	Urban – Hard Top (HCB)			Semi-Urban or Rural – Hard Top (HCB/LCB)				
	Post-Treatment Condition	Any AADT	Distress-Triggers	Post-Treatment Condition	AADT \geq 1000	1000>AADT \geq 400	AADT<400	Distress-Triggers
Routine Maintenance (RM)	PCI + 5	Crack Sealing (\$0.75 per m ²)	95>PCI \geq 90	PCI + 5	HCB – Crack Sealing (\$0.75 per m ²) LCB – N/A (Responsive Maintenance)			95>PCI \geq 90
Preventive Maintenance (PM)	PCI +10	Micro Surfacing and Minor Patching (\$6 per m ²)	90>PCI \geq 80	PCI + 10	Micro-Surfacing (\$6 per m ²)	Slurry Seal (\$4 per m ²)		90>PCI \geq 80
Resurface 6 to 10 Year (R, 6-10)	PCI + 15	Mill + 1 HMA (50 mm)	80>PCI \geq 70	PCI + 15	Mill + 1 HMA (50 mm) Overlay + Patching + Nominal Shoulder Repair (\$23 per m ²)	Mill + 1 HMA (50 mm) Overlay + Patching (\$22 per m ²)	Full Depth Removal + 1 HMA (50 mm) + Patching (\$24 per m ²) (If asphalt thickness allows for milling \$20 per m ²)	80>PCI \geq 70
Resurface 1 to 5 Year (R, 1-5)	PCI + 20	Full Depth Removal + 2 HMA (50 mm each) (\$40 per m ²)	70>PCI \geq 60	PCI + 20	Pulverize + 2 HMA (50 mm each) + Nominal Shoulder Repair (\$39 per m ²)	Pulverize + 2 HMA (50 mm each) + Nominal Shoulder Repair (\$39 per m ²)	Pulverize + 2 HMA (50 mm each) + Nominal Shoulder Repair (\$39 per m ²)	70>PCI \geq 60
Rehabilitation (REH)	PCI + 40	Full Depth Removal + 2 HMA (50 mm each) + Spot Curb Replacement (\$45 per m ²)	60>PCI \geq 40	PCI + 40	Pulverize + Granular A + 2 HMA (50 mm each) + Nominal Shoulder Repair (\$49 per m ²)	Pulverize + Granular A + 2 HMA (50 mm each) + Nominal Shoulder Repair (\$49 per m ²)	Pulverize + Granular A + 2 HMA (50mm each) {\$46 per m ² }	PCI<40
Reconstruction (REC)	PCI = 100	Full Depth Removal + 2 HMA (50mm each) + Total Base and Replacement + Total Curb Replacement + Nominal Storm Sewer Adjustment (\$95 per m ²)	PCI<40	PCI = 100	Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$75 per m ²)	Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$75 per m ²)	Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$72 per m ²)	PCI<40

4.1.6 Improvement Costs

The general improvement benchmark unit costs (costs per square metre) are for budget planning purposes and have been based on recent costing experience 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).
- 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 7 above as well as in the unit cost breakdowns in Appendix F and are based on recent data provided from the Township. The improvement types/costs consider surface types, traffic volumes, road conditions and roadside environments. Given that the improvement benchmark costs are estimated on a square metre basis, the improvement costs for any particular road section will also capture individual road widths.

4.1.7 Improvement Prioritization

For the prioritization of improvements proposed in this study, the MTO prioritization methodology was used. The MTO has developed a Priority Rating (PR) 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 for the improvement prioritization 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 MTO formula will help prioritize improvements that are priority driven by road conditions and high traffic volumes.

In addition to condition related prioritization formulas, the road improvement needs can be prioritized based on non-condition related triggers such as drainage, road width, platform width, surface type, local input from Township staff, maintenance demand, etc.

If a road is determined to have a road width and/or platform width that is less than ideal, then that road should be reviewed to determine if the current width is suitable for the current surface type and can wait for widening treatment until upgrade, or if it should be widened as soon as possible (i.e., a current surface treated road has a road width that is less than the recommended minimum for surface treated roads but given the site specific geometrics and traffic, the road width can continue to remain as is but will need to be widened prior to the road being upgraded to an asphalt surface).

4.1.8 Road Budget Consideration

Based on the 2022 and the 2023 Budget and Business Plan, the Township has allocated \$1.72 million per annum for hardtop Roads and Related Infrastructure improvement. The Township does not currently have a separate budget established for routine/preventive maintenance efforts.

As part of the recommendations of this study, it is recommended that the Township establish this routine/preventive maintenance budget to help maintain their roads at a higher level of service and prevent them from slipping into a more extensive improvement category. Typical crack sealing budgets in Ontario account for approximately \$180 per centre line kilometer of road. Based on \$180 per centreline km of road, a target crack sealing budget for King Township would be \$41,000 per year.

4.1.9 Hardtop Road Improvement Needs

Based on the analysis of the road condition data and review of the prioritization triggers previously outlined in the report for the Township's hardtop roads, a 10-year road improvement plan has been developed. The 10-year plans in the following three sections have been established using the MTO prioritization methodology outlined in this report, as well as the budget targets that have been established using the current operational budget.

A total of approximately 270.208 km of hardtop roads were reviewed as part of this study. Based on the priority rating number, traffic volumes, condition, and geographic location the improvement of hard top roads was prioritized based on the previously outlined budget target of \$1.72 million. Degradation curves for LCB/HCB roads were used to estimate a deterioration rate for each roadway based on its current improvement category. The deterioration rate was then used to determine the estimated PCI and improvement cost at the time of upgrade. The early years of the 10-year plan were utilized to improve any road segments that are in poor condition based on the surrounding land use. For example, any roads with a PCI of <40, or any rural highspeed roads with a PCI of <50 were prioritized in the early years to prevent these roads from requiring a more extensive improvement type. A full spreadsheet version of the 10-year plans, along with an enlarged map can be found in Appendix H.

4.1.9.1 Preventive Maintenance Plan

As part of this road study, Burnside completed analysis to determine a list of roads within the Township that should receive crack sealing in the next three years if sufficient budget is available. The recommended preventive maintenance plan considers all hardtop roads with a PCI between 90 to 95 which would warrant crack sealing. The implementation of the crack sealing has been prioritized based on the PR which accounts for traffic and condition of each road. Table 8 and Figure 26 outline the roads that have been proposed for routine and/or preventive maintenance.

Figure 26: Preventive Maintenance Plan (2024-2027)



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Table 8: Preventive Maintenance Plan (2024-2027)

Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
2024					
SRRD-0041	Main Street from Ben Boy Avenue to Greco Ridge Lane	92	141	Crack Sealing (Routine Maintenance)	\$1,058.00
ORRD-0031	Pumphouse Road from Graham Sideroad to End	91	1438	Crack Sealing (Routine Maintenance)	\$7,010.00
ORRD-0185	8th Concession from 18th Sideroad to 1.7 km N. of 18 th Sideroad	90	1705	Crack Sealing (Routine Maintenance)	\$7,800.00
SRRD-0060	Roselena Drive from Quaker House Lane to End	90	225	Crack Sealing (Routine Maintenance)	\$1,434.00
BRRD-0002	Kettleby Road from Lorne Avenue to Jane Street	91	693	Crack Sealing (Routine Maintenance)	\$3,378.00
KRRD-0022	Kingscross Drive from Carmichael Crescent to McKellar Lane	91	136	Crack Sealing (Routine Maintenance)	\$683.00
KRRD-0054	Warren Road from Cadden Court to Alex Campbell Crescent	92	69	Crack Sealing (Routine Maintenance)	\$424.00
ORRD-0086	Keele Street from Woodchoppers Lane to 110 m N. of Woodchoppers Lane	91	107	Crack Sealing (Routine Maintenance)	\$642.00
ORRD-0266	Dufferin Street from 630 m N. of Miller's Sideroad to King Street	92	995	Crack Sealing (Routine Maintenance)	\$5,149.00
KRRD-0099	Kingscross Drive from Keri Court to Chelsea Lane	92	172	Crack Sealing (Routine Maintenance)	\$864.00
ORRD-0272	15th Sideroad from 1.8 km E. of Weston Road to 7th Concession	90	382	Crack Sealing (Routine Maintenance)	\$2,063.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ARRD-0005	King Street from Dufferin Street to King Street Fork	92	234	Crack Sealing (Routine Maintenance)	\$1,071.00
KRRD-0009	Patton Street from Hollingsworth Drive to Kingslynn Drive	93	104	Crack Sealing (Routine Maintenance)	\$624.00
KRRD-0037	Bennet Drive from Banner Lane to Forde Crescent	90	90	Crack Sealing (Routine Maintenance)	\$473.00
KRRD-0083	Chuck Ormsby Crescent from Richard Serra Court to Ron Coles Lane	91	327	Crack Sealing (Routine Maintenance)	\$2,085.00
KRRD-0108	Alex Campbell Crescent from Alex Campbell Crescent (Loop) to King Road	92	447	Crack Sealing (Routine Maintenance)	\$2,682.00
KRRD-0129	Alex Campbell Crescent from King Road to Alex Campbell Crescent (Loop)	92	190	Crack Sealing (Routine Maintenance)	\$1,140.00
NRRD-0113	Skyline Trail from Bluff Trail to Aspen King Road	91	104	Crack Sealing (Routine Maintenance)	\$624.00
NRRD-0127	Woodhill Avenue from Gilbert Fuller Drive to Hawthorne Valley Road	92	62	Crack Sealing (Routine Maintenance)	\$372.00
NRRD-0177	Parkheights Trail from Middlehead Trail to Kettle Valley Trail	92	145	Crack Sealing (Routine Maintenance)	\$1,196.00
NRRD-0179	Parkheights Trail from Kettle Valley Trail to Blueberry Run Trail	92	80	Crack Sealing (Routine Maintenance)	\$660.00
2024 Total Length (km)			7.846	2024 Total Cost	\$41,433.00
2025					
NRRD-0233	Northcott Way from New Scotland Court to End	91	58	Crack Sealing (Routine Maintenance)	\$348.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
NRRD-0243	Wellar Avenue from Cross Avenue to 90 m N. of Cross Avenue	90	87	Crack Sealing (Routine Maintenance)	\$522.00
ORRD-0059	Fairfield Drive from Eden Vale Drive to Eden Vale Drive	91	207	Crack Sealing (Routine Maintenance)	\$1,242.00
ORRD-0227	Dufferin Street from 18th Sideroad to 19 th Sideroad	93	2062	Crack Sealing (Routine Maintenance)	\$11,135.00
SRRD-0030	Maynard Drive from Cutler Court to Moore Park Drive	92	133	Crack Sealing (Routine Maintenance)	\$848.00
SRRD-0037	Jessop Avenue from Cooper Drive to Cooper Drive	90	273	Crack Sealing (Routine Maintenance)	\$1,740.00
KRRD-0065	Carmichael Crescent from Keele Street to Curran Court	92	89	Crack Sealing (Routine Maintenance)	\$534.00
KRRD-0072	Kingslynn Drive from Patton Street to End	91	165	Crack Sealing (Routine Maintenance)	\$804.00
KRRD-0086	Patricia Drive from McBride Crescent to Elizabeth Grove	91	295	Crack Sealing (Routine Maintenance)	\$1,549.00
KRRD-0132	Chuck Ormsby Crescent from Ron Coles Lane to Ron Coles Lane	92	353	Crack Sealing (Routine Maintenance)	\$2,118.00
KRRD-0135	Findlay Avenue from Burns Boulevard to Dennis Drive	91	193	Crack Sealing (Routine Maintenance)	\$1,230.00
KRRD-0150	Fisher Street from King Road to End	91	201	Crack Sealing (Routine Maintenance)	\$1,206.00
KRRD-0179	Humber Valley Crescent from East Humber Drive to East Humber Drive	92	618	Crack Sealing (Routine Maintenance)	\$3,708.00
KRRD-0244	Warren Road from Patton Street to 120 m E. of Patton Street	93	121	Crack Sealing (Routine Maintenance)	\$662.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
NRRD-0013	Woodhill Avenue from Farmcrest Court to Gilbert Fuller Drive	93	130	Crack Sealing (Routine Maintenance)	\$780.00
NRRD-0168	Parkheights Trail from Blueberry Run Trail to Parkheights Trail (Traffic Circle)	93	67	Crack Sealing (Routine Maintenance)	\$553.00
ORRD-0102	11th Concession from 19th Sideroad to Highway 9	94	2045	Crack Sealing (Routine Maintenance)	\$13,344.00
2025 Total Length (km)			7.097	2025 Total Cost	\$42,323.00
2026					
ORRD-0129	18th Sideroad from 8th Concession to Highway 27	91	2037	Crack Sealing (Routine Maintenance)	\$9,167.00
ORRD-0225.2	10th Concession from 90 m N. of 15 th Sideroad to 16th Sideroad	91	1756	Crack Sealing (Routine Maintenance)	\$7,902.00
ORRD-0271	8th Concession from 1.7 km N. of 18 th Sideroad to Lloydtown/Aurora Road	93	310	Crack Sealing (Routine Maintenance)	\$1,558.00
SRRD-0018	Dillane Drive from Sproule Street to Dr. Kay Drive	93	180	Crack Sealing (Routine Maintenance)	\$1,215.00
SRRD-0033	Waterlily Trail from Mapleton Mills Drive to Mapleton Mills Drive	91	463	Crack Sealing (Routine Maintenance)	\$2,986.00
NRRD-0160	Fairmont Ridge Trail from Bighorn Trail to Fairmont Ridge Trail (Traffic Circle)	95	81	Crack Sealing (Routine Maintenance)	\$529.00
NRRD-0181	Fairmont Ridge Trail from Kettle Valley Trail to Highway 27	95	303	Crack Sealing (Routine Maintenance)	\$1,932.00
ORRD-0014	Keele Street from Kettleby Road to 19th Sideroad	95	831	Crack Sealing (Routine Maintenance)	\$3,802.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
KRRD-0026	Patton Street from King Road to Hollingsworth Drive	94	269	Crack Sealing (Routine Maintenance)	\$1,614.00
KRRD-0036	Melrose Avenue from Martin Street to Charles Street	92	141	Crack Sealing (Routine Maintenance)	\$899.00
KRRD-0090	Curran Court from Carmichael Crescent to End	91	174	Crack Sealing (Routine Maintenance)	\$1,044.00
KRRD-0096	Warren Road from Patricia Drive to Lavender Valley Road	94	151	Crack Sealing (Routine Maintenance)	\$963.00
KRRD-0111	McClure Drive from Pellatt Grove to Curtis Crescent	91	59	Crack Sealing (Routine Maintenance)	\$376.00
KRRD-0126	Nicort Road from Lilly Valley Crescent to Terry View Drive	94	53	Crack Sealing (Routine Maintenance)	\$318.00
KRRD-0134	Chuck Ormsby Crescent from Ron Coles Lane to Richard Serra Court	93	416	Crack Sealing (Routine Maintenance)	\$2,496.00
KRRD-0145	Elizabeth Grove from Keele Street to McBride Crescent	94	213	Crack Sealing (Routine Maintenance)	\$1,118.00
KRRD-0162	McClure Drive from Curtis Crescent to Auckland Lane	91	205	Crack Sealing (Routine Maintenance)	\$1,230.00
KRRD-0177.2	Dennison Street from 610 m E. of Valleycrest Drive to East Humber Drive	90	271	Crack Sealing (Routine Maintenance)	\$1,626.00
2026 Total Length (km)			7.913	2026 Total Cost	\$40,773
2027					
KRRD-0181	East Humber Drive from Dennison Street to End	94	97	Crack Sealing (Routine Maintenance)	\$582.00
KRRD-0184	Melrose Avenue from John Street to Martin Street	92	147	Crack Sealing (Routine Maintenance)	\$937.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
KRRD-0190	Sir Henry Court from Elmers Lane to End	93	129	Crack Sealing (Routine Maintenance)	\$774.00
KRRD-0195	15th Sideroad from Cairns Gate to Elmers Lane	93	265	Crack Sealing (Routine Maintenance)	\$1,391.00
KRRD-0226	Scott Crescent from Collard Drive to Collard Drive	91	699	Crack Sealing (Routine Maintenance)	\$3,355.00
KRRD-0230	Sir Henry Court from Lake Marie Trail to Elmers Lane	93	247	Crack Sealing (Routine Maintenance)	\$1,482.00
KRRD-0231	Elmers Lane from Lake Marie Trail to Sir Henry Court	93	315	Crack Sealing (Routine Maintenance)	\$1,890.00
KRRD-0241	Hambly Avenue from Humber Crescent to 50 m S. of Humber Crescent	92	50	Crack Sealing (Routine Maintenance)	\$263.00
NRRD-0014	Ellis Avenue from Wellington Street to Robinson Road	94	314	Crack Sealing (Routine Maintenance)	\$2,002.00
NRRD-0021	Parkheights Trail from Parkheights Trail (Traffic Circle) to West Coast Trail	94	144	Crack Sealing (Routine Maintenance)	\$1,188.00
NRRD-0030	Royal Avenue from King Road to Lynwood Crescent	91	217	Crack Sealing (Routine Maintenance)	\$977.00
NRRD-0072	Ellis Avenue from Robinson Road to Faris Avenue	94	114	Crack Sealing (Routine Maintenance)	\$727.00
NRRD-0086	Northcott Way from Westbrooke Boulevard to Skyline Trail	93	161	Crack Sealing (Routine Maintenance)	\$966.00
NRRD-0110	Skyline Trail from Westbrooke Boulevard to Piper Court	93	96	Crack Sealing (Routine Maintenance)	\$576.00

Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
NRRD-0111	Parkheights Trail from James Bowan Court to Parkheights Trail (Traffic Circle)	94	111	Crack Sealing (Routine Maintenance)	\$916.00
NRRD-0156	Paradise Valley Trail from West Coast Trail to Anderson Cove Trail	93	61	Crack Sealing (Routine Maintenance)	\$398.00
ORRD-0051	10th Concession from Huntington Road to King Road	93	1574	Crack Sealing (Routine Maintenance)	\$7,909.00
ORRD-0061	15th Sideroad from 0.53 km E. of Weston Road to 1.8 km E. of Weston Road	93	1225	Crack Sealing (Routine Maintenance)	\$6,615.00
ORRD-0074	Fairfield Drive from Eden Vale Drive to Norcliffe Drive	93	114	Crack Sealing (Routine Maintenance)	\$684.00
ORRD-0161	10th Concession from 18th Sideroad to 19th Sideroad	91	2000	Crack Sealing (Routine Maintenance)	\$9,750.00
2027 Total Length (km)			8.080	2027 Total Cost	\$43,381.00

4.1.9.2 Resurfacing Plan

Burnside completed analysis to determine a list of roads within the Township that should receive resurfacing over the next 10 years, as the Township's budget will allow for. The recommended resurfacing plan considers all hardtop roads that will warrant resurfacing or rehabilitation over the next 10 years. The implementation of the resurfacing improvements has been prioritized based on the PR which accounts for traffic and condition of each road. and Figure 27 outline the roads that have been proposed for routine and/or preventive maintenance.

Figure 27: 10 Year Resurfacing Plan (2023-2032)

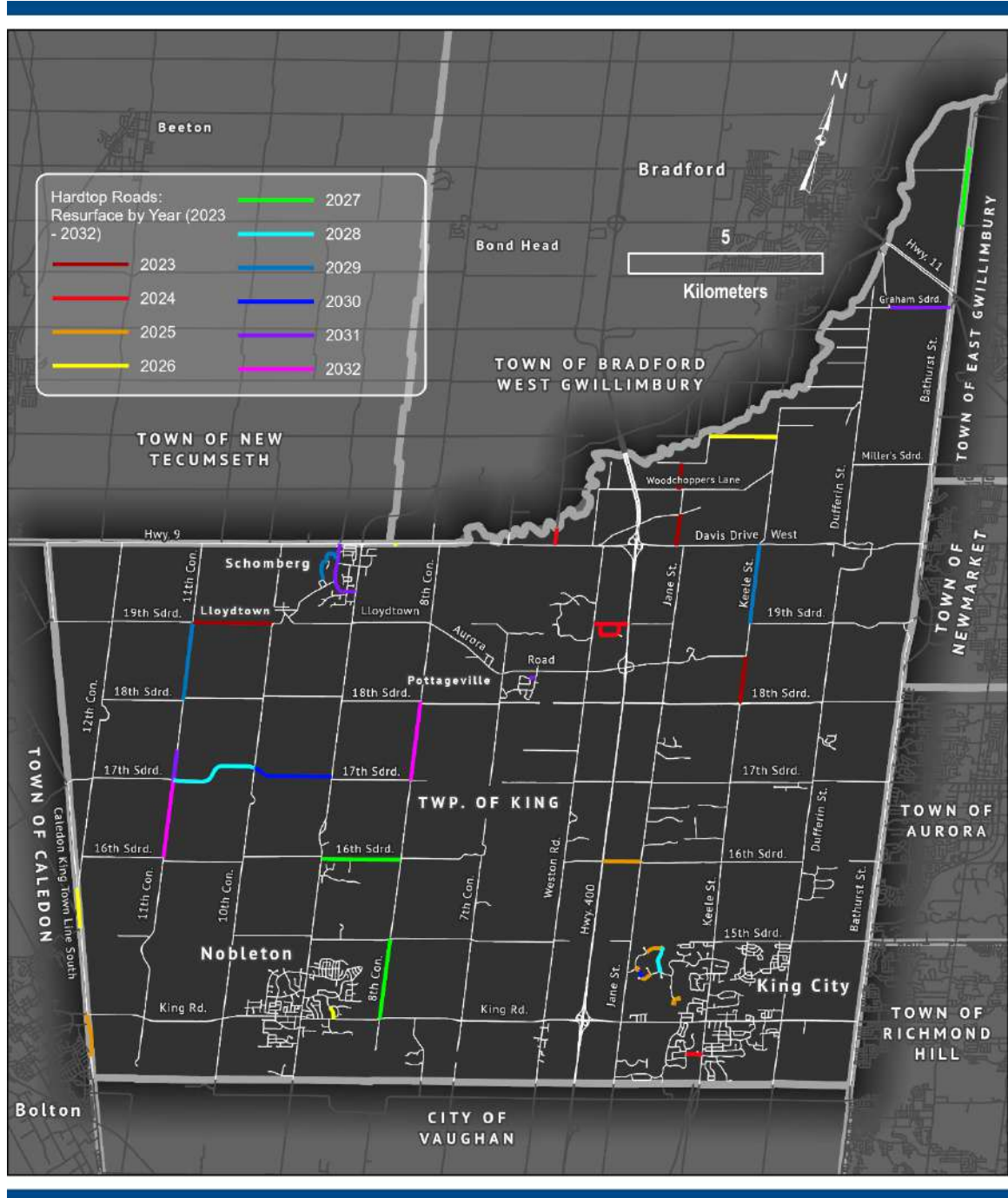


Table 9: 10 Year Resurfacing Plan (2023-2032)

Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
Year 1 (2023)					
ORRD-0020	Keele Street from Lloydtown/Aurora Road Traffic Circle to Kettleby Road	65	1365	Pulverize + 2 HMA (Resurfacing)	\$356,655.00
ORRD-0250	Jane Street from Davis Drive West to South Canal Bank Road	68	818	Pulverize + 2 HMA (Resurfacing)	\$267,969.00
ORRD-0135	Jane Street from Woodchoppers Lane to Edward Avenue	83	681	Pulverize + 2 HMA (Resurfacing)	\$175,305.00
ORRD-0137	19th Sideroad from 10th Concession to 11th Concession	95	2049	Pulverize + 2 HMA (Resurfacing)	\$479,466.00
Year 1 Length (km)			4.913	Year 1 Cost	1,279,395.00
Year 2 (2024)					
ORRD-0105	19th Sideroad from Hodgson Avenue to Hodgson Avenue	54	489	Pulverize + 2 HMA (Resurfacing)	127,764.00
ORRD-0065	Rupke Road from Highway 9 to End	54	448	Pulverize + 2 HMA (Resurfacing)	\$108,342.00
ORRD-0158	Hodgson Avenue from William's Court to 19th Sideroad	66	719	Pulverize + 2 HMA (Resurfacing)	\$187,863.00
ORRD-0002	19th Sideroad from End (Cul-de-Sac) to Hodgson Avenue	70	228	Pulverize + 2 HMA (Resurfacing)	\$59,592.00
ORRD-0048	Hodgson Avenue from 19th Sideroad to William's Court	77	264	Resurface	\$68,991.00
ORRD-0109	19th Sideroad from Hodgson Avenue to Weston Road	77	167	Pulverize + 2 HMA (Resurfacing)	\$32,565.00
KRRD-0148	Station Road from Burton Grove to West Street	44	139	Full depth asphalt removal + 2 HMA + Spot curb replacement (Rehabilitation)	\$64,440.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
KRRD-0204	Station Road from West Street to Burns Boulevard	68	284	Full depth asphalt removal + 2 HMA (Resurfacing)	\$111,320.00
Year 2 Length (km)			2.738	Year 2 Cost	\$780,323.00
Year 3 (2025)					
KRRD-0043	Westgate Circle from Kingsworth Road to Westgate Boulevard	51	16	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$6,272.00
KRRD-0067	Westgate Circle from Kingscross Drive to Kingsworth Road	58	58	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$22,736.00
ORRD-0056	16th Sideroad from Jane Street to Highway 400 Overpass	62	983	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$308,259.00
KRRD-0080	Westgate Circle from Westgate Boulevard to Kingscross Drive	66	54	Pulverize + 2 HMA (Resurfacing)	\$12,636.00
KRRD-0087	Manitou Drive (East Cul-de-Sac) from Fork to End	60	173	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$53,314.00
KRRD-0081	Manitou Drive (South Cul-de-Sac) from Fork to End (Cul-de-Sac)	64	159	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$48,990.00
ORRD-0118	Albion Vaughan Road from Old King Road to 72m N. of Old King Road	77	71	Milling + Patching + 1 HMA (Resurfacing)	\$11,109.00
ORRD-0226	Albion Vaughan Road from 340 m N. of Queensgate Boulevard to Old King Road	80	852	Milling + Patching + 1 HMA (Resurfacing)	\$143,060.00
KRRD-0077	Kingsworth Road from Blueberry Lane to Watch Hill Road	55	454	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$137,816.00
KRRD-0018	Kingscross Drive from Cranberry Lane to Snowberry Lane	67	285	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$111,720.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0094	Albion Vaughan Road from 72 m N. of Old King Road to Caledon King Town Line South	84	175	Milling + Patching + 1 HMA (Resurfacing)	\$24,150.00
Year 3 Length (km)			3.280	Year 3 Cost	\$880,062.00
Year 4 (2026)					
ORRD-0128	Strawberry Lane from Keele Street to Aileen Avenue	49	1739	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$570,899.00
ORRD-0202	Caledon King Town Line South from Columbia Way to Mt. Pleasant Road	70	240	Pulverize + 2 HMA (Resurfacing)	\$34,164.00
ORRD-0203	Caledon King Town Line South from Mt. Pleasant Road to 12th Concession	74	783	Pulverize + 2 HMA (Resurfacing)	\$111,462.00
NRRD-0237	Greenside Drive from King Road to 35 m N. of King Road	72	35	Pulverize + Granular A + 2 HMA (Resurfacing)	\$13,377.00
NRRD-0141	Greenside Drive from Noblewood Drive to Noblewood Drive	73	261	Pulverize + Granular A + 2 HMA (Resurfacing)	\$99,762.00
NRRD-0121	Greenside Drive from 35 m N. of King Road to Noblewood Drive	74	40	Pulverize + Granular A + 2 HMA (Resurfacing)	\$15,288.00
ORRD-0132	Showa Court from Highway 9 to End (Cul-de-Sac)	65	67	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$85,358.00
Year 4 Length (km)			3.165	Year 4 Cost	\$930,310.00
Year 5 (2027)					
ORRD-0025	16th Sideroad from 8th Concession to Trainor Court	51	1306	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$415,961.00
ORRD-0178	16th Sideroad from Trainor Court to Highway 27	53	743	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$236,670.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0234	Bathurst Street from Queensville Sideroad West to Hochreiter Road	62	1443	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$459,620.00
ORRD-0224	8th Concession from King Road to 15th Sideroad	60	2092	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$666,302.00
ORRD-0060	Bathurst Street from Hochreiter Road to King – Bradford Boundary	64	576	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$183,456.00
Year 5 Length (km)			6.160	Year 5 Cost	\$1,962,009.00
Year 6 (2028)					
KRRD-0053	Watch Hill Road from Champlain Crescent to Kingsworth Road	59	734	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$237,356.00
ORRD-0024	17th Sideroad from 10th Concession to 1.4 km W. of 10th Concession	72	1441	Pulverize + Granular A + 2 HMA (Resurfacing)	\$488,943.00
ORRD-0157	17th Sideroad from 1.4 km W. of 10th Concession to 11th Concession	76	839	Pulverize + Granular A + 2 HMA (Resurfacing)	\$284,661.00
Year 6 Length (km)			3.014	Year 6 Cost	\$1,010,960.00
Year 7 (2029)					
ORRD-0026	11th Concession from 18th Sideroad to 19th Sideroad	70	1967	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$626,514.00
ORRD-0151	11th Concession from 18th Sideroad to 18th Sideroad	71	71	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$22,638.00
ORRD-0096	Keele Street from 19th Sideroad to Davis Drive West	71	2045	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$671,349.00
SRRD-0015	Western Avenue from Brownsville Court to Main Street	69	491	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$204,526.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
SRRD-0014	Western Avenue from Elmwood Avenue to Brownsville Court	68	562	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$234,073.00
Year 7 Length (km)			5.136	Year 7 Cost	\$1,759,100.00
Year 8 (2030)					
ORRD-0039	17th Sideroad from Highway 27 to 10th Concession	77	2053	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$673,995.00
KRRD-0079	Kingscross Drive from Snowberry Lane to Westgate Circle	71	231	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$90,552.00
Year 8 Length (km)			2.284	Year 8 Cost	\$764,547.00
Year 9 (2031)					
ORRD-0268	11th Concession from 17th Sideroad to 0.8 km N. of 17th Sideroad	75	787	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$258,377.00
SRRD-0051	Main Street from Cooper Drive to Church Street	80	441	Milling + Patching + 1 HMA (Resurfacing)	\$101,430.00
PRRD-0013	Archibald Road from Cook Drive to Cutting Crescent	70	169	Full depth asphalt removal + 2 HMA + Spot curb replacement (Rehabilitation)	\$64,665.00
ORRD-0124	Graham Sideroad from Bathurst Street to Pumphouse Road	76	1568	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$553,210.00
SRRD-0067	Main Street from Dr. Kay Drive to Western Avenue	82	152	Milling + Patching + 1 HMA (Resurfacing)	\$34,960.00
SRRD-0013	Main Street from Greco Ridge Lane to Highway 9	85	71	Milling + Patching + 1 HMA (Resurfacing)	\$16,330.00
SRRD-0004	Main Street from Western Avenue to Ben Boy Avenue	86	144	Milling + Patching + 1 HMA (Resurfacing)	\$33,120.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
SRRD-0041	Main Street from Ben Boy Avenue to Greco Ridge Lane	92	141	Milling + Patching + 1 HMA (Resurfacing)	\$32,430.00
SRRD-0058	Main Street from Church Street to Dr. Kay Drive	84	484	Milling + Patching + 1 HMA (Resurfacing)	\$111,320.00
SRRD-0045	Main Street from Highway 27 to Cooper Drive	86	236	Milling + Patching + 1 HMA (Resurfacing)	\$54,280.00
Year 9 Length (km)			4.193	Year 9 Cost	\$1,260,122.00
Year 10 (2032)					
ORRD-0194	8th Concession from 17th Sideroad to 17th Sideroad	73	19	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$6,223.00
ORRD-0159	8th Concession from 17th Sideroad to 18th Sideroad	83	1987	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$652,337.00
ORRD-0114	8th Concession from 18th Sideroad to 18th Sideroad	98	60	Milling + Patching + 1 HMA (Resurfacing)	\$8,844.00
ORRD-0053	11th Concession from 16th Sideroad to 17th Sideroad	78	2012	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$660,520.00
Year 10 Length (km)			4.078	Year 10 Cost	\$1,327,924.00

and Figure 27 outline the roads that have been proposed for routine and/or preventive maintenance.

Figure 27: 10 Year Resurfacing Plan (2023-2032)

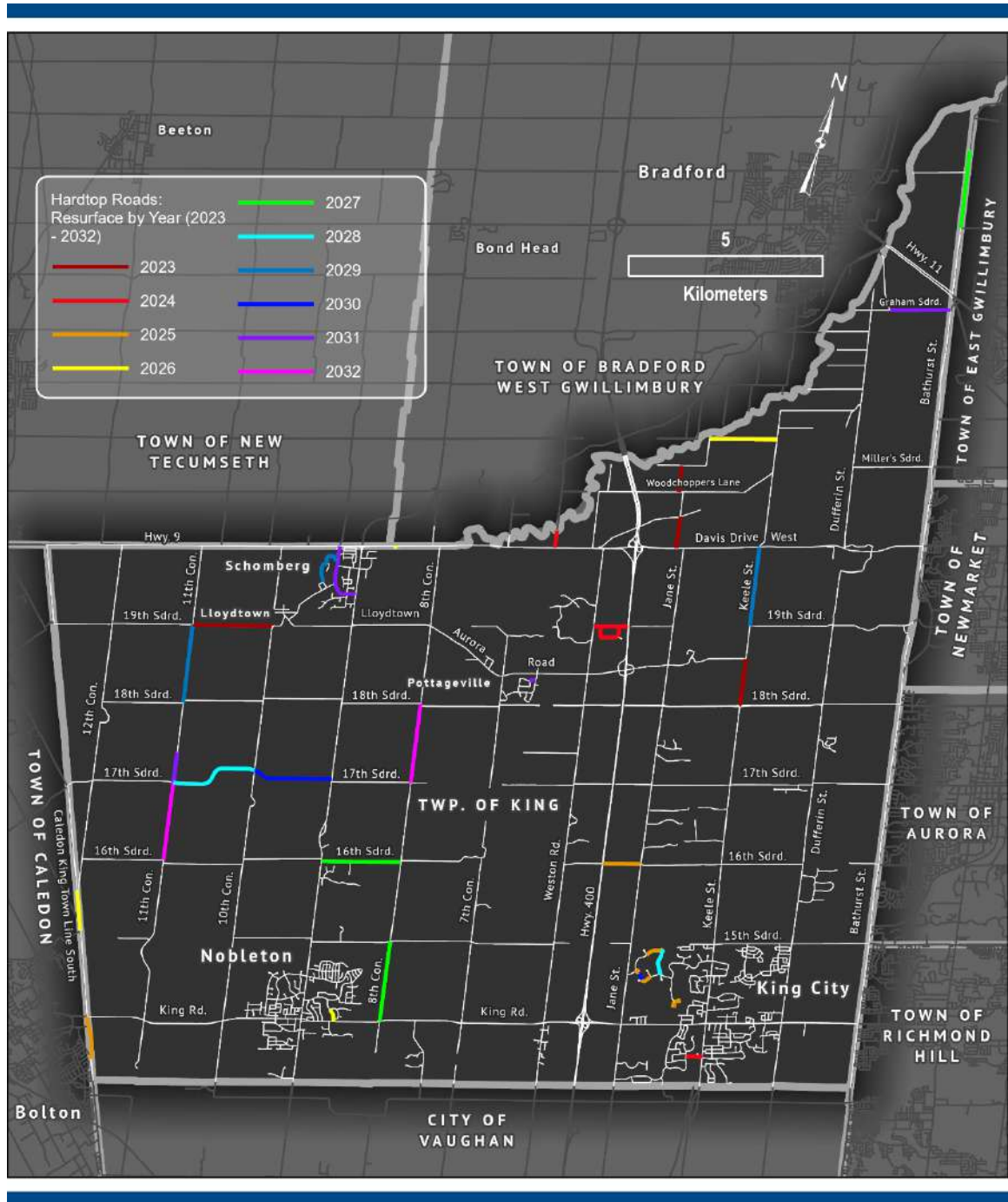


Table 9: 10 Year Resurfacing Plan (2023-2032)

Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
Year 1 (2023)					
ORRD-0020	Keele Street from Lloydtown/Aurora Road Traffic Circle to Kettleby Road	65	1365	Pulverize + 2 HMA (Resurfacing)	\$356,655.00
ORRD-0250	Jane Street from Davis Drive West to South Canal Bank Road	68	818	Pulverize + 2 HMA (Resurfacing)	\$267,969.00
ORRD-0135	Jane Street from Woodchoppers Lane to Edward Avenue	83	681	Pulverize + 2 HMA (Resurfacing)	\$175,305.00
ORRD-0137	19th Sideroad from 10th Concession to 11th Concession	95	2049	Pulverize + 2 HMA (Resurfacing)	\$479,466.00
Year 1 Length (km)			4.913	Year 1 Cost	1,279,395.00
Year 2 (2024)					
ORRD-0105	19th Sideroad from Hodgson Avenue to Hodgson Avenue	54	489	Pulverize + 2 HMA (Resurfacing)	127,764.00
ORRD-0065	Rupke Road from Highway 9 to End	54	448	Pulverize + 2 HMA (Resurfacing)	\$108,342.00
ORRD-0158	Hodgson Avenue from William's Court to 19th Sideroad	66	719	Pulverize + 2 HMA (Resurfacing)	\$187,863.00
ORRD-0002	19th Sideroad from End (Cul-de-Sac) to Hodgson Avenue	70	228	Pulverize + 2 HMA (Resurfacing)	\$59,592.00
ORRD-0048	Hodgson Avenue from 19th Sideroad to William's Court	77	264	Resurface	\$68,991.00
ORRD-0109	19th Sideroad from Hodgson Avenue to Weston Road	77	167	Pulverize + 2 HMA (Resurfacing)	\$32,565.00
KRRD-0148	Station Road from Burton Grove to West Street	44	139	Full depth asphalt removal + 2 HMA + Spot curb replacement (Rehabilitation)	\$64,440.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
KRRD-0204	Station Road from West Street to Burns Boulevard	68	284	Full depth asphalt removal + 2 HMA (Resurfacing)	\$111,320.00
Year 2 Length (km)			2.738	Year 2 Cost	\$780,323.00
Year 3 (2025)					
KRRD-0043	Westgate Circle from Kingsworth Road to Westgate Boulevard	51	16	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$6,272.00
KRRD-0067	Westgate Circle from Kingscross Drive to Kingsworth Road	58	58	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$22,736.00
ORRD-0056	16th Sideroad from Jane Street to Highway 400 Overpass	62	983	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$308,259.00
KRRD-0080	Westgate Circle from Westgate Boulevard to Kingscross Drive	66	54	Pulverize + 2 HMA (Resurfacing)	\$12,636.00
KRRD-0087	Manitou Drive (East Cul-de-Sac) from Fork to End	60	173	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$53,314.00
KRRD-0081	Manitou Drive (South Cul-de-Sac) from Fork to End (Cul-de-Sac)	64	159	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$48,990.00
ORRD-0118	Albion Vaughan Road from Old King Road to 72m N. of Old King Road	77	71	Milling + Patching + 1 HMA (Resurfacing)	\$11,109.00
ORRD-0226	Albion Vaughan Road from 340 m N. of Queensgate Boulevard to Old King Road	80	852	Milling + Patching + 1 HMA (Resurfacing)	\$143,060.00
KRRD-0077	Kingsworth Road from Blueberry Lane to Watch Hill Road	55	454	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$137,816.00
KRRD-0018	Kingscross Drive from Cranberry Lane to Snowberry Lane	67	285	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$111,720.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0094	Albion Vaughan Road from 72 m N. of Old King Road to Caledon King Town Line South	84	175	Milling + Patching + 1 HMA (Resurfacing)	\$24,150.00
Year 3 Length (km)			3.280	Year 3 Cost	\$880,062.00
Year 4 (2026)					
ORRD-0128	Strawberry Lane from Keele Street to Aileen Avenue	49	1739	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$570,899.00
ORRD-0202	Caledon King Town Line South from Columbia Way to Mt. Pleasant Road	70	240	Pulverize + 2 HMA (Resurfacing)	\$34,164.00
ORRD-0203	Caledon King Town Line South from Mt. Pleasant Road to 12th Concession	74	783	Pulverize + 2 HMA (Resurfacing)	\$111,462.00
NRRD-0237	Greenside Drive from King Road to 35 m N. of King Road	72	35	Pulverize + Granular A + 2 HMA (Resurfacing)	\$13,377.00
NRRD-0141	Greenside Drive from Noblewood Drive to Noblewood Drive	73	261	Pulverize + Granular A + 2 HMA (Resurfacing)	\$99,762.00
NRRD-0121	Greenside Drive from 35 m N. of King Road to Noblewood Drive	74	40	Pulverize + Granular A + 2 HMA (Resurfacing)	\$15,288.00
ORRD-0132	Showa Court from Highway 9 to End (Cul-de-Sac)	65	67	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$85,358.00
Year 4 Length (km)			3.165	Year 4 Cost	\$930,310.00
Year 5 (2027)					
ORRD-0025	16th Sideroad from 8th Concession to Trainor Court	51	1306	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$415,961.00
ORRD-0178	16th Sideroad from Trainor Court to Highway 27	53	743	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$236,670.00

Township of King Road Needs Study
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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0234	Bathurst Street from Queensville Sideroad West to Hochreiter Road	62	1443	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$459,620.00
ORRD-0224	8th Concession from King Road to 15th Sideroad	60	2092	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$666,302.00
ORRD-0060	Bathurst Street from Hochreiter Road to King – Bradford Boundary	64	576	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$183,456.00
Year 5 Length (km)			6.160	Year 5 Cost	\$1,962,009.00
Year 6 (2028)					
KRRD-0053	Watch Hill Road from Champlain Crescent to Kingsworth Road	59	734	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$237,356.00
ORRD-0024	17th Sideroad from 10th Concession to 1.4 km W. of 10th Concession	72	1441	Pulverize + Granular A + 2 HMA (Resurfacing)	\$488,943.00
ORRD-0157	17th Sideroad from 1.4 km W. of 10th Concession to 11th Concession	76	839	Pulverize + Granular A + 2 HMA (Resurfacing)	\$284,661.00
Year 6 Length (km)			3.014	Year 6 Cost	\$1,010,960.00
Year 7 (2029)					
ORRD-0026	11th Concession from 18th Sideroad to 19th Sideroad	70	1967	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$626,514.00
ORRD-0151	11th Concession from 18th Sideroad to 18th Sideroad	71	71	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$22,638.00
ORRD-0096	Keele Street from 19th Sideroad to Davis Drive West	71	2045	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$671,349.00
SRRD-0015	Western Avenue from Brownsville Court to Main Street	69	491	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$204,526.00

Township of King Road Needs Study
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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
SRRD-0014	Western Avenue from Elmwood Avenue to Brownsville Court	68	562	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$234,073.00
Year 7 Length (km)			5.136	Year 7 Cost	\$1,759,100.00
Year 8 (2030)					
ORRD-0039	17th Sideroad from Highway 27 to 10th Concession	77	2053	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$673,995.00
KRRD-0079	Kingscross Drive from Snowberry Lane to Westgate Circle	71	231	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$90,552.00
Year 8 Length (km)			2.284	Year 8 Cost	\$764,547.00
Year 9 (2031)					
ORRD-0268	11th Concession from 17th Sideroad to 0.8 km N. of 17th Sideroad	75	787	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$258,377.00
SRRD-0051	Main Street from Cooper Drive to Church Street	80	441	Milling + Patching + 1 HMA (Resurfacing)	\$101,430.00
PRRD-0013	Archibald Road from Cook Drive to Cutting Crescent	70	169	Full depth asphalt removal + 2 HMA + Spot curb replacement (Rehabilitation)	\$64,665.00
ORRD-0124	Graham Sideroad from Bathurst Street to Pumphouse Road	76	1568	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$553,210.00
SRRD-0067	Main Street from Dr. Kay Drive to Western Avenue	82	152	Milling + Patching + 1 HMA (Resurfacing)	\$34,960.00
SRRD-0013	Main Street from Greco Ridge Lane to Highway 9	85	71	Milling + Patching + 1 HMA (Resurfacing)	\$16,330.00
SRRD-0004	Main Street from Western Avenue to Ben Boy Avenue	86	144	Milling + Patching + 1 HMA (Resurfacing)	\$33,120.00

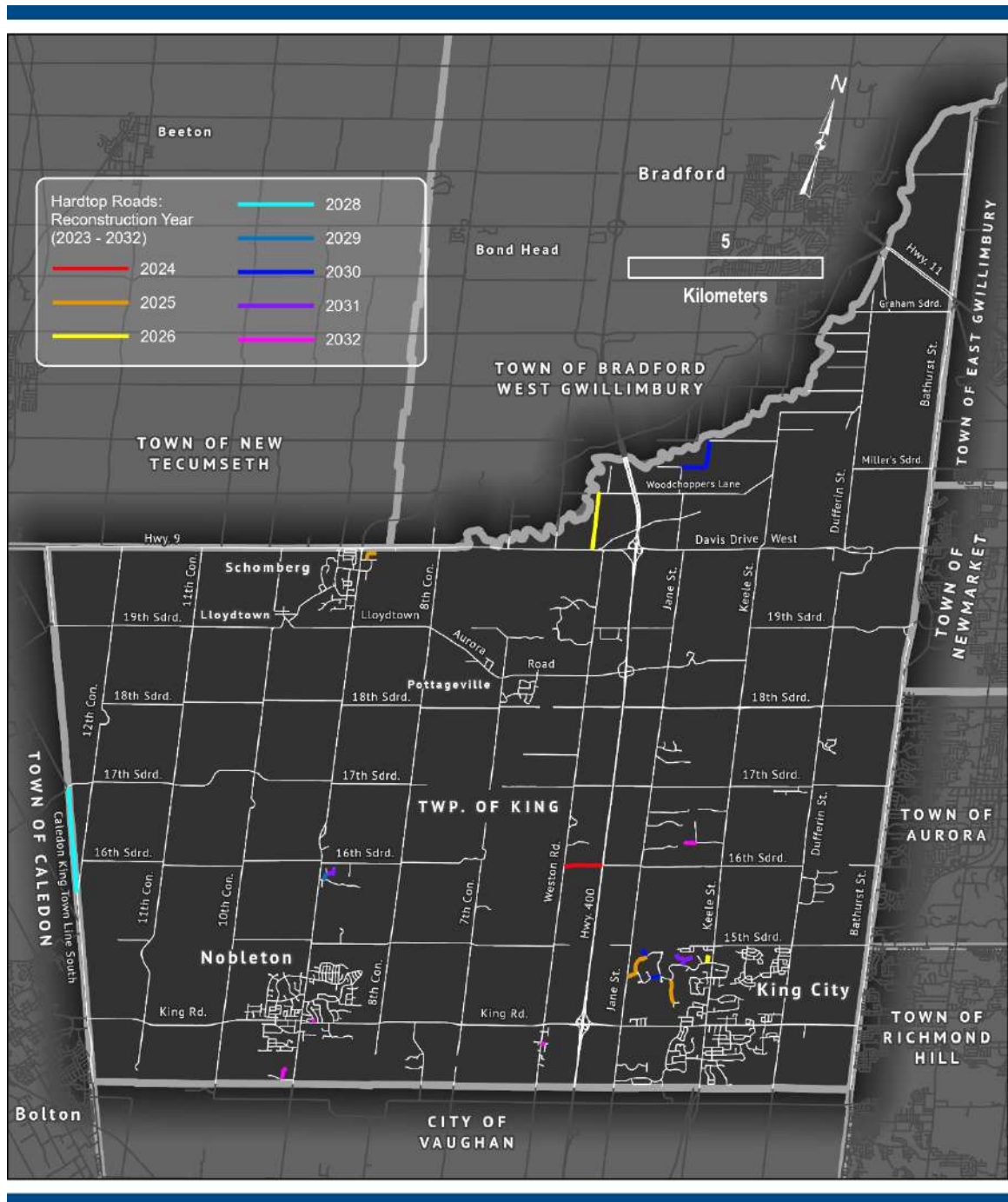
Township of King Road Needs Study
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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
SRRD-0041	Main Street from Ben Boy Avenue to Greco Ridge Lane	92	141	Milling + Patching + 1 HMA (Resurfacing)	\$32,430.00
SRRD-0058	Main Street from Church Street to Dr. Kay Drive	84	484	Milling + Patching + 1 HMA (Resurfacing)	\$111,320.00
SRRD-0045	Main Street from Highway 27 to Cooper Drive	86	236	Milling + Patching + 1 HMA (Resurfacing)	\$54,280.00
Year 9 Length (km)			4.193	Year 9 Cost	\$1,260,122.00
Year 10 (2032)					
ORRD-0194	8th Concession from 17th Sideroad to 17th Sideroad	73	19	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$6,223.00
ORRD-0159	8th Concession from 17th Sideroad to 18th Sideroad	83	1987	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$652,337.00
ORRD-0114	8th Concession from 18th Sideroad to 18th Sideroad	98	60	Milling + Patching + 1 HMA (Resurfacing)	\$8,844.00
ORRD-0053	11th Concession from 16th Sideroad to 17th Sideroad	78	2012	Pulverize + Granular A + 2 HMA (Rehabilitation)	\$660,520.00
Year 10 Length (km)			4.078	Year 10 Cost	\$1,327,924.00

4.1.9.3 Reconstruction Plan

In addition to the preventive maintenance and resurfacing plan, Burnside completed analysis to determine a list of roads within the Township that should receive full reconstruction over the next 10 years, as the Township's budget will allow for. The recommended reconstruction plan considers all hardtop roads with a PCI less than 40, which would warrant reconstruction. The implementation of the reconstruction improvements has been prioritized based on the PR which accounts for traffic and condition of each road. Table 10 and Figure 28 outline the roads that have been proposed for routine and/or preventive maintenance.

Figure 28: 10 Year Reconstruction Plan (2023-2032)



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Table 10: 10 Year Reconstruction Plan (2023-2032)

Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
Year 1 (2023)					
No Proposed Reconstructions					
Year 2 (2024)					
ORRD-0236	16th Sideroad from Highway 400 Overpass to Weston Road	47	1004	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$504,525.00
Year 2 Length (km)			1.004	Year 2 Cost	\$504,525.00
Year3 (2025)					
SRRD-0053	Magnum Drive from Proctor Road to End (Cul-de-Sac)	41	367	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$200,925.00
KRRD-0073	Westgate Boulevard from Jane Street to Westgate Circle	48	260	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$112,320.00
KRRD-0005	Manitou Drive from Kingcross Drive to Fork	47	620	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$299,088.00
KRRD-0105	Kingsworth Road from Westgate Circle to Blueberry Lane	40	570	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$270,864.00
Year 3 Length (km)			1.817	Year 3 Cost	\$883,197.00
Year 4 (2026)					

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0195	Holancin Road from Highway 9 to 2nd Concession	42	1496	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$721,656.00
KRRD-0032	McKellar Lane from Kingcross Drive to End (Cul-de-Sac)	36	213	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$102,744.00
Year 4 Length (km)			1.709	Year 4 Cost	\$824,400.00
Year 5 (2027)					
No Proposed Reconstructions					
Year 6 (2028)					
ORRD-0076	Caledon King Town Line South from 12th Concession to 17th Sideroad	62	2702	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$744,750.00
Year 6 Length (km)			2.702	Year 6 Cost	\$744,750.00
Year 7 (2029)					
ORRD-0093	Loch Erne Lane from Nobleton Lakes Drive to Hilliard Grove	66	168	Full depth asphalt removal + Total base replacement + Total curb replacement + 2 HMA (Reconstruction)	\$127,680.00
Year 7 Length (km)			0.168	Year 7 Cost	\$127,680.00
Year 8 (2030)					
ORRD-0258	Aileen Avenue from Edward Avenue to Strawberry Lane	65	702	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$352,725.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
ORRD-0150	Edward Avenue from Aileen Avenue to Jane Street	67	613	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$289,650.00
KRRD-0031	Blueberry Lane from Kingsworth Road to End	52	234	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$122,976.00
KRRD-0048	Kingscross Drive from Champlain Crescent to Cranberry Lane	69	255	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$153,000.00
Year 8 Length (km)			1.804	Year 8 Cost	\$918,351.00
Year 9 (2031)					
ORRD-0192	Loch Erne Lane from Hilliard Grove to End (Cul-de-Sac)	63	312	Full depth asphalt removal + Total base replacement + Total curb replacement + 2 HMA (Reconstruction)	\$237,120.00
KRRD-0059	Chelsea Lane from Fork to End (Cul-de-Sac)	55	249	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$120,096.00
KRRD-0093	Chelsea Lane from Fork to End (West Cul-de-Sac)	50	292	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$140,832.00

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Municipal ID	Road Segment	PCI	Length (m)	Improvement Type	Improvement Cost
KRRD-0047	Chelsea Lane from Kingscross Drive to Fork	52	138	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$66,600.00
Year 9 Length (km)			0.991	Year 9 Cost	\$564,648.00
Year 10 (2032)					
ORRD-0041	Cavell Avenue from Fog Road to End (West)	68	310	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$151,125.00
ORRD-0098	Hilda Road from Diana Drive to End (Cul-de-Sac)	52	340	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$164,016.00
NRRD-0142	Lynwood Crescent from King Road to Royal Avenue	68	110	Full depth asphalt removal + Total base replacement + 2 HMA (Reconstruction)	\$57,750.00
YRRD-0001	Laskay Mills Drive from Weston Road to Rolling Court	64	107	Full depth asphalt removal + Total base replacement + Total curb replacement + 2 HMA (Reconstruction)	\$81,320.00
Year 10 Length (km)			0.867	Year 10 Cost	\$454,211.00

4.2 Gravel Paving Program and Management

4.2.1 Gravel Condition Rating

Similar to the condition rating system developed for hardtop roads, Burnside developed the “Gravel Condition Evaluation Form”. The Form incorporates rating schema from the Inventory Manual for Municipal Roads (Ministry of Transportation Ontario [MTO], 1991), such as the Structural Adequacy and Drainage Rating. The various distress types shown in the Form have been collected in the field to support the overall Structural Adequacy Rating (scale between 1 to 20). The gravel road condition review also included establishing a Ride Comfort Rating (scale between 1 and 10) and a Drainage Rating (scale between 1 to 15), as well as providing comments on the specific distress observations (if any) on each gravel road section.

Based on the distress types determined during the condition survey and using the Ministry of Transportation (MTO) formulae, the Gravel Condition Rating (GCR) is determined 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 MTO formulae, from the visual distress data collected in the field. The condition rating methodology follows the procedures developed by the MTO for gravel surface roads (MTO, 1989).

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

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

Where:

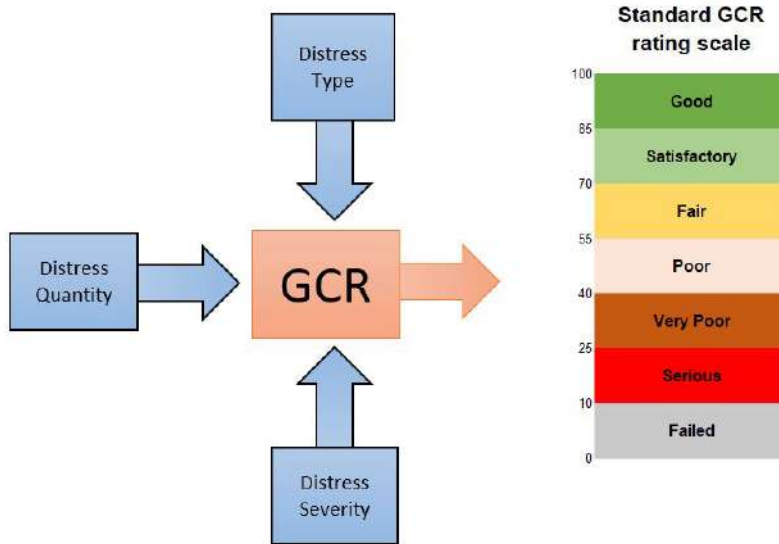
- DMI = Distress Manifestation Index, which is a systematic method of classifying and assessing the visible consequences of various surface distress mechanisms. The DMI classifies distress manifestations into various categories which are given a weighting factor (W), and which are classified according 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:

$$\text{Gravel Surface: } DMI = 10 \times (135 - \text{summation of } W \times (D+S))/135$$

- 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 GCR ranges is shown in Figure 29.

Figure 29: Qualitative Description of GCR Ranges



Based on the above methodology/procedure, the updated GCR for each road segment is illustrated on a map in Appendix D and shown in the excel spreadsheets in Appendix A.

There are two gravel roads in the township with poor condition Ratings (GCR<55), which currently require significant rehabilitation or full reconstruction. If sufficient budget is available to replace these roads, then these roads should be completed as soon as feasible as the roads currently sit in a state of disrepair that is not favoured by the level of service that should be provided. These roads (like the others) are subject to ongoing deterioration and will continue to degrade passed the state they are currently in. Table 11 below summarizes the two roads that have a poor condition rating and should be replace as soon as feasible.

Table 11: Gravel Roads with Poor Condition Ratings (GCR<55)

Road Segment	Surface Type	AADT (vpd)	GCR
Lipchey Road, from Keele Street to End (East)	Gravel	50-199	15
South Canal Bank Road, from Jane Street to End (East)	Gravel	50-199	43

4.2.2 Surface Type Needs

The surface type of a roadway should be appropriately designed to accommodate the volume and type of traffic. According to the MTO guidelines (*Inventory Manual for Municipal Roads, Ministry of Transportation, 1991*), The surface type requirements are as follows:

- Gravel roads are typically suitable for traffic volumes of less than 200 vehicles per day (vpd), however, upgrades to hardtop may be considered if roadside environment is semi-urban or for road network connectivity/hardtop continuity, subject to budget constraints and desired Level of Service. To minimize maintenance concerns, it is suggested that roads that have traffic volumes exceeding 200 vpd may be considered for a hard top surface (i.e., surface treatment for roads with 200 to 400 vpd AADT and asphalt for roads with over 400 vpd AADT).
- Asphalt roads may be considered where there is a high percentage of truck traffic, to maximize the road life.

Upgrading of gravel roads to asphalt may be considered for roads experiencing high truck volumes or high truck loading, AADT volumes higher than 200 or where high maintenance is an issue. For low volume rural roads, it is suggested that surface upgrading may be economical where the percentage of trucks exceed 10% of the AADT and is over 30 trucks per day.

Truck volumes typically range from a low of 3% on low volume residential streets to a high of 15% or more on arterials and collector roads. Information on truck volumes on the Township's roads was not available for this current study and 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's surface type. 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.

Based on the above surface type considerations, a review of the data in Appendix A indicates that there are 18 gravel roads in the Township that presently meet these surface type criteria, as summarized in Table 12.

It is acknowledged that the Township plans to upgrade most, if not all, of its gravel roads, as the budget allows it, to improve the overall Level of Service provided by its road network. 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 increase the benchmark costs established in this study, to account for any related upgrading required to support the upgraded surface type.

Table 12: Existing Gravel Roads That May Warrant Upgrading

Road Segment	Length (m)	AADT (vpd)	Rationale for Upgrade
Semi-Urban Gravel Road			
Lipchey Road, from Keele Street to End (East)	886	60	Land use/ Environment
Elmpine Trail, from Mill Road to End (West)	487	153	Land use/ Environment
2nd Concession from Davis Road to Hanemaayer Lane	631	421	Traffic Volume
2nd Concession from Hanemaayer Lane to Holancin Road	205	421	Traffic Volume
19th Sideroad from 11th Concession to 12th Concession	2075	425	Traffic Volume
10th Concession from 165 m S. of 15 th Sideroad to 15th Sideroad	166	436	Traffic Volume
10th Concession from 145 m N. of King Road to 165m S. of 15th Sideroad	1834	436	Traffic Volume
Davis Road from 160 m N. of South Canal Bank Road to 2nd Concession	794	437	Traffic Volume
16th Sideroad from 7th Concession to 8 th Concession	2113	444	Traffic Volume
Dufferin Street from 1.4 km N. of 19th Sideroad to Davis Drive West	1129	494	Traffic Volume
Dufferin Street from 400 m N. of 19th Sideroad to 1.4 km N. of 19th Sideroad	998	494	Traffic Volume
12th Concession from 120 m N. of Caledon King Townline to 16th Sideroad	823	517	Traffic Volume
Mill Road from King – Vaughn Boundary to Elmpine Trail	422	566	Traffic Volume
Mill Road from Humber Trail to King Road	900	566	Traffic Volume
Mill Road from Elmpine Trail to Humber Trail	376	566	Traffic Volume
19th Sideroad from 230 m W. of Dufferin Street to 1.86 km W. of Dufferin Street	1635	865	Traffic Volume
19th Sideroad from 1.86 km W. of Dufferin Street to Keele Street	282	865	Traffic Volume
Caledon King Town Line North from Halls Lake Sideroad to Highway 9	1978	1690	Traffic Volume

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

4.2.3 Road Width

The minimum gravel road surface widths (i.e., platform width, travel width plus shoulders) have been assessed according to 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 13.

Table 13: 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

There are ten gravel roads in the Township that have been identified to have widths that currently do not meet the recommended lower width limit and are summarized in Table 14.

Table 14: Summary of Gravel Roads with Deficient Platform Widths

Road	Road Length (m)	Posted Speed (km/h)	AADT (vpd)	Width (m)
Burrows Road from Weston Road to Weston Road	512	80	8	3.3
Elmpine Trail, from Mill Road to End (West)	487	50	153	5.0
Toll Road, from Bathurst Street to Highway 11	2051	60	74	5.0
17 th Sideroad from Jane Street to End (West)	921	80	245	5.5
Emma Road from Dufferin Street to End (West)	975	80	253	6.10
Graham Sideroad, from Dufferin Street to End (West)	393	50	253	6.1

Road	Road Length (m)	Posted Speed (km/h)	AADT (vpd)	Width (m)
Wilhelmena Road from Dufferin Street to End (Canal)	758	80	253	6.1
Juliana Road from Dufferin Street to End (East)	1090	80	253	6.1
19th Sideroad, from 1.86 km W. of Dufferin Street to Keele Street	282	60	865	6.1
12th Concession from 120 m N. of Caledon King Townline to 16th Sideroad	823	80	517	7.3

Some of the gravel roads with deficient platform widths are located on roads with low traffic volumes (i.e., less than 400 vpd), and therefore may not be considered critical (i.e., not justifying widening to address the width deficiency). For the higher volume/higher speed roads, the magnitude of the width deficiencies is generally not that significant. However, consideration may be given to completing some widening of these roads as part of future maintenance work (i.e., maintenance gravel for gravel roads or surface treatment / asphalt resurfacing maintenance for hardtop roads). While none of the platform width deficiencies are considered critical in the short term, it is recommended that widths be upgraded to meet minimum acceptable standards when, or if, such sections are rehabilitated or reconstructed to address condition needs.

4.2.4 Improvement Types

The different improvement types that are proposed in this study are listed below. These improvement types cover the full lifecycle of the road assets and require the Township to keep up with the road maintenance to prevent leaving the roads until they slip into a more extensive category like Rehabilitation or Reconstruction.

Routine Maintenance (RM):

Routine maintenance for gravel roads consists of grading and application of dust suppressants (calcium). Routine maintenance can help delay the need for more extensive rehabilitation or reconstruction and often adds a few years to the lifespan of a roadway. Routine/preventive maintenance is typically done when a road is in good condition but is starting to show slight deficiencies.

Preventive Maintenance (PM):

Preventive maintenance for gravel roads consists of the application of maintenance gravel (gravel top-up). Preventive Maintenance can help to delay the need for more extensive rehabilitation or reconstruction. Preventive maintenance is typically done when a road is in good condition but is starting to show slight deficiencies.

Resurfacing (R):

Resurfacing for gravel roads, as proposed in this study consists of upgrading the gravel surface to a hardtop surface. Through discussion with Township staff, it is understood that the preferred surface type is Hot Mix Asphalt (HMA) and where applicable, roads should be upgraded to a HMA surface. This study proposes that the resurfacing improvement consists of nominal base strengthening (i.e., adding a thin lift of granular A to the existing surface) + two (50 mm) lifts of HMA.

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 upgrading the surface of gravel roads, but minimal work is done to the base of the road, aside from patching where required.

Rehabilitation (REH):

Rehabilitation for gravel roads, as proposed in this study consists of upgrading the gravel surface to a hardtop surface. Through discussion with Township staff, it is understood that the preferred surface type is Hot Mix Asphalt (HMA) and where applicable, roads should be upgraded to a HMA surface. This study proposes that the rehabilitation improvement consists of partial base strengthening (i.e., excavating part of the existing base and replacing the material with new granular A material) + two (50 mm) lifts of HMA.

More extensive rehabilitation treatments are applied to roads in poor condition which have deteriorated to a point where full depth replacement of the road surface is required to protect the integrity of the underlying granular base and to delay more extensive reconstruction being required. Rehabilitation extends the service life of a pavement and its load carrying capacity by enhancing the road structure. This is achieved by eliminating the age-related deterioration of the pavement or increasing the thickness of pavement layers to address increases in traffic volume.

Reconstruction (REC):

Reconstruction for gravel roads, as proposed in this study consists of upgrading the gravel surface to a hardtop surface. Through discussion with Township staff, it is understood that the preferred surface type is Hot Mix Asphalt (HMA) and where applicable, roads should be upgraded to a HMA surface. This study proposes that the

reconstruction improvement consists of full base strengthening (i.e., excavating all the existing base and replacing the material with new granular A and granular B material) + two (50 mm) lifts of HMA.

Reconstructions are typically done when a road is in very poor condition. If roads are left to deteriorate, they become weak and lose their structural integrity. As its structural capacity is weakened, a road will begin to disintegrate, resulting in extensive cracking, rutting and potholes being developed. At this point, maintenance, resurfacing, or rehabilitation treatments will not be able to restore its structural integrity. Once a minimum condition level is reached, the surface and road base may require full reconstruction to reestablish the proper base support for the road surface. Applying a lesser rehabilitation treatment may result in premature failure of any newly applied surface material. Once the road degrades below a minimum recommended condition, ongoing maintenance (e.g., filling of potholes) will typically increase significantly and/or safety or user complaints may become a concern. Reconstruction is also required when the road needs to be improved, to cater to significant increases in projected traffic volumes or to accommodate road widening.

Determining Improvement Needs:

To determine the improvement types that are warranted for certain road sections, the GCR values collected in the field were assigned to the distress trigger value ranges set for different improvement types. The trigger value ranges set for each improvement type are summarized in Table 15 along with estimated benchmark treatment costs. In addition, the forecasted improvement effects resulting from the various life cycle treatments are shown in Table 15 (i.e., the net benefit to the GCR values after a certain improvement type is implemented). The net benefit that is presented because of implementing a given improvement type is to represent that maintaining the condition of roads and performing routine and preventive maintenance will lengthen the lifecycle of a road segment (i.e., performing crack sealing with help extend the useful life of a road segment).

Table 15: Gravel Road Improvement Matrix

Improvement	Semi-Urban or Rural - Gravel				Distress Triggers
	Post-Treatment Condition	AADT \geq 400	400 $>$ AADT \geq 200	AADT $<$ 200	
Routine Maintenance (RM)	N/A	N/A	N/A	Grading + Dust Suppressants	GCR \geq 60
Preventive Maintenance (PM)	N/A	N/A	N/A	Maintenance Gravel (once every three years) + Calcium Chloride [\$0.55 per m ²]	
Resurface (R)	N/A	2 HMA + Nominal Base Strengthening + Nominal Ditch Repair [\$45 per m ²]	2 HMA + Nominal Base Strengthening + Nominal Ditch Repair [\$40 per m ²]	2 HMA + Nominal Base Strengthening + Nominal Ditch Repair [\$40 per m ²] (Policy Upgrade)	
Rehabilitation (REH)	N/A	2 HMA + Partial Base Strengthening + Nominal Ditch Repair [\$51 per m ²]	2 HMA + Partial Base Strengthening + Nominal Shoulder/Ditch Repair [\$49 per m ²]	2 HMA + Partial Base Strengthening + Nominal Shoulder/Ditch Repair [\$49 per m ²]	60 $>$ GCR \geq 40
Reconstruction (REC)	PCI=100	2 HMA + Total Base Replacement + Nominal Shoulder/Ditch Repair [\$70 per m ²]	2 HMA + Total Base Replacement + Nominal Shoulder/Ditch Repair [\$70 per m ²]	2 HMA + Total Base Replacement + Nominal Shoulder/Ditch Repair [\$70 per m ²]	GCR $<$ 40

4.2.5 Improvement Costs

General improvement benchmark unit costs (costs per square metre) are for budget planning purposes and have been based on recent costing experience 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 15 above as well as unit cost breakdowns in Appendix F and are based on recent data provided from the Township. The improvement types/costs consider surface types, traffic volumes, road conditions and roadside environments. Since the improvement benchmark costs are estimated on a square metre basis, the improvement costs for any particular road section will also capture individual road widths.

4.2.6 Improvement Prioritization

For the prioritization of the gravel upgrades proposed in this study, non-condition related triggers were used. Local Township staff knowledge regarding road functionality, stability (i.e., condition during freeze/thaw season), maintenance demand and drainage were used to determine the order of prioritization for upgrade of the Township's gravel roads.

If a road is determined to have a road width and/or platform width that is less than ideal, this road should be reviewed to determine if the current width is suitable for the current surface type and can wait for widening treatment until upgrade, or if it should be widened as soon as possible (i.e., a current gravel road has a road width that is less than the recommended minimum for gravel roads but given the site specific geometrics and traffic, the road width can continue to remain as is but will need to be widened prior to the road being upgraded to an asphalt surface).

4.2.7 Road Budget Consideration

The Township has adopted a policy to upgrade/pave all of the gravel roads in the network. As part of this policy, the township has allocated an annual budget for gravel

road upgrade. Based on the 2022 and the 2023 Budget and Business Plan, the Township has allocated \$0.8 million per annum for gravel road conversion/paving.

4.2.8 Gravel Conversion Plan

A total of approximately 60.002 km of gravel roads was reviewed as part of this study. Since most of the Township's gravel roads are in good condition (GCR>60), the remaining roads were prioritized based on non-condition related triggers such as local knowledge of condition deterioration, maintenance demand and functionality as well as proximity to the surrounding hardtop network. Occasionally roads were not recommended for upgrading due to specific issues that may arise if the road is provided with a hard top surface. These issues could consist of significant horizontal/vertical alignment upgrading, roadside encroachment, as well as type of traffic utilizing the road. Providing a hardtop surface on roads where speeding is currently an issue, or the focus of a road is to serve access for local residents, upgrading to a hard top surface and attracting other network traffic would not be considered a benefit. Table 16 and Figure 30 below outline the proposed roads to be upgraded as part of the 10-year plan. A full spreadsheet version of the 10-year plan, along with an enlarged map can be found in Appendix G.

Figure 30: 10 Year Gravel Upgrade Plan

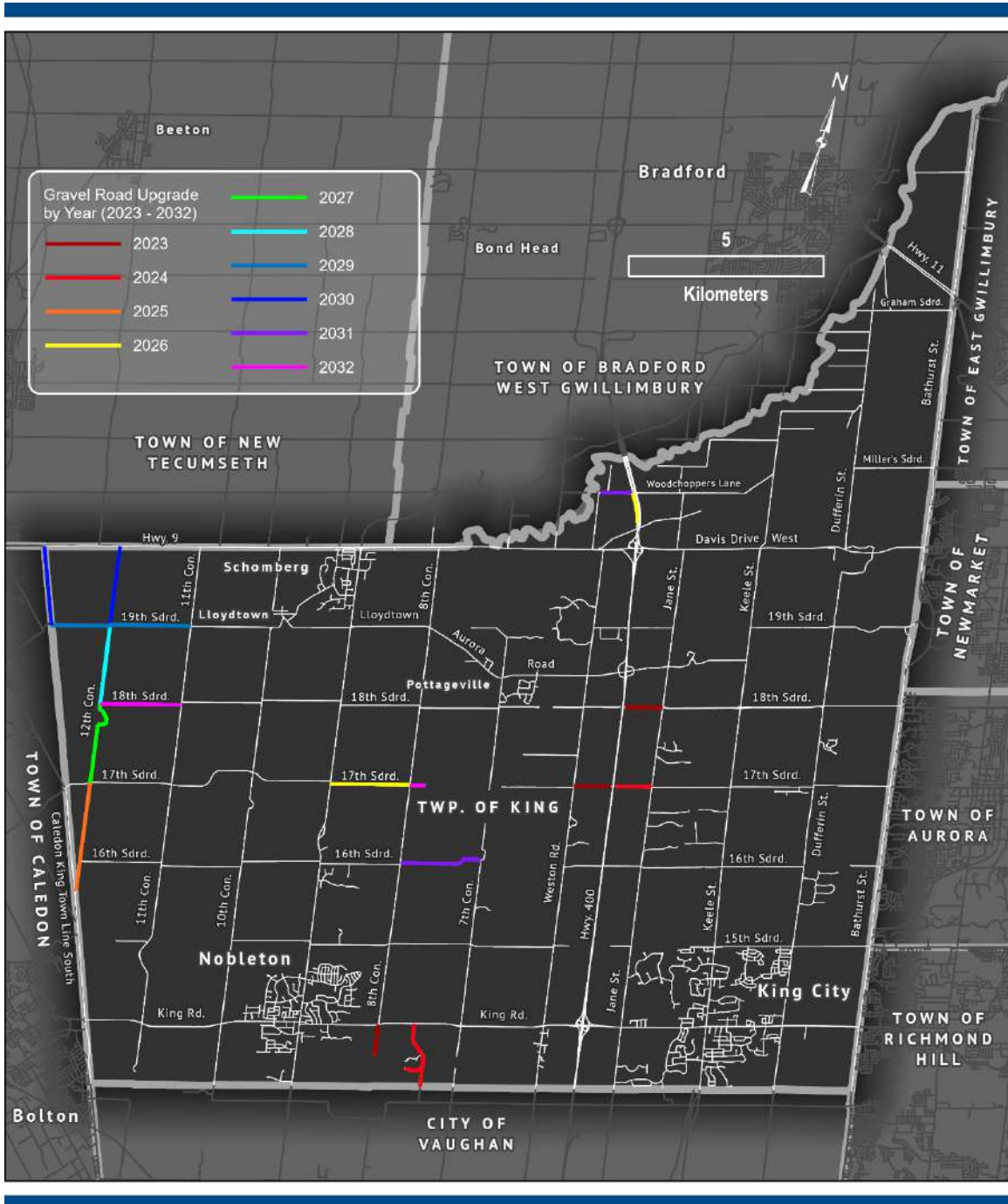


Table 16: Gravel Road Conversion 10 Year Plan

Municipal ID	Road Segment	Length (m)	Improvement Cost
Year 1 (2023)			
ORRD-0016	17th Sideroad from Weston Road to East end	946	\$253,520.00
ORRD-0092	8th Concession from South end to King Road	799	\$194,960.00
ORRD-0239	18th Sideroad from Jane Street to West end	952	\$255,120.00
Year 1 Total (km)		2.697	\$703,600.00
Year 2 (2024)			
ORRD-0175	Mill Road from King – Vaughn Boundary to Elmpine Trail	422	\$138,645.00
ORRD-0156	Mill Road from Elmpine Trail to Humber Trail	376	\$123,525.00
ORRD-0052	Mill Road from Humber Trail to King Road	900	\$295,650.00
ORRD-0144	Elmpine Trail from Mill Road to West end	487	\$97,400.00
ORRD-0251	17th Sideroad from Jane Street to West end	921	\$202,640.00
Year 2 Total (km)		3.106	\$857,860.00
Year 3 (2025)			
ORRD-0165.2	12th Concession from 120 m N. of Caledon King Townline to 16th Sideroad	823	\$270,360.00
ORRD-0212	12th Concession from 16th Sideroad to 17th Sideroad	2029	\$592,480.00
Year 3 Total (km)		2.852	\$862,840.00
Year 4 (2026)			
ORRD-0196	17th Sideroad from 8th Concession to Highway 27	2042	\$547,240.00
ORRD-0040.2	Davis Road from 160 m N. of South Canal Bank Road to 2nd Concession	794	\$282,285.00
Year 4 Total (km)		2.836	\$829,525.00
Year 5 (2027)			
ORRD-0147	12th Concession from 17th Sideroad to 1.5 km N. of 17th Sideroad	1504	\$493,320.00
ORRD-0081	12th Concession from 1.5 km N. of 17th Sideroad to 2.2 km N. of 17th Sideroad	660	\$216,480.00
ORRD-0062	12th Concession from 2.2 km N. of 17th Sideroad to 18th Sideroad	118	\$38,720.00
Year 5 Total (km)		2.282	\$748,520.00
Year 6 (2028)			

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November 2022 (Revised June 2023)

Municipal ID	Road Segment	Length (m)	Improvement Cost
ORRD-0207	12th Concession from 18th Sideroad to 19th Sideroad	2031	\$674,280.00
Year 6 Total (km)		2.031	\$674,280.00
Year 7 (2029)			
ORRD-0148	19th Sideroad from 12th Concession to Caledon King Townline North	1505	\$439,480.00
ORRD-0209	19th Sideroad from 11th Concession to 12th Concession	2075	\$681,660.00
Year 7 Total (km)		3.580	\$1,121,140.00
Year 8 (2030)			
ORRD-0119	12th Concession from 19th Sideroad to Highway 9	2045	\$736,200.00
ORRD-0230	Caledon King Townline North from 19th Sideroad to Halls Lake Sideroad	51	\$8,680.00
ORRD-0077	Caledon King Townline North from Halls Lake Sideroad to Highway 9	1978	\$378,293.00
Year 8 Total (km)		4.074	\$1,123,173.00
Year 9 (2031)			
ORRD-0180	16th Sideroad from 7th Concession to 8th Concession	2113	\$694,125.00
ORRD-0160	2nd Concession from Davis Road to Hanemaayer Lane	631	\$212,985.00
ORRD-0073	2nd Concession from Hanemaayer Lane to Holancin Road	205	\$69,210.00
Year 9 Total (km)		2.949	\$976,320.00
Year 10 (2032)			
ORRD-0142	18 th Sideroad from 11 th Concession to 12 th Concession	2083	\$766,560
ORRD-0267	17 th Sideroad from 8 th Concession to End (East)	398	\$97,120
Year 10 Total (km)		2.481	\$863,680.00

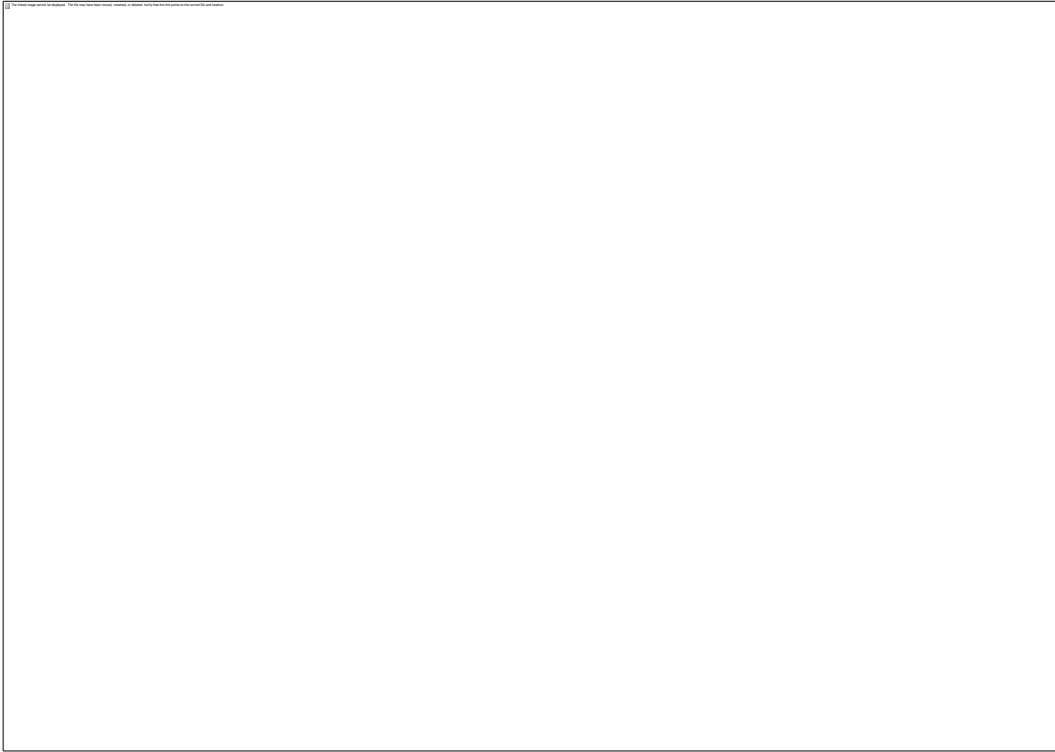
5.0 Asset Management and Capital Planning Considerations

The needs outlined in this study are determined to be the current (2023) needs and are subject to ongoing deterioration. The current needs of the Township roads equate to \$26.5 million for hardtop and \$9.7 million to upgrade the remaining gravel roads. The current needs are subject to ongoing deterioration, which may require future improvements to be more extensive (i.e., a current resurface need with a PCI of 65 that is being pushed for 3 years until enough budget is available, might require rehabilitation in 3 years rather than resurfacing). If the Township's goal is to maintain a certain level of service and keep up with the road needs, the current budgets will need to be reviewed and increased to a level where the Township is comfortable with the expenditures and level of service for all the roads.

The previous Road Needs Studies have provided general considerations for establishing a capital improvement plan for the road network, based on the condition, needs, and other factors. As part of this study, a 10-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 to their ongoing Asset Management and Capital Planning work. The updated GIS database, Excel spreadsheets and mapping will 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 project-level review and completing a 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 2 years to update the condition ratings of their road network, to assess ongoing deterioration rates and resulting improvement requirements.

The 2021 Asset Management Plan for the township presented a need to invest \$3.7M per year, on average, for all township road assets. The current allocation for maintenance is less than this amount, leaving a shortfall per year. Over time, this shortfall tends to increase disproportionately, as the deterioration of roads follows an increasing exponential deterioration curve (as opposed to linear) and the gap could increase to a point of never being able to "catch up". Therefore, it is recommended the township align its road maintenance needs with its Asset Management Plan to ensure an effective and efficient roadway network. To illustrate this point, a calculation of the actual road needs for the next five years versus the planned allocated budget reveals a need for approximately \$4.2 million versus the current allocation of \$2.52 million. This is also reflected in Appendix E where some roads requiring maintenance are not in the 10-year program, as those in the program reflect a greater need and are prioritized within the budget constraints that exist.

Figure 31: Asset Management Plan Budget Needs Table

Source: King Township Asset Management Plan (2021)

Should the Township increase their annual road improvement budget to eliminate/keep up with the needs of the network, 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:

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

where:

- PGN is the Priority Guide Number
- Condition Rating is the Pavement Condition Index of the selected road segment
- TF is the Traffic Factor, which is an estimate of the traffic served over the life cycle of the improvement based on the warranted improvement type, the existing AADT and the 10-year projected AADT presented in Table 1 and is 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)

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 road section relative to other road sections. The PGN value is summarized in Appendix A.



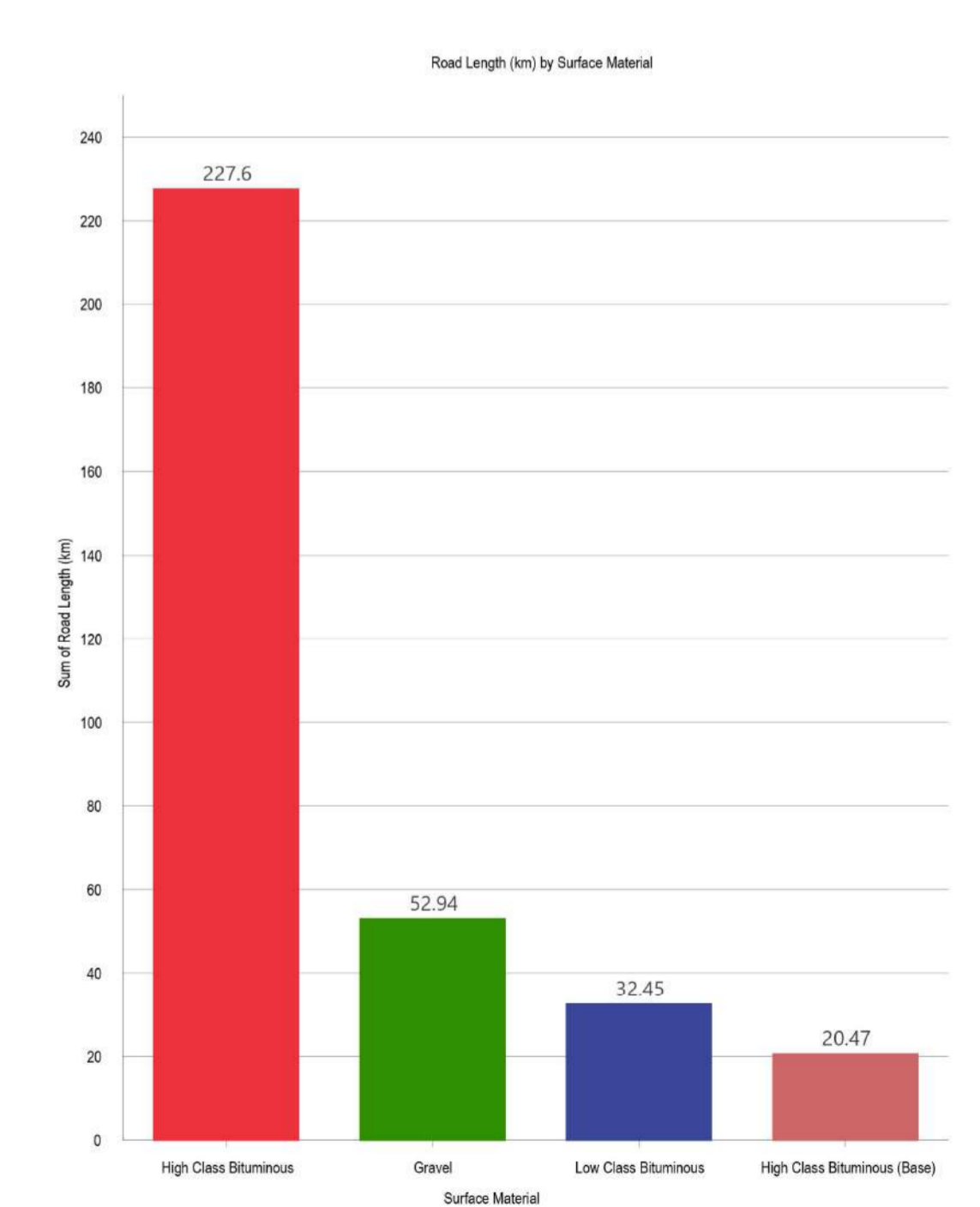
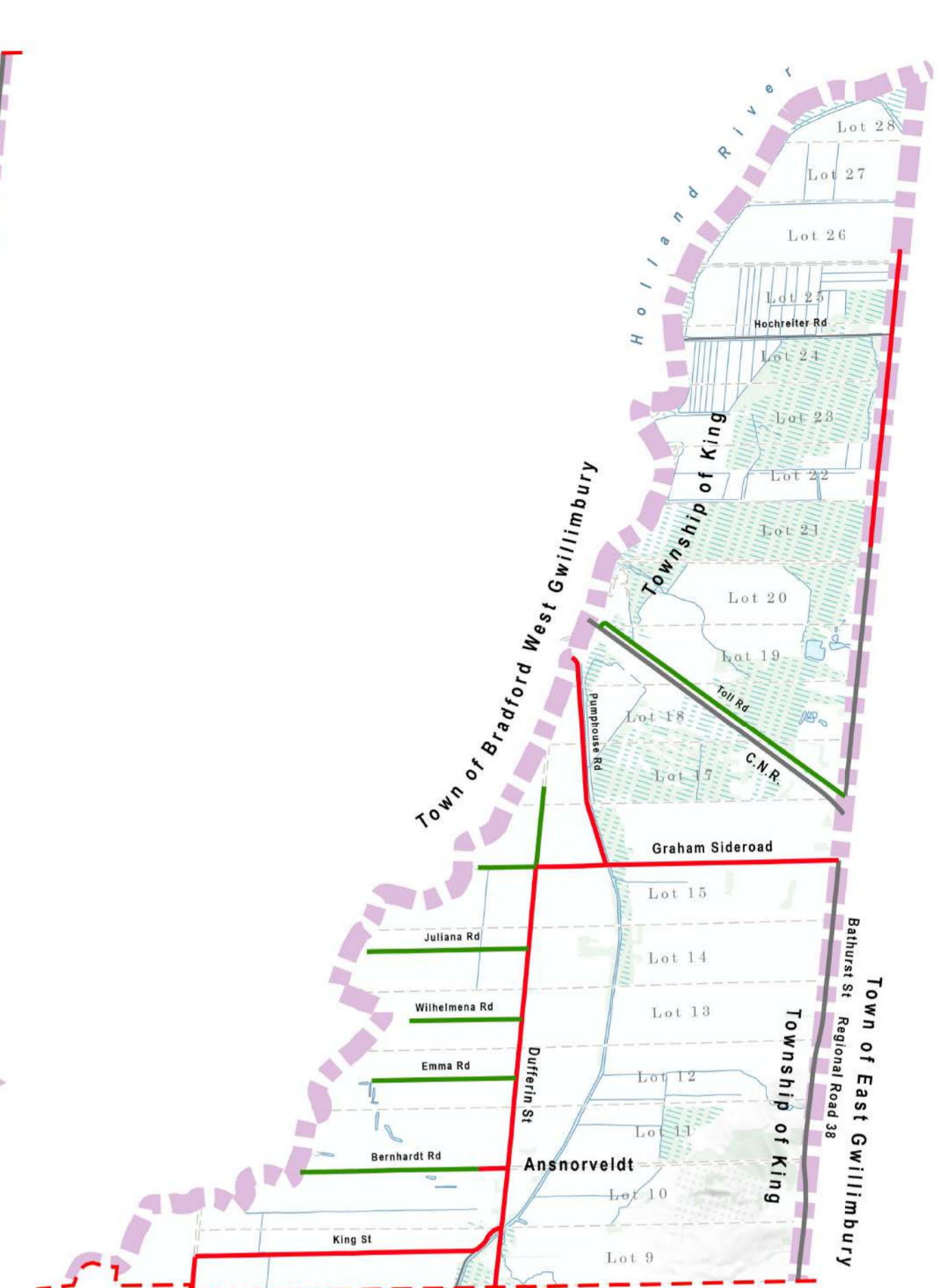
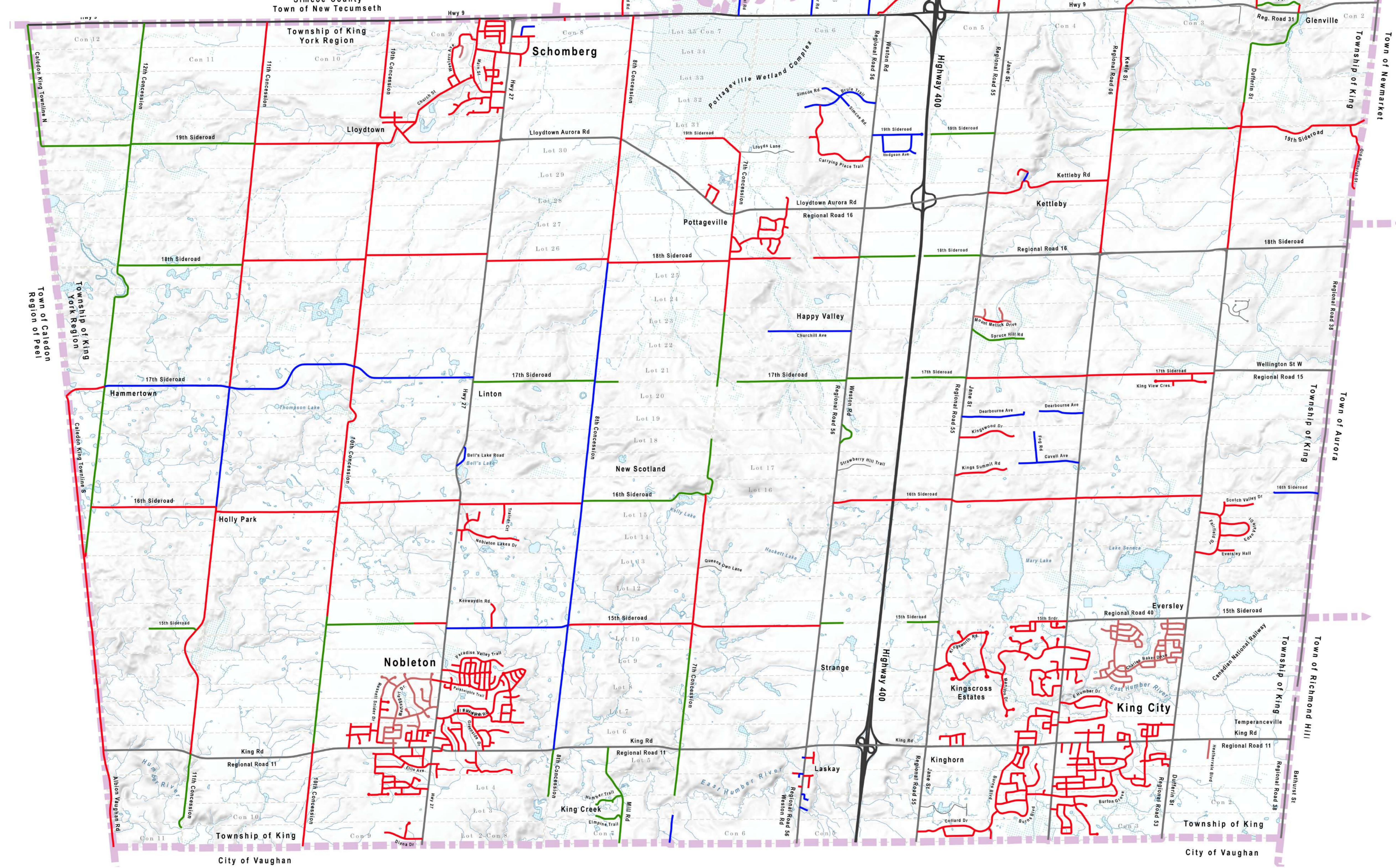
BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]



Appendix A

Road Inventory Maps and Table



Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

Disclaimer:
 R.J. Burnside & Associates Limited and the above mentioned sources and agencies are not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Date: North American 1983 CSRS
Coord. System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°00.00'W
False Easting: 500,000m
False Northing: 0m
Page Orientation: 17E
Scale Factor: 0.99960

Scale: 1:35,000

North Arrow: Grid North

Non-Municipal Roads

- Provincial Highway / Freeway
- Regional Road
- Private Road

Municipal Roads by Surface Material

- High Class Bituminous
- High Class Bituminous (Base)
- Low Class Bituminous
- Gravel

Map Title: 2022 ROADS NEEDS STUDY ROAD SURFACE TYPE

Client: TOWNSHIP OF KING

Drawn: PS
Checked: HC
Date: 2023/03/03
Scale: H 1:35,000
Project No.: 300052814
Map No.: 1

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² calc.)	OSIM Culverts/Bridges
ORRD-0042		17th Concession	18th Sideroad	18th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	80 km/h	00050-0198	113	1902	8.00	7.90	1007	Structure 0219 & 0317
ORRD-0046	136	18th Concession	18th Sideroad	18th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	80 km/h	00050-0198	165	7.00	7.90	462		Structure 0221
ORRD-0051	225	10th Concession	Humintation Road	King Road	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	782	1574	6.50	8.00	10546	
ORRD-0103	351	10th Concession	16th Sideroad	2.06km N. of 16th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	171	2081	5.70	6.70	11749	
ORRD-0161	0	10th Concession	19th Sideroad	19th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	165	2000	6.50	7.90	13000	
ORRD-0174	223	10th Concession	Queen Street	Highway 9	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00200-00394	242	1610	7.20	8.90	11592	
ORRD-0187	0	10th Concession	2.06km N. of 16th Sideroad	17th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	171	338	5.70	6.70	1927	
ORRD-0223	169	10th Concession	16th Sideroad	16th Sideroad	King Twp (Rural)	Not Recorded											
ORRD-0225	0	10th Concession	90m N. of 15th Sideroad	16th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00200-00394	265	1756	6.00	7.90	10536	
ORRD-0229	0	10th Concession	16th Sideroad	16th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00200-00394	265	147	6.00	7.90	882	
ORRD-0234	181	10th Concession	145m N. of King Road	145m N. of King Road	King Twp (Rural)	Not Recorded											
ORRD-0256	181	10th Concession	145m S. of King Road	145m S. of King Road	King Twp (Rural)	No	5	High Class Bituminous	Rural	50 km/h	00400-00994	436	1534	6.50	7.90	14489	
ORRD-0257	306	10th Concession	165m S. of 15th Sideroad	15th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00400-00994	436	166	6.50	7.90	1311	
ORRD-0026	193	11th Concession	18th Sideroad	19th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1993	1967	6.50	9.00	12786	
ORRD-0033	169	11th Concession	16th Sideroad	16th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1534	79	6.50	10.30	414	
ORRD-0034	111	11th Concession	15th Sideroad	240m N. of 15th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00400-00994	402	235	6.50	10.30	1528	
ORRD-0063	75	11th Concession	16th Sideroad	17th Sideroad	King Twp (Rural)	No	5	Low Class Bituminous	Rural	40 km/h	01000-01993	1534	2012	6.50	8.50	13480	
ORRD-0067	241	11th Concession	King Road	End (South)	King Twp (Rural)	No	4	High Class Bituminous	Rural	80 km/h	00050-0198	61	1284	5.70	6.70	8603	
ORRD-0101	177	11th Concession	240m N. of 15th Sideroad	16th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00400-00994	402	1891	6.50	10.30	11707	Structure 0222, 0323 & 0335
ORRD-0102	185	11th Concession	19th Sideroad	Highway 9	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1526	2045	8.70	10.10	1781	
ORRD-0136	137	11th Concession	1.3km N. of King Road	15th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	152	921	6.30	8.50	5802	Structure 0321 & 0322
ORRD-0151	215	11th Concession	18th Sideroad	King Road	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1993	711	6.50	9.00	482	
ORRD-0199	0	11th Concession	1.3km N. of King Road	15th Sideroad	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	152	1273	6.30	8.50	8020	
ORRD-0268	173	11th Concession	17th Sideroad	0.8km N. of 17th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1709	787	6.70	9.10	5273	
ORRD-0270	175	11th Concession	0.8km N. of 17th Sideroad	18th Sideroad	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1709	1272	6.70	9.10	8208	
ORRD-0082	129	12th Concession	2.2km N. of 17th Sideroad	2.2km N. of 17th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00050-0198	127	118	8.00	9.80	988	Structure 0215 & 0313
ORRD-0081	99	12th Concession	1.5km N. of 17th Sideroad	2.2km N. of 17th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00050-0198	127	260	8.20	8.20	5412	
ORRD-0119	335	12th Concession	19th Sideroad	Highway 9	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00050-0198	173	645	7.00	9.00	18405	
ORRD-0147	141	12th Concession	17th Sideroad	1.5km N. of 17th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00050-0198	173	1508	6.00	8.20	12333	
ORRD-0165	153	12th Concession	Caledon King Townline	120m N. of Caledon King Townline	King Twp (Rural)	Not Recorded											
ORRD-0165	16	12th Concession	16th Sideroad	16th Sideroad	King Twp (Rural)	No	3	Gravel	Rural	80 km/h	00400-00994	517	823	6.30	7.30	6008	Structure 0304
ORRD-0207	55	12th Concession	18th Sideroad	19th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00200-00394	384	2031	7.50	8.90	16857	
ORRD-0212	120	12th Concession	17th Sideroad	17th Sideroad	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00200-00394	384	2029	7.50	8.90	16857	
ORRD-0194	5	15th Sideroad	Keele Street	Cairns Gate	King City	No	5	High Class Bituminous	Rural	40 km/h	00400-00994	519	266	7.00	8.90	1862	
ORRD-0195	5	15th Sideroad	Cairns Gate	Elmiers Lane	King City	No	5	High Class Bituminous	Rural	40 km/h	00400-00994	519	265	7.00	8.90	1865	
ORRD-0200	15	15th Sideroad	Elmiers Lane	Elmiers Lane	King City	No	5	High Class Bituminous	Rural	40 km/h	00400-00994	519	265	7.00	8.90	1865	
ORRD-0103	263	15th Sideroad	0.53km E. of Highway 27	10th Concession	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	188	1465	6.30	7.30	10965	
ORRD-0061	167	15th Sideroad	0.53km East of Weston Road	1.8km East of Weston Road	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	599	1225	7.20	8.50	8820	
ORRD-0075	149	15th Sideroad	260m East of 7th Concession	8th Concession	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00200-00394	298	1823	7.00	8.50	12761	
ORRD-0089	159	15th Sideroad	11th Concession	End (West)	King Twp (Rural)	No	6	Gravel	Rural	80 km/h	00000-00043	32	804	5.10	6.10	410	
ORRD-0097	195	15th Sideroad	Jane Street	End (West)	King Twp (Rural)	No	6	Gravel	Rural	80 km/h	00000-00043	47	536	6.00	6.10	3270	
ORRD-0099	241	15th Sideroad	8th Concession	Keewatin Road	King Twp (Rural)	No	4	Low Class Bituminous	Rural	60 km/h	00400-00994	727	1286	6.40	8.20	8230	
ORRD-0166	233	15th Sideroad	Keewatin Road	Highway 27	King Twp (Rural)	No	5	Low Class Bituminous	Rural	50 km/h	00400-00994	727	760	6.00	9.85	4560	Structure 0205, 0206, 0207 & 0208
ORRD-0188	213	15th Sideroad	Weston Road	End (East)	King Twp (Rural)	No	4	Low Class Bituminous	Rural	60 km/h	00050-0198	188	388	5.10	6.10	2871	Structure 0302
ORRD-0080	239	15th Sideroad	Highway 27	0.55km E. of Highway 27	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	108	547	6.30	7.30	3446	
ORRD-0272	12	15th Sideroad	1.8km East of Weston Road	7th Concession	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	599	382	7.20	8.50	2750	
ORRD-0273	12	15th Sideroad	0.53km East of Weston Road	0.53km East of Weston Road	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	599	382	7.20	8.50	2750	
ORRD-0276	13	15th Sideroad	260m East of 7th Concession	260m East of 7th Concession	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00200-00394	266	263	7.20	8.50	1884	
ORRD-0007	133	16th Sideroad	Highway 27	10th Concession	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	72	206	6.00	8.50	14112	
ORRD-0025	175	16th Sideroad	8th Concession	Tranor Court	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00400-00994	443	1306	7.50	8.50	8489	
ORRD-0056	54	16th Sideroad	Jane Street	Highway 400 Overpass	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	01000-01993	1145	963	8.00	8.00	6291	
ORRD-0110	317	16th Sideroad	10th Concession	11th Concession	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	515	2048	7.40	9.40	15155	
ORRD-0130	129	16th Sideroad	Bathurst Street	End (West)	King Twp (Rural)	No	6	Low Class Bituminous	Rural	40 km/h	00000-00043	25	763	5.00	6.00	3765	
ORRD-0178	324	16th Sideroad	Tranor Court	Highway 27	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00400-00994	443	743	6.00	8.50	4300	
ORRD-0180	113	16th Sideroad	7th Concession	8th Concession	King Twp (Rural)	No	5	Gravel	Rural	60 km/h	00400-00994	444	2113	6.00	7.30	15425	
ORRD-0191	201	16th Sideroad	Keele Street	Jane Street	King Twp (Rural)	No	5	High Class Bituminous	Rural	40 km/h	00400-00994	696	2082	6.80	8.90	13741	
ORRD-0222	39	16th Sideroad	Duffern Street	Keele Street	King Twp (Rural)	No	6	High Class Bituminous	Rural	40 km/h	00400-00994	437	2103	7.20	9.80	15142	Structure 0308
ORRD-0223	119	16th Sideroad	11th Concession	11th Concession	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	00400-00994	557	2093	6.00	8.00	2070	
ORRD-0236	331	16th Sideroad	Highway 400 Overpass	Weston Road	King Twp (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01993	1145	1004	6.70	9.70	6727	
ORRD-0016	264	17th Sideroad	Weston Road	End (East)	King Twp (Rural)	No	4	Gravel	Rural	80 km/h	00050-0198	194	946	5.70	6.70	6338	
ORRD-0024	263	17th Sideroad	10th Concession	1.4km 10th Concession	King Twp (Rural)	No	3	Low Class Bituminous	Rural	60 km/h	02000-02994	3000	2888	1441	6.50	12537	
ORRD-0039	283	17th Sideroad	Highway 27	Highway 27	King Twp (Rural)	No	3	Low Class Bituminous	Rural	60 km/h	03000-3999	3000	2053	6.00	8.50	13755	
ORRD-0055	29	17th Sideroad	12th Concession	Caledon King Town Line South	King Twp (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0198	123	687	6.50	8.70	4466	
ORRD-0125	237	17th Sideroad	420m W. of King View Crescent	Keele Street	King Twp (Rural)	No	3	High Class Bituminous	Rural	60 km/h	00050-02994	5727	1338	6.70	9.50	8965	
ORRD-0153	129	17th Sideroad	17th Concession	17th Concession	King Twp (Rural)	No	4	Low Class Bituminous	Rural	60 km/h	02000-02994</						

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² /cat.)	OSIM Culverts/Bridges
ORRD-0092	20	8th Concession	End (South)	King Road	King Twp. (Rural)	No	4	Gravel	Rural	40	00050-0199	170	799	5.10	474		
ORRD-0114	127	8th Concession	18th Sideroad	18th Sideroad	King Twp. (Rural)	No	4	High Class Bituminous	Rural	60	00400-0094	666	60	6.70	6.70	402	
ORRD-0152	73	8th Concession	16th Sideroad	17th Sideroad	King Twp. (Rural)	No	5	Low Class Bituminous	Rural	60	00050-0193	114	204	6.70	8.50	13427	
ORRD-0159	279	8th Concession	16th Sideroad	16th Sideroad	King Twp. (Rural)	No	4	High Class Bituminous	Rural	60	00050-0193	145	1987	6.70	8.50	13313	
ORRD-0185	295	8th Concession	17th Sideroad	17th Sideroad	King Twp. (Rural)	No	5	Low Class Bituminous	Rural	60	01000-0193	1293	1705	6.10	8.10	10400	
ORRD-0189	297	8th Concession	16th Sideroad	16th Sideroad	King Twp. (Rural)	No	4	Low Class Bituminous	Rural	60	01000-0193	1010	2054	6.50	8.50	10351	
ORRD-0194	277	8th Concession	17th Sideroad	17th Sideroad	King Twp. (Rural)	No	4	Low Class Bituminous	Semi-Urban	60	00400-0093	660	19	6.70	8.50	1277	
ORRD-0204	63	8th Concession	King Road	King Road	King Twp. (Rural)	No	4	High Class Bituminous	Rural	60	00400-0093	948	2062	6.70	8.50	13588	
ORRD-0271	129	8th Concession	1.7km N. of 18th Sideroad	Lloydton/Aurora Road	King Twp. (Rural)	No	4	High Class Bituminous	Rural	60	01000-0193	1293	310	6.70	8.50	2077	
KRRD-0095	0	Adelia Place	Nicot Road	End (Cul-de-Sac)	King City	No	5	High Class Bituminous	Urban	50	00200-0393	341	84	8.00	6.00	672	
KRRD-0258	291	Adelia Avenue	Edwards Lane	Edwards Lane	King Twp. (Rural)	No	5	High Class Bituminous	Rural	60	00400-0093	387	702	6.70	7.90	4703	
KRRD-0170	0	Albert Hill Court	Macmurchy Avenue	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	60	00050-0193	160	159	8.50	8.50	1352	
ORRD-0019	261	Albion Vaughan Road	Queensgate Blvd.	340m N. of Queensgate Blvd.	King Twp. (Rural)	Yes	2	High Class Bituminous	Semi-Urban	80	10000-1199	10467	701	6.80	2352	Structure 0315	
ORRD-0094	0	Albion Vaughan Road	72m N. of Old King Road	Caledon King Town Line South	King Twp. (Rural)	Yes	3	High Class Bituminous	Urban	60	10000-1199	10467	175	6.00	1050		
ORRD-0119	163	Albion Vaughan Road	Old King Road	72m N. of Old King Road	King Twp. (Rural)	Yes	2	High Class Bituminous	Urban	80	10000-1199	10467	71	6.80	483		
ORRD-0213	309	Albion Vaughan Road	Queensgate Blvd.	King/Vaughan Boundary	King Twp. (Rural)	Yes	3	High Class Bituminous	Rural	60	10000-1199	10467	204	7.30	1489	Structure 0011	
ORRD-0226	0	Albion Vaughan Road	340m N. of Queensgate Blvd.	Old King Rd.	King Twp. (Rural)	Yes	2	High Class Bituminous	Urban	80	10000-1199	10467	852	7.30	6220		
KRRD-0188	1191	Alex Campbell Crescent	Alex Campbell Crescent (Loop)	King Road	King City	No	5	High Class Bituminous	Urban	40	00400-0093	900	447	8.00	3576		
KRRD-0129	1191	Alex Campbell Crescent	King Road	Alex Campbell Crescent (Loop)	King City	No	5	High Class Bituminous	Urban	40	00400-0093	900	190	8.00	860	1920	
NRRD-0019	2131	Anderson Cove Trail	Paradise Valley Trail	Paradise Valley Trail	Nobleton	No	5	High Class Bituminous	Urban	50	00400-0093	458	182	8.70	8.70	1583	
NRRD-0026	2131	Anderson Cove Trail	Parkheights Trail	Fairmont Ridge Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00400-0093	458	293	8.70	8.70	2549	
KRRD-0042	4005	Archibald Road	235m W. of Cutting Crescent	Cutting Crescent	Pottsville	No	6	High Class Bituminous	Urban	40	00050-0199	108	213	8.50	8.50	1811	
KRRD-0013	4004	Archibald Road	Cook Drive	Cutting Crescent	Pottsville	No	5	High Class Bituminous	Urban	40	00400-0093	563	169	8.50	8.50	1437	
KRRD-0016	4005	Archibald Road	Cutting Crescent	Cook Drive	Pottsville	No	6	High Class Bituminous	Urban	40	00050-0199	108	165	8.50	8.50	1403	
KRRD-0020	4004	Archibald Road	Cutting Crescent	235m W. of Cutting Crescent	Pottsville	No	5	High Class Bituminous	Urban	50	00400-0093	563	234	8.50	8.50	1989	
KRRD-0009	4012	Armstrong Crescent	Cook Drive	Cook Drive	King City	No	6	High Class Bituminous	Urban	40	00400-0093	228	598	8.00	8.50	5293	
KRRD-0150	0	Aspen King Court	Skyline Trail	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40	00050-0199	66	156	8.00	1268		
KRRD-0163	1114	Aukland Lane	Brinell Court	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40	00050-0193	171	246	8.00	8.50	1948	
KRRD-0087	0	Austin Rumble Court	Richard Serra Court	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40	00400-0199	267	251	8.00	8.50	2111	
KRRD-0131	0	Austin Rumble Court	Richard Serra Court	Richard Serra Court	King City	No	6	High Class Bituminous	Urban	40	00050-0199	167	139	8.00	8.00	1112	
KRRD-0001	4018	Bachy Crescent	7th Concession	Pottsville	No	6	High Class Bituminous	Semi-Urban	40	00050-0199	126	188	6.00	8.00	1128		
KRRD-0012	4018	Bachy Crescent	Cook Drive	Cook Drive	Pottsville	No	6	High Class Bituminous	Semi-Urban	40	00050-0199	126	283	6.00	8.00	1698	
KRRD-0199	0	Ballard Drive	Larkin Avenue	Oliver Emmerson Avenue	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	302	101	8.50	8.50	2321	
KRRD-0202	0	Ballard Drive	Oliver Emmerson Avenue	Wilkie Avenue	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	302	2321	8.50	8.50	2321	
KRRD-0014	1062	Banner Lane	Warren Road	Elizabeth Grove	King City	No	5	High Class Bituminous	Urban	40	00400-0093	532	342	8.50	8.50	2907	
KRRD-0023	1050	Banner Lane	330m S. of King Road	Bennet Drive	King City	No	5	High Class Bituminous	Rural	40	00400-0093	555	741	8.50	8.50	2421	
KRRD-0046	0	Banner Lane	Bennet Drive	Kingstlyn Drive	King City	No	5	High Class Bituminous	Semi-Urban	40	00400-0093	555	104	7.20	9.40	1745	
KRRD-0057	0	Banner Lane	Kingstlyn Drive	Warren Road	King City	No	5	High Class Bituminous	Urban	40	00400-0093	555	107	8.00	8.50	816	
KRRD-0239	1048	Banner Lane	30m S. of King Road	30m S. of King Road	King City	No	5	High Class Bituminous	Urban	40	01000-0193	1403	27	8.00	8.50	2100	
KRRD-0242	1050	Banner Lane	30m S. of King Road	330m S. of King Road	King City	No	5	High Class Bituminous	Urban	40	00400-0093	592	300	8.50	10.50	2400	
KRRD-0119	0	Basil Ridge Court	End (Cul-de-Sac)	Lavender Valley Road	King City	No	6	High Class Bituminous	Urban	40	00200-0393	243	67	8.00	5.36		
ORRD-0060	11	Bathurst Street	Hochreiter Road	Kings - Bradford Boundary	King Twp. (Rural)	Yes	5	High Class Bituminous	Rural	50	01000-0199	1161	670	6.50	8.50	3744	Structure 0204
ORRD-0234	349	Bathurst Street	Queensville Sideroad West	Hochreiter Road	King Twp. (Rural)	Yes	5	High Class Bituminous	Rural	50	01000-0199	1161	1443	6.50	8.50	9380	
ORRD-0017	0	Bell's Lake Trail	Highway 27	Highway 27	King Twp. (Rural)	No	4	Low Class Bituminous	Rural	40	00400-0093	827	390	8.70	2913		
SRRD-0005	3075	Ben Boy Avenue	Waterlily Trail	Waterlily Trail	Schomberg	No	6	High Class Bituminous	Urban	40	00200-0393	398	83	8.70	8.70	7213	
SRRD-0050	0	Ben Boy Avenue	Main Street	Dufferin Valley Court	Schomberg	No	6	High Class Bituminous	Urban	40	00200-0393	329	123	8.70	10.70	1070	
KRRD-0069	1075	Ben Boy Avenue	Ben Boy Village Lane	Ben Boy Village Lane	Schomberg	No	6	High Class Bituminous	Urban	40	00200-0393	398	248	8.70	8.70	2158	
KRRD-0037	1042	Bennet Drive	Banner Lane	Forde Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40	00200-0393	307	90	7.00	10.00	630	
KRRD-0068	1038	Bennet Drive	Warren Road	Warren Road	King City	No	6	High Class Bituminous	Urban	40	00200-0393	307	142	8.00	8.50	1136	
KRRD-0121	1038	Bennet Drive	190m E. of Forde Crescent	Forde Crescent (East Intersection)	King City	No	6	High Class Bituminous	Urban	40	00200-0393	307	102	8.00	8.50	816	
KRRD-0205	1040	Bennet Drive	190m E. of Forde Crescent	Forde Crescent (West Intersection)	King City	No	6	High Class Bituminous	Semi-Urban	40	00200-0393	307	190	8.00	8.50	1368	
ARD-0003	327	Bernhardt Road	Dufferin Street	200m W. of Dufferin Street	Ansonvelt	No	-1	High Class Bituminous	Rural	Not Recorded	00200-0393	308	196	5.70	6.70	1117	
KRRD-0021	327.2	Bernhardt Road	200m W. of Dufferin Street	End (West)	Ansonvelt	No	-1	Gravel	Rural	Not Recorded	00200-0393	308	1206	5.70	6.70	8080	
NRRD-0168	0	Bigton Trail	Cosial Trail	Cosial Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00400-0093	458	253	8.00	8.50	2201	
NRRD-0223	2128	Black Duck Trail	Black Duck Trail (Traffic Circle)	Black Duck Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	329	181	8.70	8.70	1575	
NRRD-0144	2127	Black Duck Trail	Parkheights Trail	Thomas Noble Court	Nobleton	No	5	High Class Bituminous	Urban	50	00200-0393	329	99	8.70	8.70	861	
NRRD-0145	2127	Black Duck Trail	Thomas Noble Court	Black Duck Trail (Traffic Circle)	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	329	177	8.70	8.70	1540	
NRRD-0159	0	Black Duck Trail	West Coast Trail	Bluff Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00400-0093	458	295	8.00	8.50	2044	
NRRD-0096	2137	Blue Beech Trail	Bluff Trail	Bluff Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	177	8.00	8.70	1416	
KRRD-0031	1152	Blueberry Lane	Kingstlyn Drive	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	40	00050-0199	101	234	7.30	9.00	1708	
NRRD-0180	0	Blueberry Run Trail	Parkheights Trail	Cosial Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00400-0093	458	169	8.50	8.50	1692	
NRRD-0094	2135	Bluff Trail	Chapel Gully Trail	Chapel Gully Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	80	8.00	8.70	1544	
NRRD-0097	2135	Bluff Trail	Blue Beech Trail	Cape George Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	80	8.00	8.70	640	
NRRD-0099	2135	Bluff Trail	Blue Beech Trail	Cape George Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	81	8.00	8.70	648	
KRRD-0100	2135	Bluff Trail	Parkheights Trail (Traffic Circle)	Cape George Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	111	8.00	8.70	700	
NRRD-0102	2135	Bluff Trail	Cape George Trail	Bluff Trail (Traffic Circle)	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	161	8.00	8.70	1288	
NRRD-0106	2135	Bluff Trail	Blue Beech Trail	Blue Beech Trail	Nobleton	No	5	High Class Bituminous	Urban	50	00200-0393	361	84	8.70	8.70	731	
NRRD-0114	2135	Bluff Trail	Chapel Gully Trail	Chapel Gully Trail	Nobleton	No	6	High Class Bituminous	Urban	40	00200-0393	361	78	8.00	8.70	624	
KRRD-0110	0	Bluff Trail	Robert Berry Crescent	Robert Berry Crescent	King City	No	6	High Class Bituminous	Urban	40							

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² calc.)	OSIM Culverts/Bridges	
KRRD-0034	1086	Charles Street	Charles Street	Melrose Avenue	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00399	346	112	9.00	9.00	1008		
KRRD-0137	1086	Charles Street	Burns Boulevard	James Street	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00399	346	112	9.00	9.00	1008		
KRRD-0047	1132	Chelsea Lane	Kingswood Drive	Fork	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00000-00043	43	138	6.70	9.70	928		
KRRD-0059	1130	Chelsea Lane	Fork	End (East Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	128	249	6.70	9.70	1668		
KRRD-0093	0	Chelsea Lane	Fork	End (West Cul-de-Sac)	King City	No	6	High Class Bituminous	Rural	40 km/h	00000-00043	43	292	6.70	8.70	956		
NRRD-0004	2065	Chinook Drive	Hawman Avenue	Hawman Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	94	132	6.30	8.70	271		
NRRD-0046	2065	Chinook Drive	Hawman Avenue	End (North)	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	94	43	6.30	8.70	271		
NRRD-0071	2064	Chinook Drive	King Road	King Road	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	94	115	6.30	8.70	774		
KRRD-0083	0	Chuck Ormsby Crescent	Richard Serra Court	Ron Coles Lane	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	497	327	8.50	9.70	2780	Structure 0332	
KRRD-0132	0	Chuck Ormsby Crescent	Ron Coles Lane	Ron Coles Lane	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	497	353	8.00	9.00	2824		
KRRD-0134	0	Chuck Ormsby Crescent	Ron Coles Lane	Richard Serra Court	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	497	416	8.00	9.00	3328		
LRRD-0007	3040	Church Street	Church Street	Rebellion Way	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00399	271	293	8.60	9.60	1934		
SRRD-0006	3041	Church Street	Edwards Mill Lane	Western Avenue	Schomberg	No	5	High Class Bituminous	Urban	50 km/h	00400-00999	628	209	8.40	9.40	1756		
SRRD-0022	3040	Church Street	Western Avenue	Castletown Avenue	Schomberg	No	5	High Class Bituminous	Urban	50 km/h	00200-00399	271	137	6.60	8.60	904		
SRRD-0028	3040	Church Street	Castletown Avenue	Centre Street	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00399	271	892	8.70	9.70	1760	Structure 0225	
SRRD-0052	3041	Church Street	Main Street	Edwards Mill Lane	Schomberg	No	5	High Class Bituminous	Urban	50 km/h	00400-00999	628	46	8.40	9.40	386		
ORRD-0015	61	Churchill Avenue	End (West)	End (West)	King Twp. (Rural)	No	6	Low Class Bituminous	Semi-Urban	40 km/h	00200-00399	343	1396	6.00	7.30	8376		
KRRD-0176	0	Claudy Street	Wells Orchard Crescent	Tallon Court	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	423	187	8.00	9.00	1498		
KRRD-0075	1059	Clearview Heights	Keele Street	Clearview Heights	King City	No	5	High Class Bituminous	Semi-Urban	50 km/h	00400-00999	432	75	7.00	8.50	925		
KRRD-0113	1058	Clearview Heights	Elizabeth Crescent	Elizabeth Grove	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00400-00999	489	292	7.00	9.00	2044		
KRRD-0149	1056	Clearview Heights	Clearview Crescent	McBride Crescent	King City	No	5	High Class Bituminous	Semi-Urban	50 km/h	00400-00999	432	201	7.00	8.50	1407		
NRRD-0184	235	Coastal Trail	Bueberry Run Trail	Bueberry Run Trail	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	458	257	8.50	9.50	2165		
KRRD-0231	255	Collard Drive	Winter Road	175m N. of Winter Road	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	102	154	6.40	8.90	986		
KRRD-0232	1160	Collard Drive	175m N. of Winter Road	Burns Boulevard	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	102	186	8.50	8.50	1581		
KRRD-0225	255	Collard Drive	Scott Crescent	Winter Road	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	102	245	6.40	8.90	1089		
KRRD-0207	4000	Collard Drive	Scott Crescent (East Intersection)	Scott Crescent (East Intersection)	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	102	262	8.00	9.00	3033		
KRRD-0228	255	Collard Drive	Jane Street	Scott Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	102	449	6.40	8.90	2874		
PRRD-0003	4000	Cook Drive	Shanks Drive	Shanks Drive	Portavelle	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	922	238	8.50	9.50	2023		
PRRD-0004	4000	Cook Drive	110m W. of Archibald Road	110m W. of Archibald Road	Portavelle	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	922	231	8.50	9.50	1571		
PRRD-0007	4000	Cook Drive	Archibald Road	Archibald Road	Portavelle	No	5	High Class Bituminous	Urban	40 km/h	00400-00999	922	43	8.50	8.50	986		
PRRD-0010	4000	Cook Drive	Archibald Road	Shanks Drive	Portavelle	No	5	High Class Bituminous	Urban	40 km/h	00400-00999	922	119	8.50	8.50	1012		
PRRD-0014	4000	Cook Drive	Armstrong Crescent	Armstrong Crescent	Portavelle	No	5	High Class Bituminous	Urban	40 km/h	00400-00999	922	141	8.50	8.50	1199		
PRRD-0015	4000	Cook Drive	Armstrong Crescent	Armstrong Crescent	Portavelle	No	5	High Class Bituminous	Urban	40 km/h	00400-00999	922	169	8.50	8.50	1352		
PRRD-0017	4000	Cook Drive	Archibald Road	Archibald Road	Portavelle	No	5	High Class Bituminous	Urban	40 km/h	00400-00999	922	176	8.50	8.50	1498		
PRRD-0018	4000	Cook Drive	Archibald Road	110m W. of Archibald Road	Portavelle	No	5	High Class Bituminous	Urban	50 km/h	00400-00999	922	114	8.50	8.50	969		
SRRD-0003	3056	Cooper Drive	Dr. Jones Drive	Dr. Jones Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	01000-01999	1024	368	8.50	8.50	2501		
SRRD-0040	3064	Cooper Drive	Rice Drive	Dr. Jones Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	01000-01999	1024	113	8.50	8.50	981		
SRRD-0061	3064	Cooper Drive	Dr. Jones Drive	Dr. Jones Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	01000-01999	1024	113	8.50	8.50	981		
SRRD-0071	3004	Cooper Drive	Main Street	Rice Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	01000-01999	1024	145	8.50	8.50	1233		
NRRD-0176	0	Coopermine Valley Trail	Coopermine Valley Trail	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00400-00999	458	156	8.50	9.50	1387		
KRRD-0011	1150	Cranberry Lane	Kingscross Drive	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-01199	72	252	7.30	9.00	1840		
NRRD-0036	2004	Crestwood Drive	Janet Avenue	Janet Avenue	Nobleton	No	5	High Class Bituminous	Semi-Urban	50 km/h	00200-00399	312	156	6.40	8.40	998		
NRRD-0118	2004	Crestwood Drive	Janet Avenue	Janet Avenue	Nobleton	No	5	High Class Bituminous	Semi-Urban	50 km/h	00200-00399	312	86	6.40	8.40	550		
KRRD-0062	2000	Cross Valley Drive	Elizabeth Drive	Elizabeth Drive	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	163	200	7.00	8.00	460		
KRRD-0051	1068	Crossley Court	Patricia Drive	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00399	243	202	8.50	8.50	1717		
KRRD-0090	1184	Curran Court	Carmichael Crescent	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	171	174	8.50	8.50	1382		
KRRD-0083	0	Curtiss Crescent	McCullars Drive	McCullars Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	922	567	9.00	9.50	2200		
KRRD-0011	3016	Cutler Court	Cutler Court	End (Cul-de-Sac)	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	00050-01199	127	91	8.50	8.50	774		
KRRD-0008	4006	Cutting Crescent	Archibald Road	Archibald Road	Portavelle	No	6	High Class Bituminous	Urban	50 km/h	00050-01199	139	435	8.50	8.50	3698		
ORRD-0040	283.2	Dava Road	South Canal Bank Road	160m N. of South Canal Bank Road	King Twp. (Rural)	No	-1	High Class Bituminous	Rural	Not Recorded	00400-00999	437	160	6.00	7.90	960		
ORRD-0042	411	Dava Road	160m N. of South Canal Bank Road	2nd Concession	King Twp. (Rural)	No	-1	Gravel	Rural	Not Recorded	00400-00999	437	794	8.00	7.90	6273		
ORRD-0139	47	Dava Road	2nd Concession	King-Simco County Boundary	King Twp. (Rural)	No	4	High Class Bituminous	Rural	80 km/h	00400-00999	437	939	6.00	7.90	5634		
ORRD-0090	125	Dearbourne Avenue	Jane Street	End (East)	King Twp. (Rural)	No	6	Low Class Bituminous	Rural	40 km/h	00050-01199	145	1088	6.00	7.00	6528		
ORRD-0140	0	Dearbourne Avenue	Keele Street	End (West)	King Twp. (Rural)	No	6	Low Class Bituminous	Rural	40 km/h	00050-01199	145	747	6.00	7.00	5810		
KRRD-0208	1188	Dennis Drive	Dennis Drive	Walkington Way	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00400-00999	437	85	8.00	8.50	1020		
KRRD-0217	0	Dennis Drive	Walkington Way	Burns Boulevard	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00399	385	146	8.70	10.00	2970		
KRRD-0158	1076	Dennison Street	Keele Street	Valleycrest Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	132	192	8.00	8.50	1536		
KRRD-0171	1076	Dennison Street	Valleycrest Drive	610m E. of Valleycrest Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	132	211	8.00	8.50	1686		
KRRD-0172	1080	Dennison Street	610m E. of Valleycrest Drive	East Humber Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-01199	132	211	8.00	8.50	1686	Structure 0203	
KRRD-0167	1002	Dew Street	William Street	King Boulevard	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00399	203	244	7.00	9.00	1708		
KRRD-0180	1006	Dew Street	William Street	End (Cul-de-Sac)	King City	No	5	High Class Bituminous	Semi-Urban	50 km/h	00200-00399	203	244	7.00	9.00	1652		
NRRD-0191	0	Di Leo Lane	Caliber Court	Wilson Court	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	Not Recorded	00050-01199	131	40	7.50	8.50	400	
NRRD-0193	0	Di Leo Lane	Caliber Court	Peterson Place	Nobleton	No	-1	High Class Bituminous	Urban	Not Recorded	00050-01199	131	47	8.50	4.00	400		
KRRD-0112	1190	Di Nardo Court	Carmichael Crescent	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban									

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform (m)	Surface Area (m ² calc.)	OSIM Culverts/Bridges
KRRD-0196	0	Elmers Lane	15th Sideroad	Lake Marie Trail	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-0098	519	228	8.0		2420	
KRRD-0231	0	Elmers Lane	Lake Marie Trail	Sir Henry Court	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-0094	519	315	8.0		2420	
ORRD-0144	231	Elmpine Trail	Mill Road	End (West)	King Twp. (Rural)	No	6	Gravel	Semi-Urban	50 km/h	00050-0193	153	487	4.00	5.00	2435	
SRRD-0056	3044	Elmwood Avenue	Castelwood Avenue	Castelwood Avenue	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	104	136	8.50	8.50	1156	
ARRD-0006	329	Elmwood Avenue	Elmwood Avenue	End (West)	King City	No	6	High Class Bituminous	Rural	80 km/h	00200-0039	253	975	5.10	6.10	5848	
ORRD-0104	119	Elmwood Avenue	Elmwood Avenue	End (Cul-de-Sac)	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	115	297	8.00	8.00	2376	
ORRD-0045	189	Elmwood Avenue	Elmwood Avenue	End (Cul-de-Sac)	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	555	405	8.50	8.50	3443	
ORRD-0059	30	Eden Vale Drive	Eden Vale Drive	Eden Vale Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	555	345	8.50	8.50	2760	
ORRD-0074	14	Eden Vale Drive	Eden Vale Drive	Norcliffe Drive	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	555	114	8.00	8.00	3147	Structure 0301
ORRD-0122	353	Eden Vale Drive	Eden Vale Drive	Eden Vale Drive	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	555	241	8.00	8.00	1928	
ORRD-0205	2133	Eden Vale Drive	Eden Vale Drive	Norcliffe Drive	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	555	345	8.50	8.50	2760	
NRDD-0017	2133	Fairmont Ridge Trail	West Coast Trail	Anderson Cove Trail	Nobleton	No	5	High Class Bituminous	Urban	50 km/h	01000-1199	1837	81	8.70	8.70	705	
NRDD-0018	2133	Fairmont Ridge Trail	Black Duck Trail (Traffic Circle)	Anderson Cove Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1837	69	8.70	8.70	600	
NRDD-0154	2133	Fairmont Ridge Trail	West Coast Trail	Bighorn Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1837	82	8.70	8.70	713	
NRDD-0160	2133	Fairmont Ridge Trail	Bighorn Trail	Bighorn Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1837	81	8.70	8.70	705	
NRDD-0174	0	Fairmont Ridge Trail	Blueberry Run Trail	Kettle Valley Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1876	79	8.50	8.50	672	
NRDD-0181	0	Fairmont Ridge Trail	Kettle Valley Trail	Kettle Valley Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1876	303	8.50	8.50	2576	
NRDD-0223	0	Fairmont Ridge Trail	Fairmont Ridge Trail (Traffic Circle)	Blueberry Run Trail	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1876	65	8.50	8.50	553	
NRDD-0220	0	Fairmont Ridge Trail	Black Duck Trail (Traffic Circle)	Black Duck Trail	Nobleton	No	6	High Class Bituminous	Urban	30 km/h	00200-0039	209	99	8.70	8.70	663	
NRDD-0217	0	Fairmont Ridge Trail	Samson Trail	Samson Trail	Nobleton	No	5	High Class Bituminous	Urban	30 km/h	01000-1199	1876	97	6.70	6.70	650	
NRDD-0078	2046	Faris Avenue	135m W. of Kinsley Street	Ellis Avenue	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	184	95	8.00	8.50	780	
NRDD-0082	2046	Faris Avenue	Kinsley Street	135m W. of Kinsley Street	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	245	136	7.00	9.00	952	
NRDD-0244	2044	Faris Avenue	20m W. of Wellington Street	Kinsley St.	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	260	187	6.20	8.20	1159	
NRDD-0065	2120	Farmcrest Court	Woodhill Avenue	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	86	200	8.10	8.70	1620	
KRRD-0135	1162	Farmcrest Court	Burns Boulevard	Dennis Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	264	193	8.50	8.50	1641	
KRRD-0207	1162	Farmcrest Court	Findlay Avenue	Dennis Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	264	193	8.50	8.50	1641	
KRRD-0150	1014	Fisher Street	King Road	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	286	201	8.00	8.50	1609	
ORRD-0182	357	Fog Road	Cavell Avenue	End (North)	King Twp. (Rural)	No	6	Low Class Bituminous	Semi-Urban	50 km/h	00050-0199	147	527	5.50	6.50	2689	
KRRD-0140	30	Forde Crescent	140m E. of Bennet Drive	Bennet Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	286	140	8.00	8.00	2444	
KRRD-0237	1044	Forde Crescent	140m E. of Bennet Drive	Bennet Drive	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	286	140	7.00	10.00	980	
ORRD-0164	153	Forest Trail	Humber Trail	End (South)	King Twp. (Rural)	No	6	Gravel	Rural	50 km/h	00050-0199	153	41	6.00	6.00	246	
NRDD-0088	2030	Forestate Crescent	Noblewood Drive	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	66	76	6.60	9.40	502	
KRRD-0041	0	Fourth Street	West Street	End (East)	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	66	76	6.60	9.40	502	
KRRD-0191	0	Gains Gate	Gallity Court	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00000-0004	36	124	8.20	10.17	1017	
NRDD-0186	0	Giant Cedars Court	Midhead Trail	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-0099	458	156	8.70	7.10	1357	
NRDD-0123	2122	Gilbert Fuller Drive	Woodhill Avenue	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00000-0009	33	263	8.00	8.50	2104	
KRRD-0245	1118	Gilman Circle	McClure Drive	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	28	69	8.00	8.50	444	
ORRD-0111	317	Glenville Road	Davis Drive West	140m N. of Davis Drive West	King Twp. (Rural)	No	-1	High Class Bituminous	Rural	Not Recorded	00050-0199	85	142	5.70	6.70	809	
ORRD-0112	287	Glenville Road	140m N. of Davis Drive West	Duffryn Trail	King Twp. (Rural)	No	-1	Gravel	Rural	Not Recorded	00050-0199	85	142	5.70	6.70	809	
NRDD-0042	2031	Goodfellow Crescent	500m W. of Hill Farm Road	Hill Farm Road (East Intersection)	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	524	242	8.00	8.50	1860	
NRDD-0242	2036	Goodfellow Crescent	500m W. of Hill Farm Road	500m W. of Hill Farm Road (East Intersection)	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	508	495	8.00	8.50	3960	
ORRD-0120	0	Graham Sideroad	Duffryn Street	End (West)	King Twp. (Rural)	No	5	Gravel	Rural	50 km/h	00200-0039	253	393	5.10	6.10	2387	
ORRD-0124	56	Graham Sideroad	Pumphouse Road	Pumphouse Road	King Twp. (Rural)	No	5	High Class Bituminous	Rural	50 km/h	01000-1199	1522	1568	7.20	8.10	11200	
ORRD-0154	0	Graham Sideroad	Pumphouse Road	Duffryn Street	King Twp. (Rural)	No	5	High Class Bituminous	Rural	50 km/h	01000-1199	1522	473	8.00	9.10	3189	
KRRD-0166	0	Great Heron Court	King Boulevard	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	58	150	8.00	12.00	1200	
NRDD-0088	0	Greenside Lane	Skyline Trail	Westbrooke Boulevard	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	361	161	8.00	9.80	1282	
NRDD-0085	027	Greenside Drive	Noblewood Drive	Hill Farm Road	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	2166	278	9.80	9.80	2724	
NRDD-0121	2027	Greenside Drive	35m N. of King Road	Noblewood Drive	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	02000-2299	2166	40	9.80	9.80	980	
NRDD-0141	2027	Greenside Drive	Noblewood Drive	Noblewood Drive	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	02000-2299	2166	261	9.80	9.80	2558	
NRDD-0237	2026	Greenside Drive	King Road	35m N. of King Road	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	02000-2299	2166	35	9.80	9.80	343	
KRRD-0008	1108	Hamby Avenue	50m S. of Hamber Crescent	End	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	72	40	8.00	8.50	320	
KRRD-0049	1102	Hamby Avenue	Humber Crescent	Heritage Park	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	300	55	7.00	8.40	385	
KRRD-0071	0	Hamby Avenue	30m N. of Hamber Crescent	Martin Street	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	283	47	8.00	3.76	376	
KRRD-0085	0	Hamby Avenue	Martin Street	80m N. of Martin Street	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	283	78	8.00	8.00	628	
KRRD-0115	1102	Hamby Avenue	Heritage Park	Humber Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	300	44	7.00	8.40	398	
KRRD-0240	1102	Hamby Avenue	Hamby Avenue	30m N. of Hamber Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	300	49	7.00	8.40	343	
KRRD-0241	1102	Hamby Avenue	Humber Crescent	50m S. of Hamber Crescent	King City	No	5	High Class Bituminous	Urban	50 km/h	00200-0039	300	50	7.00	8.40	350	
KRRD-0043	2000	Hamby Avenue	80m N. of Martin Street	Hamby Avenue	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00200-0039	300	17	8.00	8.50	176	
NRDD-0022	2068	Hawman Avenue	Chinook Drive	Chinook Drive	Nobleton	No	5	High Class Bituminous	Semi-Urban	40 km/h	00400-0099	760	12	6.30	9.50	750	
NRDD-0029	2066	Hawman Avenue	Chinook Drive	Chinook Drive	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-0039	222	280	6.10	8.50	1798	
NRDD-0050	2068	Hawman Avenue	Hazenby Drive	Chinook Drive	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00400-0099	760	65	6.50	9.50	605	
NRDD-0054	2068	Hawman Avenue	Hawman Avenue	Hawman Avenue	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	760	64	6.30	9.50	592	
NRDD-0128	2068	Hawman Avenue	End (Cul-de-Sac)	Henley Drive	Nobleton	No	5	High Class Bituminous	Semi-Urban	40 km/h	00400-0099	760	79	6.30	9.50	448	
NRDD-0002	2124	Hawthorne Valley Road	Woodhill Avenue	End (Cul-de-Sac)	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	846	562	8.00	9.50	4996	
NRDD-0049	2070	Hazelburg Drive	Hawman Avenue	Hawman Avenue	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-0039	300	17	8.00	8.50	176	
NRDD-0148	2070	Henley Drive	Hawman Avenue	Wilson Road	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-0199	131	176	6.00	8.20	1058	
NRDD-0069	2050	Henry Gate	King Road	Ellis Avenue	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00400-0099	562	115	8.50	8.50	978	
KRRD-0028	1106	Heritage Park	Keele Street	Herbys Avenue	King City	No	5	High Class Bituminous	Semi-Urban	50 km/h	00400-0099	486	117	7.00	8.40	819	

Appendix A - Road Inventory Database (Sorted by Road Name)

Previous RNS ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² /calc.)	OSIM Culverts/Bridges	
NRDR-0048	2008	Keheo Court	Russell Snider Drive	End (Cul-de-Sac)	Nobleton		6	High Class Bituminous	Urban	40 km/h	00050-0198	86	125	8.50	8.50	1070		
NRDR-0060	1128	Keri Court	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00000-00044	22	123	8.70	9.70	1070		
NRDR-0211	0	Kettle Valley Trail	Parkhighlights Trail	Fairmont Ridge Trail	Nobleton	No	5	High Class Bituminous	Urban	50 km/h	00400-00994	458	205	8.50	8.70	1743		
BRDR-0001	103	Kellyby Road	Kellyby Road	Lorne Avenue	Kellyby	No	5	High Class Bituminous	Rural	30 km/h	01000-01999	1068	1495	8.30	8.30	9418	Structure 0009 & 0025	
BRDR-0002	105	Kellyby Road	Jones Avenue	Kellyby	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1188	693	6.60	9.40	4505	Structure 0024	
NRDR-0094	1000	King Boulevard	King Road	Dew Street	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	423	163	6.60	9.00	1078	
NRDR-0224	1000	King Boulevard	Great Heron Court	Dew Street	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	423	126	8.00	10.00	1008	
NRDR-0113	217	King Hills Lane	300m E. of Jones Street	King Twp. (Rural)	King City	No	5	High Class Bituminous	Rural	40 km/h	01000-01999	217	304	6.10	7.30	854		
NRDR-0005	315	King Street	Duffren Street	King St. Fork	Ansonville	No	5	High Class Bituminous	Rural	40 km/h	01000-01999	1104	234	6.10	7.30	1427		
ORRD-0163	0	King Street	King St. Fork	Keele Street	King Twp. (Rural)	No	4	High Class Bituminous	Rural	60 km/h	01000-01999	1104	1894	6.10	7.30	11553		
ORRD-0116	0	King View Crescent	King View Crescent (Fork)	End (Cul-de-Sac)	King City	No	5	High Class Bituminous	Rural	50 km/h	02000-00399	269	365	8.00	8.00	2445		
ORRD-0170	199	King View Crescent	King View Crescent (Fork)	Lane Road	King City	No	5	High Class Bituminous	Semi-Urban	Urban	50 km/h	02000-00399	269	317	6.70	10.00	2124	
ORRD-0173	191	King View Crescent	King View Crescent	17th Sideroad	King Twp. (Rural)	No	5	High Class Bituminous	Semi-Urban	Urban	50 km/h	02000-00399	286	116	6.70	11.00	1767	Structure 0318 & 0319
ORRD-0177	33	King View Crescent	King View Crescent (Fork)	End (Cul-de-Sac)	King Twp. (Rural)	No	5	High Class Bituminous	Rural	50 km/h	02000-00399	269	293	6.70	10.00	983	Structure 0305	
NRDR-0155	0	Kinghorn Road	King Road	James Stokes Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	346	169	8.00	8.00	1362		
ORRD-0184	220	King's Summit Road	Jane Street	End (Cul-de-Sac)	King Twp. (Rural)	No	5	High Class Bituminous	Semi-Urban	Urban	50 km/h	02000-00399	215	896	6.50	9.00	5824	Structure 0019
NRDR-0003	1122	Kingscross Drive	Chelsea Lane	Manitou Drive	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1303	742	6.70	9.70	4971	Structure 0330
NRDR-0004	1142	Kingscross Drive	Manitou Drive	Champlain Crescent	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	681	304	6.70	9.70	2037	
NRDR-0018	1144	Kingscross Drive	Kingscross Drive	Snowberry Lane	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	681	285	8.00	11.00	2280	
NRDR-0020	1122	Kingscross Drive	McKellar Lane	Lockhart Lane	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1303	143	6.70	9.70	958	
NRDR-0022	1122	Kingscross Drive	Carmichael Crescent	McKellar Lane	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1303	136	6.70	9.70	911	
NRDR-0035	1122	Kingscross Drive	Lockhart Lane	Ken Court	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1303	425	6.70	9.70	2947	
NRDR-0048	1144	Kingscross Drive	Champlain Crescent	Cranberry Lane	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	681	255	8.00	11.00	2040	Structure 0329
NRDR-0079	1144	Kingscross Drive	Westgate Circle	Ken Court	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	681	231	8.00	11.00	1848	
NRDR-0099	1122	Kingscross Drive	Ken Court	Chelsea Lane	King City	No	5	High Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1303	172	8.00	9.70	1152	
NRDR-0056	1028	Kingslynn Drive	Hollingsworth Drive	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	02000-00399	294	96	6.50	8.00	672		
NRDR-0072	1024	Kingslynn Drive	End (West)	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	02000-00399	294	165	6.50	9.00	1073		
NRDR-0106	1028	Kingslynn Drive	Patton Street	Hollingsworth Drive	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	02000-00399	294	203	7.00	9.80	1421	
NRDR-0242	205	Kingwood Drive	Jane Street	End (Cul-de-Sac)	King Twp. (Rural)	No	6	High Class Bituminous	Urban	50 km/h	00050-0199	683	85	8.50	8.50	8188		
NRDR-0277	1145	Kingwood Drive	Blueberry Lane	Watch Hill Road	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	02000-00399	236	454	6.60	8.20	996	
NRDR-0105	1145	Kingwood Drive	Westgate Circle	Blueberry Lane	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	02000-00399	236	570	6.60	8.20	3762	Structure 0331
NRDR-0108	2048	Kinsley Street	King Road	Faris Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	Urban	50 km/h	00050-0199	184	144	6.70	7.90	985	
NRDR-0201	0	Lake Marie Trail	Sir Henry Court	Nicoll Road	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	424	80	8.00	8.00	688		
NRDR-0202	0	Lake Marie Trail	Sir Henry Court	15th Sideroad	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	519	73	6.70	9.00	985		
ORRD-0067	271	Lane Road	King View Crescent	End (South)	King Twp. (Rural)	No	6	High Class Bituminous	Semi-Urban	Urban	50 km/h	00000-00044	15	86	6.70	11.00	576	
NRDR-0146	0	Langdon Drive	180m N. of Wellington Way	John Tanner Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	278	80	8.00	8.00	720		
NRDR-0219	0	Langdon Drive	Langdon Drive	John Tanner Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	278	143	8.00	8.00	1144		
NRDR-0220	0	Langdon Drive	Langdon Drive	Tieno Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	278	183	8.00	8.00	1464		
NRDR-0221	0	Langdon Drive	Langdon Drive	Hogan Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	278	67	8.00	8.00	536		
NRDR-0236	1172	Langdon Drive	Washington Way	Burns Boulevard	King City	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	278	67	8.00	8.50	1506		
NRDR-0161	0	Larkin Avenue	180m N. of Wellington Way	Starrett Street	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	302	159	8.50	8.50	1352		
NRDR-0162	0	Larkin Avenue	Ballard Drive	Wilks Avenue	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	302	209	8.50	8.50	1777		
NRDR-0163	0	Larkin Avenue	Starrett Street	Ballard Drive	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	302	115	8.50	8.50	976		
NRDR-0111	0	Laskay Lane	Weston Road	End (East)	Laskay	No	5	Low Class Bituminous	Rural	50 km/h	00000-00044	26	147	4.20	4.20	617		
YRDR-0001	248.1	Laskay Mills Drive	Weston Road	Rolling Court	Laskay	No	5	High Class Bituminous	Urban	50 km/h	02000-00399	243	107	8.00	8.00	856		
YRDR-0012	248.2	Laskay Mills Drive	Weston Road	Rolling Court	Laskay	No	5	High Class Bituminous	Urban	50 km/h	02000-00399	243	67	8.00	8.00	536		
NRDR-0068	0	Lavender Valley Road	Basal Ridge Court	Spring Hill Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	627	603	6.70	8.00	404		
NRDR-0117	0	Lavender Valley Road	Basal Ridge Court	Spring Hill Drive	King City	No	5	High Class Bituminous	Urban	50 km/h	00400-00994	627	169	5.50	8.00	1437		
NRDR-0118	0	Lavender Valley Road	Ria Court	Warren Road	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	627	308	8.00	8.00	2484		
ORRD-0205	0	Leonard Road	Highway 27	King - Simcoe County Boundary	King Twp. (Rural)	No	5	High Class Bituminous	Rural	60 km/h	02000-00399	244	491	7.20	8.80	3535		
NRDR-0198	0	Lily Valley Crescent	Nicoll Road	Nicoll Road	King City	No	5	High Class Bituminous	Urban	50 km/h	00400-00994	627	434	8.00	8.00	3472		
ORRD-0200	0	Lipchey Road	Keele Street	End (East)	King Twp. (Rural)	No	-1	Gravel	Semi-Urban	Not Recorded	00050-0199	60	886	6.20	7.90	6999		
NRDR-0011	3020	Little Rebel Road	19th Sideroad	Rebellion Way	King Twp. (Rural)	No	5	High Class Bituminous	Semi-Urban	Urban	50 km/h	00400-00994	592	295	6.00	10.00	2065	
ORRD-0043	291	Lloydwood/Aurora Road	Highway 27	Rebellion Way	King Twp. (Rural)	No	5	High Class Bituminous	Rural	50 km/h	00400-00994	659	1510	6.30	6.10	9513		
ORRD-0093	0	Loch Erne Lane	Hilliard Grove	Nobleton Lakes Drive	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	168	68	8.00	8.50	544		
ORRD-0192	217	Loch Erne Lane	Hilliard Grove	End (Cul-de-Sac)	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	319	312	8.00	8.50	2496		
NRDR-0086	1126	Lockhart Lane	Kingscross Drive	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00050-0199	72	292	6.70	9.70	1956	
BRDR-0003	109	Lorne Avenue	165m N. of Kettleby Road	Kettleby	King City	No	6	Low Class Bituminous	Rural	40 km/h	00000-00044	26	167	5.00	5.00	688		
BRDR-0004	0	Lorne Avenue	End (South)	Kettleby	King City	No	6	High Class Bituminous	Rural	40 km/h	00000-00044	26	251	6.10	8.00	1060		
NRDR-0045	2016	Lynwood Crescent	235m N. of Norman Avenue	Hill Farm Road	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	378	163	8.50	8.50	1386		
NRDR-0079	2014	Lynwood Crescent	Royal Avenue	Norman Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	467	107	7.00	8.50	749	
NRDR-0142	2014	Lynwood Crescent	King Road	Norman Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	467	110	7.00	8.50	749	
NRDR-0241	2014	Lynwood Crescent	Norman Avenue	235m N. of Norman Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	Urban	40 km/h	00400-00994	467	234	7.00	8.50	1638	
NRDR-0008	0	Macmurchy Avenue	Albert Hill Court	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	302	283	8.50	8.00	2406		
NRDR-0089	0	Macmurchy Avenue	Macmurchy Avenue	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	02000-00399	302	169	8.00	10.00	1690		
SRDR-0053	3002	Magnum Drive	Proctor Road	End (Cul-de-Sac)	Schomberg	No	5	Low Class Bituminous	Semi-Urban	Urban	40 km/h	01000-01999	1092	367	7.30	9.70	2679	
NRDR-0173	0	Mahaffy Court	Larkin Avenue	End (Cul-de-Sac)	Nobleton													

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside	Posted Speed Limit (km/h)	AADT	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² calc.)	OSIM Culverts/Bridges	
KRRD-0188		Nicort Road	Lily Valley Crescent	Adella Place	King City	No	5	High Class Bituminous	Urban	50 km/h	04040-0993	934	96	8.00				
KRRD-0189	0	Nicort Road	Terry View Drive	Lily Valley Crescent	King City	No	5	High Class Bituminous	Urban	50 km/h	04040-0994	934	200	8.00		1600		
KRRD-0197	0	Nicort Road	Duffin Street	Lily Valley Crescent	King City	No	5	High Class Bituminous	Urban	50 km/h	04040-0994	934	83	8.00		664		
KRRD-0190	0	Noble Oaks Court	Middlehead Trail	End (Cul-de-Sac)	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	38	107	8.00		331		
ORRD-0087	299	Nobleton Lakes Drive	Loch Erne Lane	Loch Erne Lane	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	04040-0993	963	854	8.00	8.50	7632		
ORRD-0171	203	Nobleton Lakes Drive	Highway 27	Earhwood Crescent	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	963	81	8.00	8.50	648		
ORRD-0220	235	Nobleton Lakes Drive	Earhwood Crescent	Loch Erne Lane	King Twp. (Rural)	No	5	High Class Bituminous	Urban	40 km/h	04040-0993	963	50	8.00	8.50	400		
NRRD-0013	252	Nobleview Drive	Simon Henry Avenue	End (North)	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	256	62	8.00		527		
NRRD-0043	2052	Nobleview Drive	Hilside Drive	Simon Henry Avenue	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	256	139	8.00		1182		
NRRD-0120	2052	Nobleview Drive	King Road	Hilside Drive	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	256	221	8.50		1879		
NRRD-0041	2028	Noblewood Drive	Hollywood Crescent	Hollywood Crescent	Notation	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1752	184	8.40	9.00	1178		
NRRD-0078	2028	Noblewood Drive	Greenside Drive	Greenside Drive	Notation	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1752	197	6.40	9.00	1261		
NRRD-0147	2028	Noblewood Drive	Greenside Drive	Greenside Drive	Notation	No	5	High Class Bituminous	Urban	50 km/h	01000-1199	1752	176	6.40	9.00	1176		
ORRD-0106	0	Norciffie Drive	Fairfield Drive	Scotch Valley Drive	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	00000-0043	18	207	8.50		1780	Structure 0004.0005.0006.0007 & 210	
ORRD-0108	121	Norciffie Drive	Scotch Valley Drive	End (Cul-de-Sac)	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	00000-0043	18	68	8.00		544		
NRRD-0009	2012	Norman Avenue	Highway 27	Lynwood Crescent	Notation	No	5	High Class Bituminous	Semi-Urban	50 km/h	02020-0394	292	251	5.80	7.80	1458		
KRRD-0076	1098	Norman Drive	Martin Street	Martin Street	King City	No	5	High Class Bituminous	Urban	50 km/h	04040-0994	403	413	8.00	8.50	3511		
KRRD-0092	1098	Norman Drive	George Armstrong Lane	Hambly Avenue	King City	No	6	High Class Bituminous	Urban	40 km/h	04040-0993	403	105	8.00	8.50	840		
NRRD-0098	2145	Northcott Way	Westbrooke Boulevard	Shivine Trail	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0996	466	161	8.00	8.50	1298		
NRRD-0087	2145	Northcott Way	Westbrooke Boulevard	Westbrooke Boulevard	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0993	466	95	8.00	8.50	760		
NRRD-0117	2145	Northcott Way	Skyline Trail	New Scotland Court	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	466	179	8.00	8.50	1432		
NRRD-0203	2145	Northcott Way	New Scotland Court	End (Cul-de-Sac)	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0996	466	58	8.00	8.50	454		
ORRD-0058	349	Old Bathurst Street	Old Bathurst Street	700m N. of Bathurst Street	King Twp. (Rural)	No	5	High Class Bituminous	Rural	40 km/h	00050-0193	113	717	6.00	9.60	4302		
ORRD-0064	275	Old Bathurst Street	700m N. of Bathurst Street	19th Sidestrad	King Twp. (Rural)	No	5	High Class Bituminous	Rural	60 km/h	00050-0193	26	194	6.00	9.60	2574		
YRRD-0005	247	Old Church Road	Weston Road	End (East)	Laskaw	No	6	Low Class Bituminous	Semi-Urban	50 km/h	00000-0043	113	429	4.50	5.50	873		
YRRD-0009	251	Old Forge Road	End (West)	End (West)	Semi-Urban	No	6	Low Class Bituminous	Semi-Urban	50 km/h	00000-0043	113	429	4.50	5.50	881		
NRRD-0027	2000	Old King Road	Highway 27	King Road	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0996	436	181	11.00	9.60	1466		
NRRD-0212	0	Oliver Emmons Avenue	Munzie Drive	Larkin Avenue	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	302	179	11.00		1969		
NRRD-0213	0	Oliver Emmons Avenue	Munzie Drive	Larkin Avenue	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	302	202	11.00		2380		
NRRD-0214	0	Oliver Emmons Avenue	Munzie Drive	Wilkie Avenue	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	302	204	11.00		2344		
NRRD-0215	0	Oliver Emmons Avenue	Munzie Drive	Munzie Drive	Notation	No	6	High Class Bituminous	Urban	40 km/h	02020-0394	302	130	11.00		1430		
NRRD-0034	2096	O'Neill Court	Russell Snider Drive	End (Cul-de-Sac)	Notation	No	6	High Class Bituminous	Urban	40 km/h	00050-0193	86	183	8.50	9.50	1556		
NRRD-0020	2130	Paradise Valley Trail	Anderson Cove Trail	Anderson Cove Trail	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	458	67	11.00		497		
NRRD-0155	2130	Paradise Valley Trail	Paradise Valley Trail	Unnamed (Planned Road)	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	458	197	8.70	8.70	1714		
NRRD-0166	2130	Paradise Valley Trail	Paradise Valley Trail	West Coast Trail	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	458	61	8.70	8.70	1531		
NRRD-0175	0	Paradise Valley Trail	Paradise Valley Trail	Farmton Ridge Trail	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	458	111	8.00		944		
NRRD-0188	0	Paradise Valley Trail	Paradise Valley Trail	Unnamed (Planned Road)	Notation	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	458	264	8.70		2297		
NRRD-0021	2126	Parkheights Trail	Parkheights Trail (Traffic Circle)	West Coast Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	144	11.00	11.70	1281		
NRRD-0111	2126	Parkheights Trail	Parkheights Trail	James Bowman Court	Parkheights Trail (Traffic Circle)	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	111	11.00	11.70	1524	
NRRD-0188	2126	Parkheights Trail	Parkheights Trail	Bluesteryn Run Trail	Parkheights Trail (Traffic Circle)	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	147	11.00	11.80	1737	
NRRD-0177	2125	Parkheights Trail	Parkheights Trail	Middlehead Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	145	11.00	11.80	1955		
NRRD-0178	2125	Parkheights Trail	Parkheights Trail	Middlehead Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	179	14.20	11.80	2542		
NRRD-0179	2125	Parkheights Trail	Parkheights Trail	Kettle Valley Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	80	11.00	11.80	880		
NRRD-0208	2126	Parkheights Trail	Parkheights Trail	Black Duck Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	249	11.70		2139		
NRRD-0208	2126	Parkheights Trail	Parkheights Trail	West Coast Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	100	11.70	11.70	1170		
NRRD-0209	2126	Parkheights Trail	Parkheights Trail	Anderson Cove Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	44	11.70	11.70	517		
NRRD-0110	2126	Parkheights Trail	Parkheights Trail	Castle Mountain Court	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	49	11.70	11.70	573		
NRRD-0167	0	Parkheights Trail / Traffic Circle	Parkheights Trail	Black Duck Trail	Notation	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	838	98	6.40	6.20	625		
NRRD-0157	0	Parkheights Trail / Traffic Circle	Parkheights Trail	Parkheights Trail	Notation	No	5	High Class Bituminous	Urban	30 km/h	04040-0994	838	94	6.40	6.40	602		
NRRD-0007	2002	Parkview Drive	Parkview Drive	Ellis Avenue	Notation	No	5	High Class Bituminous	Semi-Urban	50 km/h	04040-0994	423	104	6.40	8.40	666		
NRRD-0119	2002	Parkview Drive	Parkview Drive	Cresview Road	Notation	No	5	High Class Bituminous	Semi-Urban	50 km/h	04040-0994	423	40	6.40	8.40	256		
KRRD-0030	1066	Patricia Drive	Patricia Drive	Crossley Court	King City	No	5	High Class Bituminous	Urban	40 km/h	04040-0994	747	140	8.00	9.50	1120		
KRRD-0086	1060	Patricia Drive	Patricia Drive	McBride Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	02020-0394	396	295	7.00	8.40	2065		
KRRD-0136	1057	Patricia Drive	Patricia Drive	McBride Crescent	King City	No	6	High Class Bituminous	Semi-Urban	40 km/h	04040-0994	423	201	7.00	8.00	1407		
KRRD-0141	1066	Patricia Drive	Patricia Drive	Elizabeth Grove	King City	No	5	High Class Bituminous	Urban	40 km/h	04040-0993	747	324	8.00	8.50	2952		
KRRD-0143	1066	Patricia Drive	Patricia Drive	Warren Road	King City	No	5	High Class Bituminous	Urban	50 km/h	04040-0994	747	217	8.50	8.50	1845		
KRRD-0009	1016	Patton Street	Patton Street	Hollingsworth Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1388	104	8.00	8.50	832		
KRRD-0026	1018	Patton Street	Patton Street	Hollingsworth Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	01000-1199	1388	299	8.00	8.50	2152		
KRRD-0050	1018	Patton Street	Patton Street	Warren Road	King City	No	5	High Class Bituminous	Semi-Urban	40 km/h	04040-0994	997	104	7.00	9.70	728		
KRRD-0082	1018	Patton Street	Patton Street	Warren Road	King City	No	5	High Class Bituminous	Semi-Urban	40 km/h	04040-0994	997	101	7.00	9.70	707		
KRRD-0013	1116	Peter Kings Road	Peter Kings Road	McClure Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	04040-0994	811	103	8.00	8.50	808		
KRRD-0153	0	Peter Kings Road	Peter Kings Road	James Stokes Court	King City	No	6	High Class Bituminous	Urban	40 km/h	02020-0393	341	803	8.00		624		
NRRD-0194	0	Petersen Place	Petersen Place	Di Meo Lane	Notation	No	-1	High Class Bituminous	Urban	Not Recorded	00050-0196	143	24	7.50		180		
NRRD-0195	0	Petersen Place	Petersen Place	Di Meo Lane	Notation	No	-1	High Class Bituminous	Urban	Not Recorded	00050-0196	143	31	7.50		233		
NRRD-0196	2144	Prince Adam Court	Prince Adam Court	Skyline Trail	Notation	No	6	High Class Bituminous	Urban	40 km/h	00050-0196	171	67	8.00	8.50	516		
YRRD-0003	256	Prince Adam Court	Prince Adam Court	Centre View Avenue	Laskaw	No	6	High Class Bituminous	Semi-Urban	50 km/h	00050-0196	171	104	7.50	9.50	780		
YRRD-0004	256	Prince Adam Court	Prince Adam Court	Centre View Avenue	Laskaw	No	6	High Class Bituminous	Semi-Urban	50 km/h	00050-0196	171	104	7.50	9.50	780		
SRRD-0054	3000	Proctor Road	Proctor Road	Dillane Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	02000-2293	2140	107	8.50		910		
SRRD-0062	3000	Proctor Road	Proctor Road	Magnum Drive	Schomberg	No	5	High Class Bituminous	Urban	40 km/h	02000-2293</							

Appendix A - Road Inventory Database (Sorted by Road Name)

Municipal ID	Previous RNS ID	Name	Name From	Name To	Community	Boundary Road	Maintenance Class	Surface Material	Roadside Environment	Posted Speed Limit (km/h)	AADT Range	AADT	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ² /calc.)	OSIM Culverts/Bridges
NRDD-0088	262	Simon Henry Avenue	Cedarwood Crescent	Nobleview Drive	Nobleton		5	High Class Bituminous	Urban	40 km/h	00050-0198	61	336	8.00	8.50	282	
KRRD-0190	0	Sir Henry Court	End (Cul-de-Sac)	Elmiers Lane	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	519	129	8.00		1032	
KRRD-0230	0	Lake Marie Trail	Elmiers Lane	Elmiers Lane	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	519	129	8.00		1032	
NRDD-0082	2141	Skyline Trail	Greenlaw Lane	Northcott Way	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	56	8.00	8.70	448	
NRDD-0083	2141	Skyline Trail	Greenlaw Lane	Northcott Way	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	141	8.00	8.70	1128	
NRDD-0091	2139	Parkheights Trail (Traffic Circle)	Bluff Trail (Traffic Circle)	Bluff Trail (Traffic Circle)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	269	8.00	8.60	2152	
NRDD-0110	2141	Skyline Trail	Westbrooke Boulevard	Piper Court	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	96	8.00	8.70	788	
NRDD-0111	2141	Skyline Trail	Bluff Trail (Traffic Circle)	Bluff Trail (Traffic Circle)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	113	8.00	8.70	832	
NRDD-0115	2141	Skyline Trail	Aspen King Court	Westbrooke Boulevard	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	118	8.00	8.70	944	
NRDD-0092	0	Skyline Trail / Bluff Trail / Hill farm Road (Traffic Circle)	Skyline Trail	Skyline Trail	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	361	199	6.70	6.70	663	
KRRD-0128	1149	Shelberry Lane	Kingscross Drive	End (Loop)	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00050-0199	155	107	6.00	6.00	1253	
KRRD-0208	69	South Canal Bank Road	Jane Street	West Road	King Twp. (Rural)	No	6	High Class Bituminous	Rural	50 km/h	00050-0199	155	90	7.00	7.00	6099	
ORRD-0044	349	South Canal Bank Road	Highway 400	Highway 400	King Twp. (Rural)	No	6	Low Class Bituminous	Rural	50 km/h	00050-0199	155	65	5.70	6.70	370	
ORRD-0206	161	South Canal Bank Road	Jane Street	End (East)	King Twp. (Rural)	No	6	Gravel	Rural	15 km/h	00050-0199	155	544	6.80	7.80	4243	Structure 0325
ORRD-0215	433	South Canal Bank Road	Highway 400	Highway 400	King Twp. (Rural)	No	6	High Class Bituminous	Rural	50 km/h	00050-0199	155	117	7.20	8.10	1114	
ORRD-0259	18	South Canal Bank Road	Highway 400	West Road	King Twp. (Rural)	No	5	Low Class Bituminous	Rural	60 km/h	00050-0199	155	55	5.70	6.70	313	
KRRD-0116	0	Springs Hill Drive	Adella Place	Adella Place	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	290	332	8.00		2656	
KRRD-0120	0	Springs Hill Drive	Adella Place	Lavender Valley Road	King City	No	5	High Class Bituminous	Urban	50 km/h	00200-00394	290	311	8.50		2644	
KRRD-0161	0	Springs Hill Drive	Lavender Valley Road	End (West)	King City	No	5	High Class Bituminous	Urban	50 km/h	00200-00394	290	116	8.70		1009	
YRRD-0002	0	Spring Street	End (West)	Laslay	King City	No	6	High Class Bituminous	Rural	50 km/h	00000-00043	26	65	3.50		228	
SRRD-0002	0	Soroule Street	Dillane Drive	End (Cul-de-Sac)	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00050-01994	72	207	8.50		1760	
ORRD-0134	300	Spruce Hill Road	300m E. of Jane Street	King City	King City	No	5	Gravel	Rural	60 km/h	00050-0199	92	632	6.00		956	
KRRD-0171	0	Stan Roots Street	King Road	Sim Hill Crescent	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	290	78	8.00		624	
KRRD-0172	0	Stan Roots Street	Sim Hill Crescent	Sim Hill Crescent	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	290	115	8.00		920	
KRRD-0173	0	Stan Roots Street	Sim Hill Crescent	Talton Court	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	290	88	8.00		704	
NRDD-0092	0	Starnett Street	Larkin Avenue	Starnett Street	Nobleton	No	5	High Class Bituminous	Urban	40 km/h	00200-00394	290	110	8.00		925	
KRRD-0148	1154	Station Road	Burton Grove	West Street	King City	No	4	High Class Bituminous	Urban	60 km/h	01000-01994	1462	139	10.30	10.30	1432	
KRRD-0204	1156	Station Road	West Street	Burns Boulevard	King City	No	5	High Class Bituminous	Urban	40 km/h	01000-01994	1462	284	9.80	9.80	2783	Structure 0016
ORRD-0128	283	Strawberry Lane	Alleen Avenue	Alleen Avenue	King Twp. (Rural)	No	5	High Class Bituminous	Rural	40 km/h	00400-00994	415	179	7.00	7.00	1161	
SRRD-0046	3077	Summit Ridge Drive	Rose Cottage Lane	Rose Cottage Lane	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	245	8.70	8.70	2131	Structure 0216 & 0312
KRRD-0025	0	Sunbrook Street	Sunbrook Street	End (North)	King City	No	6	High Class Bituminous	Urban	50 km/h	00050-0199	58	41	8.50		349	
NRDD-0077	2102	Sunset Drive	Russell Snider Drive	Cedarwood Crescent	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	191	125	8.50	8.50	1063	
KRRD-0016	0	Talton Court	Talton Court	155m W. of Duffren Street	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	198	8.00		1264	
KRRD-0019	0	Talton Court	Stan Roots Street	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	176	8.00		1376	
KRRD-0024	0	Talton Court	Sunbrook Street	Wells Orchard Crescent	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	53	8.00		424	
KRRD-0169	0	Talton Court	Claudvieve Street	Stan Roots Street	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	85	8.00		680	
KRRD-0178	0	Talton Court	Claudvieve Street	Wells Orchard Crescent	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	89	8.00		712	
KRRD-0233	0	Talton Court	155m W. of Duffren Street	Sunbrook Street	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	346	57	8.50		486	
KRRD-0040	1188	Tawes Trail	Jenkinson Grove	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00000-00043	43	112	8.00	8.50	895	
KRRD-0144	0	Tawes Trail	Jenkinson Grove	End (West)	King City	No	5	High Class Bituminous	Urban	40 km/h	00000-00043	43	118	8.00		944	
KRRD-0124	0	Terry Drive	Valley Point Crescent	End (South)	King City	No	5	High Class Bituminous	Urban	50 km/h	00400-00994	423	25	8.00		200	
KRRD-0125	0	Terry Drive	Nisort Road	Valley Point Crescent	King City	No	5	High Class Bituminous	Urban	50 km/h	00400-00994	423	91	8.00		728	
NRDD-0146	2143	Thomas Noble Court	Black Duck Trail	End (Cul-de-Sac)	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	193	8.60	8.60	1660	
KRRD-0093	2143	Tripp Court	Adrian King Court	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	466	124	8.00		992	
KRRD-0209	0	Tieno Court	Langdon Drive	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	72	41	8.00		328	
ORRD-0244	0	Toi Road	Bathurst Street	Highway 11	King Twp. (Rural)	No	5	Gravel	Rural	60 km/h	00050-0199	74	2051	4.00	5.00	10255	
ORRD-0003	020	Tranor Court	16th Side Road	End (Cul-de-Sac)	King Twp. (Rural)	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	334	8.50	8.50	2939	
KRRD-0123	0	Terry View Drive	Valley Point Crescent	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	50 km/h	00200-00394	215	133	8.00		1064	
KRRD-0064	1078	Valleycrest Drive	Dennison Street	End (Cul-de-Sac)	King City	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	58	90	8.50		570	
KRRD-0010	3036	Valleycrest Drive	Queen Street	End East	Lloydton	No	6	High Class Bituminous	Urban	50 km/h	00050-0199	61	133	4.00	8.50	729	
KRRD-0001	2170	Valleycrest Drive	Burns Boulevard	Langdon Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	240	198	8.50		1883	
KRRD-0091	1170	Valleycrest Drive	Langdon Drive	Dennis Drive	King City	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	240	230	8.50		1955	
KRRD-0012	0	Warren Road	120m E. of Talton Street	Banner Lane	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	844	189	8.00		1512	
KRRD-0015	1034	Warren Road	50m N. of Bannet Drive	Cadden Court	King City	No	5	High Class Bituminous	Urban	40 km/h	02000-02994	245	210	8.50	8.50	2083	
KRRD-0054	1034	Warren Road	Alex Campbell Court	Alex Campbell Court	King City	No	5	High Class Bituminous	Urban	40 km/h	02000-02994	245	69	8.20	8.50	966	
KRRD-0096	1030	Warren Road	Lavender Valley Road	Lavender Valley Road	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	827	161	8.50	8.50	1284	
KRRD-0122	1032	Warren Road	Banner Lane	Patricia Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	827	254	8.00	8.50	2032	
KRRD-0142	1030	Warren Road	Lavender Valley Road	Lavender Valley Road	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	827	161	8.50	8.50	1284	
KRRD-0234	1030	Warren Road	50m N. of Bannet Drive	Bannet Drive	King City	No	5	High Class Bituminous	Urban	40 km/h	00400-00994	827	47	8.00	8.50	1376	
KRRD-0244	1029	Warren Road	Patton Street	120m E. of Patton Street	King City	No	5	High Class Bituminous	Semi-Urban	40 km/h	00400-00994	827	121	7.30	8.20	883	
KRRD-0053	1146	Watch Hill Road	Champlain Crescent	Kingsworth Road	King City	No	5	High Class Bituminous	Semi-Urban	40 km/h	00400-00994	827	754	8.00	8.00	4644	
SRRD-0200	3080	Waterlily Trail	Ben Boy Avenue	Mapleton Mills Drive	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	483	8.00	8.00	3820	
SRRD-0033	3080	Waterlily Trail	Mapleton Mills Drive	Mapleton Mills Drive	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	483	8.60	8.60	3889	
SRRD-0035	3080	Waterlily Trail	Rose Cottage Lane	Ben Boy Avenue	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	272	8.60	8.60	3392	
SRRD-0036	3080	Waterlily Trail	Mapleton Mills Drive	Ben Boy Avenue	Schomberg	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	329	483	8.60	8.60	3889	
NRDD-0025	2129	Wedgport Court	Black Duck Trail	Black Duck Trail	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00400-00994	458	263	8.70	8.70	2288	
PRRD-0011	4016	Weedon Court	Cook Drive	End (Cul-de-Sac)	Pottsville	No	6	High Class Bituminous	Urban	40 km/h	00050-0199	115	222	8.00	8.50	1887	
NRDD-0133	0	Weller Avenue	King Road	Cross Avenue	Nobleton	No	6	High Class Bituminous	Semi-Urban	40 km/h	00200-00394	270	379	8.00		3032	
NRDD-0443	2024	Weller Avenue	Hill Farm Road	90m N. of Cross Avenue	Nobleton	No	6	High Class Bituminous	Urban	40 km/h	00200-00394	343	87	8.00	8.50	696	



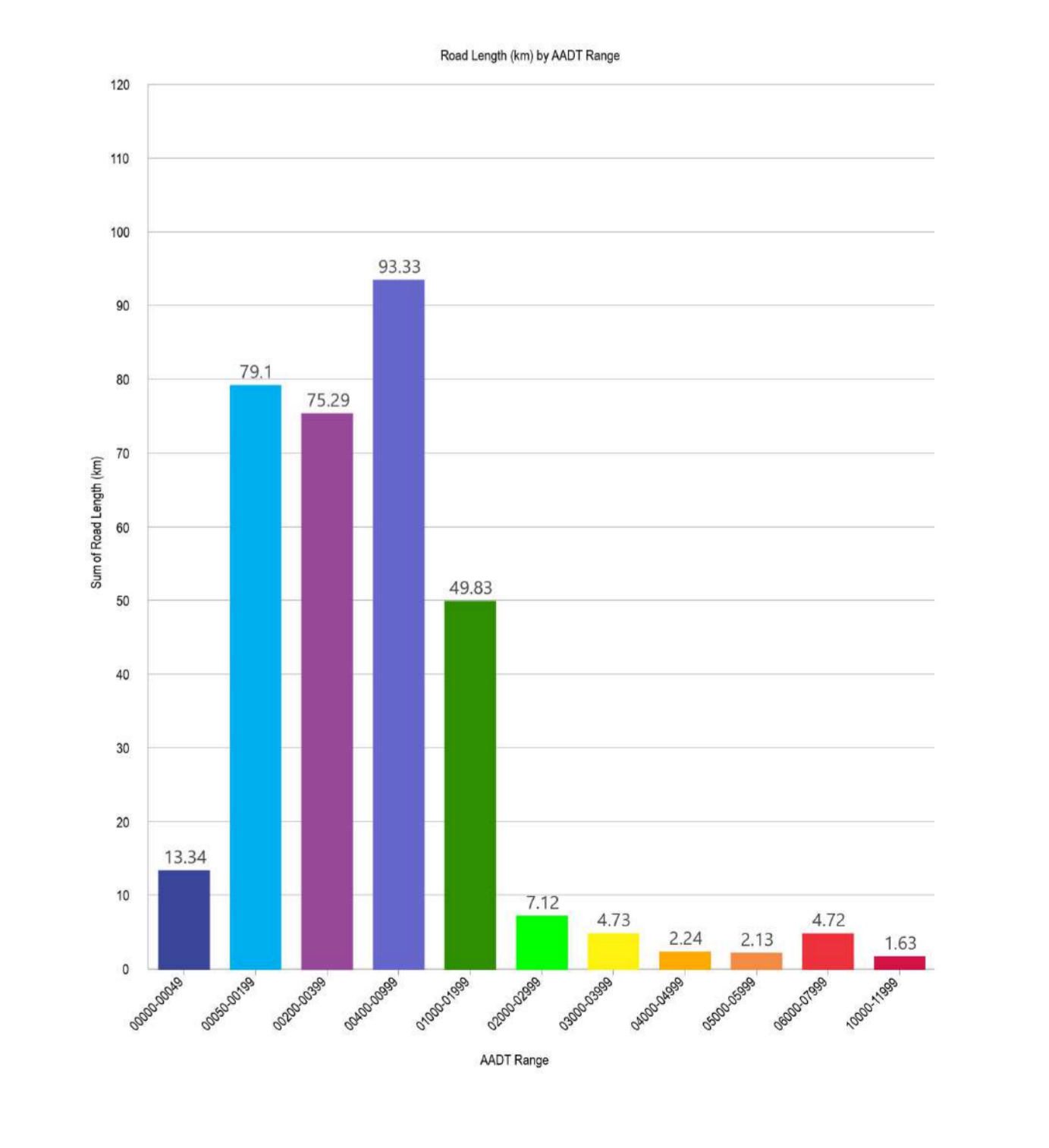
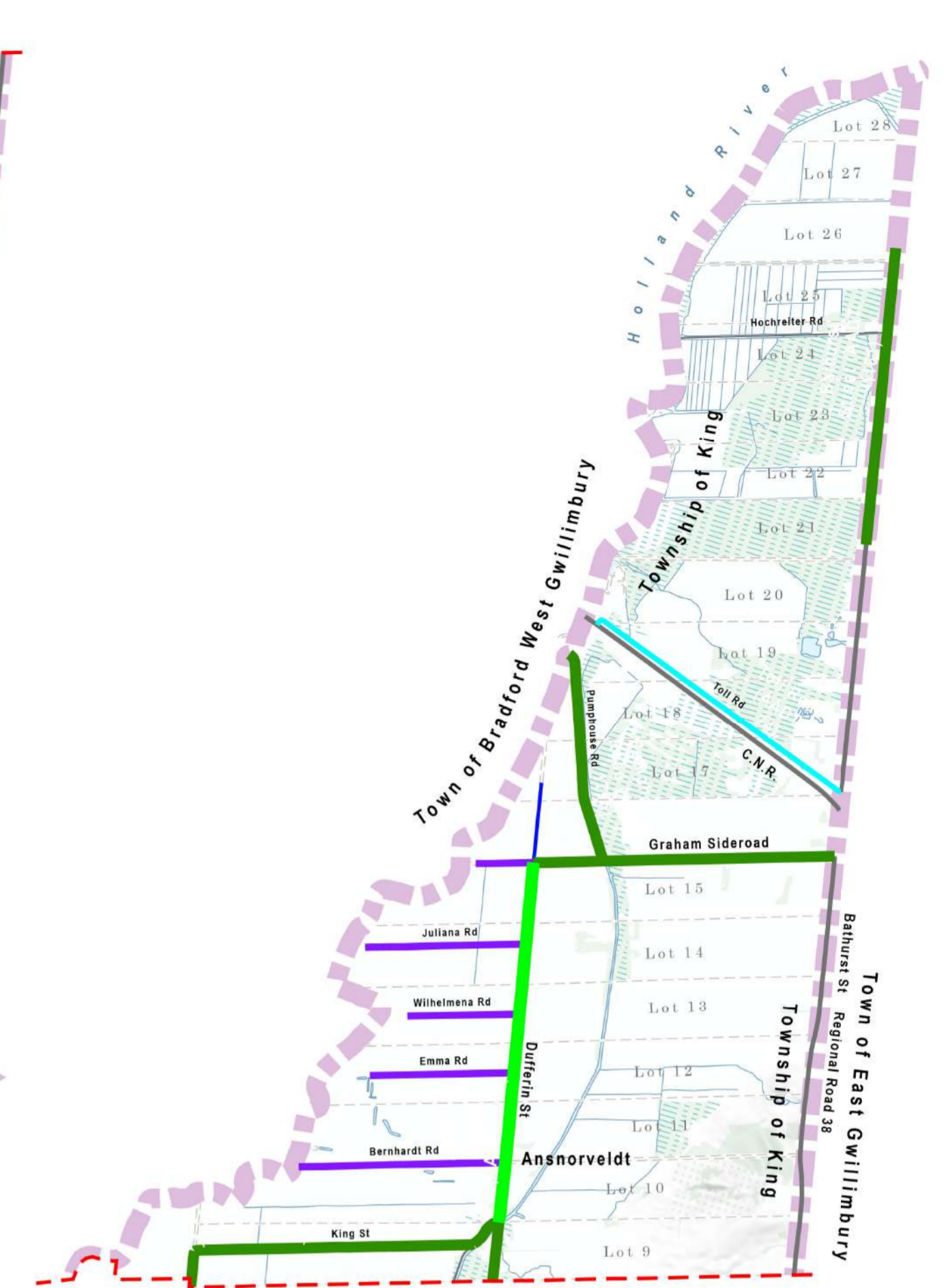
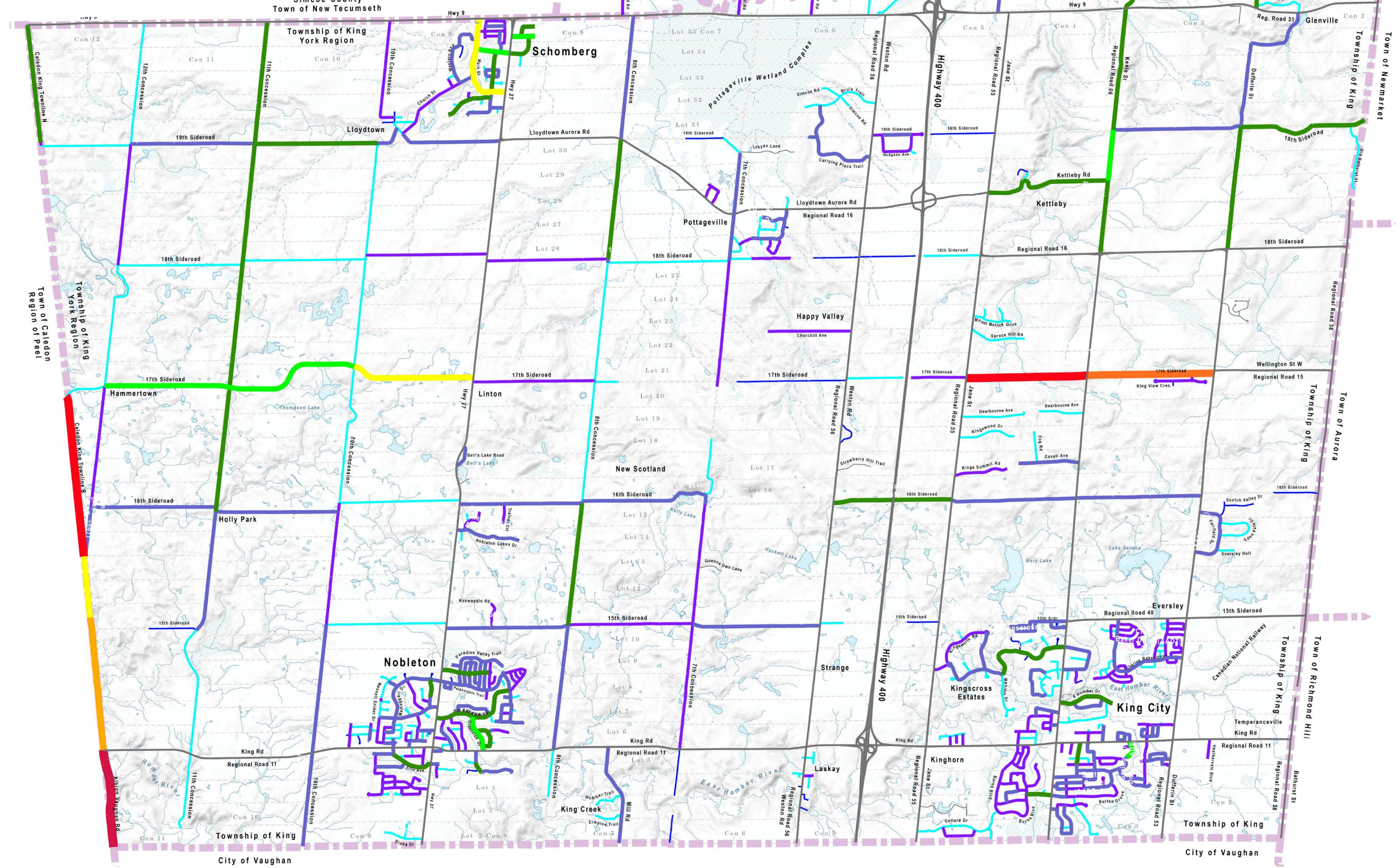
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Appendix B

AADT Map

Appendix B



Sources:
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 False Easting: 500,000m
 False Northing: 0m
 Page Orientation: -17°
 Scale Factor: 0.99960

Scale:
 0 1 2 3 Kilometers

Non-Municipal Roads	AADT Range	AADT Range	AADT Range
Provincial Highway / Freeway	0-49 AADT	400-999 AADT	4000-4999 AADT
Regional Road	50-199 AADT	1000-1999 AADT	5000-5999 AADT
Private Road	200-399 AADT	2000-2999 AADT	6000-7999 AADT
		3000-3999 AADT	10000-11999 AADT

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Map Title: 2022 ROADS NEEDS STUDY ANNUAL AVERAGE DAILY TRAFFIC RANGES (2022)

Client: TOWNSHIP OF KING

Drawn: PS
Checked: CC
Date: 2023/03/03
Scale: H 1:35,000
Project No.: 300052814

Appendix: B

File Path: \\unimark\dms\work\300052814_GIS\Map\Print Date: 2023/03/03 Time: 08:55 AM



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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 Manifestation 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 aggregate loss	3.0	Cover Aggregate Loss	3.0	Flat/reverse crown	2.0
Flushing	1.5	Flushing	2.0	Loose gravel	1.5
Rippling and showing	1.0	Rippling and Showing	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
Longitudinal wheel track - single/multiple cracking	1.5	Streaking	1.0	Rutting	3.0
Longitudinal 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 - single/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

Severity Factors

Ride Condition Rating Factors

Density of Distress Asphalt or Gravel Roads)	Density Factor (D)	Severity of Distress (Asphalt or Gravel Roads)	Severity Factor (S)	Ride Condition Rating (RCR)	Factor
Few (<10%)	0.5	Very Slight	0.5	Very Poor	1
Intermittent (10 to 20%)	1.0	Slight	1.0	Poor	2 to 3
Frequent (20 to 40%)	2.0	Moderate	2.0	Fair	4 to 6
Extensive (40 to 80%)	3.0	Severe	3.0	Good	7 to 9
Throughout (>80%)	4.0	Very Severe	4.0	Very Good	10

Empirical Formulae For Calculation of Distress Manifestation Index (DMI)

Surface Type	Formulae For Distress Manifestation Index (DMI)
Asphalt	$DMI = 10 \times (208 - \text{summation of } W \times (D+S))/208$
Surface Treatment or Gravel or Earth	$DMI = 10 \times (135 - \text{summation of } W \times (D+S))/135$

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

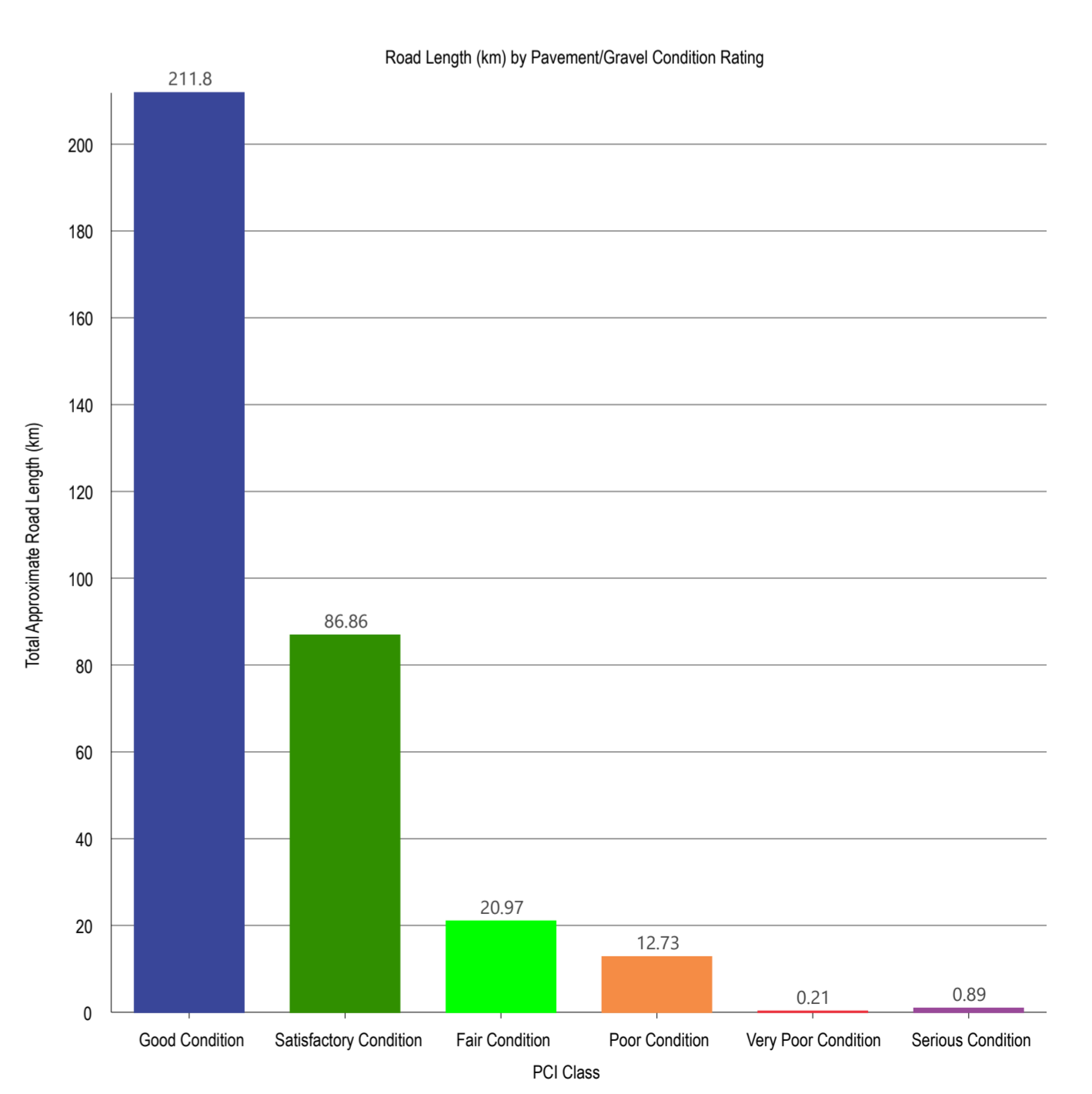
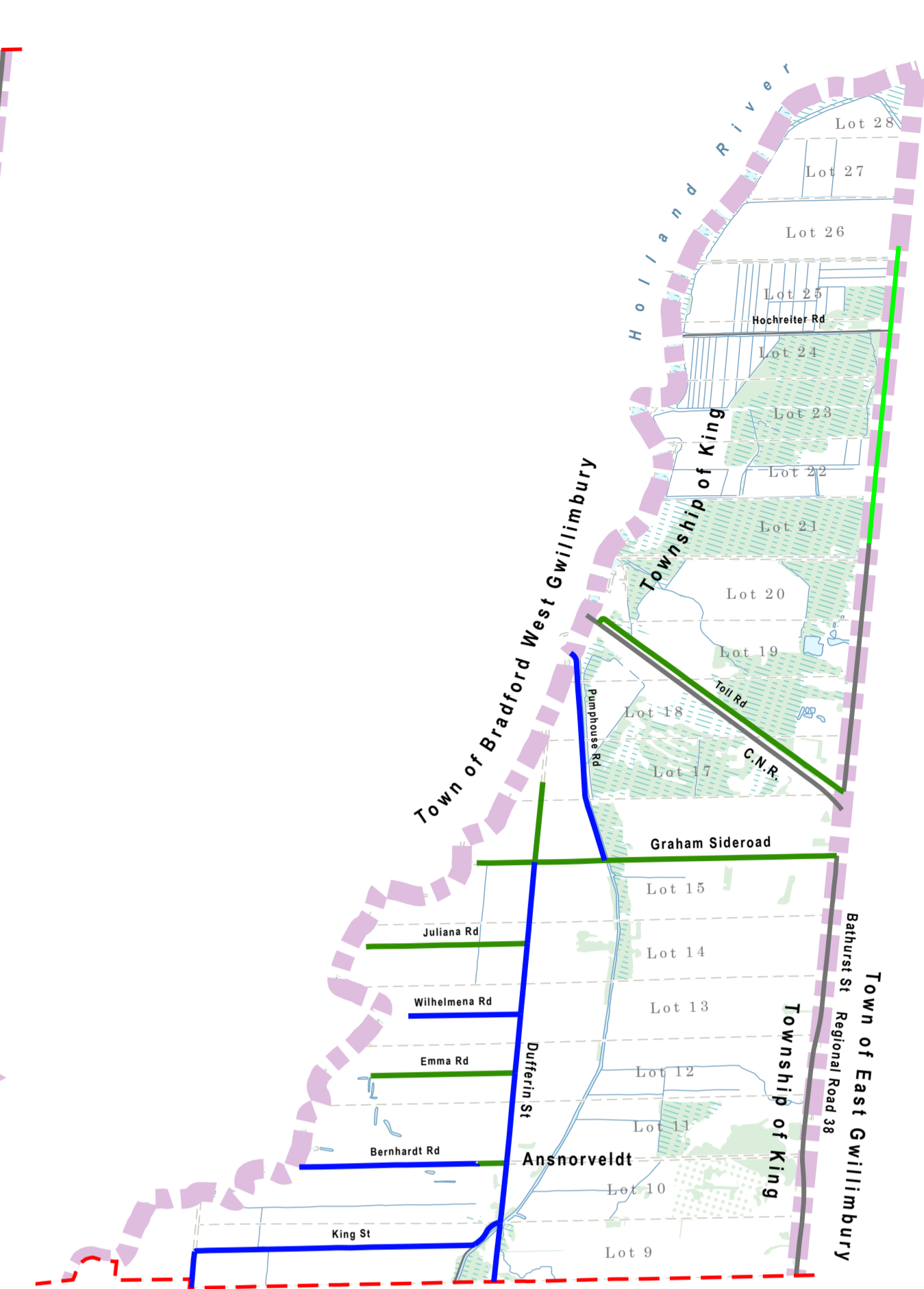
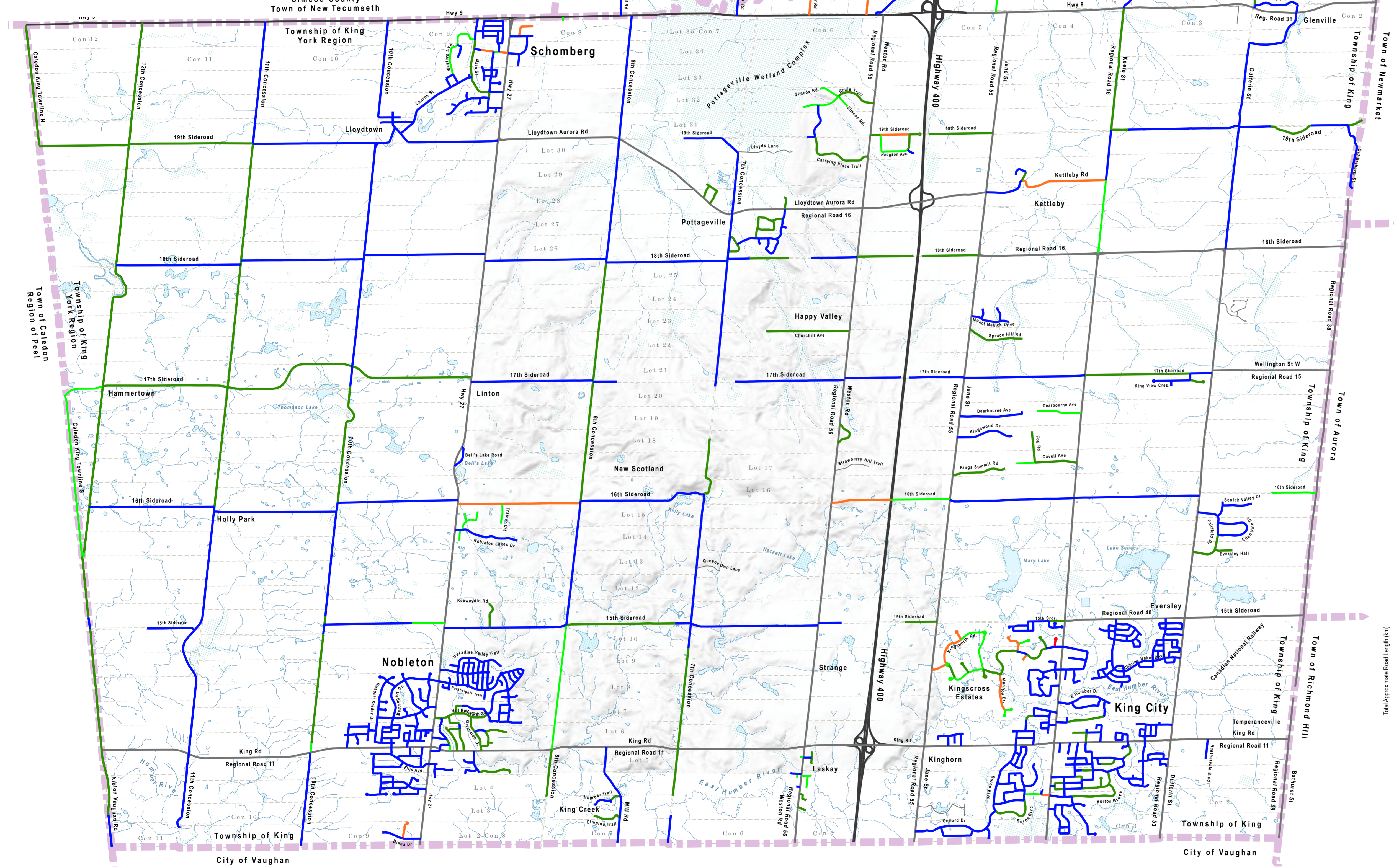


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Appendix D

Pavement Condition Rating Map



Sources:
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 2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.
 3. Regional Municipality of York

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Scale:
 0 1 2 3 Kilometers

North Arrow:
 Grid North

Non-Municipal Roads

- Provincial Highway / Freeway
- Regional Road
- Private Road

Municipal Roads by PCI Class

- Good Condition (>85)
- Satisfactory Condition (70 - 85)
- Fair Condition (55 - 70)
- Poor Condition (40 - 55)
- Very Poor Condition (25 - 40)
- Serious Condition
- Failed < 10

Map Title:
2022 ROADS NEEDS STUDY
 PAVEMENT/GRAVEL CONDITION INDEX

Client:
 TOWNSHIP OF KING

Map Info:
 Drawn: PS
 Checked: HC
 Date: 2023/05/19
 Scale: 1:35,000
 Project No.: 300052814

Appendix:
D

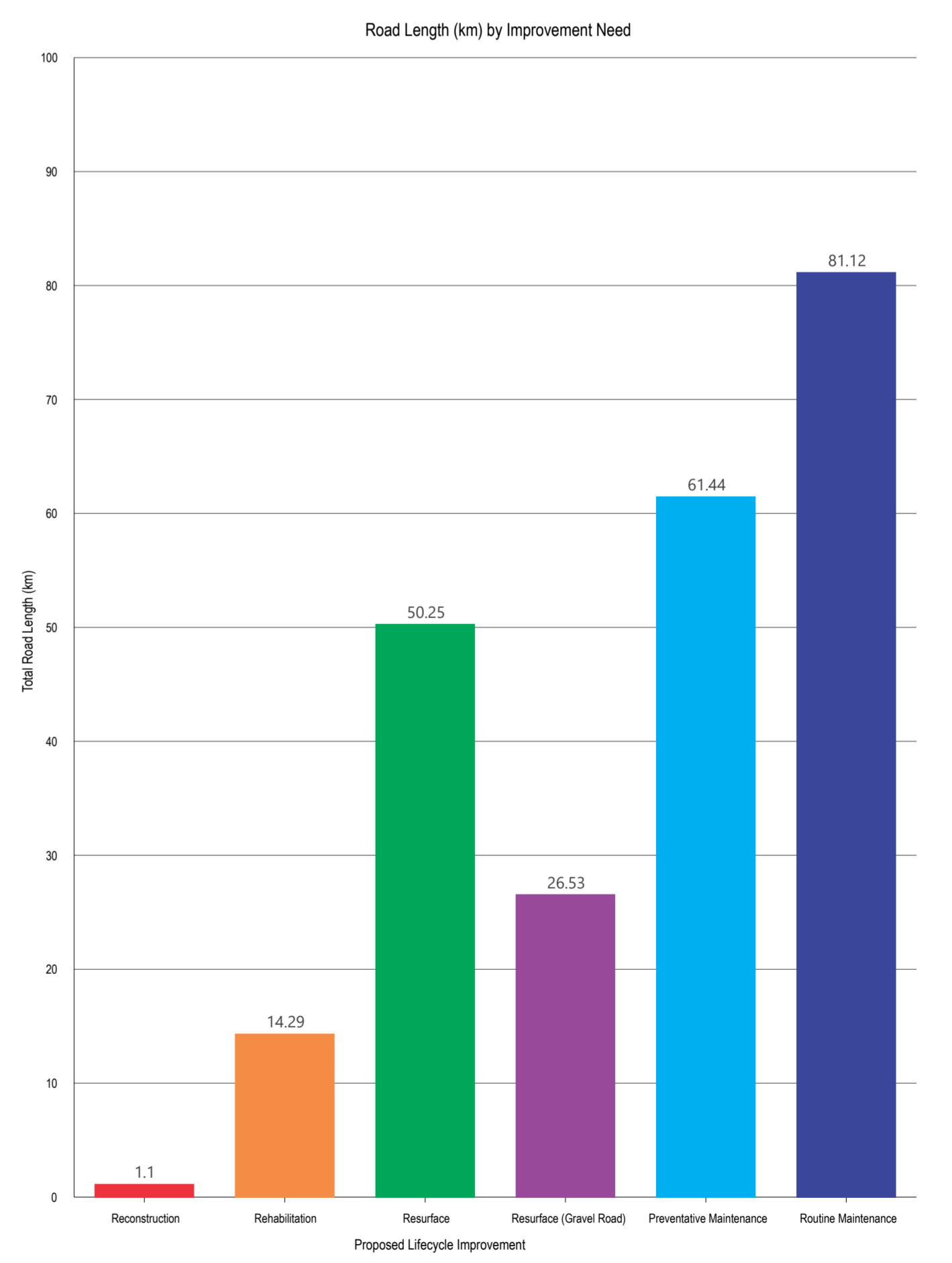
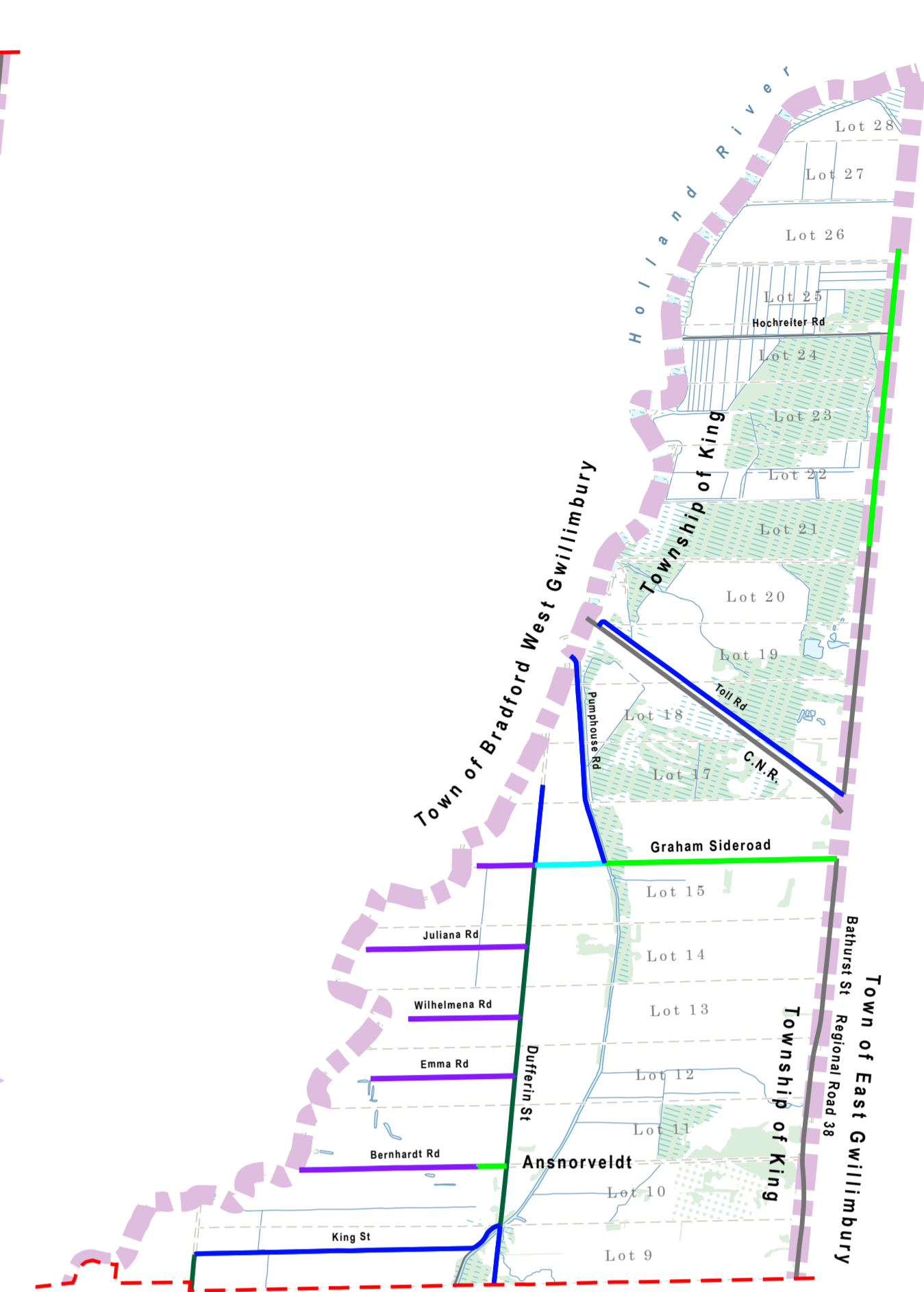
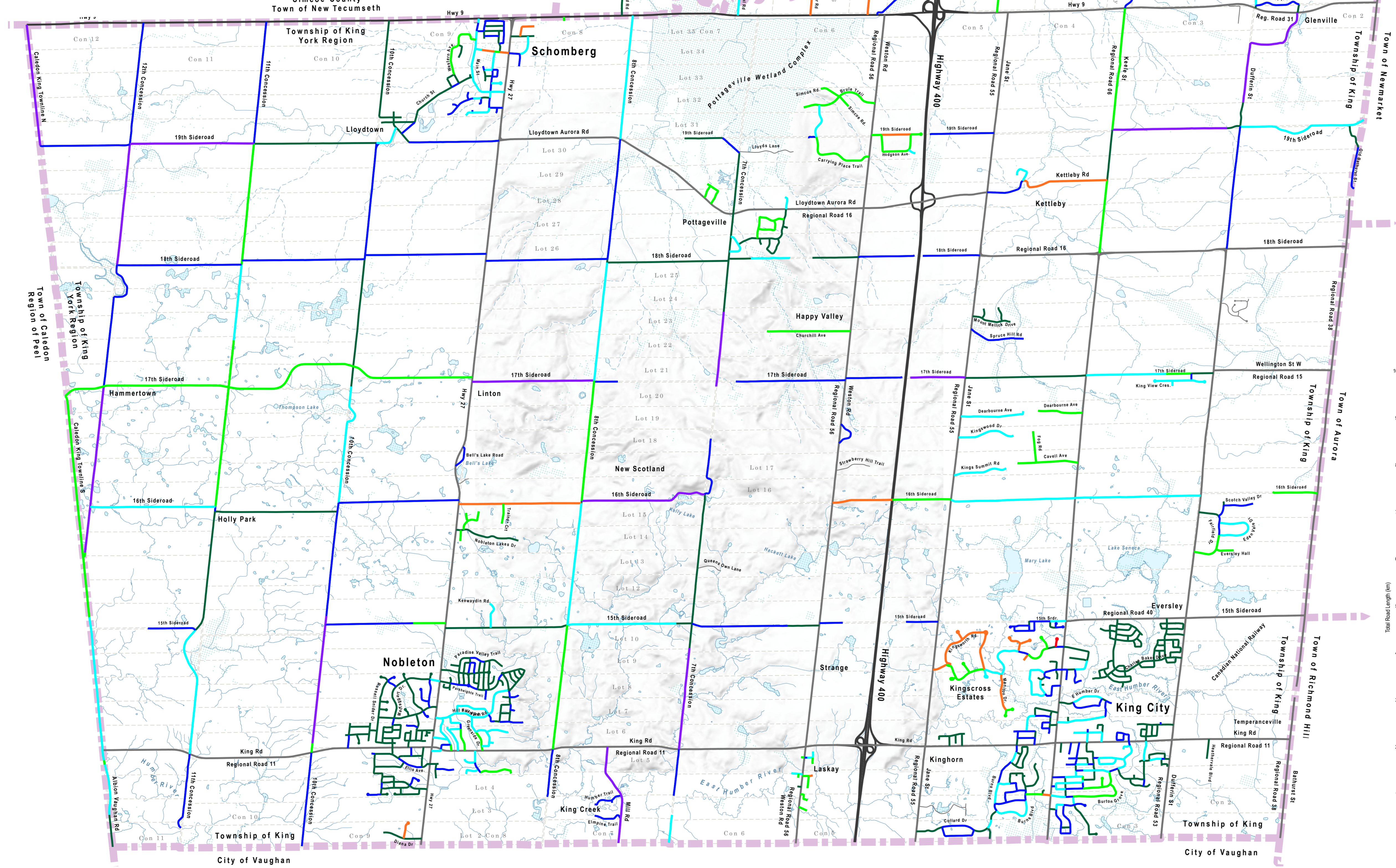


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Appendix E

Road Condition Improvement Needs, Map and Table



Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

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Projection: Transverse Mercator
Central Meridian: 81°00.00"W
False Easting: 500,000m
False Northing: 0m
Page Orientation: 17°E
Scale Factor: 0.99960

Improvement Needs

- Reconstruction
- Rehabilitation
- Resurface
- Resurface (Gravel Road)
- Preventative Maintenance
- Routine Maintenance
- No Improvements in Ten Year Time Frame

Non-Municipal Roads

- Provincial Highway / Freeway
- Regional Road
- Private Road

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2022 ROADS NEEDS STUDY ROAD CONDITION IMPROVEMENT NEEDS

TOWNSHIP OF KING

Map Title: 2022 ROADS NEEDS STUDY ROAD CONDITION IMPROVEMENT NEEDS

Client: TOWNSHIP OF KING

Drawn: PS
 Checked: HC
 Date: 2023/05/23
 Project No: 300052814
 Scale: H 1:35,000

Appendix: **E**

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Code (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges
ORRD-0220	Lipchey Road	Keefe Street	End (East)	King Twp. (Rural)	No	Gravel	Semi-Urban	60	3	0	4.74	15	Serious Condition	54	14.9	886	6.20	7.90	6999	Reconstruction	\$489,930.00	\$70.00	
ORRD-0032	McCluskey Lane	King City Drive	End (West)	King City	No	High Class Bituminous	Semi-Urban	36	4	5	8.16	36	Very Poor Condition	38	17.7	213	9.70	14.07	1427	Rehabilitation	\$102,744.00	\$270.00	
ORRD-0105	Kingworth Road	Westgate Circle	Blueberry Lane	King City	No	High Class Bituminous	Semi-Urban	236	5	3	5.58	40	Poor Condition	49	75.5	5.60	8.20	3760	Rehabilitation	\$173,052.00	\$46.00		
SRRD-0053	Magnum Drive	Proctor Road	End (Cul-De-Sac)	Schomberg	No	Low Class Bituminous	Semi-Urban	1092	6	5	5.00	41	Poor Condition	68	29.17	367	7.30	9.70	2679	Rehabilitation	\$131,271.00	\$49.00	
ORRD-0156	King Worth Road	2nd Concession Road	End (Cul-De-Sac)	King City	No	Low Class Bituminous	Semi-Urban	1045	6	5	5.16	39	Poor Condition	45	45.8	1063	14.66	18.00	10023	Rehabilitation	\$481,005.00	\$46.00	
ORRD-0205	South Canal Bank Road	Jane Street	End (East)	King Twp. (Rural)	No	Gravel	Rural	155	4	0	6.74	43	Poor Condition	43	37.3	544	6.80	8.00	4243	Rehabilitation	\$207,907.00	\$46.00	
KRRD-0148	Station Road	Barton Grove	West Street	King City	No	High Class Bituminous	Urban	1462	6	7	5.25	44	Poor Condition	70	296.1	139	10.30	10.30	1432	Rehabilitation	\$54,440.00	\$45.00	
ORRD-0055	Manitou Drive	King City Drive	End (West)	King City	No	High Class Bituminous	Semi-Urban	407	5	4	6.31	37	Poor Condition	45	47.4	620	9.70	11.00	4154	Rehabilitation	\$191,437.00	\$46.00	
ORRD-0236	16th Sideroad	Highway 400 Overpass	Weston Road	King Twp. (Rural)	No	High Class Bituminous	Rural	1145	6	3	5.69	47	Poor Condition	62	299.3	1004	6.70	9.70	6727	Rehabilitation	\$326,923.00	\$49.00	Structure 0024
KRRD-0073	Westgate Boulevard	Jane Street	Alsen Avenue	King City	No	High Class Bituminous	Semi-Urban	219	6	4	5.70	48	Poor Condition	42	66.7	260	6.00	8.20	1560	Rehabilitation	\$171,760.00	\$46.00	
ORRD-0128	Strawberry Lane	Keefe Street	Alsen Avenue	King Twp. (Rural)	No	High Class Bituminous	Rural	415	6	3	5.87	40	Poor Condition	47	104.3	179	6.70	7.90	11651	Rehabilitation	\$570,899.00	\$49.00	
RRD-0093	Cheslea Lane	End (West Cul-De-Sac)	Keefe Street	King City	No	Gravel	Rural	40	6	9	5.96	30	Poor Condition	39	6.8	292	8.00	10.00	1992	Rehabilitation	\$89,378.00	\$46.00	
KRRD-0043	Westgate Circle	Kingworth Road	Westgate Boulevard	King City	No	High Class Bituminous	Rural	884	5	6	6.75	51	Poor Condition	54	-1	16	8.00	12.8	128	Rehabilitation	\$6,272.00	\$49.00	
ORRD-0025	18th Sideroad	8th Concession	Tranor Court	King Twp. (Rural)	No	High Class Bituminous	Rural	463	6	2	5.55	51	Poor Condition	46	110.4	1308	6.50	8.50	4489	Rehabilitation	\$415,961.00	\$49.00	Structure 0330
KRRD-0031	Blueberry Lane	Kingworth Road	End (Cul-De-Sac)	King City	No	High Class Bituminous	Semi-Urban	100	6	4	6.13	52	Poor Condition	33	23.1	234	9.00	17.08	1708	Rehabilitation	\$78,668.00	\$46.00	
KRRD-0047	Cheslea Lane	Kingworth Road	Fork	King City	No	High Class Bituminous	Semi-Urban	43	6	13	6.15	52	Poor Condition	29	10.8	138	6.70	9.70	925	Rehabilitation	\$42,550.00	\$46.00	
ORRD-0098	Hills Road	Diana Drive	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	72	7	3	5.65	52	Poor Condition	31	18.1	130	6.70	8.50	2278	Rehabilitation	\$104,788.00	\$46.00	
RRD-0001	Kettley Road	Lorne Avenue	Lorne Avenue	King Twp. (Rural)	No	High Class Bituminous	Rural	1099	7	4	5.73	53	Poor Condition	54	253.8	1455	6.90	8.30	9419	Rehabilitation	\$491,531.00	\$49.00	
KRRD-0060	Keel Court	Kingworth Road	End (Cul-De-Sac)	King City	No	High Class Bituminous	Semi-Urban	22	5	15	7.04	53	Poor Condition	26	4.1	123	6.70	9.70	1070	Rehabilitation	\$49,220.00	\$46.00	
ORRD-0178	18th Sideroad	Tranor Court	Highway 27	King Twp. (Rural)	No	High Class Bituminous	Rural	443	7	2	5.70	53	Poor Condition	44	105.9	743	6.50	8.50	4830	Rehabilitation	\$236,670.00	\$49.00	
ORRD-0065	Rupee Road	Highway 9	End (Constr)	King Twp. (Rural)	No	Low Class Bituminous	Rural	275	7	3	5.96	54	Poor Condition	39	71.8	448	6.20	9.30	2278	Rehabilitation	\$127,788.00	\$46.00	
ORRD-0105	19th Sideroad	Hodsdon Avenue	Hodsdon Avenue	King Twp. (Rural)	No	Low Class Bituminous	Rural	440	7	15	6.04	54	Poor Condition	43	99.8	489	6.70	7.90	3076	Rehabilitation	\$160,524.00	\$46.00	
ORRD-0099	Cheslea Lane	Fork	End (East Cul-De-Sac)	King City	No	High Class Bituminous	Semi-Urban	128	6	8	6.44	55	Fair Condition	32	30.3	249	6.70	9.70	1668	Rehabilitation	\$76,728.00	\$46.00	
ORRD-0077	Blueberry Lane	Watch Hill Road	Watch Hill Road	King City	No	High Class Bituminous	Semi-Urban	236	6	3	6.41	55	Fair Condition	37	66.6	454	6.60	8.20	2996	Rehabilitation	\$137,616.00	\$46.00	
KRRD-0067	Westgate Circle	Kingworth Road	Kingworth Road	King City	No	High Class Bituminous	Semi-Urban	884	7	6	6.28	58	Fair Condition	46	-1	58	8.00	464	464	Rehabilitation	\$22,736.00	\$46.00	
KRRD-0053	Watch Hill Road	Champlain Crescent	Kingworth Road	King City	No	High Class Bituminous	Semi-Urban	676	6	4	6.97	59	Fair Condition	42	138.8	734	6.60	8.20	4844	Rehabilitation	\$237,356.00	\$49.00	
ORRD-0102	Laskawick Drive	Rolling Court	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	115	7	8	6.45	60	Fair Condition	34	6.4	34	6.7	34	34	Rehabilitation	\$34,120.00	\$46.00	
KRRD-0087	Manitou Drive (East Cul-De-Sac)	Fork	End (Cul-De-Sac)	King City	No	High Class Bituminous	Semi-Urban	167	7	15	7.00	60	Fair Condition	30	10.1	173	6.70	9.70	1159	Resurface	\$45,201.00	\$39.00	
ORRD-0165	12th Concession	Calodon King Townline	120m N. of Calodon King Townline	King Twp. (Rural)	Not Recorded	High Class Bituminous	Rural	430	6	3	7.00	60	Fair Condition	37	27.2	8.5	8.40	7.80	544	Resurface	\$21,716.00	\$39.00	
ORRD-0234	16th Sideroad	16th Sideroad	16th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Rural	153	7	13	7.13	60	Fair Condition	34	4.8	2092	6.50	8.50	4508	Resurface	\$330,342.00	\$49.00	
ORRD-0256	10th Concession	King Road	145m N of King Road	King Twp. (Rural)	Not Recorded	High Class Bituminous	Rural	527	7	17	6.47	60	Fair Condition	39	35.5	157	7.00	9.00	1099	Resurface	\$42,861.00	\$39.00	
YRRD-0103	Second Street	Mill Street	End (South)	Laskawick	No	Low Class Bituminous	Semi-Urban	72	7	17	6.70	60	Fair Condition	26	4.8	6.5	6.00	9.70	390	Resurface	\$15,210.00	\$39.00	
ORRD-0128	Second Street	End (West)	End (West)	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	68	5	5	7.28	61	Fair Condition	28	3.3	179	6.50	8.50	1009	Resurface	\$48,867.00	\$46.00	
ORRD-0084	Simcoe Road	Brule Trail	End (Cul-De-Sac)	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	100	7	20	6.78	61	Fair Condition	27	5.9	348	6.70	9.70	2332	Resurface	\$90,948.00	\$39.00	
YRRD-0009	Old Forge Road	Centre View Avenue	End (West)	Laskawick	No	Low Class Bituminous	Semi-Urban	72	7	3	6.78	61	Fair Condition	25	4.2	58	6.80	9.40	381	Resurface	\$14,859.00	\$39.00	
ORRD-0056	16th Sideroad	Jane Street	Highway 400 Overpass	King Twp. (Rural)	No	High Class Bituminous	Rural	1145	7	6	6.66	62	Fair Condition	45	68.8	963	6.40	8.00	6291	Resurface	\$435,249.00	\$39.00	
ORRD-0076	12th Concession	17th Sideroad	End (West)	King Twp. (Rural)	No	High Class Bituminous	Rural	107	6	8	6.78	62	Fair Condition	20	17.6	702	7.00	8.50	1980	Resurface	\$174,540.00	\$46.00	
ORRD-0234	Bathurst Street	Queenville Sideroad West	Hochstetler Road	King Twp. (Rural)	Yes	High Class Bituminous	Rural	1161	6	3	7.32	62	Fair Condition	45	69.7	1443	6.50	8.00	9380	Resurface	\$365,920.00	\$46.00	
ORRD-0243	Earwood Crescent	Nelson Lakes Drive	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Urban	115	7	6	6.75	62	Fair Condition	27	5.1	100	6.50	8.50	300	Resurface	\$61,200.00	\$46.00	
ORRD-0130	16th Sideroad	End (West)	End (West)	King Twp. (Rural)	No	High Class Bituminous	Rural	793	7	12	6.93	63	Fair Condition	21	8.3	191	6.50	7.90	1763	Resurface	\$146,935.00	\$46.00	
ORRD-0192	Loch Erne Lane	Hillside Grove	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Urban	319	7	15	6.84	63	Fair Condition	32	14.6	312	8.00	8.50	2496	Resurface	\$99,840.00	\$46.00	
ORRD-0197	Brule Trail	Simcoe Road	Carrying Place Trail	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	123	7	7	7.00	63	Fair Condition	26	6.9	381	6.70	9.70	2553	Resurface	\$99,567.00	\$39.00	
ORRD-0081	Manitou Drive (Cul-De-Sac)	Fork	End (Cul-De-Sac)	King Twp. (Rural)	Yes	High Class Bituminous	Rural	115	7	8	7.01	63	Fair Condition	27	6.2	61	6.70	7.90	159	Resurface	\$41,533.00	\$39.00	
ORRD-0060	Bathurst Street	Hochstetler Road	King - Bradford Boundary	King Twp. (Rural)	Yes	High Class Bituminous	Rural	1161	7	2	6.95	64	Fair Condition	42	65.1	576	6.50	8.50	3744	Resurface	\$146,016.00	\$39.00	
ORRD-0176	Brule Trail	Carrying Place Trail	End (Cul-De-Sac)	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	123	7	20	7.15	64	Fair Condition	26	6.7	268	6.70	9.70	1798	Resurface	\$70,044.00	\$39.00	
ORRD-0001	Laskawick Drive	Rolling Court	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Urban	115	7	8	6.92	64	Fair Condition	30	6.9	350	6.50	8.50	107	Resurface	\$34,240.00	\$39.00	
ORRD-0010	Rolling Court	Laskawick Mills Drive	End (Cul-De-Sac)	Laskawick	No	High Class Bituminous	Urban	171	7	7	6.92	64	Fair Condition	27	7.6	206	8.00	8.50	1648	Resurface	\$65,020.00	\$46.00	
ORRD-0008	Simcoe Road	Brule Trail	End (Cul-De-Sac)	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	164	8	18	6.93	65	Fair Condition	26	6.7	225	6.70	9.70	1507	Resurface	\$58,773.00	\$39.00	
ORRD-0020	King City Drive	Kettley Road	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Rural	107	7	12	6.93	65	Fair Condition	26	6.7	195	6.50	8.50	945	Resurface	\$37,476.00	\$39.00	
ORRD-0055	17th Sideroad	12th Concession	Calodon King Town Line South	King Twp. (Rural)	No	High Class Bituminous	Rural	123	7	5	7.09	65	Fair Condition	25	6.7	687	6.50	8.70	4466	Resurface	\$174,174.00	\$39.00	
ORRD-0132	Showa Court	Highway 9	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Rural	672	7	10	7.08	65	Fair Condition	36	-1	67	28.00	1742	Resurface	\$67,938.00	\$39.00		
ORRD-0058	Strawberry Lane	Kingworth Road	End (Cul-De-Sac)	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	487	7	14	7.02	64	Fair Condition	37	22.2	61	7.90	420					

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-5)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Grade (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges
ORRD-0118	Albion Vaughan Road	Old King Road	72m N. of Old King Road	King Twp. (Rural)	Yes	High Class Bituminous	Rural	10467	8	17	7.97	77	Satisfactory Condition	47	-1	71	6.80	8.80	4833	Resurface	\$9,660.00	\$20.00	
ORRD-0146	19th Concession	End (Cu-de-Sac)	Edwards Crescent	King Twp. (Rural)	Yes	High Class Bituminous	Rural	208	7	19	8.56	77	Satisfactory Condition	21	11.4	18.4	7.81	6.80	2023	Routine Maintenance	\$200,320.00	\$45.00	
ORRD-0209	19th Concession	12th Concession	12th Concession	King Twp. (Rural)	Yes	High Class Bituminous	Rural	425	8	12	8.19	77	Satisfactory Condition	21	11.1	20.75	6.00	7.30	15148	Resurface	\$681,660.00	\$45.00	
ORRD-0254	Edward Pollock Crescent	235m N. of Lloyd/Dun/ Aurora Road	Edward Pollock Crescent (Cu-de-Sac)	King Twp. (Rural)	No	High Class Bituminous	Urban	215	7	13	8.39	77	Satisfactory Condition	18	11.5	16.4	8.50	8.50	1394	Resurface	\$27,880.00	\$20.00	
PRRD-0002	235m N. of Lloyd/Dun/ Aurora Road	Pollock Crescent	Pollock Crescent	King Twp. (Rural)	No	High Class Bituminous	Urban	208	7	12	8.38	77	Satisfactory Condition	18	11.5	16.8	8.50	8.50	1313	Resurface	\$28,720.00	\$20.00	
PRRD-0016	Archibald Road	Cutting Crescent	Cook Drive	Portageville	No	High Class Bituminous	Urban	108	8	9	8.05	77	Satisfactory Condition	16	5.8	16.5	8.50	1403	Resurface	\$28,600.00	\$20.00		
KRRD-0030	Patricia Drive	Crossley Court	Burton Cove	King City	No	High Class Bituminous	Urban	747	8	12	8.13	78	Satisfactory Condition	23	40.6	14.0	8.00	8.50	1120	Resurface	\$22,400.00	\$20.00	
KRRD-0002	Hawthorne Valley Drive	Woodlawn Avenue	End (Cu-de-Sac)	Nobleton	No	High Class Bituminous	Urban	646	8	16	8.10	78	Satisfactory Condition	24	45.9	5.62	6.00	8.50	4498	Resurface	\$99,920.00	\$20.00	
KRRD-0133	11th Concession	Westlar Avenue	Cross Avenue	King City	No	High Class Bituminous	Semi-Urban	71	7	11	8.07	78	Satisfactory Condition	21	30.92	7.00	6.00	379	Resurface	\$12,480.00	\$20.00		
ORRD-0003	11th Concession	16th Side Road	17th Side Road	King Twp. (Rural)	No	Low Class Bituminous	Rural	1534	10	16	7.87	78	Satisfactory Condition	28	86.5	2.10	6.70	8.50	13480	Resurface	\$310,400.00	\$23.00	
ORRD-0062	12th Concession	2.36m N. of 17th Side Road	2.36m N. of 17th Side Road	King Twp. (Rural)	No	Gravel	Rural	127	7	18	8.67	78	Satisfactory Condition	16	6.7	11.8	7.20	8.20	663	Routine Maintenance	\$38,720.00	\$40.00	
ORRD-0211	West Road	King Simcoe County Boundary	West Road	King Twp. (Rural)	No	High Class Bituminous	Rural	93	7	14	8.46	78	Satisfactory Condition	17	10.4	9.63	7.70	6.00	629	Resurface	\$14,440.00	\$24.00	
ORRD-0256.3	10th Concession	145m N. of King Road	165m S. of 15th Side Road	King Twp. (Rural)	No	Gravel	Rural	436	8	19	8.37	78	Satisfactory Condition	21	21.0	18.34	6.50	7.90	14489	Resurface	\$652,050.00	\$45.00	
ORRD-0264	17th Side Road	King View Crescent	420m W. of King View Crescent	King Twp. (Rural)	No	High Class Bituminous	Rural	5727	8	9	8.17	78	Satisfactory Condition	38	32.9	4.22	6.70	8.50	2827	Resurface	\$65,021.00	\$23.00	
ORRD-0265	Durham Side Road	End (North)	End (North)	King Twp. (Rural)	No	Gravel	Rural	34	7	16	8.74	79	Satisfactory Condition	11	4.7	5.63	5.70	6.00	3598	Routine Maintenance	\$145,520.00	\$40.00	
ORRD-0015	Churchill Avenue	Weston Road	End (East)	King Twp. (Rural)	No	Low Class Bituminous	Semi-Urban	343	9	23.7	8.19	79	Satisfactory Condition	19	23.7	13.96	6.00	7.30	8376	Resurface	\$167,200.00	\$20.00	
ORRD-0117	18th Side Road	Weston Road	End (East)	King Twp. (Rural)	No	Gravel	Rural	49	9	18	8.13	79	Satisfactory Condition	13	23.5	9.42	6.00	7.30	8877	Routine Maintenance	\$275,080.00	\$40.00	
ORRD-0122	Fieldside Drive	Evered Hall	Evered Hall	King Twp. (Rural)	No	High Class Bituminous	Urban	555	7	15	8.59	79	Satisfactory Condition	21	29.8	2.61	8.00	8.50	1929	Resurface	\$38,960.00	\$20.00	
ORRD-0147	12th Concession	1.5km N. of 17th Side Road	1.5km N. of 17th Side Road	King Twp. (Rural)	No	Gravel	Rural	127	9	18	8.13	79	Satisfactory Condition	15	5.4	15.04	7.20	8.20	12333	Routine Maintenance	\$493,320.00	\$40.00	
ORRD-0230	Caledon King Town Line North	17th Side Road	Halls Lake Side Road	King Twp. (Rural)	No	Gravel	Rural	245	7	0	8.81	79	Satisfactory Condition	17	5.7	5.1	7.70	8.50	434	Resurface	\$17,260.00	\$40.00	
KRRD-0015	Warren Road	50m N. of Bennet Drive	Caldon Court	King City	No	High Class Bituminous	Urban	2210	8	20	8.37	80	Satisfactory Condition	28	147.4	2.65	8.50	8.50	2083	Preventive Maintenance	\$12,498.00	\$6.00	
KRRD-0177	Dennison Street	Valleycrest Drive	610m E. of Valleycrest Drive	King City	No	High Class Bituminous	Urban	132	7	15	8.70	80	Satisfactory Condition	14	9.3	6.12	8.00	8.50	4896	Preventive Maintenance	\$28,376.00	\$6.00	
KRRD-0180	Dee Street	William Street	End (Cu-de-Sac)	King City	No	High Class Bituminous	Semi-Urban	203	7	14	8.68	80	Satisfactory Condition	16	24.8	236	7.00	9.00	1652	Preventive Maintenance	\$6,698.00	\$4.00	
KRRD-0084	Hollywood Crescent	115m E. of Nobleswood Drive	Hill Farm Road	Nobleton	No	High Class Bituminous	Urban	524	8	24	8.34	80	Satisfactory Condition	19	37.1	11.4	8.00	8.50	912	Preventive Maintenance	\$5,472.00	\$6.00	
KRRD-0085	Greenaide Drive	Nobleswood Drive	Hill Farm Road	Nobleton	No	High Class Bituminous	Urban	2168	8	17	8.34	80	Satisfactory Condition	27	125.3	2.79	8.00	8.50	806	Preventive Maintenance	\$16,344.00	\$6.00	
ORRD-0012	19th Side Road	King - Neamarkat Boundary	Old Bathurst Street	King Twp. (Rural)	No	High Class Bituminous	Rural	1350	8	13	8.33	80	Satisfactory Condition	24	107.8	2.59	7.10	9.10	1839	Preventive Maintenance	\$11,034.00	\$6.00	
ORRD-0148	19th Side Road	Caledon King Town Line North	End (Cu-de-Sac)	King Twp. (Rural)	No	High Class Bituminous	Rural	1350	8	13	8.33	80	Satisfactory Condition	24	107.8	2.59	7.10	9.10	1839	Preventive Maintenance	\$11,034.00	\$6.00	
ORRD-0169	Keewadin Drive	15th Side Road	End (Cu-de-Sac)	King Twp. (Rural)	No	High Class Bituminous	Rural	227	7	18	8.78	80	Satisfactory Condition	16	28.8	5.60	6.00	6.50	2688	Preventive Maintenance	\$11,952.00	\$4.00	
ORRD-0188	Duffin Street	Glenview Drive	Miller's Side Road	King Twp. (Rural)	No	High Class Bituminous	Rural	1419	8	20	8.37	80	Satisfactory Condition	25	104.5	20.57	7.00	8.50	15839	Preventive Maintenance	\$95,034.00	\$4.00	
ABRD-0205	340m N. of Westgate Blvd.	Old King Rd	Old King Rd	King Twp. (Rural)	Yes	High Class Bituminous	Rural	17	8	17	8.49	79	Satisfactory Condition	17	4.1	8.52	7.00	8.50	40	Resurface	\$27,520.00	\$40.00	
PRRD-0001	Bachy Crescent	Cook Drive	7th Concession	Portageville	No	High Class Bituminous	Semi-Urban	126	8	18	8.32	80	Satisfactory Condition	14	17.8	1.88	6.00	8.00	1128	Preventive Maintenance	\$4,512.00	\$4.00	
SRRD-0051	Main Street	Church Street	Schomberg	No	High Class Bituminous	Urban	3414	9	18	8.06	80	Satisfactory Condition	31	193.5	4.41	10.00	10.00	4410	Preventive Maintenance	\$28,460.00	\$6.00		
SRRD-0063	Moore Park Drive	Cropper Drive	Schomberg	No	High Class Bituminous	Urban	730	8	18	8.33	80	Satisfactory Condition	21	48.7	101	5.50	8.50	859	Preventive Maintenance	\$5,154.00	\$6.00		
KRRD-0138	19th Side Road	Weston Road	End (Cu-de-Sac)	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	341	7	17	8.33	80	Satisfactory Condition	17	16.5	4.40	6.00	6.50	1267	Preventive Maintenance	\$4,820.00	\$6.00	
KRRD-0222	Burns Boulevard	Collard Drive	Finlay Avenue	King City	No	High Class Bituminous	Urban	329	7	17	8.53	81	Satisfactory Condition	17	18.1	7.58	9.80	9.80	748	Preventive Maintenance	\$44,568.00	\$6.00	
KRRD-0143	Weller Avenue	90m N. of Cross Avenue	Hill Farm Road	King Twp. (Rural)	No	High Class Bituminous	Urban	343	9	18	8.13	81	Satisfactory Condition	17	23.1	2.74	6.00	8.50	2192	Preventive Maintenance	\$15,152.00	\$6.00	
KRRD-0081	12th Concession	1.8km N. of 17th Side Road	West Road	King Twp. (Rural)	No	Gravel	Rural	57	7	18	9.06	81	Satisfactory Condition	14	6.9	6.60	6.00	540	Routine Maintenance	\$13,000.00	\$40.00		
KRRD-0216	Burns Road	Weston Road	Weston Road	King Twp. (Rural)	No	Gravel	Rural	8	7	18	9.00	81	Satisfactory Condition	10	0.7	5.12	3.30	4.30	2202	Routine Maintenance	\$88,880.00	\$40.00	
ORRD-0225	10th Concession	10th Side Road	90m N. of 10th Side Road	King Twp. (Rural)	Not Recorded	Gravel	Rural	220	8	18	8.67	81	Satisfactory Condition	15	4.4	14.2	9.00	10.00	1278	Resurface	\$51,720.00	\$40.00	
KRRD-0012	Warren Road	120m E. of Palton Street	Barnet Lane	King City	No	High Class Bituminous	Urban	1752	8	19	8.84	82	Satisfactory Condition	25	11.5	8.9	7.30	10.00	198	Preventive Maintenance	\$7,920.00	\$6.00	
KRRD-0041	Nobleswood Drive	Hollywood Crescent	Hollywood Crescent	Nobleton	No	High Class Bituminous	Urban	1752	8	19	8.59	82	Satisfactory Condition	23	139.7	1.84	6.40	9.00	1178	Preventive Maintenance	\$7,008.00	\$6.00	
KRRD-0087	Cross Avenue	Weller Avenue	Elizabeth Drive	Nobleton	No	High Class Bituminous	Semi-Urban	163	8	15	8.53	82	Satisfactory Condition	14	17.1	2.00	7.30	8.70	1460	Preventive Maintenance	\$5,840.00	\$4.00	
KRRD-0139	Hill Farm Road	Linwood Crescent	Linwood Crescent	Nobleton	No	High Class Bituminous	Urban	1654	8	17	8.53	82	Satisfactory Condition	23	115	8.59	6.00	8.50	973	Preventive Maintenance	\$5,880.00	\$6.00	
KRRD-0147	Greenaide Drive	Forestate Crescent	Forestate Crescent	Nobleton	No	High Class Bituminous	Urban	1752	7	19.7	8.52	82	Satisfactory Condition	23	139.7	1.76	6.40	9.00	1126	Preventive Maintenance	\$6,786.00	\$6.00	
KRRD-0239	Hollywood Crescent	115m E. of Nobleswood Drive	End (Cu-de-Sac)	Nobleton	No	High Class Bituminous	Urban	315	8	20	8.52	82	Satisfactory Condition	16	20.1	2.81	8.00	8.50	2088	Preventive Maintenance	\$12,528.00	\$6.00	
KRRD-0097	15th Side Road	End (Cu-de-Sac)	End (Cu-de-Sac)	King Twp. (Rural)	No	Gravel	Rural	13	8	15	8.53	82	Satisfactory Condition	13	5.6	5.36	6.00	6.50	340	Routine Maintenance	\$13,000.00	\$40.00	
ORRD-0154	Graham Side Road	Pumphouse Road	Duffin Street	King Twp. (Rural)	No	High Class Bituminous	Rural	1522	8	20	8.62	82	Satisfactory Condition	23	115.9	4.73	6.70	6.70	3169	Preventive Maintenance	\$10,014.00	\$6.00	
ORRD-0177	King View Crescent	King View Crescent (Fork)	King View Crescent (Fork)	King Twp. (Rural)	No	High Class Bituminous	Rural	269	7	18	8.50	82	Satisfactory Condition	15	30.7	2.93	6.70	10.00	1963	Preventive Maintenance	\$7,852.00	\$4.00	
KRRD-0112	12th Concession	17th Side Road	17th Side Road	King Twp. (Rural)	No	Gravel	Rural	31	8	19	8.64	83	Satisfactory Condition	13	8.9	20.29	6.00	7.30	148	Resurface	\$59,400.00	\$40.00	
SRRD-0067	Main Street	King Dr. Kay Drive	Weston Avenue	Schomberg	No	High Class Bituminous	Urban	3989	8	17	8.53	82	Satisfactory Condition	29	203.1	1.52	10.00	10.00	1550	Preventive Maintenance	\$20,120.00	\$6.00	
KRRD-0003	Lorne Avenue	Kellyville Drive	165m N. of Kellyville Drive	King City	No	Low Class Bituminous	Rural	84	8	19	8.89	83	Satisfactory Condition	12	16.9	1.67	4.00	5.00	668	Preventive Maintenance	\$6,772.00	\$4.00	
KRRD-0003	Kingston Drive	Manitou Drive	Manitou Drive	King City	No	High Class Bituminous	Semi-Urban	803	8														

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Grade (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges	
YRRD-0006	Mil Street	Second Street	End (West)	Laskay	No	High Class Bituminous	Rural	72	8	18	8.13	88	Good Condition	9	-1	120	6.00	720	20	Preventive Maintenance	\$2,880.00	\$4.00		
KRRD-0100	Camden Drive	Walton Way	End (West)	Laskay	No	High Class Bituminous	Rural	48	8	20	8.42	87	Good Condition	10	2.2	115	6.00	1488	20	Preventive Maintenance	\$8,208.00	\$6.00		
KRRD-0101	Burns Boulevard	Walton Way	End (West)	Laskay	No	High Class Bituminous	Rural	290	8	18	9.71	87	Good Condition	11	13.3	348	6.00	870	20	Preventive Maintenance	\$16,704.00	\$6.00		
KRRD-0107	Elizabeth Court	Clearview Heights	King City	No	High Class Bituminous	Urban	204	8	16	9.13	87	Good Condition	10	9.4	45	8.00	8.50	360	20	Preventive Maintenance	\$2,160.00	\$6.00		
KRRD-0122	Palton Drive	King Road	End (East)	King City	No	High Class Bituminous	Urban	122	7	20	9.54	84	Good Condition	14	38.1	254	6.50	204	20	Preventive Maintenance	\$12,120.00	\$6.00		
KRRD-0131	Austin Bluff Court	Burton Grove	Richard Serra Court	King City	No	High Class Bituminous	Urban	167	8	20	9.16	87	Good Condition	10	-1	139	8.00	1112	20	Preventive Maintenance	\$6,672.00	\$6.00	Structure 0220	
KRRD-0142	Warren Road	Lavender Valley Road	Bennet Drive	King City	No	High Class Bituminous	Urban	827	8	15	9.10	87	Good Condition	14	35.9	232	8.50	8.50	1972	20	Preventive Maintenance	\$11,832.00	\$6.00	
KRRD-0146	East Hunter Drive	Humber Valley Crescent	Humber Valley Crescent	King City	No	High Class Bituminous	Urban	1033	9	18	8.86	87	Good Condition	15	47.6	517	6.00	8.50	4136	20	Preventive Maintenance	\$24,816.00	\$6.00	
KRRD-0183	Curtis Crescent	McClure Drive	McClure Drive	King City	No	High Class Bituminous	Urban	907	8	18	9.07	87	Good Condition	15	28.1	700	6.00	8.50	2700	20	Preventive Maintenance	\$43,740.00	\$6.00	
KRRD-0234	Warren Road	Bennet Drive	50m N. of Bennet Drive	King City	No	High Class Bituminous	Urban	827	8	17	9.14	87	Good Condition	14	38.1	47	8.00	8.50	376	20	Preventive Maintenance	\$2,256.00	\$6.00	
KRRD-0237	Old King Road	Highway 27	King Road	Nobleton	No	High Class Bituminous	Urban	434	7	17	8.47	87	Good Condition	12	19.8	181	6.00	160	160	Preventive Maintenance	\$8,760.00	\$6.00		
KRRD-0283	Woodhill Avenue	Farmcrest Court	King Road	Nobleton	No	High Class Bituminous	Urban	704	8	20	9.11	87	Good Condition	14	27	195	8.00	1872	20	Preventive Maintenance	\$11,232.00	\$6.00	Structure 0223	
NRRD-0065	Farmcrest Court	Woodhill Avenue	End (Cul-de-Sac)	Nobleton	No	High Class Bituminous	Urban	86	8	15	9.09	87	Good Condition	9	3.9	200	8.10	8.70	1520	20	Preventive Maintenance	\$9,720.00	\$6.00	
NRRD-0089	MacTaggart Drive	McCuthchen Avenue	Highway 27	Nobleton	No	High Class Bituminous	Urban	589	8	17	9.10	87	Good Condition	13	21.7	169	10.00	10.00	980	20	Preventive Maintenance	\$10,140.00	\$6.00	
ORRD-0047	19th Sideroad	19th Concession	19th Concession	King Twp. (Rural)	No	High Class Bituminous	Rural	671	8	18	9.12	87	Good Condition	13	61.8	196	6.00	8.00	1176	20	Preventive Maintenance	\$4,704.00	\$4.00	
ORRD-0136	11th Concession	1.3km N. of King Road	15th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Rural	152	10	20	8.61	87	Good Condition	10	13.3	92	6.30	8.50	5902	20	Preventive Maintenance	\$23,208.00	\$4.00	
ORRD-0180	2nd Concession	Davis Road	Hanemeyer Lane	King Twp. (Rural)	No	Gravel	Rural	421	8	19	9.33	87	Good Condition	12	6	831	6.00	7.50	4733	20	Resurface	\$212,985.00	\$45.00	
ORRD-0186	17th Sideroad	Highway 27	Highway 27	King Twp. (Rural)	No	Gravel	Rural	357	9	18	9.02	87	Good Condition	12	8.5	2942	6.70	6.70	13881	20	Resurface	\$547,240.00	\$40.00	
ORRD-0199	11th Concession	King Road	1.3km N. of King Road	King Twp. (Rural)	No	High Class Bituminous	Rural	152	10	20	8.61	87	Good Condition	10	13.3	1273	6.30	8.50	8020	20	Preventive Maintenance	\$32,080.00	\$4.00	
ORRD-0222	18th Sideroad	Duffell Street	Keefe Street	King Twp. (Rural)	No	High Class Bituminous	Rural	437	9	20	8.89	87	Good Condition	12	33.5	2103	7.20	9.80	15142	20	Preventive Maintenance	\$90,568.00	\$4.00	
ORRD-0251	17th Sideroad	Jane Street	End (West)	King Twp. (Rural)	No	Gravel	Rural	253	9	19	9.02	87	Good Condition	11	5.1	758	6.10	6.10	4624	20	Resurface	\$184,860.00	\$40.00	
YRRD-0008	Centre View Avenue	45m E. of Weston Road	Prince Adam Court	Laskay	No	High Class Bituminous	Semi-Urban	171	8	16	9.13	87	Good Condition	10	12.6	84	7.50	9.50	705	20	Preventive Maintenance	\$2,820.00	\$4.00	
KRRD-0004	Loma Avenue	End (South)	Kellyby	No	High Class Bituminous	Rural	28	8	19	9.24	88	Good Condition	7	1	251	6.10	1531	20	Preventive Maintenance	\$8,124.00	\$4.00			
KRRD-0001	Walkingway	Burns Boulevard	Landon Drive	King City	No	High Class Bituminous	Urban	240	10	20	8.81	88	Good Condition	10	9.6	198	8.50	8.50	1583	20	Preventive Maintenance	\$10,098.00	\$6.00	
KRRD-0027	Burton Grove	McBride Crescent	Keele Street	King City	No	High Class Bituminous	Urban	495	8	20	9.28	88	Good Condition	12	21.1	253	8.00	8.50	2024	20	Preventive Maintenance	\$12,144.00	\$6.00	
KRRD-0078	Camden Court	End (Cul-de-Sac)	End (Cul-de-Sac)	King City	No	High Class Bituminous	Urban	215	8	20	9.28	88	Good Condition	10	14.7	9.8	10.00	10.00	147	20	Preventive Maintenance	\$7,200.00	\$6.00	
KRRD-0082	Palton Drive	Warren Road	997	King City	No	High Class Bituminous	Semi-Urban	997	8	18	9.28	88	Good Condition	14	72.7	101	7.00	9.70	707	20	Preventive Maintenance	\$2,528.00	\$4.00	
KRRD-0088	Richard Serra Court	Chuck Ormsby Crescent	Chuck Ormsby Crescent	King City	No	High Class Bituminous	Urban	243	10	20	9.75	88	Good Condition	10	-1	196	8.00	1568	20	Preventive Maintenance	\$9,408.00	\$6.00		
KRRD-0108	Highway 27	Highway 27	Highway 27	King City	No	High Class Bituminous	Semi-Urban	484	7	20	9.47	87	Good Condition	10	21.4	203	9.00	9.80	1013	20	Preventive Maintenance	\$15,888.00	\$6.00	
KRRD-0113	Clearview Heights	McBride Crescent	Elizabeth Court	King City	No	High Class Bituminous	Semi-Urban	489	8	20	9.19	88	Good Condition	12	35.6	292	7.00	9.00	2044	20	Preventive Maintenance	\$8,176.00	\$4.00	
KRRD-0116	Spring Hill Drive	King Road	Adelia Place	King City	No	High Class Bituminous	Urban	290	7	20	9.58	88	Good Condition	10	-1	332	8.00	10.00	2656	20	Preventive Maintenance	\$15,936.00	\$6.00	
KRRD-0214	Burns Boulevard	Blin Way	Robert Berry Crescent	King City	No	High Class Bituminous	Urban	290	7	20	9.62	88	Good Condition	10	11.6	187	8.50	8.50	1590	20	Preventive Maintenance	\$9,540.00	\$6.00	
NRRD-0014	19th Sideroad	19th Concession	Rebelloy Way	King Twp. (Rural)	No	Gravel	Rural	295	10	20	9.28	88	Good Condition	10	11.6	187	8.50	8.50	1590	20	Preventive Maintenance	\$9,540.00	\$6.00	
NRRD-0041	Lyndon Crescent	235m N. of Norman Avenue	Nobleton	No	High Class Bituminous	Semi-Urban	467	9	18	9.01	88	Good Condition	11	34	224	7.00	8.60	1638	20	Preventive Maintenance	\$8,552.00	\$4.00		
KRRD-0013	15th Sideroad	0.55km E. of Highway 27	10th Concession	King Twp. (Rural)	No	Gravel	Rural	168	9	18	9.15	88	Good Condition	9	28.7	1465	6.30	7.50	10665	20	Resurface	\$427,600.00	\$40.00	
KRRD-0021	11th Concession	110m N. of Weston Lane	Strawberry Lane	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	158	9	18	9.52	87	Good Condition	9	7.59	8.00	8.50	4532	20	Preventive Maintenance	\$28,604.00	\$6.00		
ORRD-0049	8th Concession	Lloyd/Dun/Arora Road	Highway 9	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	777	8	18	9.16	88	Good Condition	13	56.6	209	9.00	14539	20	Preventive Maintenance	\$68,156.00	\$4.00		
ORRD-0067	11th Concession	King Road	End (South)	King Twp. (Rural)	No	Gravel	Rural	51	9	18	9.11	88	Good Condition	8	18.3	1284	5.10	6.70	8903	20	Resurface	\$344,120.00	\$40.00	
ORRD-0078	West/Cross County Bank Road	King - Simpson County Boundary	End (West)	King Twp. (Rural)	No	Low Class Bituminous	Rural	92	10	20	9.12	87	Good Condition	10	21.9	324	6.00	7.00	1024	20	Preventive Maintenance	\$17,238.00	\$6.00	
ORRD-0089	15th Sideroad	11th Concession	End (West)	King Twp. (Rural)	No	Gravel	Rural	32	9	18	9.11	88	Good Condition	7	10.6	804	5.10	6.10	4904	20	Routine Maintenance	\$198,160.00	\$40.00	
ORRD-0170	King View Crescent	King View Crescent (Fork)	Loops Drive	King Twp. (Rural)	No	High Class Bituminous	Rural	289	8	17	9.26	88	Good Condition	10	20.5	317	6.70	9.00	2124	20	Preventive Maintenance	\$8,496.00	\$4.00	
ORRD-0223	16th Sideroad	12th Concession	Loops Drive	King Twp. (Rural)	No	High Class Bituminous	Rural	458	8	18	9.28	88	Good Condition	12	39.4	2093	8.00	10.00	15070	20	Preventive Maintenance	\$97,800.00	\$6.00	
SRRD-0009	Dr. Jones Drive	Willard Hunt Court	Cane Drive	Schomberg	No	High Class Bituminous	Urban	456	8	18	9.21	88	Good Condition	11	18.2	140	8.50	8.50	1190	20	Preventive Maintenance	\$7,140.00	\$6.00	
SRRD-0048	Dilane Drive	Proctor Road	Sproule Street	Schomberg	No	High Class Bituminous	Urban	1092	10	20	8.75	88	Good Condition	14	-1	371	9.00	3339	20	Preventive Maintenance	\$20,034.00	\$6.00		
SRRD-0109	King Boulevard	Palton Street	Palton Street	King City	No	High Class Bituminous	Semi-Urban	423	8	18	9.30	88	Good Condition	12	18.5	120	9.00	1200	20	Preventive Maintenance	\$5,100.00	\$4.00		
KRRD-0094	King Boulevard	King Road	Dew Street	King City	No	High Class Bituminous	Semi-Urban	423	8	15	9.38	89	Good Condition	10	30	163	6.60	9.00	1076	20	Preventive Maintenance	\$4,304.00	\$4.00	
KRRD-0104	McClure Drive	Cambla Place	Gilham Circle	King City	No	High Class Bituminous	Urban	168	8	18	9.38	89	Good Condition	8	6.5	84	8.00	8.50	672	20	Preventive Maintenance	\$4,032.00	\$6.00	
KRRD-0127	Cambla Crescent	End (Cul-de-Sac)	Dr. Hanks Drive	King City	No	High Class Bituminous	Urban	159	9	18	9.42	89	Good Condition	11	30.1	324	6.00	1100	20	Preventive Maintenance	\$15,840.00	\$6.00		
KRRD-0158	Denimsson Street	Keele Street	Valleyview Drive	King City	No	High Class Bituminous	Urban	132	9	18	9.30	89	Good Condition	8	5.1	192	8.00	8.50	1536	20	Preventive Maintenance	\$9,216.00	\$6.00	
KRRD-0223	Collard Drive	Winter Road	175m N. of Winter Road	King City	No	High Class Bituminous	Semi-Urban	102	7	20	9.71	89	Good Condition	8	7.4	154	8.40	9.80	986	20	Preventive Maintenance	\$3,944.00	\$4.00	
KRRD-0237	16th Sideroad	16th Sideroad	16th Sideroad	King City	No	High Class Bituminous	Semi-Urban	216	9	18	9.28	88	Good Condition	8	14.0	80	8.00	8.00	480	20	Preventive Maintenance	\$3,200.00	\$4.00	
NRRD-0009	Norman Avenue	Highway 27	Lyndon Crescent	Nobleton	No</																			

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (T-20)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Code (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges
KRRD-0184	Melrose Avenue	John Street	Marlin Street	King City	No	High Class Bituminous	Semi-Urban	326	8	18	9.64	92	Good Condition	7	37.8	147	8.50	8.50	1250	Routine Maintenance	\$837.50	\$0.75	
KRRD-0203	Burns Boulevard	Colford Drive	Marlin Street	King City	No	High Class Bituminous	Urban	300	9	18	9.42	92	Good Condition	7	28.1	129	8.00	8.00	490	Routine Maintenance	\$600.00	\$0.75	
KRRD-0241	Hambly Avenue	Humber Crescent	50m S. of Humber Crescent	King City	No	High Class Bituminous	Urban	300	9	20	9.64	92	Good Condition	7	42.2	50	8.40	8.50	350	Routine Maintenance	\$252.50	\$0.75	
NRRD-0055	Kaake Road	Goodfellow Crescent	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	72	9	19	9.35	92	Good Condition	5	8.3	185	8.50	8.50	1573	Routine Maintenance	\$1,179.75	\$0.75	
NRRD-0080	Palmer Court	End (Cul-De-Sac)	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	6	9	18	9.35	92	Good Condition	5	8.1	37	8.50	8.50	618	Routine Maintenance	\$462.50	\$0.75	
NRRD-1108	Kinley Street	King Road	Fairis Avenue	Nobleton	No	High Class Bituminous	Semi-Urban	184	10	20	9.35	92	Good Condition	6	21	144	6.70	7.90	965	Routine Maintenance	\$723.75	\$0.75	
NRRD-0127	Woodhill Avenue	Gilbert Fuller Drive	Hawthorne Valley Road	Nobleton	No	High Class Bituminous	Urban	1056	10	18	9.21	92	Good Condition	9	130	62	8.00	8.50	496	Routine Maintenance	\$372.00	\$0.75	
NRRD-0157	Parkhegns Trail / Sampson Trail (Traffic Circle)	Parkhegns Trail	Parkhegns Trail	Nobleton	No	High Class Bituminous	Urban	658	10	20	9.23	92	Good Condition	9	144	64	6.40	6.40	602	Routine Maintenance	\$451.50	\$0.75	
NRRD-0177	Parkhegns Trail	Parkhegns Trail	Kettle Valley Trail	Nobleton	No	High Class Bituminous	Urban	775	15	20	9.42	92	Good Condition	7	75	145	11.80	10.90	1595	Routine Maintenance	\$1,198.25	\$0.75	
NRRD-0179	Parkhegns Trail	Kettle Valley Trail	Blueberry Run Trail	Nobleton	No	High Class Bituminous	Urban	838	10	20	9.21	92	Good Condition	9	75	80	11.00	11.80	850	Routine Maintenance	\$660.00	\$0.75	
ORRD-0027	16th Concession	Highway 27	Highway 27	King City (Rural)	No	High Class Bituminous	Rural	72	10	20	9.19	92	Good Condition	5	10.1	2016	7.00	8.50	1412	Routine Maintenance	\$10,360.00	\$0.75	
ORRD-0044	South Canal Bank Road	Highway 400	Highway 400	King City (Rural)	No	Low Class Bituminous	Rural	155	20	20	9.44	92	Good Condition	6	-1	65	6.70	6.70	370	Routine Maintenance	\$0.00	\$0.00	
ORRD-0155	7th Concession	Lloyd's Lane	19th Sideroad	King City (Rural)	No	High Class Bituminous	Rural	126	10	20	9.22	92	Good Condition	6	24.3	376	5.10	6.10	1918	Routine Maintenance	\$1,438.50	\$0.75	
ORRD-0168	18th Sideroad	Highway 27	10th Concession	King City (Rural)	No	High Class Bituminous	Rural	330	9	20	9.42	92	Good Condition	7	54.1	2028	6.00	8.50	12168	Routine Maintenance	\$9,126.00	\$0.75	
ORRD-0229	South Canal Bank Road	Highway 400	West Road	King City (Rural)	No	Low Class Bituminous	Rural	155	10	20	9.44	92	Good Condition	6	-1	55	6.70	6.70	313	Routine Maintenance	\$0.00	\$0.00	
ORRD-0215	South Canal Bank Road	Highway 9	Davis Road	King City (Rural)	No	High Class Bituminous	Rural	155	10	20	9.25	92	Good Condition	6	21.1	1127	7.20	8.10	8114	Routine Maintenance	\$6,085.50	\$0.75	
ORRD-0229	10th Concession	Highway 9	16th Sideroad	King City (Rural)	No	High Class Bituminous	Rural	265	10	19	9.16	92	Good Condition	7	43.5	147	6.00	7.90	882	Routine Maintenance	\$691.50	\$0.75	
ORRD-0258	South Canal Bank Road	Highway 9	West Road	King City (Rural)	No	High Class Bituminous	Rural	155	10	20	9.44	92	Good Condition	6	-1	55	6.70	6.70	313	Routine Maintenance	\$0.00	\$0.00	
ORRD-0266	Duffell Street	630m N. of Miller's Sideroad	King Street	King City (Rural)	No	High Class Bituminous	Rural	1833	9	16	9.41	92	Good Condition	11	261.6	995	6.90	10.20	8686	Routine Maintenance	\$5,149.50	\$0.75	
SRRD-0002	Sproule Street	Dillane Drive	End (Cul-De-Sac)	Schomberg	No	High Class Bituminous	Urban	72	10	20	9.23	92	Good Condition	5	-1	207	8.00	8.00	1769	Routine Maintenance	\$1,320.00	\$0.75	
SRRD-0017	McGuire Court	Roselena Drive	End (Cul-De-Sac)	Schomberg	No	High Class Bituminous	Urban	100	9	19	9.40	92	Good Condition	6	11.5	119	8.50	8.50	1012	Routine Maintenance	\$725.00	\$0.75	
SRRD-0030	Maynard Drive	Culter Court	Moore Park Drive	Schomberg	No	High Class Bituminous	Urban	766	9	19	9.41	92	Good Condition	9	88.7	133	8.50	8.50	1131	Routine Maintenance	\$848.25	\$0.75	
SRRD-0041	Main Street	Ben Boy Avenue	Greco Ridge Lane	Schomberg	No	High Class Bituminous	Urban	3680	9	17	9.35	92	Good Condition	13	392	141	10.00	10.00	1410	Routine Maintenance	\$1,097.50	\$0.75	
SRRD-0084	Marionette Drive	Ben Boy Avenue	Marionette Drive	Schomberg	No	High Class Bituminous	Urban	329	9	19	9.45	92	Good Condition	7	37.7	91	8.60	8.60	783	Routine Maintenance	\$587.25	\$0.75	
KRRD-0006	Jenkinson Drive	Taves Trail	Carmichael Crescent	King City	No	High Class Bituminous	Urban	204	9	19	9.53	93	Good Condition	6	21.9	232	8.00	8.50	1856	Routine Maintenance	\$1,392.00	\$0.75	
KRRD-0008	Hambly Avenue	50m S. of Humber Crescent	End	King City	No	High Class Bituminous	Urban	72	9	20	9.53	93	Good Condition	5	7.7	40	8.00	8.50	320	Routine Maintenance	\$240.00	\$0.75	
KRRD-0009	Palton Street	Wellington Street	Wellington Street	King City	No	High Class Bituminous	Urban	340	9	20	9.42	92	Good Condition	6	147.3	104	8.50	8.50	912	Routine Maintenance	\$684.00	\$0.75	
KRRD-0102	Richard Serra Court	Austin Rumble Court	Chuck Ormsby Crescent	King City	No	High Class Bituminous	Urban	243	10	20	9.35	93	Good Condition	6	-1	181	8.00	8.00	1448	Routine Maintenance	\$1,086.00	\$0.75	
KRRD-0109	Richard Serra Court	Austin Rumble Court	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	243	10	20	9.35	93	Good Condition	6	-1	247	8.00	8.00	1976	Routine Maintenance	\$1,482.00	\$0.75	
KRRD-0134	Chuck Ormsby Crescent	Richard Serra Court	Richard Serra Court	King City	No	High Class Bituminous	Urban	387	10	20	9.47	92	Good Condition	7	148.7	416	8.00	8.00	328	Routine Maintenance	\$2,388.00	\$0.75	
KRRD-0185	Humber Crescent	Hambly Avenue	Hambly Avenue	King City	No	High Class Bituminous	Semi-Urban	314	10	20	9.28	93	Good Condition	6	38.6	341	7.00	9.20	2387	Routine Maintenance	\$1,790.25	\$0.75	
KRRD-0190	Sir Henry Court	Elmora Lane	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	519	10	20	9.30	93	Good Condition	7	-1	129	8.00	8.00	1032	Routine Maintenance	\$774.00	\$0.75	
KRRD-0191	Gettly Court	Carlma Gate	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	26	10	20	9.35	93	Good Condition	4	-1	124	6.20	6.20	1017	Routine Maintenance	\$762.75	\$0.75	
KRRD-0193	Carlma Gate	End (Cul-De-Sac)	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	26	10	20	9.35	93	Good Condition	4	-1	124	6.20	6.20	1017	Routine Maintenance	\$762.75	\$0.75	
KRRD-0195	15th Sideroad	Carlma Gate	Elmora Lane	King City	No	High Class Bituminous	Urban	519	9	18	9.47	93	Good Condition	7	63.9	265	8.00	8.90	1855	Routine Maintenance	\$1,391.25	\$0.75	
KRRD-0196	Elmora Lane	15th Sideroad	Lake Marie Trail	King City	No	High Class Bituminous	Urban	519	10	20	9.25	93	Good Condition	7	-1	236	6.00	6.00	1668	Routine Maintenance	\$1,416.00	\$0.75	
KRRD-0200	15th Sideroad	Lake Marie Trail	Lake Marie Trail	King City	No	High Class Bituminous	Rural	259	10	20	9.47	93	Good Condition	7	63.9	78	8.90	54.0	849	Routine Maintenance	\$460.50	\$0.75	
KRRD-0205	Burns Boulevard	Station Road	Denne Drive	King City	No	High Class Bituminous	Urban	329	10	20	9.26	93	Good Condition	6	28.9	85	9.80	9.80	837	Routine Maintenance	\$477.75	\$0.75	
KRRD-0217	Dennis Drive	Walington Way	Burns Boulevard	King City	No	High Class Bituminous	Urban	385	10	20	9.35	93	Good Condition	6	-1	146	8.00	8.00	1270	Routine Maintenance	\$922.50	\$0.75	
KRRD-0227	Scott Crescent	Scott Crescent (East-West Intersection)	Scott Crescent (East-West Intersection)	King City	No	High Class Bituminous	Semi-Urban	329	9	19	9.45	92	Good Condition	6	13.7	82	9.80	9.80	552	Routine Maintenance	\$405.00	\$0.75	
KRRD-0230	Sir Henry Court	Elmora Lane	Elmora Lane	King City	No	High Class Bituminous	Urban	519	10	20	9.30	93	Good Condition	7	-1	247	8.00	8.00	1976	Routine Maintenance	\$1,482.00	\$0.75	
KRRD-0231	Elmora Lane	Lake Marie Trail	Sir Henry Court	King City	No	High Class Bituminous	Urban	519	10	20	9.30	93	Good Condition	7	-1	315	8.00	8.00	2520	Routine Maintenance	\$1,890.00	\$0.75	
KRRD-0244	Watson Road	120m E. of Palton Street	Palton Street	King City	No	High Class Bituminous	Semi-Urban	827	8	17	9.25	93	Good Condition	8	97.8	121	8.80	8.80	893	Routine Maintenance	\$692.25	\$0.75	
LRRD-0047	Church Street	Rebellion Way	Lloydton	King City	No	High Class Bituminous	Urban	271	10	20	9.35	93	Good Condition	6	-1	293	6.60	6.60	1934	Routine Maintenance	\$1,450.50	\$0.75	
NRRD-0103	Woodhill Avenue	Fairmont Court	Gilbert Fuller Drive	Nobleton	No	High Class Bituminous	Urban	1056	9	18	9.48	93	Good Condition	8	113.7	130	8.00	8.50	1040	Routine Maintenance	\$780.00	\$0.75	
NRRD-0106	Westbrooke Boulevard	Skivine Trail	Skivine Trail	Nobleton	No	High Class Bituminous	Urban	460	9	18	9.42	93	Good Condition	7	161	120	8.00	8.00	1207	Routine Maintenance	\$900.00	\$0.75	
NRRD-0110	Skivine Trail	Westbrooke Boulevard	Piper Court	Nobleton	No	High Class Bituminous	Urban	466	9	18	9.50	93	Good Condition	7	50.2	96	8.00	8.00	768	Routine Maintenance	\$576.00	\$0.75	
NRRD-0150	Aspen King Court	Skivine Trail	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	66	9	19	9.50	93	Good Condition	4	-1	156	8.00	8.00	1248	Routine Maintenance	\$936.00	\$0.75	
NRRD-0156	Prudace Valley Trail	Anderson Court	Anderson Court	Nobleton	No	High Class Bituminous	Urban	458	9	18	9.47	93	Good Condition	7	45.4	61	8.00	8.70	531	Routine Maintenance	\$399.25	\$0.75	
NRRD-0168	Parkhegns Trail	Blueberry Run Trail	Parkhegns Trail (Traffic Circle)	Nobleton	No	High Class Bituminous	Urban	838	10	20	9.26	93	Good Condition	8	66.6	67	11.00	11.80	737	Routine Maintenance	\$552.75	\$0.75	
NRRD-0200	Wilke Avenue	Oliver Emmerson Avenue	Larkin Avenue	Nobleton	No	High Class Bituminous	Urban	302	10	20	9.35	93	Good Condition	6	32.5	87	8.00	8.50	776	Routine Maintenance	\$522.00	\$0.75	
KRRD-0033	16th Sideroad	16th Sideroad	16th Sideroad	King City (Rural)	No	High Class Bituminous	Rural	1034	9	19	9.45	93	Good Condition	6	29.3	114	8.50	8.50	118	Routine Maintenance	\$88.50	\$0.75	
ORRD-0051	10th Concession	King Road	King Road	King City (Rural)	No	High Class Bituminous	Rural	72	10	20	9.36	93	Good Condition	7	109.0	1574	6.70	8.00	10546	Routine Maintenance	\$7,509.50	\$0.75	
ORRD-0061	15th Sideroad	0.53km East of Western Road	1.8km East of Western Road	King City (Rural)	No	High Class Bituminous	Rural	599	10	17	9.36	93	Good Condition	7	71.7	1225	7						

Appendix E - Road Improvement Needs (Sorted by PCI)

Table with columns: Municipal ID, Name, Name From, Name To, Community, Boundary Road, Surface Material, Roadside Environment, AADT, Ride Comfort Rating (RCR), Structural Adequacy (T-20), DMI, 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 (\$/ft), OSM Culverts/Bridges. The table lists 1000+ road segments with their respective details.

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges
KRRD-0172	Stan Road Street	Sim Hill Crescent	Sim Hill Crescent	King City	No	High Class Bituminous	Urban	290	9	20	10.00	87	Good Condition	3	-1	115	8.00	8.00	920	No Maintenance Required	\$0.00	\$0.00	
KRRD-0173	Stan Road Street	Sim Hill Crescent	Sim Hill Crescent	King City	No	High Class Bituminous	Urban	290	9	20	10.00	97	Good Condition	3	-1	115	8.00	8.00	920	No Maintenance Required	\$0.00	\$0.00	
KRRD-0174	Wells Orchard Crescent	Claudiaue Street	Claudiaue Street	King City	No	High Class Bituminous	Urban	423	9	20	10.00	87	Good Condition	3	-1	284	8.00	8.00	2112	No Maintenance Required	\$0.00	\$0.00	Structure 0318 & 0319
KRRD-0175	Wells Orchard Crescent	Sim Hill Crescent	Claudiaue Street	King City	No	High Class Bituminous	Urban	423	9	20	10.00	87	Good Condition	3	-1	101	8.00	8.00	808	No Maintenance Required	\$0.00	\$0.00	
KRRD-0176	Wells Orchard Crescent	Sim Hill Crescent	Talton Court	King City	No	High Class Bituminous	Urban	423	9	20	10.00	87	Good Condition	3	-1	187	8.00	8.00	1486	No Maintenance Required	\$0.00	\$0.00	
KRRD-0178	Talton Court	Wells Orchard Crescent	Claudiaue Street	King City	No	High Class Bituminous	Urban	346	9	20	10.00	87	Good Condition	3	-1	89	8.00	8.00	712	No Maintenance Required	\$0.00	\$0.00	
KRRD-0187	Carmichael Crescent	Di Nardo Court	Keefe Street	King City	No	High Class Bituminous	Urban	742	9	18	9.93	97	Good Condition	3	-1	569	8.00	8.50	4552	No Maintenance Required	\$0.00	\$0.00	Structure 0305
KRRD-0192	Calms Gate	15th Sideroad	Celliway Court	King City	No	High Class Bituminous	Urban	514	9	20	10.00	97	Good Condition	3	-1	183	6.20	6.20	1501	No Maintenance Required	\$0.00	\$0.00	
KRRD-0200	North Road	Libby Valley Crescent	Libby Valley Crescent	King City	No	High Class Bituminous	Urban	334	10	20	10.00	97	Good Condition	3	-1	83	6.20	6.20	684	No Maintenance Required	\$0.00	\$0.00	
KRRD-0209	Hi Way	Langdon Drive	End (Cul-De-Sac)	King City	No	High Class Bituminous	Urban	72	9	20	10.00	97	Good Condition	2	-1	41	8.00	8.00	328	No Maintenance Required	\$0.00	\$0.00	
KRRD-0210	Hi Way	Robert Berry Crescent	Burns Boulevard	King City	No	High Class Bituminous	Urban	290	9	20	10.00	97	Good Condition	3	-1	89	8.00	8.00	712	No Maintenance Required	\$0.00	\$0.00	
KRRD-0215	Robert Berry Crescent	Burns Boulevard	100m E. of Burns Boulevard	King City	No	High Class Bituminous	Urban	290	9	20	10.00	97	Good Condition	3	-1	97	8.00	8.00	778	No Maintenance Required	\$0.00	\$0.00	
KRRD-0216	Robert Berry Crescent	Hi Way	710m to Robert Berry Crescent Intersection	King City	No	High Class Bituminous	Urban	290	9	20	10.00	97	Good Condition	3	-1	708	8.00	8.00	5664	No Maintenance Required	\$0.00	\$0.00	
KRRD-0218	Robert Berry Crescent	Hi Way	210m S. of Hi Way	King City	No	High Class Bituminous	Urban	290	9	20	10.00	97	Good Condition	3	-1	208	8.00	8.00	1664	No Maintenance Required	\$0.00	\$0.00	
KRRD-0219	Langdon Drive	John Turner Court	Tero Court	King City	No	High Class Bituminous	Urban	278	9	20	9.93	97	Good Condition	3	-1	143	8.00	11.44	1144	No Maintenance Required	\$0.00	\$0.00	Structure 0019
KRRD-0221	Langdon Drive	Burns Boulevard	Burns Boulevard	King City	No	High Class Bituminous	Urban	278	10	20	9.78	97	Good Condition	3	-1	67	8.00	8.00	536	No Maintenance Required	\$0.00	\$0.00	
KRRD-0224	King Boulevard	Great Heron Court	Dew Street	King City	No	High Class Bituminous	Semi-Urban	423	9	20	10.00	97	Good Condition	3	-1	126	8.00	9.00	1008	No Maintenance Required	\$0.00	\$0.00	
KRRD-0225	Collard Drive	Scott Crescent	Water Road	King City	No	High Class Bituminous	Semi-Urban	102	9	20	10.00	97	Good Condition	2	-1	245	6.40	9.80	1568	No Maintenance Required	\$0.00	\$0.00	
KRRD-0228	Collard Drive	Jane Street	Scott Crescent	King City	No	High Class Bituminous	Semi-Urban	102	9	20	9.98	97	Good Condition	2	-1	449	6.40	9.80	2874	No Maintenance Required	\$0.00	\$0.00	Structure 0302
KRRD-0233	Talton Court	155m W. of Duffren Street	Sunbloom Street	King City	No	High Class Bituminous	Urban	346	9	20	10.00	97	Good Condition	3	-1	57	8.50	8.50	485	No Maintenance Required	\$0.00	\$0.00	
KRRD-0238	Hamby Avenue	80m N. of Martin Street	Normal Drive	King City	No	High Class Bituminous	Urban	300	9	20	10.00	97	Good Condition	3	-1	17	8.00	8.50	136	No Maintenance Required	\$0.00	\$0.00	
LRRD-0001	Centre Street	End (West)	Centre Street	Lloydton	No	High Class Bituminous	Urban	23	9	20	10.00	97	Good Condition	2	-1	211	5.00	6.20	1055	No Maintenance Required	\$0.00	\$0.00	
LRRD-0002	Rebellion Way	Queen Street	Queen Street	Lloydton	No	High Class Bituminous	Semi-Urban	31	9	20	9.93	97	Good Condition	2	-1	80	4.50	10.10	520	No Maintenance Required	\$0.00	\$0.00	
LRRD-0003	Rebellion Way	Church Street	Little Rabbit Road	Lloydton	No	High Class Bituminous	Semi-Urban	139	10	19	9.77	97	Good Condition	2	-1	133	6.70	12.70	891	No Maintenance Required	\$0.00	\$0.00	
LRRD-0006	Rebellion Way	Queen Street	End (North)	Lloydton	No	High Class Bituminous	Urban	221	9	20	10.00	97	Good Condition	2	-1	102	4.50	5.50	459	No Maintenance Required	\$0.00	\$0.00	
LRRD-0008	Queen Street	North Concession	Queen Street	Lloydton	No	High Class Bituminous	Semi-Urban	221	9	20	10.00	97	Good Condition	2	-1	247	4.50	5.50	123	No Maintenance Required	\$0.00	\$0.00	Structure 0327
LRRD-0009	Centre Street	Church Street	Rebellion Way	Lloydton	No	High Class Bituminous	Urban	53	10	20	9.78	97	Good Condition	2	-1	351	5.20	6.60	1825	No Maintenance Required	\$0.00	\$0.00	
LRRD-0010	Victoria Street	Queen Street	End East	Lloydton	No	High Class Bituminous	Urban	81	9	20	10.00	97	Good Condition	2	-1	133	4.50	5.50	599	No Maintenance Required	\$0.00	\$0.00	
LRRD-0004	Chinook Drive	Newman Avenue	Chinook Drive	Lloydton	No	High Class Bituminous	Urban	84	9	20	9.93	97	Good Condition	2	-1	132	8.70	8.70	1123	No Maintenance Required	\$0.00	\$0.00	
NRRD-0005	Wilkie Avenue	Robinson Road	Ballard Drive	Nobleton	No	High Class Bituminous	Urban	302	10	20	9.71	97	Good Condition	3	-1	299	8.50	8.50	2542	No Maintenance Required	\$0.00	\$0.00	
NRRD-0006	Russell Snider Drive	Keohc Court	55m N. of Keohc Court	Nobleton	No	High Class Bituminous	Urban	387	9	20	10.00	97	Good Condition	3	-1	55	8.50	8.50	468	No Maintenance Required	\$0.00	\$0.00	
NRRD-0007	Parkview Drive	Ellis Avenue	Creswell Road	Nobleton	No	High Class Bituminous	Semi-Urban	423	9	20	10.00	97	Good Condition	3	-1	104	6.40	6.40	696	No Maintenance Required	\$0.00	\$0.00	
NRRD-0010	Hillside Drive	Noblevue Drive	End (West)	Nobleton	No	High Class Bituminous	Urban	93	9	20	10.00	97	Good Condition	2	-1	62	8.50	8.50	524	No Maintenance Required	\$0.00	\$0.00	
NRRD-0011	Hillside Drive	Midway	Noblevue Drive	Nobleton	No	High Class Bituminous	Urban	70	9	20	10.00	97	Good Condition	2	-1	131	8.50	8.50	1114	No Maintenance Required	\$0.00	\$0.00	
NRRD-0012	Hillside Drive	Cedarwood Crescent	Midway	Nobleton	No	High Class Bituminous	Urban	70	9	20	10.00	97	Good Condition	2	-1	208	8.50	8.50	1768	No Maintenance Required	\$0.00	\$0.00	Structure 0325
NRRD-0016	Midway	Midway	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	42	10	20	10.00	97	Good Condition	2	-1	196	8.50	8.50	1662	No Maintenance Required	\$0.00	\$0.00	
NRRD-0018	Fairmont Ridge Trail	Black Duck Trail (Traffic Circle)	Anderson Cove Trail	Nobleton	No	High Class Bituminous	Urban	1837	10	20	9.71	97	Good Condition	4	-1	89	8.70	8.70	800	No Maintenance Required	\$0.00	\$0.00	Structure 0324
NRRD-0019	Anderson Cove Trail	Fairmont Ridge Trail	Paradise Valley Trail	Nobleton	No	High Class Bituminous	Urban	458	9	20	9.93	97	Good Condition	3	-1	182	9.70	8.70	1583	No Maintenance Required	\$0.00	\$0.00	
NRRD-0020	Anderson Cove Trail	Black Duck Trail	Black Duck Trail	Nobleton	No	High Class Bituminous	Urban	426	9	20	9.93	97	Good Condition	3	-1	27	8.70	8.70	239	No Maintenance Required	\$0.00	\$0.00	
NRRD-0022	Chinook Drive	Chinook Drive	Chinook Drive	Nobleton	No	High Class Bituminous	Semi-Urban	780	10	20	9.71	97	Good Condition	3	-1	12	6.30	9.50	76	No Maintenance Required	\$0.00	\$0.00	
NRRD-0024	West Coast Trail	Fairmont Ridge Trail	Paradise Valley Trail	Nobleton	No	High Class Bituminous	Urban	838	9	20	9.93	97	Good Condition	3	-1	188	8.70	8.70	1723	No Maintenance Required	\$0.00	\$0.00	Structure 0011
NRRD-0028	Anderson Cove Trail	Fairmont Ridge Trail	Fairmont Ridge Trail	Nobleton	No	High Class Bituminous	Urban	423	9	20	9.93	97	Good Condition	3	-1	293	8.70	8.70	2249	No Maintenance Required	\$0.00	\$0.00	
NRRD-0029	Chinook Drive	Chinook Drive	Chinook Drive	Nobleton	No	High Class Bituminous	Semi-Urban	222	9	20	9.93	97	Good Condition	2	-1	280	6.10	8.50	1708	No Maintenance Required	\$0.00	\$0.00	
NRRD-0034	O'Neill Court	Russell Snider Drive	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	86	9	20	10.00	97	Good Condition	2	-1	183	8.50	8.50	1558	No Maintenance Required	\$0.00	\$0.00	
NRRD-0035	Cedarwood Crescent	Summit Drive	Summit Drive	Nobleton	No	High Class Bituminous	Urban	199	9	20	10.00	97	Good Condition	2	-1	65	8.50	8.50	593	No Maintenance Required	\$0.00	\$0.00	
NRRD-0040	Russell Snider Drive	O'Neill Court	Keohc Court	Nobleton	No	High Class Bituminous	Urban	199	9	20	10.00	97	Good Condition	2	-1	129	8.50	8.50	1097	No Maintenance Required	\$0.00	\$0.00	
NRRD-0043	Noblevue Drive	Hillside Drive	Simon Henry Avenue	Nobleton	No	High Class Bituminous	Urban	256	9	20	10.00	97	Good Condition	2	-1	139	8.50	8.50	1182	No Maintenance Required	\$0.00	\$0.00	
NRRD-0046	Chinook Drive	End (North)	Chinook Drive	Nobleton	No	High Class Bituminous	Semi-Urban	84	9	20	9.93	97	Good Condition	2	-1	83	8.70	8.70	721	No Maintenance Required	\$0.00	\$0.00	
NRRD-0047	Robinson Road	Ellis Avenue	Wilkie Avenue	Nobleton	No	High Class Bituminous	Urban	603	10	20	9.72	97	Good Condition	3	-1	540	8.50	8.50	4500	No Maintenance Required	\$0.00	\$0.00	
NRRD-0048	Keohc Court	Russell Snider Drive	End (Cul-De-Sac)	Nobleton	No	High Class Bituminous	Urban	86	9	20	10.00	97	Good Condition	2	-1	185	8.50	8.50	1573	No Maintenance Required	\$0.00	\$0.00	Structure 0308
NRRD-0050	Larkin Avenue	Wilkie Avenue	Hazelbury Drive	Nobleton	No	High Class Bituminous	Semi-Urban	450	10	20	9.78	97	Good Condition	3	-1	98	8.50	8.50	796	No Maintenance Required	\$0.00	\$0.00	
NRRD-0057	Wilson Road	Hazelbury Drive	Hazelbury Drive	Nobleton	No	High Class Bituminous	Urban	450	10	20	9.78	97	Good Condition	3	-1	94	8.50	8.50	799	No Maintenance Required	\$0.00	\$0.00	
NRRD-0058	Russell Snider Drive	Summit Drive	Shandon Drive	Nobleton	No	High Class Bituminous	Urban	225	9	20	10.00	97	Good Condition	2	-1	226	8.50	8.50	1921	No Maintenance Required	\$0.00	\$0.00	
NRRD-0061	Cedarwood Crescent	End (North)	End (North)	Nobleton	No	High Class Bituminous	Urban	302	10	20	9.93	97	Good Condition	2	-1	84	8.50	8.50	584	No Maintenance Required	\$0.00	\$0.00	
NRRD-0062	Starrett Street	Larkin Avenue	Mary Agnes Court	Nobleton	No	High Class Bituminous	Urban	302	10	20	9.76	97	Good Condition	3	-1	110	8.50	8.50	935	No Maintenance Required	\$0.00	\$0.00	
NRRD-0070	Cedarwood Crescent																						

Appendix E - Road Improvement Needs (Sorted by PCI)

Municipal ID	Name	Name From	Name To	Community	Boundary Road	Surface Material	Roadside Environment	AADT	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	DMI	PCI	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Proposed Lifecycle Improvement	Improvement Cost	Benchmark Cost (\$/km)	OSM Culverts/Bridges
ORRD-0095	Keefe Street	19th Sideroad	19th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Rural	2250	9	20	10.00	97	Good Condition	4	-1	18	6.10	110	No Maintenance Required	\$0.00	\$0.00		
ORRD-0098	18th Concession	Keeneydin Road	Keeneydin Road	King Twp. (Rural)	No	Low Class Bituminous	Rural	727	10	20	10.00	97	Good Condition	3	-1	1268	6.40	820	No Maintenance Required	\$0.00	\$0.00		
ORRD-0100	7th Concession	18th Sideroad	18th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	983	9	20	10.00	97	Good Condition	3	-1	98	7.00	940	No Maintenance Required	\$0.00	\$0.00		
ORRD-0108	Norville Drive	Scotch Valley Drive	End (Cul-de-Sac)	King Twp. (Rural)	No	High Class Bituminous	Urban	16	9	20	9.93	97	Good Condition	2	-1	68	8.00	8.50	544	No Maintenance Required	\$0.00	\$0.00	
ORRD-0127	7th Concession	1.08km W. of Queen's Own Lane	18th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Rural	696	9	20	10.00	97	Good Condition	3	-1	113	7.20	8.80	1246	No Maintenance Required	\$0.00	\$0.00	
ORRD-0138	Keefe Street	Litchey Road	King Street	King Twp. (Rural)	No	High Class Bituminous	Rural	1748	9	20	10.00	97	Good Condition	4	-1	448	6.70	8.70	3002	No Maintenance Required	\$0.00	\$0.00	
ORRD-0166	15th Sideroad	Keeneydin Road	Highway 27	King Twp. (Rural)	No	Low Class Bituminous	Rural	727	10	20	10.00	97	Good Condition	3	-1	760	6.00	9.95	4560	No Maintenance Required	\$0.00	\$0.00	Structure 0227
ORRD-0171	Nelson Lakes Drive	Highway 27	Earwood Crescent	King Twp. (Rural)	No	High Class Bituminous	Urban	963	9	20	10.00	97	Good Condition	3	-1	611	6.00	8.50	648	No Maintenance Required	\$0.00	\$0.00	
ORRD-0174	ORRD-0174	10th Concession	Highway 27	King Twp. (Rural)	No	High Class Bituminous	Rural	1610	9	20	10.00	97	Good Condition	3	-1	1810	6.30	8.90	11992	No Maintenance Required	\$0.00	\$0.00	Structure 0334
ORRD-0178	Duffrein Street	Juliana Road	Graham Sideroad	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	2147	9	20	10.00	97	Good Condition	4	-1	553	6.70	8.70	3705	No Maintenance Required	\$0.00	\$0.00	
ORRD-0181	18th Sideroad	Duffrein Street	230m W. of Duffrein Street	King Twp. (Rural)	No	High Class Bituminous	Rural	865	9	19	10.00	97	Good Condition	3	-1	297	6.30	7.30	1430	No Maintenance Required	\$0.00	\$0.00	
ORRD-0186	Woodhoppers Lane	Jane Street	West Road	King Twp. (Rural)	No	High Class Bituminous	Rural	306	9	20	10.00	97	Good Condition	3	-1	1995	6.70	7.70	7336	No Maintenance Required	\$0.00	\$0.00	
ORRD-0190	Woodhoppers Lane	1.4km W. of Keefe Street	Jane Street	King Twp. (Rural)	No	High Class Bituminous	Rural	1041	9	20	10.00	97	Good Condition	3	-1	1098	6.90	8.40	7576	No Maintenance Required	\$0.00	\$0.00	
ORRD-0208	17th Sideroad	Duffrein Street	King View Crescent	King Twp. (Rural)	No	High Class Bituminous	Rural	5727	9	8	10.00	97	Good Condition	5	-1	367	6.70	8.50	2459	No Maintenance Required	\$0.00	\$0.00	
ORRD-0213	ORRD-0213	Alton Vaughan Road	King Vaughan Boundary	King Twp. (Rural)	Yes	High Class Bituminous	Rural	15667	9	20	10.00	97	Good Condition	6	-1	204	7.20	8.80	1469	No Maintenance Required	\$0.00	\$0.00	
ORRD-0218	18th Sideroad	Weston Road	End (West)	King Twp. (Rural)	No	High Class Bituminous	Rural	32	9	20	10.00	97	Good Condition	2	-1	768	6.00	7.30	4608	No Maintenance Required	\$0.00	\$0.00	
ORRD-0219	ORRD-0219	Hilda Drive	Hilda Road	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	50	9	5	10.00	97	Good Condition	2	-1	358	6.30	8.70	2263	No Maintenance Required	\$0.00	\$0.00	
ORRD-0221	ORRD-0221	Nelson Lakes Drive	Leah Erin Lane	King Twp. (Rural)	No	High Class Bituminous	Urban	963	9	20	10.00	97	Good Condition	3	-1	50	8.00	8.50	490	No Maintenance Required	\$0.00	\$0.00	
ORRD-0221	7th Concession	15th Sideroad	Queen's Own Lane	King Twp. (Rural)	No	High Class Bituminous	Rural	385	10	20	9.78	97	Good Condition	3	-1	927	7.20	8.80	6674	No Maintenance Required	\$0.00	\$0.00	
ORRD-0241	ORRD-0241	Mount Melick Drive	Bachly Crescent	Pottagoville	No	High Class Bituminous	Semi-Urban	983	9	20	10.00	97	Good Condition	3	-1	250	7.00	9.40	1750	No Maintenance Required	\$0.00	\$0.00	
ORRD-0249	ORRD-0249	Jane Street	Orion Chequer Court	King Twp. (Rural)	No	High Class Bituminous	Urban	97	9	20	10.00	97	Good Condition	2	-1	344	8.00	7.90	2752	No Maintenance Required	\$0.00	\$0.00	Structure 0225
ORRD-0252	ORRD-0252	17th Sideroad	Keefe Street	King Twp. (Rural)	No	High Class Bituminous	Rural	6380	9	20	9.95	97	Good Condition	5	-1	2020	6.70	9.50	13534	No Maintenance Required	\$0.00	\$0.00	
ORRD-0261	ORRD-0261	17th Concession	18th Sideroad	King Twp. (Rural)	No	High Class Bituminous	Rural	218	9	20	10.00	97	Good Condition	2	-1	855	6.00	9.10	5130	No Maintenance Required	\$0.00	\$0.00	
ORRD-0262	ORRD-0262	Woodhoppers Lane	900m West of Keefe Street	King Twp. (Rural)	No	High Class Bituminous	Rural	1041	9	20	10.00	97	Good Condition	3	-1	476	6.50	9.10	2761	No Maintenance Required	\$0.00	\$0.00	
ORRD-0263	ORRD-0263	18th Sideroad	7th Concession	King Twp. (Rural)	No	High Class Bituminous	Semi-Urban	197	9	1	10.00	97	Good Condition	2	-1	371	6.70	8.10	2486	No Maintenance Required	\$0.00	\$0.00	
ORRD-0273	ORRD-0273	15th Sideroad	Weston Road	King Twp. (Rural)	No	High Class Bituminous	Rural	599	10	20	9.78	97	Good Condition	2	-1	529	7.60	11.00	4090	No Maintenance Required	\$0.00	\$0.00	
ORRD-0303	ORRD-0303	Shanks Drive	Armstrong Crescent	Pottagoville	No	High Class Bituminous	Urban	228	9	20	10.00	97	Good Condition	3	-1	288	6.00	8.50	2093	No Maintenance Required	\$0.00	\$0.00	
PRRD-0004	PRRD-0004	Shanks Drive	110m W. of Archibald Road	Pottagoville	No	High Class Bituminous	Urban	275	9	20	10.00	97	Good Condition	3	-1	231	6.80	8.00	1571	No Maintenance Required	\$0.00	\$0.00	
PRRD-0005	PRRD-0005	Shanks Drive	Cook Drive	Pottagoville	No	High Class Bituminous	Urban	43	9	20	10.00	97	Good Condition	2	-1	83	8.50	8.50	706	No Maintenance Required	\$0.00	\$0.00	
PRRD-0006	PRRD-0006	Archibald Court	Cook Drive	Pottagoville	No	High Class Bituminous	Urban	53	9	20	10.00	97	Good Condition	2	-1	108	8.50	8.50	921	No Maintenance Required	\$0.00	\$0.00	
PRRD-0007	PRRD-0007	Cook Drive	Munshaw Court	Pottagoville	No	High Class Bituminous	Urban	922	9	20	10.00	97	Good Condition	3	-1	43	8.50	8.50	366	No Maintenance Required	\$0.00	\$0.00	
PRRD-0009	PRRD-0009	Armstrong Crescent	Cook Drive	Pottagoville	No	High Class Bituminous	Urban	228	9	20	10.00	97	Good Condition	2	-1	598	8.50	8.50	5083	No Maintenance Required	\$0.00	\$0.00	
PRRD-0010	PRRD-0010	Cook Drive	Archibald Road	Pottagoville	No	High Class Bituminous	Urban	922	9	20	10.00	97	Good Condition	3	-1	119	8.50	8.50	1012	No Maintenance Required	\$0.00	\$0.00	
PRRD-0014	PRRD-0014	Cook Drive	Armstrong Crescent	Pottagoville	No	High Class Bituminous	Urban	922	9	20	10.00	97	Good Condition	3	-1	141	8.50	8.50	1199	No Maintenance Required	\$0.00	\$0.00	
PRRD-0015	PRRD-0015	Cook Drive	Armstrong Crescent	Pottagoville	No	High Class Bituminous	Urban	922	9	20	10.00	97	Good Condition	3	-1	159	8.50	8.50	1352	No Maintenance Required	\$0.00	\$0.00	
PRRD-0017	PRRD-0017	Cook Drive	Archibald Road	Pottagoville	No	High Class Bituminous	Urban	922	9	20	10.00	97	Good Condition	3	-1	176	6.50	8.50	1496	No Maintenance Required	\$0.00	\$0.00	
SRRD-0008	SRRD-0008	Church Street	Western Avenue	Schomberg	No	High Class Bituminous	Urban	628	9	20	10.00	97	Good Condition	3	-1	299	8.40	9.40	1756	No Maintenance Required	\$0.00	\$0.00	
SRRD-0008	SRRD-0008	Dr. Kay Drive	Rose Cottage Lane	Schomberg	No	High Class Bituminous	Urban	2510	9	2	10.00	97	Good Condition	4	-1	156	9.00	12.00	1404	No Maintenance Required	\$0.00	\$0.00	
SRRD-0016	SRRD-0016	Dr. Kay Drive	Cooper Drive	Schomberg	No	High Class Bituminous	Urban	2510	9	18	10.00	97	Good Condition	4	-1	114	11.00	11.00	1254	No Maintenance Required	\$0.00	\$0.00	
SRRD-0016	SRRD-0016	Dr. Kay Drive	Cooper Drive	Schomberg	Not Recorded	High Class Bituminous	Semi-Urban	2268	9	4	10.00	97	Good Condition	4	-1	212	10.00	11.70	2100	No Maintenance Required	\$0.00	\$0.00	
SRRD-0019	SRRD-0019	Western Avenue	Church Street	Schomberg	No	High Class Bituminous	Urban	611	9	20	10.00	97	Good Condition	3	-1	165	8.50	8.50	1403	No Maintenance Required	\$0.00	\$0.00	
SRRD-0021	SRRD-0021	Dr. Kay Drive	Rose Cottage Lane	Schomberg	No	High Class Bituminous	Urban	2510	9	4	10.00	97	Good Condition	4	-1	86	9.00	12.00	774	No Maintenance Required	\$0.00	\$0.00	
SRRD-0027	SRRD-0027	Mableton Mills Drive	Walden Trail	Schomberg	No	High Class Bituminous	Urban	598	10	19	9.74	97	Good Condition	3	-1	321	8.60	8.60	2761	No Maintenance Required	\$0.00	\$0.00	Structure 021 & 224
SRRD-0028	SRRD-0028	Church Street	Castwood Avenue	Schomberg	No	High Class Bituminous	Urban	271	9	20	10.00	97	Good Condition	3	-1	892	8.70	8.70	7760	No Maintenance Required	\$0.00	\$0.00	
SRRD-0039	SRRD-0039	Castwood Avenue	Church Street	Schomberg	No	High Class Bituminous	Urban	223	9	20	10.00	97	Good Condition	2	-1	164	8.50	8.50	1394	No Maintenance Required	\$0.00	\$0.00	
SRRD-0047	SRRD-0047	Edwards Mill Lane	Church Street	Schomberg	No	High Class Bituminous	Urban	15	9	20	10.00	97	Good Condition	2	-1	54	6.00	5.00	270	No Maintenance Required	\$0.00	\$0.00	
SRRD-0049	SRRD-0049	Dr. Jones Drive	Cooper Drive	Schomberg	No	High Class Bituminous	Urban	456	9	19	9.93	97	Good Condition	3	-1	119	8.50	8.50	1012	No Maintenance Required	\$0.00	\$0.00	
SRRD-0052	SRRD-0052	Church Street	Main Street	Schomberg	No	High Class Bituminous	Urban	628	9	20	10.00	97	Good Condition	3	-1	46	8.40	9.40	386	No Maintenance Required	\$0.00	\$0.00	
SRRD-0054	SRRD-0054	Proctor Road	Dilane Drive	Schomberg	No	High Class Bituminous	Urban	2140	10	20	9.74	97	Good Condition	4	-1	107	8.50	9.10	910	No Maintenance Required	\$0.00	\$0.00	Structure 0022
SRRD-0056	SRRD-0056	Elmwood Avenue	Western Avenue	Schomberg	No	High Class Bituminous	Urban	104	9	20	10.00	97	Good Condition	2	-1	136	8.50	8.50	1156	No Maintenance Required	\$0.00	\$0.00	
SRRD-0062	SRRD-0062	Proctor Road	Manxum Drive	Schomberg	No	High Class Bituminous	Urban	2140	9	20	10.00	97	Good Condition	4	-1	131	8.50	9.10	1114	No Maintenance Required	\$0.00	\$0.00	
SRRD-0065	SRRD-0065	Proctor Road	Highway 27	Schomberg	No	High Class Bituminous	Urban	2140	9	20	10.00	97	Good Condition	4	-1	157	8.50	9.10	1335	No Maintenance Required	\$0.00	\$0.00	
KRRD-0095	KRRD-0095	Adelsa Place	Niourt Road	King City	No	High Class Bituminous	Urban	341	10	20	9.90	98	Good Condition	2	-1	84	8.00	8.00	672	No Maintenance Required	\$0.00	\$0.00	
KRRD-0098	KRRD-0098	Lavender Valley Road	Basil Ridge Court	King City	No	High Class Bituminous	Urban	827	10	20	9.86	98</											



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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	\$3.00
Pulverizing	m2	\$1.00
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		\$3.00	\$3.00
Tack Coat					m2		\$0.40	\$0.40
HL4			50mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	10%							\$1.81
							Total =	\$19.91

Semi-Urban or Rural HCB/LCB Resurfacing AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Gravel Shoulders			50 mm		m2		\$1.35	\$1.35
Crack Sealing + Patching					m2		\$1.50	\$1.50
Milling			50mm		m2		\$3.00	\$3.00
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	10%							\$2.10
							Total =	\$23.05
Semi-Urban or Rural HCB/LCB Resurfacing 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Crack Sealing + Patching					m2		\$1.50	\$1.50
Milling			50 mm		m2		\$3.00	\$3.00
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	10%							\$1.96
							Total =	\$21.56
Semi-Urban or Rural HCB Resurfacing AADT<400								
Crack Sealing + Patching					m2		\$1.50	\$1.50
Asphalt Removal			50 mm		m2		\$5.00	\$5.00
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	10%							\$2.12
							Total =	\$23.32
Semi-Urban or Rural LCB Resurfacing AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Crack Sealing + Patching					m2		\$1.50	\$1.50
FibreMat					m2		\$7.00	\$7.00
Double Surface Treatment					m2		\$9.00	\$9.00
Contingencies	10%							\$1.75
							Total =	\$19.25

Urban HCB Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal			100 mm		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 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	15%							\$5.88
							Total =	\$45.08

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		\$1.00	\$1.00
Granular A			150 mm		m2		\$9.36	\$9.36
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Contingencies	15%							\$6.43
					m2			
							Total =	\$49.29
Semi-Urban or Rural HCB/LCB Rehabilitation 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Granular A			150 mm		m2		\$9.36	\$9.36
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Contingencies	15%							\$6.43
							Total =	\$49.29
Semi-Urban or Rural HCB Rehabilitation AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Granular A			150 mm		m2		\$9.36	\$9.36
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	15%							\$6.02
							Total =	\$46.18
Semi-Urban or Rural LCB Rehabilitation AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Granular A			150 mm		m2		\$9.36	\$9.36
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	15%							\$6.02
							Total =	\$46.18

Urban HCB Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal			100 mm		m2		\$5.00	\$5.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.29	\$7.29
Granular B			300 mm		m2		\$9.72	\$9.72
Curb and Gutter Replacement					m2		\$16.00	\$16.00
Catch Basin/Manhole Adjustments					m2	30	\$2.00	\$2.00
Drainage Improvements					m2		\$3.00	\$3.00
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies / Engineering	20%							\$15.91
Total =								\$95.47

30 structures per km at \$450 each

Semi-Urban or Rural HCB/LCB Reconstruction AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal			100 mm		m2		\$5.00	\$5.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Contingencies	20%							\$12.48
							Total =	\$74.87
Semi-Urban or Rural HCB/LCB Reconstruction 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal			100 mm		m2		\$5.00	\$5.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Contingencies	20%							\$12.48
							Total =	\$74.87
Semi-Urban or Rural HCB/LCB Reconstruction AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal			100 mm		m2		\$5.00	\$5.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Contingencies	20%							\$11.94
							Total =	\$71.63

Semi-Urban or Rural Gravel AADT>=400 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150 mm		m2		\$2.25	\$2.25
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt		6.7	50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Contingencies	5%							\$2.16
							Total =	\$45.33
Semi-Urban or Rural Gravel 400>AADT>200 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat							\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	5%							\$1.89
							Total =	\$39.61
Semi-Urban or Rural Gravel AADT<200 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat							\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Contingencies	5%							\$1.89
							Total =	\$39.61

Semi-Urban or Rural Gravel Rehabilitation AADT>400 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			150 mm		m2		\$2.25	\$2.25
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Contingencies	15%							\$6.63
							Total =	\$50.80
Semi-Urban or Rural Gravel Rehabilitation 400>AADT>200 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			150 mm		m2		\$2.25	\$2.25
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Gravel Shoulders			50 mm		m2		\$1.35	\$1.35
Contingencies	15%							\$6.42
							Total =	\$49.24
Semi-Urban or Rural Gravel Rehabilitation AADT<200 - To 2 HMA								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			150 mm		m2		\$2.25	\$2.25
Granular A			150 mm		m2		\$7.92	\$7.92
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Nominal Ditch Repairs					m2		\$0.50	\$0.50
Gravel Shoulders			50 mm		m2		\$1.35	\$1.35
Contingencies	15%							\$6.42
							Total =	\$49.24

Semi-Urban or Rural Gravel Reconstruction AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repair					m2		\$0.50	\$0.50
Contingencies	20%							\$11.68
							Total =	\$70.07
Semi-Urban or Rural Gravel Reconstruction 400>AADT>200								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repair					m2		\$0.50	\$0.50
Contingencies	20%							\$11.68
							Total =	\$70.07
Semi-Urban or Rural Gravel Reconstruction AADT<200								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$1.00	\$1.00
Earth Excavation			450 mm		m2		\$6.75	\$6.75
Granular A			150 mm		m2		\$7.92	\$7.92
Granular B			300 mm		m2		\$9.72	\$9.72
HL8 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Tack Coat					m2		\$0.40	\$0.40
HL4 Asphalt			50 mm	0.1225t/m2	m2		\$14.70	\$14.70
Gravel Shoulders			100 mm		m2		\$2.70	\$2.70
Nominal Ditch Repair					m2		\$0.50	\$0.50
Contingencies	20%							\$11.68
							Total =	\$70.07

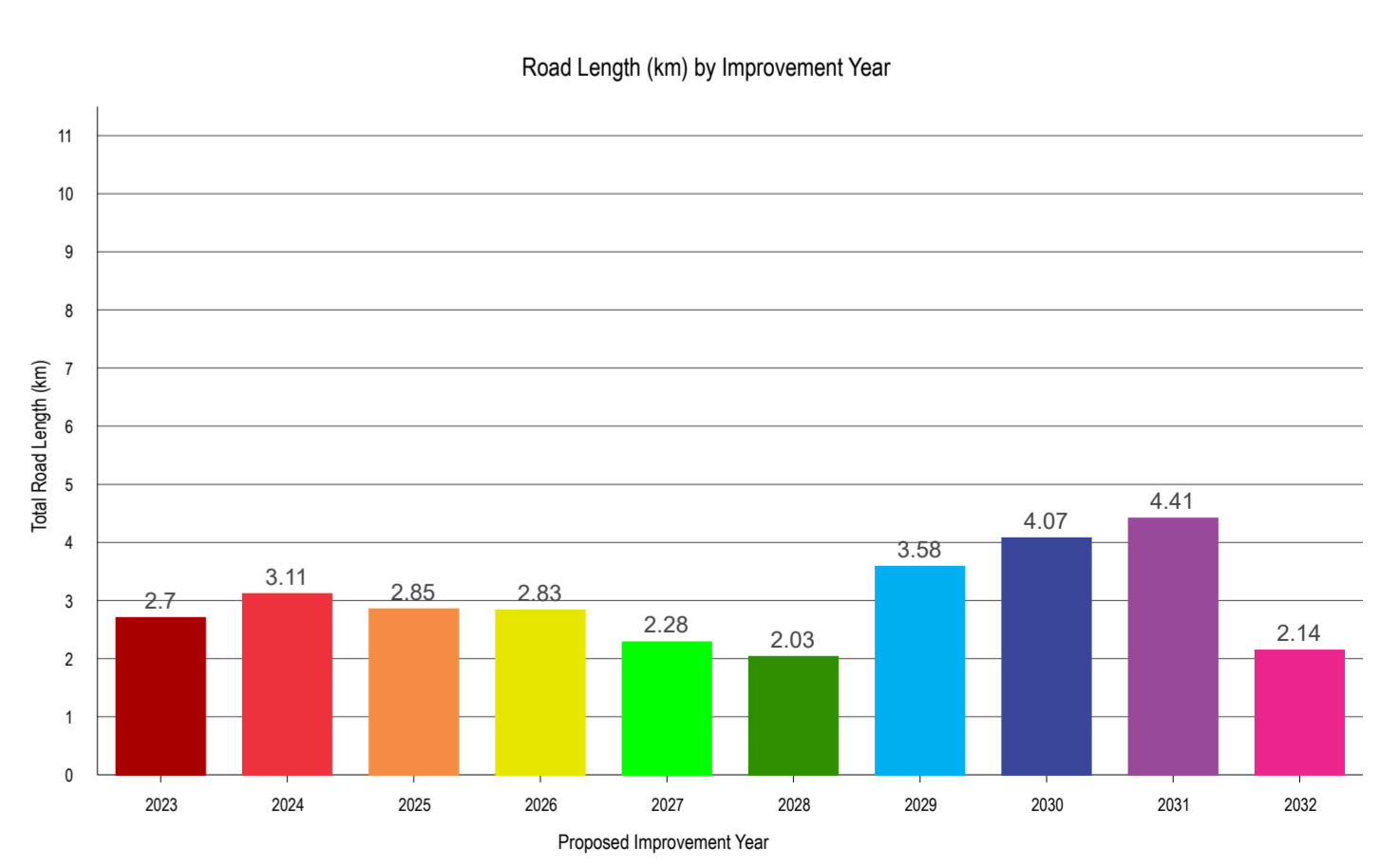
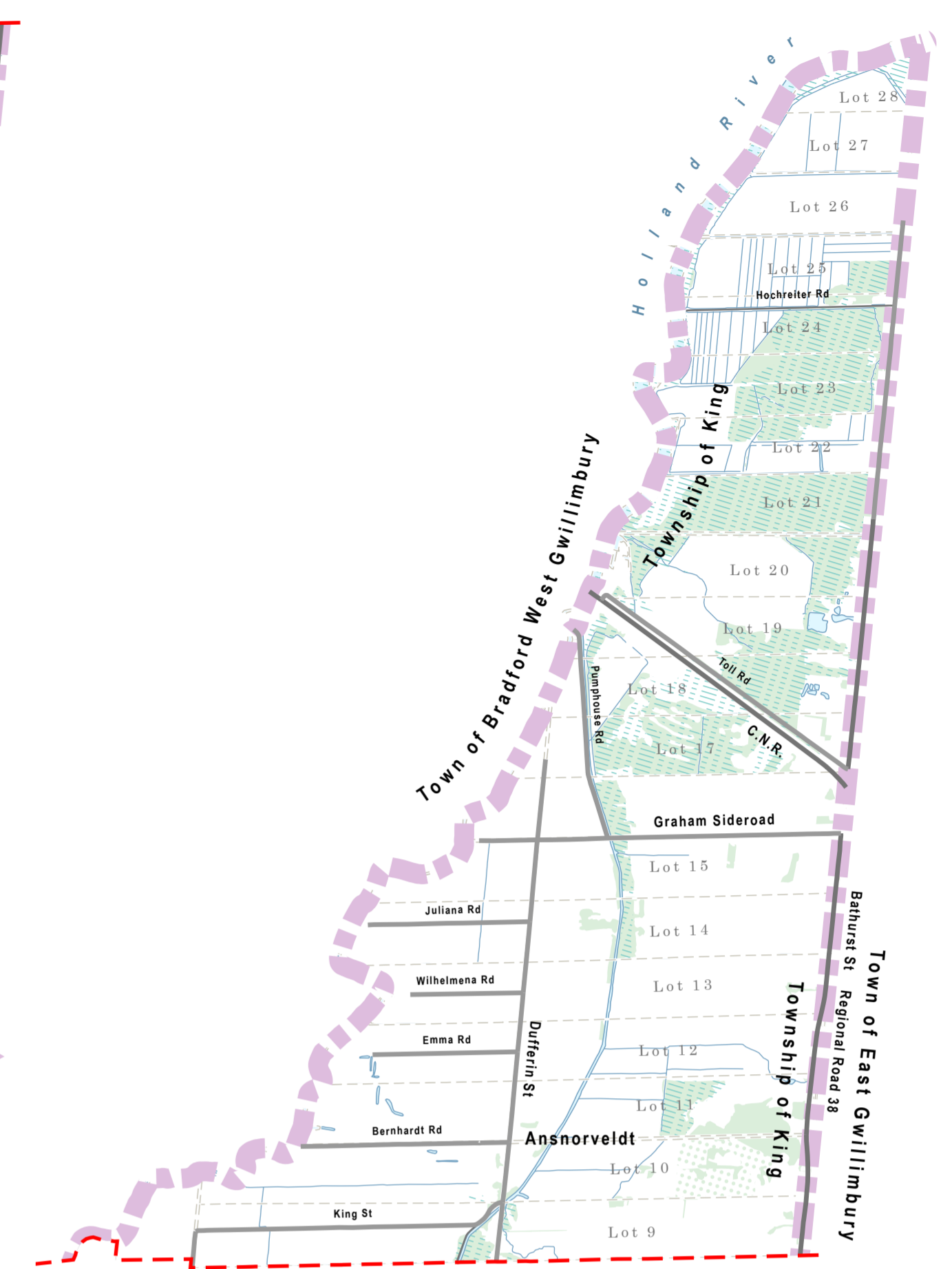
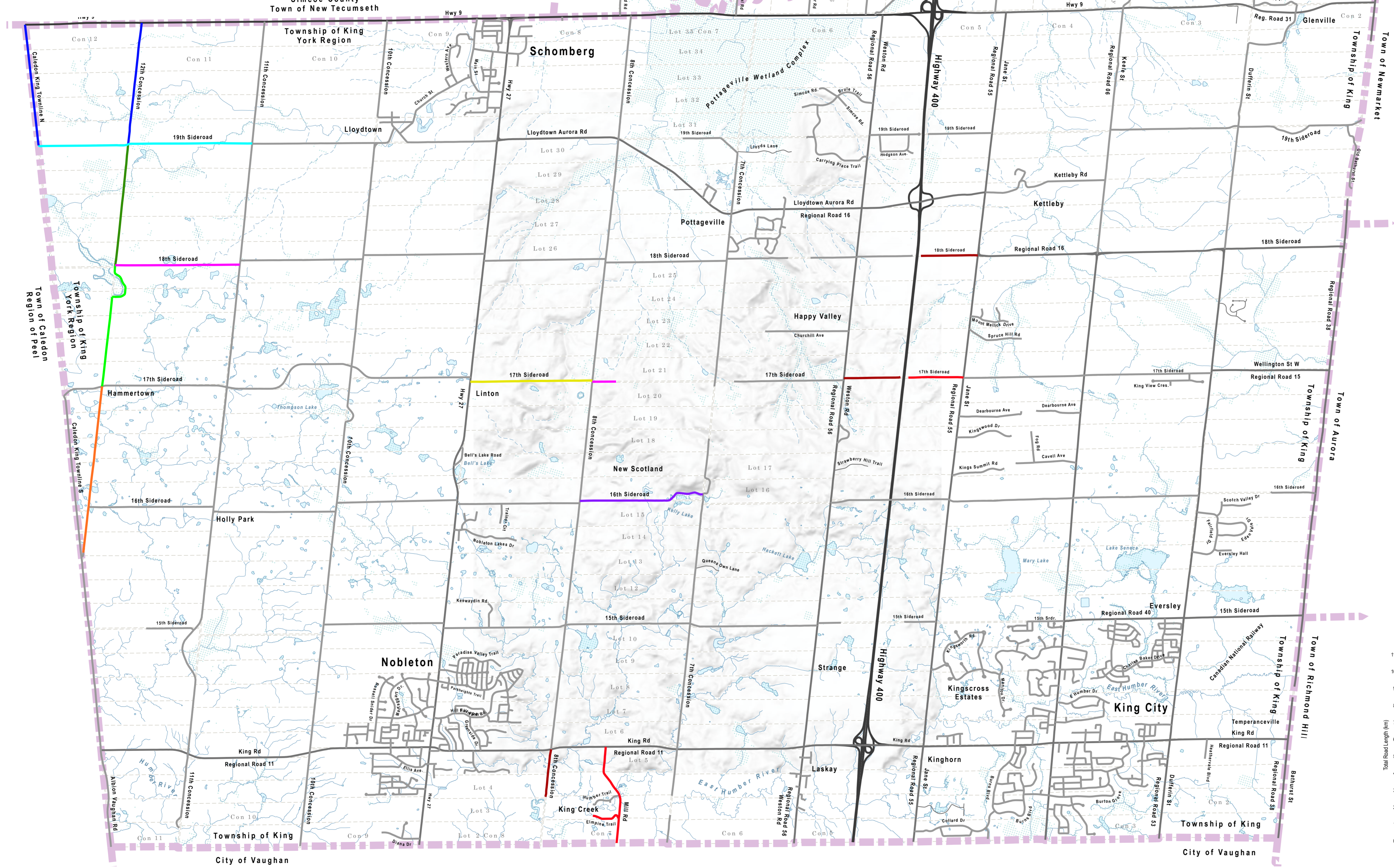


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Appendix G

Gravel Road 10-Year Road Improvement Plan



This map is designed to be printed to scale on 24" x 36" media (ARCH D Size Sheet).

Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

Disclaimer:
 R.J. Burnside & Associates Limited and the above mentioned sources and agencies are not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Map Information:

Date: North American 1983 CSRS
 Coord. System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00.00"W
 False Easting: 500,000m
 Page Orientation: 17°E
 Scale Factor: 0.99980

Scale: 0 to 3 Kilometers

Proposed Improvement Year (Report)

- 2023 (Red)
- 2024 (Orange)
- 2025 (Yellow)
- 2026 (Light Green)
- 2027 (Green)
- 2028 (Dark Green)
- 2029 (Cyan)
- 2030 (Blue)
- 2031 (Purple)
- 2032 (Magenta)
- No Improvements in Ten Year Time Frame (Grey)

Road Types:

- Non-Municipal Roads
- Provincial Highway / Freeway
- Regional Road
- Private Road

Map Title: 2022 ROADS NEEDS STUDY GRAVEL ROAD TEN YEAR ROAD IMPROVEMENT PLAN

Client: TOWNSHIP OF KING

Map Scale: 1:35,000

Drawn: PS
Checked: HC
Date: 2023/06/12
Project No.: 300052814

Appendix: G

Appendix G - Gravel Road 10 Year Conversion Plan

Municipal ID	Name	Name From	Name To	Community	Boundary Road	AADT	RCR	PCI	PCI Class	Priority Rating (PR)	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Improvement Cost	Benchmark Cost (\$/m ²)	Comments	OSIM Culverts/Bridges	
Year 1 (2023)																			
ORRD-0016	17th Sideroad	Weston Road	End (East)	King Twp. (Rural)	No	194	10	96	Good Condition	3	946	5.70	6.70	6338	\$253,520.00	\$40.00			
ORRD-0052	8th Concession	South end	King Road	King Twp. (Rural)	No	170	7	72	Satisfactory Condition	21	799	5.10	6.10	4874	\$394,860.00	\$40.00		Structure 0209	
ORRD-0239	18th Sideroad	Jane Street	West end	King Twp. (Rural)	No	82	8	83	Satisfactory Condition	11	952	5.70	6.70	6378	\$255,120.00	\$40.00			
Total Length (km)											2.697			Total Cost	\$703,600.00				
Year 2 (2024)																			
ORRD-0175	Mill Road	King - Vaughn Boundary	Elmpine Trail	King Twp. (Rural)	No	566	10	95	Good Condition	5	422	6.00	7.30	3081	\$138,645.00	\$45.00			
ORRD-0156	Mill Road	Elmpine Trail	Humber Trail	King Twp. (Rural)	No	566	9	91	Good Condition	9	376	6.00	7.30	2745	\$123,525.00	\$45.00		Structure 0001	
ORRD-0052	Mill Road	Humber Trail	King Road	King Twp. (Rural)	No	566	9	85	Good Condition	15	900	6.00	7.30	6570	\$295,650.00	\$45.00			
ORRD-0144	Elmpine Trail	Mill Road	End (West)	King Twp. (Rural)	No	153	8	70	Satisfactory Condition	22	487	4.00	5.00	2435	\$97,400.00	\$40.00			
ORRD-0251	17th Sideroad	Jane Street	End (West)	King Twp. (Rural)	No	245	9	87	Good Condition	11	921	4.50	5.50	5066	\$202,840.00	\$40.00			
Total Length (km)											3.108			Total Cost	\$857,860.00				
Year 3 (2025)																			
ORRD-0165.2	12th Concession	120m N. of Caledon King Townline	16th Sideroad	King Twp. (Rural)	No	517	8	84	Satisfactory Condition	16	823	6.30	7.30	6008	\$270,360.00	\$45.00			
ORRD-0212	12th Concession	16th Sideroad	17th Sideroad	King Twp. (Rural)	No	384	7	82	Satisfactory Condition	16	2029	6.00	7.30	14812	\$582,480.00	\$40.00			
Total Length (km)											2.852			Total Cost	\$862,840.00				
Year 4 (2026)																			
ORRD-0198	17th Sideroad	8th Concession	Highway 27	King Twp. (Rural)	No	357	9	87	Good Condition	12	2042	5.70	6.70	13681	\$547,240.00	\$40.00			
ORRD-0040.2	Davis Road	160m N. of South Canal Bank Road	2nd Concession	King Twp. (Rural)	No	437	9	84	Satisfactory Condition	15	794	6.00	7.90	6273	\$282,285.00	\$45.00			
Total Length (km)											2.836			Total Cost	\$829,525.00				
Year 5 (2027)																			
ORRD-0147	12th Concession	17th Sideroad	1.5km N. of 17th Sideroad	King Twp. (Rural)	No	127	9	79	Satisfactory Condition	15	1504	7.20	8.20	12333	\$493,320.00	\$40.00			
ORRD-0081	12th Concession	1.5km N. of 17th Sideroad	2.2km N. of 17th Sideroad	King Twp. (Rural)	No	127	7	81	Satisfactory Condition	14	660	7.20	8.20	5412	\$216,480.00	\$40.00			
ORRD-0062	12th Concession	2.2km N. of 17th Sideroad	18th Sideroad	King Twp. (Rural)	No	127	7	78	Satisfactory Condition	16	118	7.20	8.20	968	\$38,720.00	\$40.00			
Total Length (km)											2.282			Total Cost	\$748,520.00				
Year 6 (2028)																			
ORRD-0207	12th Concession	18th Sideroad	19th Sideroad	King Twp. (Rural)	No	384	8	74	Satisfactory Condition	24	2031	7.50	8.30	16857	\$674,280.00	\$40.00		Structure 0325	
Total Length (km)											2.031			Total Cost	\$674,280.00				
Year 7 (2029)																			
ORRD-0148	19th Sideroad	12th Concession	Caledon King Town Line North	King Twp. (Rural)	No	148	8	80	Satisfactory Condition	15	1505	7.30	7.30	10987	\$439,480.00	\$40.00			
ORRD-0209	19th Sideroad	11th Concession	12th Concession	King Twp. (Rural)	No	425	8	77	Satisfactory Condition	21	2075	6.00	7.30	15148	\$681,660.00	\$45.00		Structure 0324	
Total Length (km)											3.58			Total Cost	\$1,121,140.00				
Year 8 (2030)																			
ORRD-0119	12th Concession	19th Sideroad	Highway 9	King Twp. (Rural)	No	173	8	75	Satisfactory Condition	19	2045	9.00	9.00	18405	\$736,200.00	\$40.00			
ORRD-0230	Caledon King Town Line North	19th Sideroad	Halls Lake Sideroad	King Twp. (Rural)	No	245	7	79	Satisfactory Condition	17	51	7.70	8.50	434	\$8,680.00	\$40.00	Cost share with Caledon (Total cost \$17,360)		
ORRD-0077	Caledon King Town Line North	Halls Lake Sideroad	Highway 9	King Twp. (Rural)	Yes	1690	8	77	Satisfactory Condition	30	1978	7.70	8.50	16813	\$378,292.50	\$45.00	Cost share with Caledon (Total cost \$756,585)		
Total Length (km)											4.074			Total Cost	\$1,123,172.50				
Year 9 (2031)																			
ORRD-0180	16th Sideroad	7th Concession	8th Concession	King Twp. (Rural)	No	444	9	85	Good Condition	14	2113	6.00	7.30	15425	\$694,125.00	\$45.00			
ORRD-0160	2nd Concession	Davis Road	Hanemaayer Lane	King Twp. (Rural)	No	421	8	87	Good Condition	12	631	6.00	7.50	4733	\$212,985.00	\$45.00			
ORRD-0073	2nd Concession	Hanemaayer Lane	Holancin Road	King Twp. (Rural)	No	421	8	86	Good Condition	13	205	6.00	7.50	1538	\$69,210.00	\$45.00			
Total Length (km)											2.949			Total Cost	\$976,320.00				
Year 10 (2032)																			
ORRD-0142	18th Sideroad	11th Concession	12th Concession	King Twp. (Rural)	No	127	9	86	Good Condition	10	2083	7.40	9.20	19164	\$766,560.00	\$40.00			
ORRD-0267	17th Sideroad	8th Concession	End (East)	King Twp. (Rural)	No	159	9	86	Good Condition	11	398	5.10	6.10	2428	\$97,120.00	\$40.00			
Total Length (km)											2.481			Total Cost	\$863,680.00				

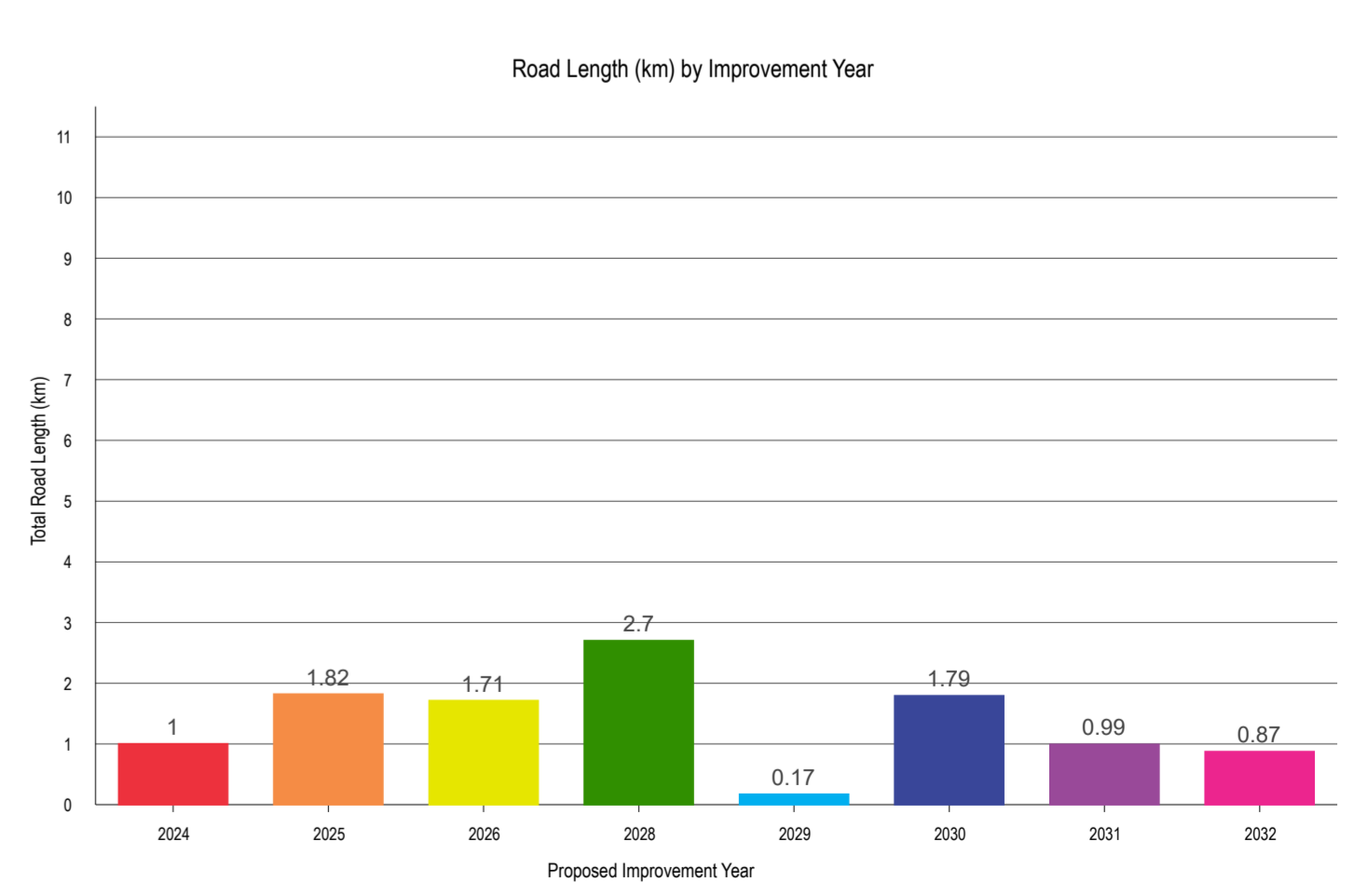
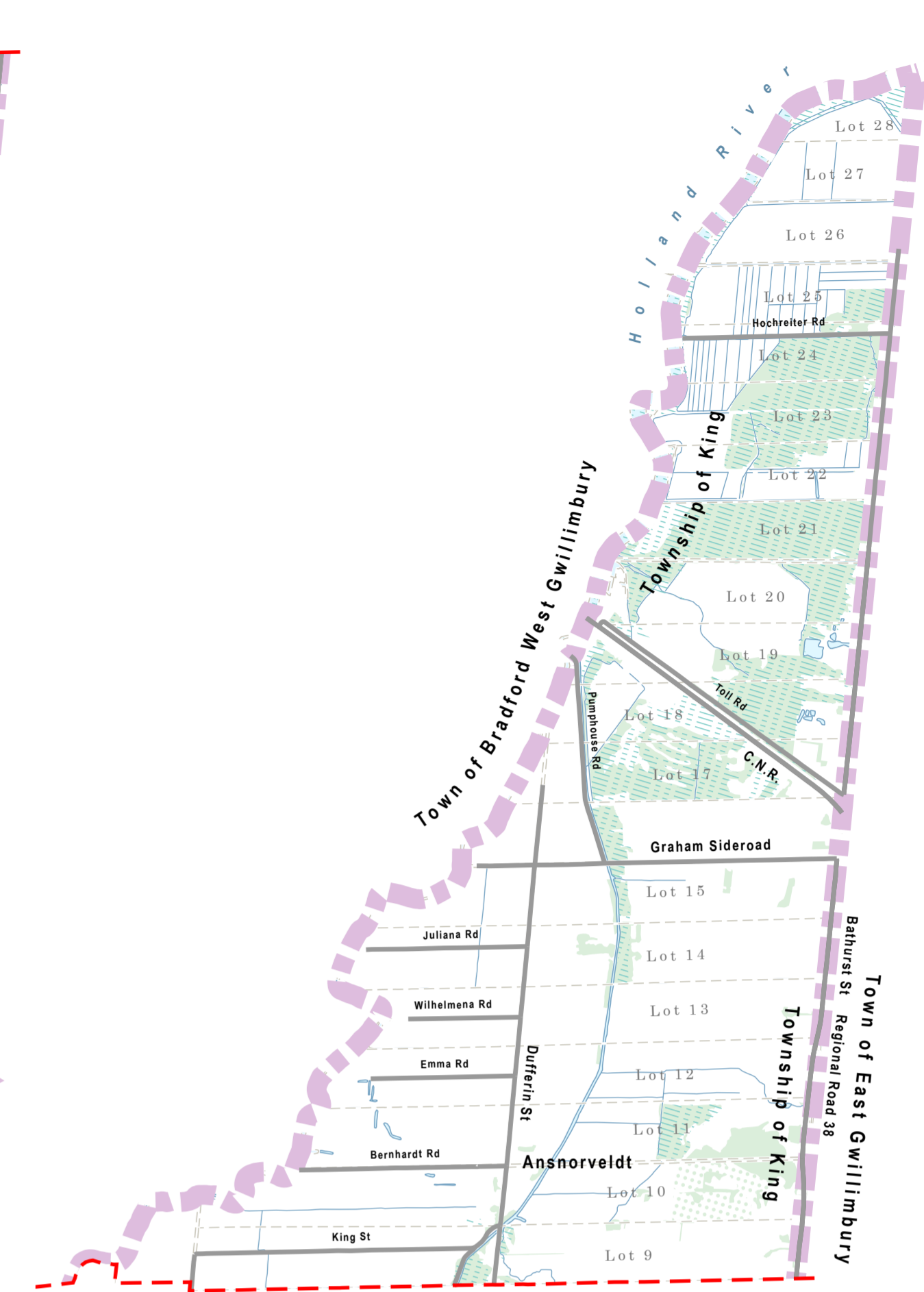
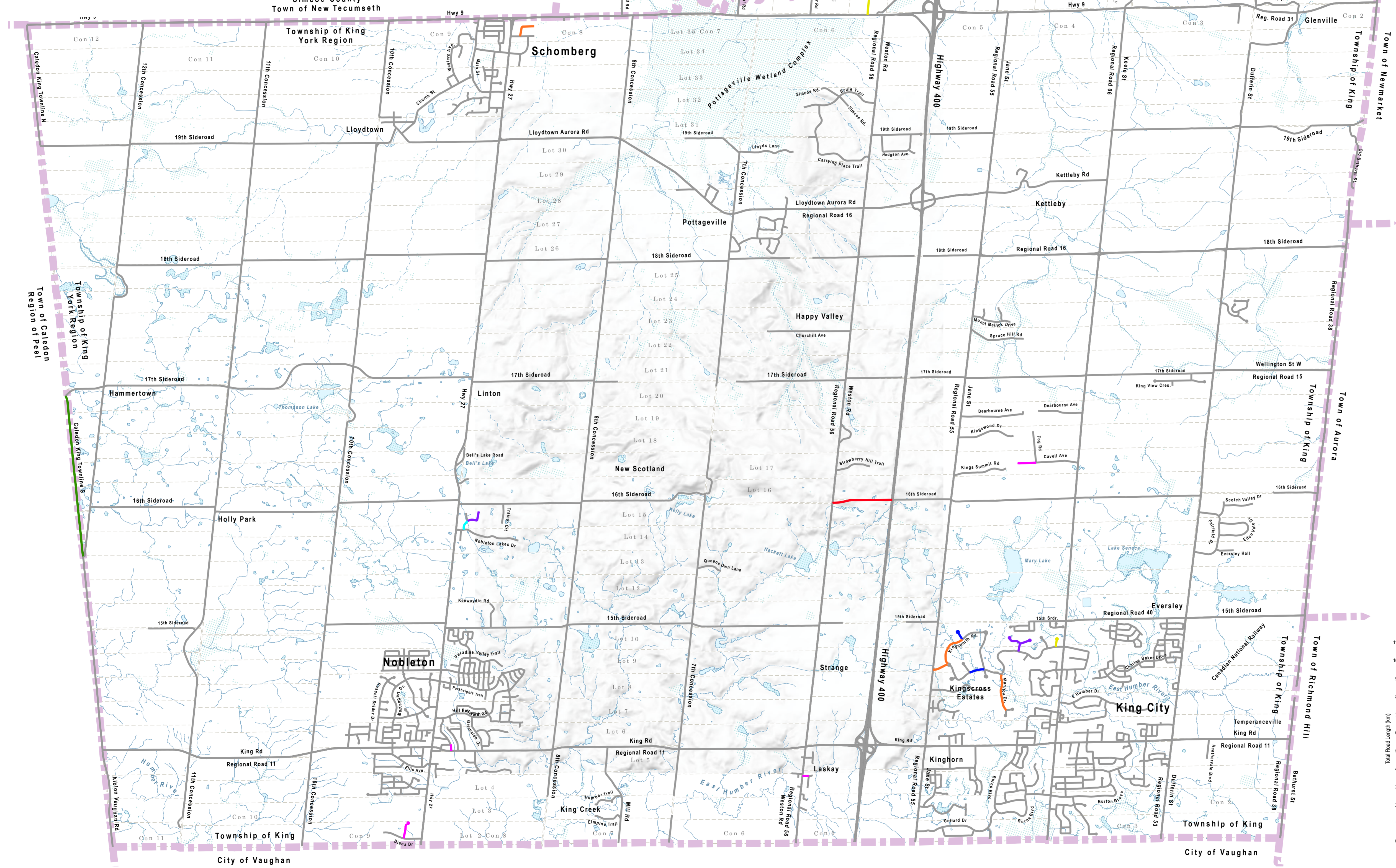


BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix H

Hard-Top Road 10-Year Road Improvement Plan



Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

Disclaimer:
 R.J. Burnside & Associates Limited and the above mentioned sources and agencies are not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Map Title: 2022 ROADS NEEDS STUDY
HARD-TOP ROADS RECONSTRUCTION TEN YEAR ROAD IMPROVEMENT PLAN

Client: TOWNSHIP OF KING

Map Title: 2022 ROADS NEEDS STUDY
HARD-TOP ROADS RECONSTRUCTION TEN YEAR ROAD IMPROVEMENT PLAN

Drawn: PS
Checked: HC
Date: 2023/06/07
Scale: 1:35,000
Project No.: 300052814

Appendix: H.1

Proposed Improvement Year (Report)

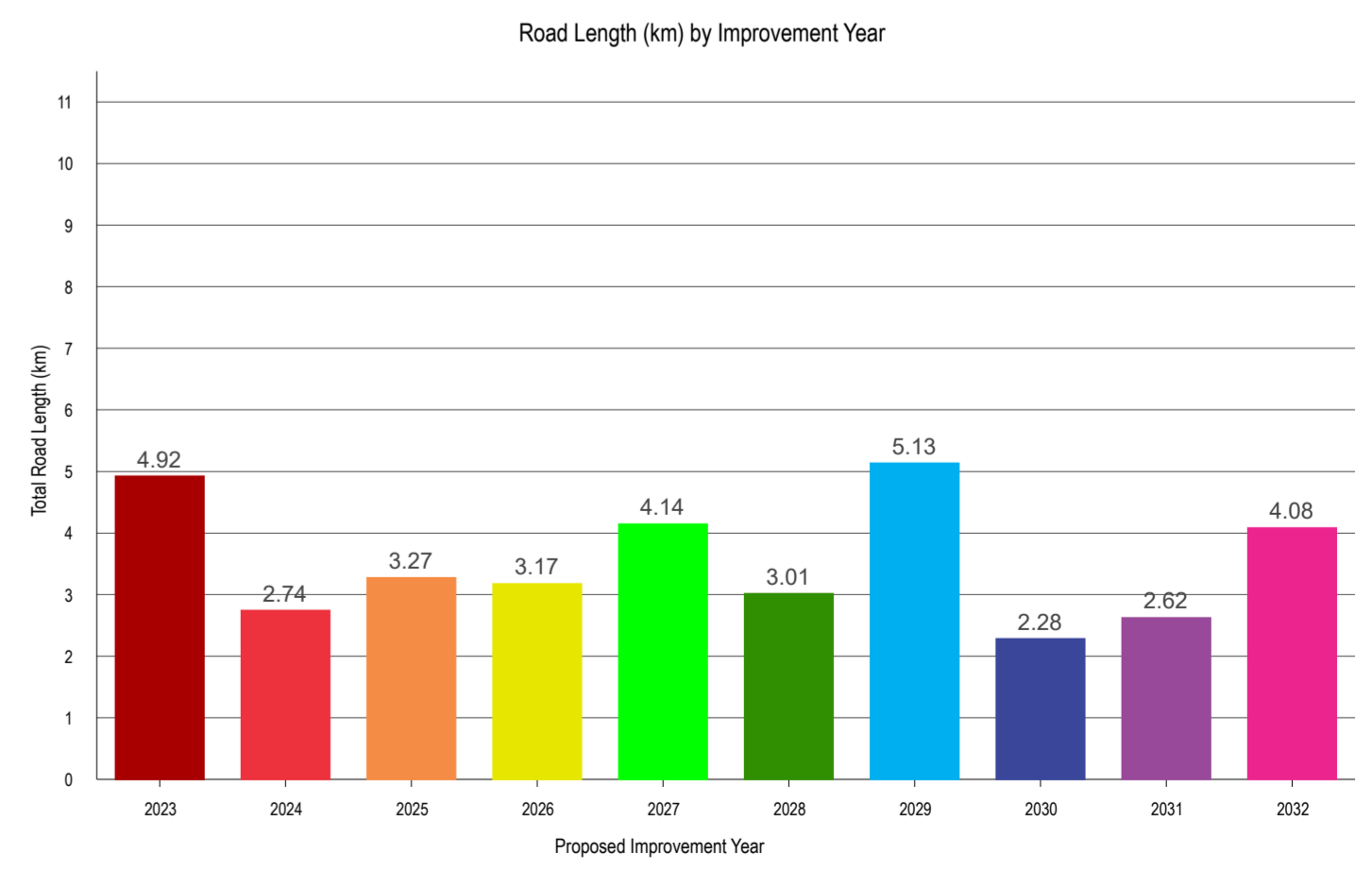
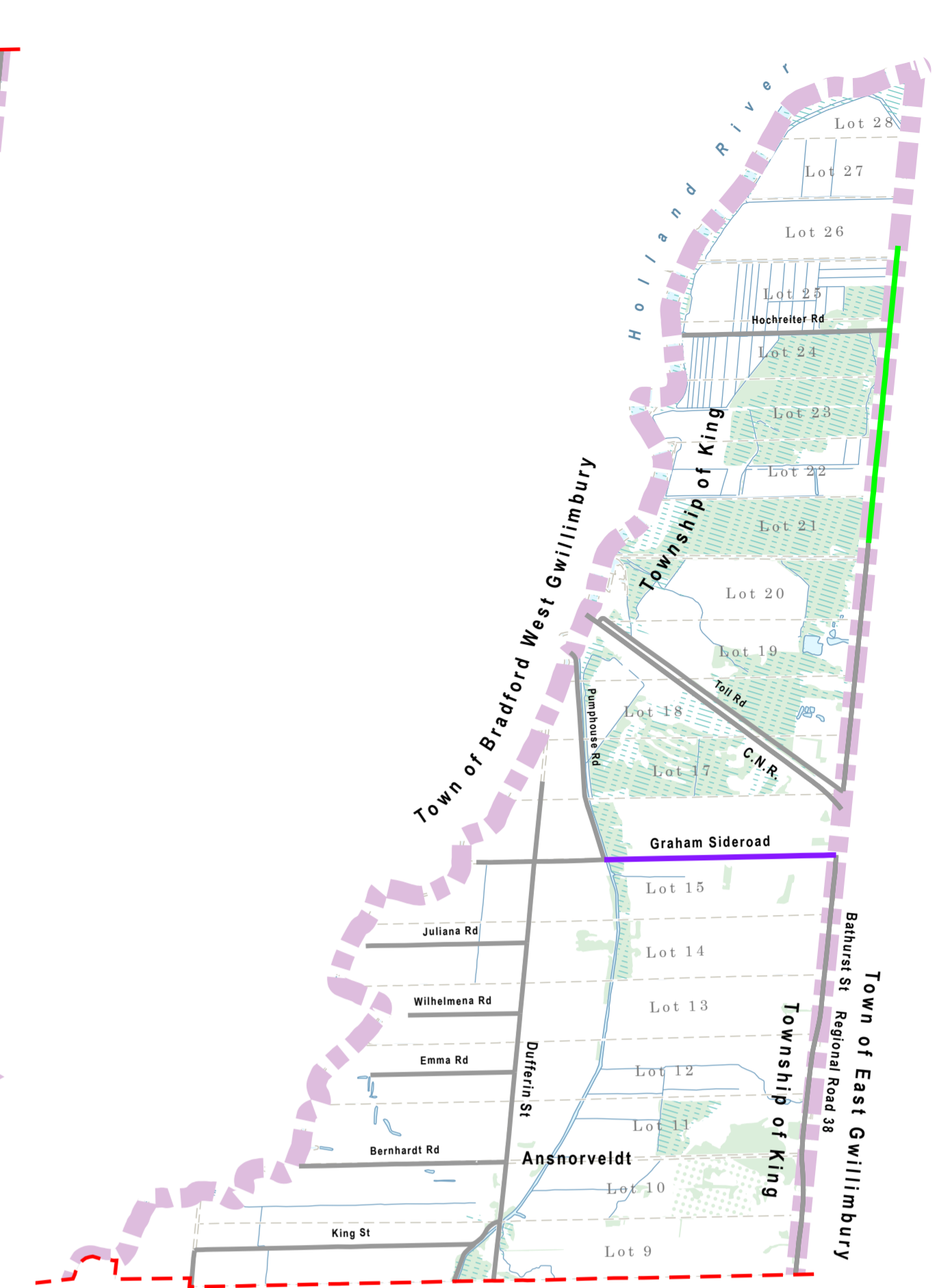
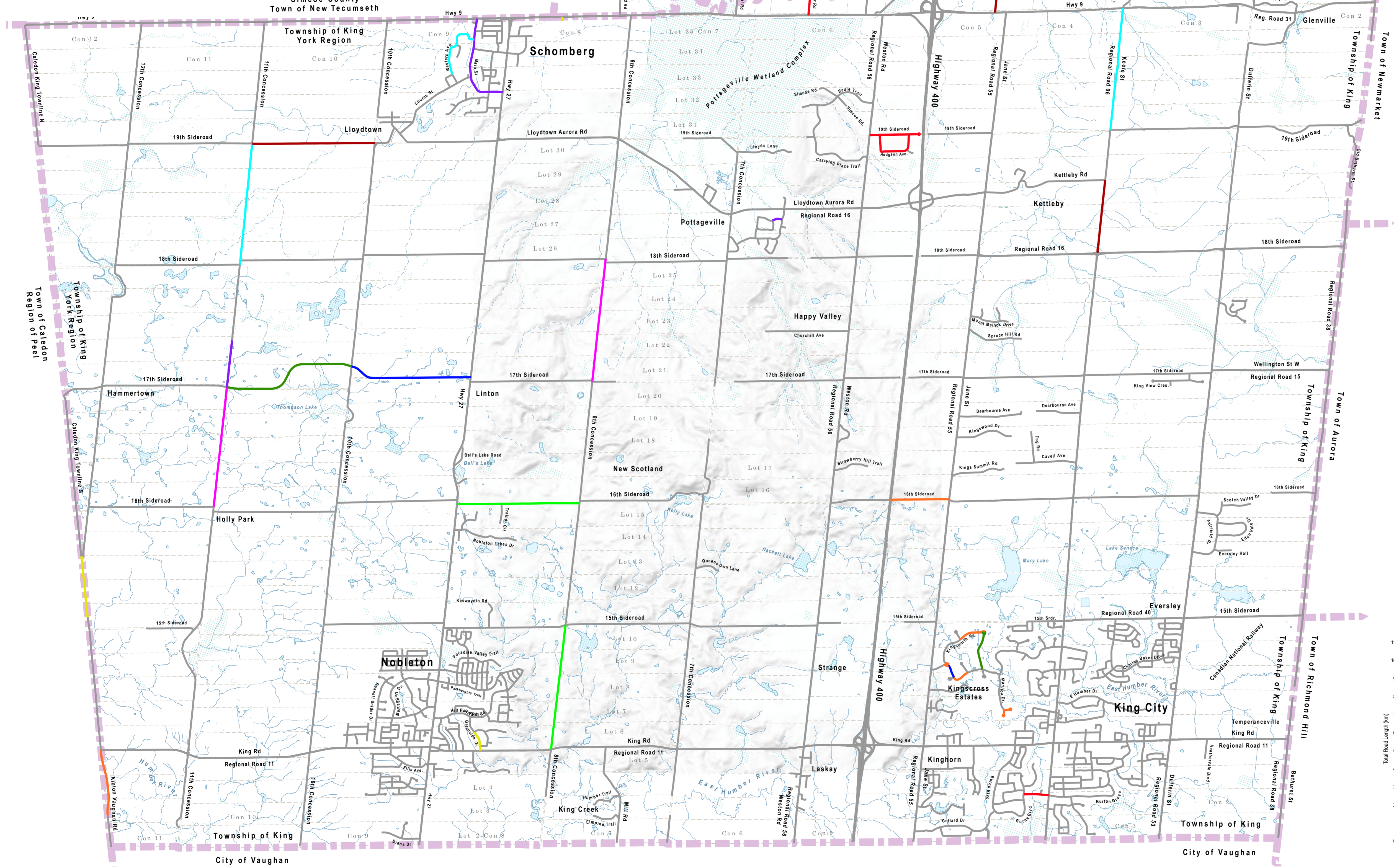
- 2023 (Red line)
- 2024 (Orange line)
- 2025 (Yellow line)
- 2026 (Light Green line)
- 2027 (Green line)
- 2028 (Dark Green line)
- 2029 (Cyan line)
- 2030 (Blue line)
- 2031 (Purple line)
- 2032 (Magenta line)
- No Improvements in Ten Year Time Frame (Grey line)

Non-Municipal Roads

- Provincial Highway / Freeway (Thick black line)
- Regional Road (Medium black line)
- Private Road (Thin black line)

Appendix H - Hardtop Road 10 Year Reconstruction Plan

Municipal ID	Previous RNS ID	Name	Name From	Name To	Surface Material	AADT	PCI	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Surface Area (m ²)	Roadside Environment	Current Proposed Lifecycle Improvement (2023)	Current Improvement Cost (2023)	2023 Benchmark Cost (\$/m ²)	Adjusted Improvement	Adjusted Benchmark Cost (\$/m ²)	Adjusted Improvement Cost	Year Proposed by 2020 Study	OSIM Culverts/Bridges
No Proposed Reconstructions																						
Year 1 (2023)											Total Length (km)		0		Total Cost		\$0.00		Revised Total Cost		\$0.00	
Year 2 (2024)																						
ORRD-0236	30	16th Sideroad	Highway 400 Overpass	Weston Road	High Class Bituminous	1145	47	Poor Condition	68	299	1004	6.70	6727	Rural	Rehabilitation	\$329,623.00	\$49.00	Reconstruction	\$75.00	\$504,525.00		
Year 3 (2025)											Total Length (km)		1.004		Total Cost		\$329,623.00		Revised Total Cost		\$504,525.00	
Year 4 (2026)																						
SRRD-0053	3002	Magnum Drive	Proctor Road	End (Cul-de-Sac)	Low Class Bituminous	1092	41	Poor Condition	68	292	357	7.30	2679	Semi-Urban	Rehabilitation	\$131,271.00	\$49.00	Reconstruction	\$75.00	\$200,925.00	2029	Structure 0309 (\$2,500) & 0310 (\$4,500)
KRRD-0073	1147	Westgate Boulevard	Jane Street	Westgate Circle	High Class Bituminous	219	48	Poor Condition	42	87	260	8.00	1560	Semi-Urban	Rehabilitation	\$71,760.00	\$46.00	Reconstruction	\$72.00	\$112,320.00		
KRRD-0005	1136	Mainfou Drive	Kingscross Drive	Fork	High Class Bituminous	167	47	Poor Condition	40	46	620	8.70	4154	Semi-Urban	Rehabilitation	\$191,084.00	\$46.00	Reconstruction	\$72.00	\$299,088.00	2030	
KRRD-0105	1145	Kingsworth Road	Westgate Circle	Blueberry Lane	High Class Bituminous	236	40	Poor Condition	49	76	570	8.60	3762	Semi-Urban	Rehabilitation	\$173,052.00	\$46.00	Reconstruction	\$72.00	\$270,864.00		Structure 0331 (\$1,000)
Year 5 (2027)											Total Length (km)		1.817		Total Cost		\$567,167.00		Revised Total Cost		\$883,197.00	
Year 6 (2028)																						
ORRD-0105	277	Hilsenrath Road	Highway 8	2nd Concession	Low Class Bituminous	185	42	Poor Condition	45	56	1496	8.70	10023	Rural	Rehabilitation	\$461,058.00	\$46.00	Reconstruction	\$72.00	\$721,656.00		
KRRD-0032	1124	McKellar Lane	Kingscross Drive	End (Cul-de-Sac)	High Class Bituminous	36	36	Very Poor Condition	38	8	213	8.70	1427	Semi-Urban	Reconstruction	\$102,744.00	\$72.00	Reconstruction	\$72.00	\$102,744.00		
Year 7 (2029)											Total Length (km)		1.709		Total Cost		\$563,802.00		Revised Total Cost		\$824,400.00	
Year 8 (2030)																						
No Proposed Reconstructions																						
Year 9 (2031)											Total Length (km)		0		Total Cost		\$0.00		Revised Total Cost		\$0.00	
Year 10 (2032)																						
ORRD-0076	149	Caledon King Town Line South	12th Concession	17th Sideroad	High Class Bituminous	7097	62	Fair Condition	70	630	2702	7.35	19860	Rural	Resurface	\$774,540.00	\$39.00	Reconstruction	\$75.00	\$744,750.00	2024	
Year 11 (2033)											Total Length (km)		2.702		Total Cost		\$774,540.00		Revised Total Cost		\$744,750.00	
Year 12 (2034)																						
ORRD-0003	201	Loch Erne Lane	Nobleton Lakes Drive	Hillard Grove	High Class Bituminous	319	66	Fair Condition	30	27	168	8.00	1344	Urban	Resurface	\$53,760.00	\$40.00	Reconstruction	\$95.00	\$127,680.00		
Year 13 (2035)											Total Length (km)		0.168		Total Cost		\$53,760.00		Revised Total Cost		\$127,680.00	
Year 14 (2036)																						
ORRD-0056	306	Aileen Avenue	Edward Avenue	Strawberry Lane	High Class Bituminous	587	65	Fair Condition	35	55	702	8.70	4703	Rural	Resurface	\$183,417.00	\$39.00	Reconstruction	\$75.00	\$352,726.00	2028	
ORRD-0150	305	Edward Avenue	Aileen Avenue	Jane Street	High Class Bituminous	743	67	Fair Condition	35	70	613	8.30	3862	Rural	Resurface	\$150,618.00	\$39.00	Reconstruction	\$75.00	\$286,650.00		
KRRD-0031	1152	Blueberry Lane	Kingsworth Road	End (Cul-de-Sac)	High Class Bituminous	100	52	Poor Condition	33	23	234	7.30	1708	Semi-Urban	Rehabilitation	\$78,568.00	\$46.00	Reconstruction	\$72.00	\$122,976.00		
KRRD-0048	1144	Kingscross Drive	Champlain Crescent	Cranberry Lane	High Class Bituminous	681	69	Fair Condition	32	47	255	8.00	2040	Semi-Urban	Resurface	\$79,560.00	\$39.00	Reconstruction	\$75.00	\$153,000.00	2028	Structure 0329
Year 15 (2037)											Total Length (km)		1.804		Total Cost		\$492,163.00		Revised Total Cost		\$919,351.00	
Year 16 (2038)																						
ORRD-0192	201	Loch Erne Lane	Hillard Grove	End (Cul-de-Sac)	High Class Bituminous	319	63	Fair Condition	32	29	312	8.00	2496	Urban	Resurface	\$99,840.00	\$40.00	Reconstruction	\$95.00	\$237,120.00		
KRRD-0059	1130	Chelsea Lane	Fork	End (East Cul-de-Sac)	High Class Bituminous	128	52	Fair Condition	32	30	249	8.70	1668	Semi-Urban	Rehabilitation	\$76,728.00	\$46.00	Reconstruction	\$72.00	\$120,096.00		
KRRD-0093	0	Chelsea Lane	Fork	End (West Cul-de-Sac)	High Class Bituminous	49	50	Poor Condition	30	-1	392	8.70	1956	Rural	Rehabilitation	\$89,976.00	\$46.00	Reconstruction	\$72.00	\$140,832.00		
KRRD-0047	1132	Chelsea Lane	Kingscross Drive	Fork	High Class Bituminous	43	52	Poor Condition	29	11	138	8.70	925	Semi-Urban	Rehabilitation	\$42,550.00	\$46.00	Reconstruction	\$72.00	\$66,600.00		
Year 17 (2039)											Total Length (km)		0.891		Total Cost		\$309,094.00		Revised Total Cost		\$564,648.00	
Year 18 (2040)																						
ORRD-0041	41	Cavell Avenue	Fog Road	End (West)	Low Class Bituminous	411	68	Fair Condition	29	36	310	8.50	2015	Semi-Urban	Resurface	\$78,585.00	\$39.00	Reconstruction	\$75.00	\$151,126.00		
ORRD-0098	195	Hilda Road	Diana Drive	End (Cul-de-Sac)	High Class Bituminous	72	52	Poor Condition	31	18	340	8.70	2278	Semi-Urban	Rehabilitation	\$104,788.00	\$46.00	Reconstruction	\$72.00	\$164,016.00		
NRRD-0142	0	Lynwood Crescent	King Road	Royal Avenue	High Class Bituminous	467	68	Fair Condition	30	38	110	7.00	770	Semi-Urban	Resurface	\$30,030.00	\$39.00	Reconstruction	\$75.00	\$57,750.00		
YRRD-0001	248	Laskay Mills Drive	Weston Road	Rolling Court	High Class Bituminous	243	64	Fair Condition	30	38	107	8.00	856	Urban	Resurface	\$34,240.00	\$40.00	Reconstruction	\$95.00	\$81,320.00		
Year 19 (2041)											Total Length (km)		0.867		Total Cost		\$247,643.00		Revised Total Cost		\$454,211.00	



Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

Disclaimer:
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 Page Orientation: 17°E

Scale Factor: 0.99960
 False Northing: 0m
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Proposed Improvement Year (Report)

- 2023
- 2024
- 2025
- 2026
- 2027
- 2028
- 2029
- 2030
- 2031
- 2032
- No Improvements in Ten Year Time Frame

Non-Municipal Roads

- Provincial Highway / Freeway
- Regional Road
- Private Road

BURNSIDE

Map Title
2022 ROADS NEEDS STUDY
HARD-TOP ROADS RESURFACE
TEN YEAR ROAD IMPROVEMENT PLAN

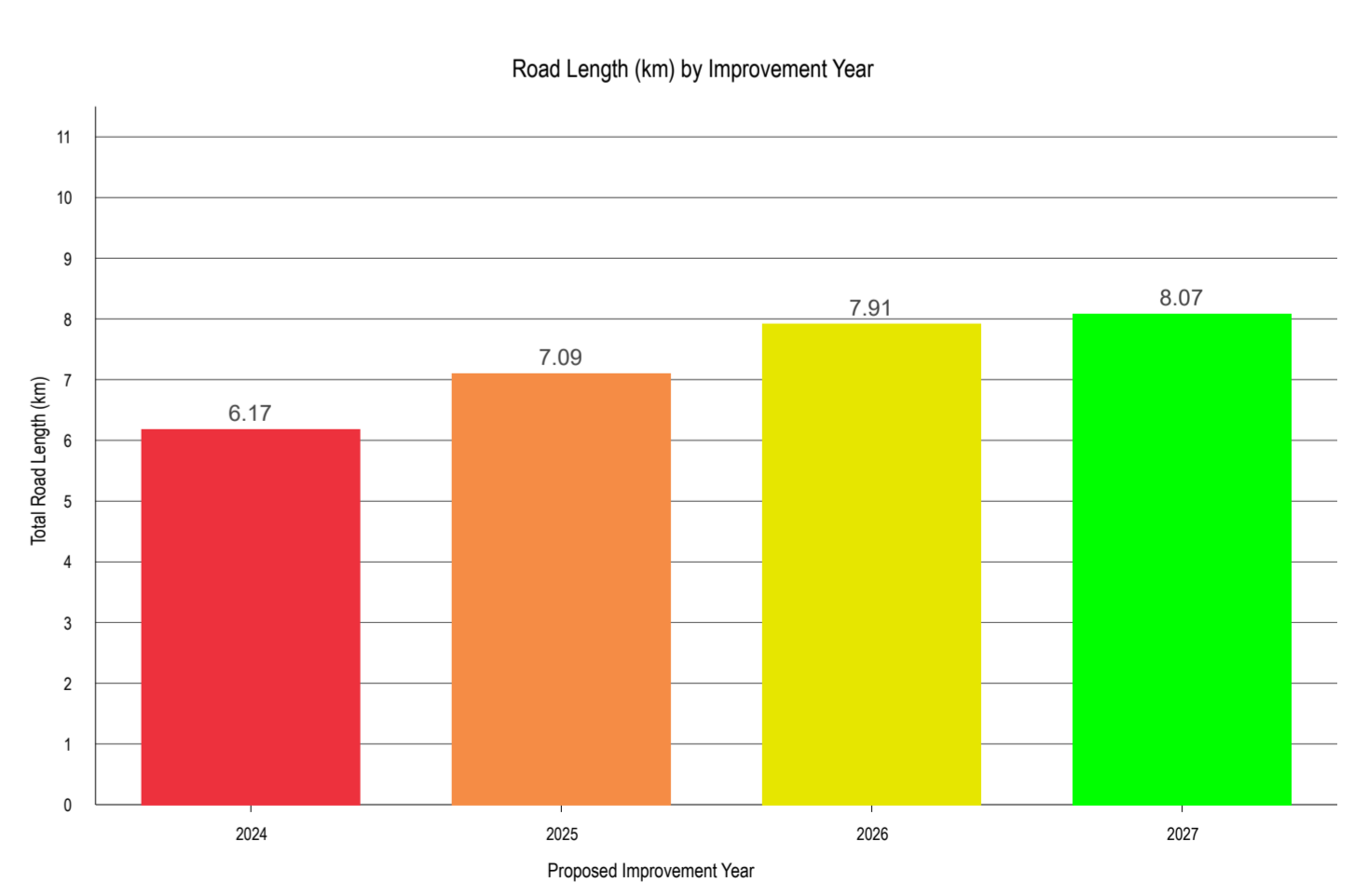
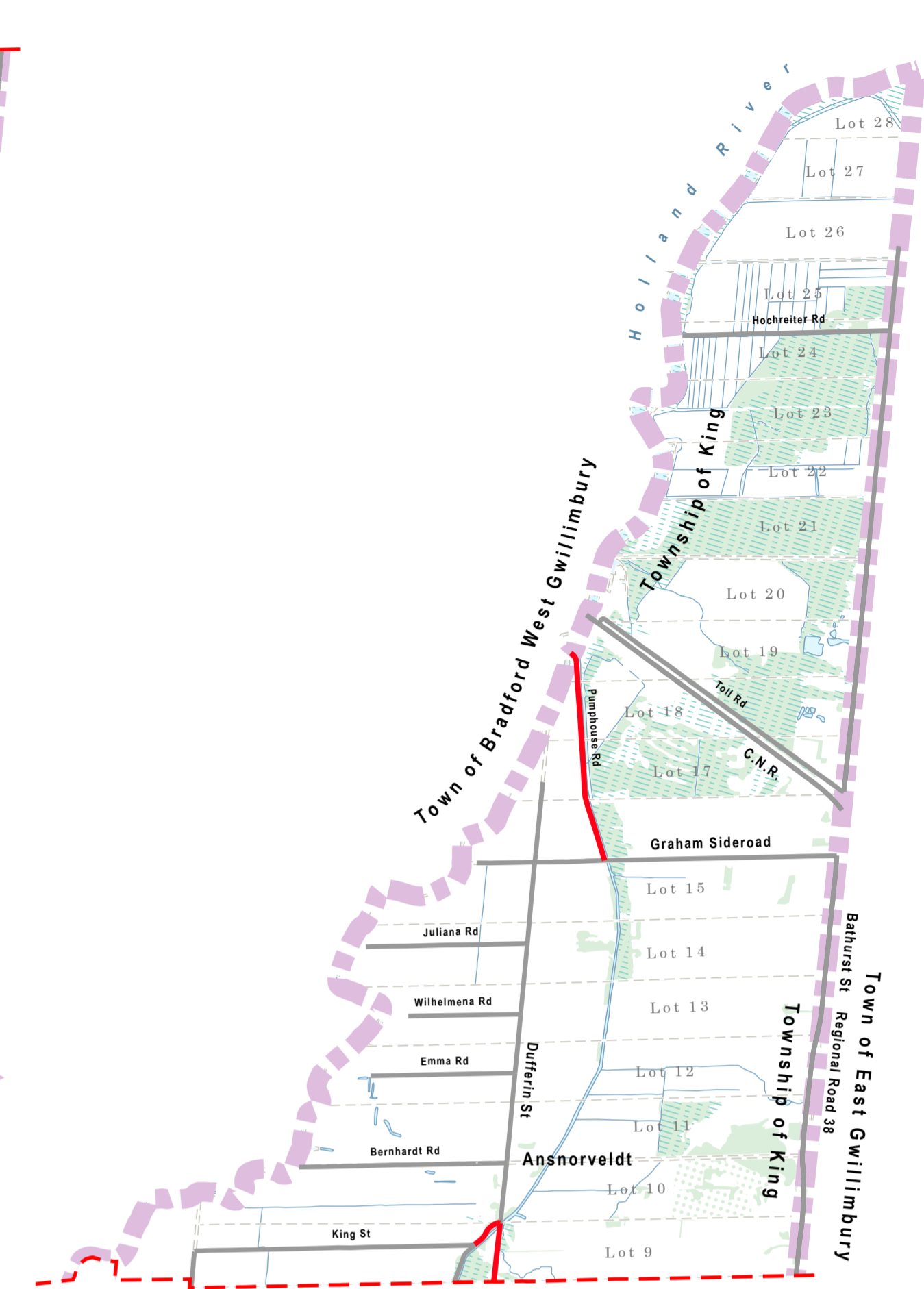
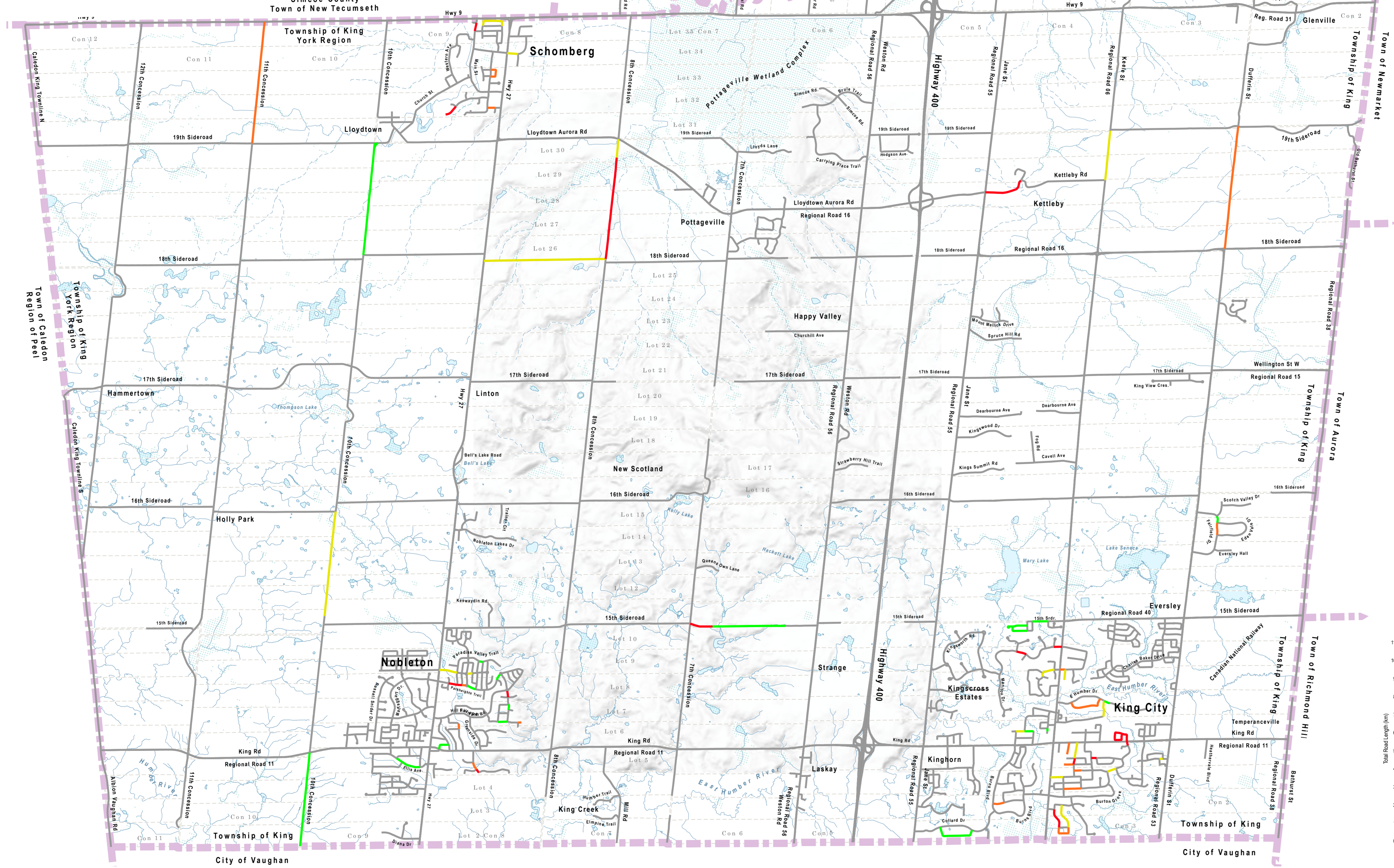
Client
TOWNSHIP OF KING

Map Info
 Drawn: PS
 Checked: HC
 Date: 2023/06/12
 Project No: 300052814
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Appendix
H.2

Appendix H - Hardtop Road Resurfacing 10 Year Plan

Municipal ID	Previd RNS ID	Name	Name From	Name To	Surface Material	AADT	PCI	PCI Class	Priority Rating (PR)	Priority Guide Number (PGN)	Road Length (m)	Road Width (m)	Surface Area (m²)	Roadside Environment	Current Proposed Lifecycle Improvement (2023)	Current Improvement Cost (2023)	2023 Benchmark Cost (\$/m²)	Adjusted Improvement	Adjusted Benchmark Cost (\$/m²)	Adjusted Improvement Cost (\$/m²)	Year Proposed by 2020 Study	OSM Culverts/Bridges	Notes
Year 1 (2023)																							
ORRD-0020	261	Keefe Street	Lloydburn/Aurora Road Traffic Circle	Keefeley Road	High Class Bituminous	1988	65	Fair Condition	47	178	1365	6.70	9145	Rural	Resurface	\$36,855.00	\$39.00	Resurface	\$39.00	\$36,855.00	2026	Structure 0315 (\$7,000)	
ORRD-0260	263	Jane Street	Davey Drive West	South Canal Bank Road	High Class Bituminous	716	68	Fair Condition	31	50	618	6.40	687	Rural	Resurface	\$27,966.00	\$39.00	Resurface	\$39.00	\$27,966.00	2026	Structure 0010 (\$1,000)	
ORRD-0130	301	Jane Street	Woodchopps Lane	Edward Avenue	High Class Bituminous	592	83	Satisfactory Condition	17	64.8	681	6.00	4455	Rural	Preventative Maintenance	\$175,895.00	\$39.00	Preventative Maintenance	\$39.00	\$175,895.00	2026		
ORRD-0137	137	19th Sideroad	10th Concession	11th Concession	High Class Bituminous	1350	95	Good Condition	6	-1	2049	6.00	12294	Rural	Routine Maintenance	\$479,466.00	\$39.00	Routine Maintenance	\$39.00	\$479,466.00	2023	Structure 0321 (\$7,000) & 0322 (\$5,500)	
Total Length (km) 4.913												Total Cost \$1,279,395.00											
Year 2 (2024)																							
ORRD-0100	119	19th Sideroad	Hodgson Avenue	Hodgson Avenue	Low Class Bituminous	440	54	Poor Condition	43	100	489	6.70	3276	Rural	Rehabilitation	\$160,524.00	\$49.00	Rehabilitation	\$49.00	\$127,764.00			
ORRD-0065	275	Rupee Road	Highway 9	End (Canal)	Low Class Bituminous	275	54	Poor Condition	39	72	448	6.20	2778	Rural	Rehabilitation	\$108,342.00	\$39.00	Rehabilitation	\$49.00	\$127,788.00	2026		
ORRD-0150	123	Hodgson Avenue	William's Court	19th Sideroad	Low Class Bituminous	300	69	Fair Condition	29	39	719	6.70	4817	Semi-Urban	Resurface	\$193,893.00	\$39.00	Resurface	\$39.00	\$187,863.00			
ORRD-0002	120	19th Sideroad	End (Cul-de-Sac)	Hodgson Avenue	Low Class Bituminous	251	70	Satisfactory Condition	25	22	228	6.70	1528	Rural	Resurface	\$59,592.00	\$39.00	Resurface	\$39.00	\$59,592.00			
ORRD-0048	123	Hodgson Avenue	19th Sideroad	William's Court	Low Class Bituminous	300	77	Satisfactory Condition	20	20	284	6.70	1769	Semi-Urban	Resurface	\$88,991.00	\$39.00	Resurface	\$39.00	\$88,991.00			
ORRD-0100	121	19th Sideroad	Hodgson Avenue	Weston Road	Low Class Bituminous	244	77	Satisfactory Condition	19	22	167	5.00	835	Rural	Resurface	\$32,565.00	\$39.00	Resurface	\$39.00	\$32,565.00			
KRRD-0148	114	12th Sideroad	Stanton Road	West Street	High Class Bituminous	1462	44	Poor Condition	70	286	130	10.30	1432	Urban	Rehabilitation	\$64,440.00	\$45.00	Rehabilitation	\$45.00	\$64,440.00	2024		
KRRD-0204	1158	Station Road	West Street	Burns Boulevard	High Class Bituminous	1462	68	Fair Condition	40	94	284	9.80	2783	Urban	Resurface	\$111,320.00	\$40.00	Resurface	\$40.00	\$111,320.00		Structure 0016 (\$2,000)	
Total Length (km) 2.738												Total Cost \$783,637.00											
Year 3 (2025)																							
KRRD-0043	0	Westgate Circle	Kingcross Drive	Westgate Boulevard	High Class Bituminous	884	51	Poor Condition	54	-1	16	8.00	128	Rural	Rehabilitation	\$6,272.00	\$49.00	Rehabilitation	\$49.00	\$6,272.00			
KRRD-0067	0	Westgate Circle	Kingcross Drive	Kingcross Road	High Class Bituminous	884	58	Fair Condition	46	-1	58	8.00	461	Semi-Urban	Rehabilitation	\$22,795.00	\$49.00	Rehabilitation	\$49.00	\$22,795.00			
ORRD-0005	29	16th Sideroad	Jane Street	Highway 400 Overpass	High Class Bituminous	1145	62	Fair Condition	45	117	983	6.40	6251	Rural	Resurface	\$245,348.00	\$39.00	Resurface	\$39.00	\$308,259.00			
KRRD-0080	0	Westgate Circle	Westgate Boulevard	Kingcross Drive	High Class Bituminous	884	66	Fair Condition	37	-1	54	6.00	324	Semi-Urban	Resurface	\$12,636.00	\$39.00	Resurface	\$39.00	\$12,636.00			
KRRD-0087	1140	Manitou Drive (East Cul-de-Sac)	Fork	End (Cul-de-Sac)	High Class Bituminous	167	60	Fair Condition	39	16	173	6.70	1159	Semi-Urban	Resurface	\$45,201.00	\$39.00	Resurface	\$39.00	\$45,201.00			
KRRD-0081	1138	Manitou Drive (South Cul-de-Sac)	Fork	End (Cul-de-Sac)	High Class Bituminous	167	64	Fair Condition	27	14.7	159	6.70	1065	Semi-Urban	Resurface	\$41,535.00	\$39.00	Rehabilitation	\$49.00	\$48,990.00			
ORRD-0118	0	Abnon Vaughan Road	Old King Road	72m N. of Old King Road	High Class Bituminous	10487	77	Satisfactory Condition	47	-1	71	6.80	483	Urban	Resurface	\$9,660.00	\$20.00	Resurface	\$20.00	\$11,109.00		Structure 0003 (\$750)	
ORRD-0228	0	Abnon Vaughan Road	340m N. of Quenesaga Blvd.	Old King Rd	High Class Bituminous	10487	80	Satisfactory Condition	49	-1	84	7.50	6230	Urban	Preventative Maintenance	\$37,320.00	\$6.00	Resurface	\$23.00	\$143,060.00			
KRRD-0077	1145	Kingcross Road	Blueberry Lane	Watch Hill Road	High Class Bituminous	236	55	Fair Condition	37	57	454	6.60	2998	Semi-Urban	Rehabilitation	\$139,818.00	\$46.00	Rehabilitation	\$46.00	\$137,610.00			
KRRD-0018	1144	Kingcross Drive	Cranberry Lane	Snowberry Lane	High Class Bituminous	681	67	Fair Condition	34	50	285	8.00	2280	Semi-Urban	Resurface	\$88,500.00	\$39.00	Rehabilitation	\$49.00	\$111,720.00	2028		
ORRD-0094	0	Abnon Vaughan Road	72m N. of Old King Road	Caledon King Town Line South	High Class Bituminous	10487	84	Satisfactory Condition	33	17	175	6.00	1050	Urban	Preventative Maintenance	\$6,300.00	\$9.00	Resurface	\$23.00	\$24,150.00			
Total Length (km) 3.165												Total Cost \$676,461.00											
Year 4 (2026)																							
ORRD-0128	307	Stratney Lane	Keefe Street	Alleen Avenue	High Class Bituminous	415	49	Poor Condition	47	104	1739	6.70	11651	Rural	Rehabilitation	\$570,899.00	\$49.00	Rehabilitation	\$49.00	\$570,899.00			
ORRD-0209	0	Caledon King Town Line South	Columbia Way	Mt. Pleasant Road	High Class Bituminous	3926	70	Satisfactory Condition	48	-1	240	7.30	1752	Rural	Resurface	\$40,299.00	\$23.00	Resurface	\$39.00	\$34,164.00		Cost to be shared with the adjacent municipality (total cost \$40,299)	
ORRD-0002	0	Caledon King Town Line South	Mt. Pleasant Road	12th Concession	High Class Bituminous	3926	74	Satisfactory Condition	41	-1	783	7.30	3742	Rural	Resurface	\$131,468.00	\$23.00	Resurface	\$39.00	\$111,462.00		Cost to be shared with the adjacent municipality (total cost \$131,468)	
NRRD-0237	2026	Greenside Drive	King Road	35m N. of King Road	High Class Bituminous	2186	72	Satisfactory Condition	38	122	35	8.90	343	Urban	Resurface	\$6,860.00	\$20.00	Resurface	\$39.00	\$13,377.00			
NRRD-0141	2027	Greenside Drive	Nobleswood Drive	Nobleswood Drive	High Class Bituminous	2186	73	Satisfactory Condition	37	118	261	9.80	2608	Urban	Resurface	\$51,160.00	\$20.00	Resurface	\$39.00	\$59,762.00			
NRRD-0121	2027	Greenside Drive	35m N. of King Road	Nobleswood Drive	High Class Bituminous	2186	74	Satisfactory Condition	36	114	40	9.80	392	Urban	Resurface	\$7,840.00	\$20.00	Resurface	\$39.00	\$15,388.00			
ORRD-0132		Showa Court	Highway 9	End (Cul-de-Sac)	High Class Bituminous	672	65	Fair Condition	36	87	67	28.00	1742	Rural	Resurface	\$87,938.00	\$39.00	Rehabilitation	\$49.00	\$85,358.00		Structure 0333 (\$3,000)	
Total Length (km) 3.165												Total Cost \$930,310.00											
Year 5 (2027)																							
ORRD-0025	33	16th Sideroad	8th Concession	Trainer Court	High Class Bituminous	443	51	Poor Condition	46	119	1306	6.50	8489	Rural	Rehabilitation	\$415,961.00	\$49.00	Rehabilitation	\$49.00	\$415,961.00	2025		
ORRD-0178	33	16th Sideroad	Highway 27	Trainer Court	High Class Bituminous	443	53	Poor Condition	44	106	743	6.50	4830	Rural	Rehabilitation	\$236,870.00	\$49.00	Rehabilitation	\$49.00	\$236,870.00	2025	Structure 0305 (\$1,500)	
ORRD-0234	347	Bathurst Street	Queenensville Sideroad West	Hochreiter Road	High Class Bituminous	1191	62	Fair Condition	45	117	1443	6.50	9380	Rural	Resurface	\$369,820.00	\$39.00	Rehabilitation	\$49.00	\$459,520.00			
ORRD-0224	211	8th Concession	King Road	15th Sideroad	Low Class Bituminous	948	60	Fair Condition	45	105	202	6.50	13598	Rural	Resurface	\$530,322.00	\$39.00	Rehabilitation	\$49.00	\$666,302.00	2024		
ORRD-0002	347	Bathurst Street	Hochreiter Street	King - Bradford Boundary	High Class Bituminous	1161	64	Fair Condition	42	110	276	6.50	3744	Rural	Resurface	\$146,016.00	\$39.00	Rehabilitation	\$49.00	\$183,436.00	2024		
Total Length (km) 5.136												Total Cost \$1,694,790.00											
Year 6 (2028)																							
KRRD-0053	1148	Watch Hill Road	Champlain Crescent	Kingcross Road	High Class Bituminous	676	59	Fair Condition	42	139	734	6.60	4844	Semi-Urban	Rehabilitation	\$237,356.00	\$49.00	Rehabilitation	\$49.00	\$237,356.00	2027		
ORRD-0204	71	17th Sideroad	10th Concession	1.4km W. of 10th Concession	Low Class Bituminous	2898	72	Satisfactory Condition	41	169	1441	6.70	12517	Rural	Resurface	\$298,151.00	\$23.00	Resurface	\$39.00	\$488,943.00	2027		
ORRD-0157	71	17th Sideroad	1.4km W. of 10th Concession	11th Concession	Low Class Bituminous	2898	76	Satisfactory Condition	35	137	839	6.70	7299	Rural	Resurface	\$167,877.00	\$23.00	Resurface	\$39.00	\$284,681.00	2027		
Total Length (km) 3.014												Total Cost \$895,884.00											
Year 7 (2029)																							
ORRD-0028	175	11th Concession	18th Sideroad	19th Sideroad	High Class Bituminous	1903	70	Satisfactory Condition	40	151	1967	6.50	12768	Rural	Resurface	\$294,078.00	\$23.00	Rehabilitation	\$49.00	\$626,514.00			
ORRD-0151	175	11th Concession	18th Sideroad	18th Sideroad	High Class Bituminous	1903	71	Satisfactory Condition	39	146	71	6.50	462	Rural	Resurface	\$10,628.00	\$23.00	Rehabilitation	\$49.00	\$22,636.00			
ORRD-0068	265	Keefe Street	15th Sideroad	Davey Drive West	High Class Bituminous	1592	71	Satisfactory Condition	39	143	2045	6.70	13701	Rural	Resurface	\$315,123.00	\$23.00	Rehabilitation	\$49.00	\$671,349.00		Structure 0016 (\$8,000)	
SRRD-0013	3048	Western Avenue	Brownsville Court	Main Street	High Class Bituminous	842	69	Fair Condition	34	61	491	8.50	4174	Urban	Resurface	\$196,960.00	\$40.00	Rehabilitation	\$49.00	\$204,526.00		Structure 0227 (\$2,000)	
SRRD-0014	3028	Western Avenue	Elmwood Avenue	Brownsville Court	High Class Bituminous	793	68	Fair Condition	34	-1	562	8.50	4777	Urban	Resurface	\$191,080.00	\$40.00	Rehabilitation	\$49.00	\$234,073.00			
Total Length (km) 5.136												Total Cost \$977,867.00											
Year 8 (2030)																							
ORRD-0038	69	17th Sideroad	Highway 27	10th Concession	Low Class Bituminous	3000	77	Satisfactory Condition	34	177	2053	6.70	13755	Rural	Resurface	\$316,365.00	\$23.00	Rehabilitation	\$49.00	\$673,995.00			
KRRD-0079	1144	Kingcross Drive	Snowberry Lane	Westgate Circle	High Class Bituminous	681	71	Satisfactory Condition	30	44	231	8.00	1848	Semi-Urban	Resurface	\$40,659.00	\$22.00	Rehabilitation	\$49.00	\$60,552.00	2028		
Total Length (km) 2.344												Total Cost \$764,547.00											
Year 9 (2031)																							
ORRD-0289	173	17th Sideroad	0.8km N. of 17th Sideroad	Church Street	High Class Bituminous	1709	75	Satisfactory Condition	32	110	787	6.70	5273	Rural	Resurface	\$121,276.00	\$23.00	Rehabilitation	\$49.00	\$258,377.00			
SRRD-0051	3052	Main Street	Cooper Drive	Church Street	High Class Bituminous	3414	80																



Sources:
 1. Ministry of Natural Resources
 2. Township of King
 3. Regional Municipality of York

Disclaimer:
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Date: North American 1983 CSRS
Coord. System: NAD 1983 CSRS UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°00.00"W
False Easting: 500,000m
Page Orientation: 17°E

Scale Factor: 0.99980
False Northing: 0m
Scale Factor: 0.99980

Proposed Improvement Year (Report)

- 2023
- 2024
- 2025
- 2026
- 2027
- 2028
- 2029
- 2030
- 2031
- 2032
- No Improvements in Ten Year Time Frame

Non-Municipal Roads

- Provincial Highway / Freeway
- Regional Road
- Private Road

Map Title: 2022 ROADS NEEDS STUDY HARD-TOP ROADS PREVENTATIVE MAINT. TEN YEAR ROAD IMPROVEMENT PLAN

Client: TOWNSHIP OF KING

Drawn: PS
Checked: HC
Date: 2023/06/07
Scale: 1:35,000
Project No.: 300052814

Appendix: H.3

Appendix H - Hardtop Road Preventive Maintenance Plan

Municipal ID	Name	Name From	Name To	Community	Surface Material	AADT	PCI	PCI Class	Priority Rating (PR)	Road Length (m)	Road Width (m)	Surface Area (m ²)	Roadside Environment	Improvement Type	Improvement Cost	2023 Benchmark Cost (\$/m ²)
2024																
SRRD-0041	Main Street	Ben Boy Avenue	Greco Ridge Lane	Schomberg	High Class Bituminous	3980	92	Good Condition	13	141	10.00	1410	Urban	Crack Sealing (Routine Maintenance)	\$1,057.50	\$0.75
ORRD-0031	Pumphouse Road	Graham Sideroad	End (Canal)	King Twp. (Rural)	High Class Bituminous	1715	91	Good Condition	12	1438	6.50	9347	Rural	Crack Sealing (Routine Maintenance)	\$7,010.25	\$0.75
ORRD-0185	18th Concession	17.7km N. of 18th Sideroad	17.7km N. of 18th Sideroad	King Twp. (Rural)	High Class Bituminous	1293	90	Good Condition	12	1705	6.10	10400	Rural	Crack Sealing (Routine Maintenance)	\$7,800.37	\$0.75
SRRD-0060	Roselena Drive	Quaker House Lane	End (Cul-de-Sac)	Schomberg	High Class Bituminous	1441	90	Good Condition	12	225	8.50	1913	Urban	Crack Sealing (Routine Maintenance)	\$1,434.38	\$0.75
BRRD-0002	Kettleby Road	Lorne Avenue	Jane Street	Kettleby	High Class Bituminous	1188	91	Good Condition	11	693	6.50	4505	Semi-Urban	Crack Sealing (Routine Maintenance)	\$3,378.38	\$0.75
KRRD-0022	Kingscross Drive	Carmichael Crescent	McKellar Lane	King City	High Class Bituminous	1303	91	Good Condition	11	136	6.70	911	Semi-Urban	Crack Sealing (Routine Maintenance)	\$683.40	\$0.75
KRRD-0054	Warren Road	Cadden Court	Alex Campbell Crescent	King City	High Class Bituminous	2210	92	Good Condition	11	69	8.20	566	Urban	Crack Sealing (Routine Maintenance)	\$424.35	\$0.75
ORRD-0086	Keele Street	Woodchoppers Lane	110m N. of Woodchoppers Lane	King Twp. (Rural)	High Class Bituminous	1609	91	Good Condition	11	107	8.00	856	Semi-Urban	Crack Sealing (Routine Maintenance)	\$642.00	\$0.75
ORRD-0268	Dufferin Street	630m N. of Miller's Sideroad	King Street	King Twp. (Rural)	High Class Bituminous	1833	92	Good Condition	11	995	6.90	6866	Rural	Crack Sealing (Routine Maintenance)	\$5,149.13	\$0.75
KRRD-0099	Kingscross Drive	Keri Court	Chester Lane	King City	High Class Bituminous	1303	92	Good Condition	10	172	6.70	1152	Semi-Urban	Crack Sealing (Routine Maintenance)	\$864.30	\$0.75
ORRD-0272	15th Sideroad	1.8km East of Weston Road	7th Concession	King Twp. (Rural)	High Class Bituminous	599	90	Good Condition	10	382	7.20	2750	Rural	Crack Sealing (Routine Maintenance)	\$2,062.80	\$0.75
ARRD-0005	Dufferin Street	King St. Fork	Ansonvelt	High Class Bituminous	1104	92	Good Condition	9	234	6.10	1427	Rural	Crack Sealing (Routine Maintenance)	\$1,070.55	\$0.75	
KRRD-0009	Patton Street	Hollingsworth Drive	Kingslynn Drive	King City	High Class Bituminous	1368	93	Good Condition	9	104	8.00	832	Urban	Crack Sealing (Routine Maintenance)	\$624.00	\$0.75
KRRD-0037	Bennet Drive	Banner Lane	Forde Crescent	King City	High Class Bituminous	307	90	Good Condition	9	90	7.00	630	Semi-Urban	Crack Sealing (Routine Maintenance)	\$472.50	\$0.75
KRRD-0083	Chuck Ormsby Crescent	Richard Serra Court	Ron Coles Lane	King City	High Class Bituminous	497	91	Good Condition	9	327	8.50	2780	Urban	Crack Sealing (Routine Maintenance)	\$2,084.63	\$0.75
KRRD-0108	Alex Campbell Crescent	Alex Campbell Crescent (Loop)	King Road	King City	High Class Bituminous	900	92	Good Condition	9	447	8.00	3576	Urban	Crack Sealing (Routine Maintenance)	\$2,682.00	\$0.75
KRRD-0129	Alex Campbell Crescent	King Road	Alex Campbell Crescent (Loop)	King City	High Class Bituminous	900	92	Good Condition	9	190	8.00	1520	Urban	Crack Sealing (Routine Maintenance)	\$1,140.00	\$0.75
NRRD-0113	NRRD-0113	Bluff Trail (Traffic Circle)	Aspen King Court	Nobleton	High Class Bituminous	466	91	Good Condition	9	104	8.00	832	Urban	Crack Sealing (Routine Maintenance)	\$624.00	\$0.75
NRRD-0127	Woodhill Avenue	Gilbert Fuller Drive	Hawthorne Valley Road	Nobleton	High Class Bituminous	1056	92	Good Condition	9	62	8.00	496	Urban	Crack Sealing (Routine Maintenance)	\$372.00	\$0.75
NRRD-0177	Parkheights Trail	Middlehead Trail	Kettle Valley Trail	Nobleton	High Class Bituminous	838	92	Good Condition	9	145	11.00	1595	Urban	Crack Sealing (Routine Maintenance)	\$1,196.25	\$0.75
NRRD-0179	Parkheights Trail	Kettle Valley Trail	Blueberry Run Trail	Nobleton	High Class Bituminous	838	92	Good Condition	9	80	11.00	880	Urban	Crack Sealing (Routine Maintenance)	\$660.00	\$0.75
Total Length (km)										7.846			Total Cost		\$41,432.77	
2025																
NRRD-0233	Northcott Way	New Scotland Court	End (Cul-de-Sac)	Nobleton	High Class Bituminous	466	91	Good Condition	9	58	8.00	464	Urban	Crack Sealing (Routine Maintenance)	\$348.00	\$0.75
NRRD-0243	Wellar Avenue	Cross Avenue	90m N. of Cross Avenue	Nobleton	High Class Bituminous	343	90	Good Condition	9	87	8.00	696	Urban	Crack Sealing (Routine Maintenance)	\$522.00	\$0.75
ORRD-0059	Fairfield Drive	Eden Vale Drive	Eden Vale Drive	King Twp. (Rural)	High Class Bituminous	555	91	Good Condition	9	207	8.00	1656	Urban	Crack Sealing (Routine Maintenance)	\$1,242.00	\$0.75
ORRD-0227	Dufferin Street	18th Sideroad	19th Sideroad	King Twp. (Rural)	High Class Bituminous	1510	93	Good Condition	9	2062	7.20	14846	Rural	Crack Sealing (Routine Maintenance)	\$11,134.80	\$0.75
SRRD-0030	Maynard Drive	Cutter Court	Moore Park Drive	Schomberg	High Class Bituminous	766	92	Good Condition	9	133	8.50	1131	Urban	Crack Sealing (Routine Maintenance)	\$847.88	\$0.75
SRRD-0037	Jessop Avenue	Cooper Drive	Schomberg	High Class Bituminous	456	90	Good Condition	9	273	8.50	2321	Urban	Crack Sealing (Routine Maintenance)	\$1,740.38	\$0.75	
KRRD-0095	Carmichael Crescent	Keele Street	Curran Court	King City	High Class Bituminous	699	92	Good Condition	8	89	8.00	712	Urban	Crack Sealing (Routine Maintenance)	\$534.00	\$0.75
KRRD-0072	Kingslynn Drive	Patton Street	End (West)	King City	High Class Bituminous	284	91	Good Condition	8	165	8.50	1073	Semi-Urban	Crack Sealing (Routine Maintenance)	\$804.38	\$0.75
KRRD-0086	Patricia Drive	McBride Crescent	Elizabeth Grove	King City	High Class Bituminous	396	91	Good Condition	8	295	7.00	2065	Semi-Urban	Crack Sealing (Routine Maintenance)	\$1,548.75	\$0.75
KRRD-0132	Chuck Ormsby Crescent	Ron Coles Lane	Ron Coles Lane	King City	High Class Bituminous	497	92	Good Condition	8	353	8.00	2824	Urban	Crack Sealing (Routine Maintenance)	\$2,118.00	\$0.75
KRRD-0135	Findlay Avenue	Burns Boulevard	Dennis Drive	King City	High Class Bituminous	264	91	Good Condition	8	193	8.50	1641	Urban	Crack Sealing (Routine Maintenance)	\$1,230.38	\$0.75
KRRD-0150	Fisher Street	King Road	End (Cul-de-Sac)	King City	High Class Bituminous	286	91	Good Condition	8	201	8.00	1608	Urban	Crack Sealing (Routine Maintenance)	\$1,206.00	\$0.75
KRRD-0179	Humber Valley Crescent	East Humber Drive	King Road	King City	High Class Bituminous	603	92	Good Condition	8	618	8.00	4944	Urban	Crack Sealing (Routine Maintenance)	\$3,708.00	\$0.75
KRRD-0244	Warren Road	Patton Street	120m E. of Patton Street	King City	High Class Bituminous	827	93	Good Condition	8	121	7.30	883	Semi-Urban	Crack Sealing (Routine Maintenance)	\$662.48	\$0.75
NRRD-0013	Woodhill Avenue	Farmcrest Court	Gilbert Fuller Drive	Nobleton	High Class Bituminous	1056	93	Good Condition	8	130	8.00	1040	Urban	Crack Sealing (Routine Maintenance)	\$780.00	\$0.75
NRRD-0168	Parkheights Trail	Blueberry Run Trail	Parkheights Trail (Traffic Circle)	Nobleton	High Class Bituminous	838	93	Good Condition	8	67	11.00	737	Urban	Crack Sealing (Routine Maintenance)	\$552.75	\$0.75
ORRD-0102	11th Concession	19th Sideroad	Highway 9	King Twp. (Rural)	High Class Bituminous	1526	94	Good Condition	8	2045	8.70	17791	Rural	Crack Sealing (Routine Maintenance)	\$13,343.62	\$0.75
Total Length (km)										7.097			Total Cost		\$42,323.40	
2026																
ORRD-0129	18th Sideroad	8th Concession	Highway 27	King Twp. (Rural)	High Class Bituminous	267	91	Good Condition	8	2037	6.00	12222	Rural	Crack Sealing (Routine Maintenance)	\$9,166.50	\$0.75
ORRD-0225	10th Concession	90m N. of 15th Sideroad	16th Sideroad	King Twp. (Rural)	High Class Bituminous	265	91	Good Condition	8	1756	6.00	10536	Rural	Crack Sealing (Routine Maintenance)	\$7,902.00	\$0.75
ORRD-0271	18th Concession	1.7km N. of 18th Sideroad	Lloydtown/Aurora Road	King Twp. (Rural)	High Class Bituminous	1293	93	Good Condition	8	310	6.70	2077	Rural	Crack Sealing (Routine Maintenance)	\$1,557.75	\$0.75
SRRD-0018	Dillane Drive	Sproule Street	Dr. Kay Drive	Schomberg	High Class Bituminous	1092	93	Good Condition	8	180	9.00	1620	Urban	Crack Sealing (Routine Maintenance)	\$1,215.00	\$0.75
SRRD-0033	Waterlily Trail	Mapleton Mills Drive	Mapleton Mills Drive	Schomberg	High Class Bituminous	329	91	Good Condition	8	463	8.60	3982	Urban	Crack Sealing (Routine Maintenance)	\$2,986.35	\$0.75
NRRD-0160	Fairmont Ridge Trail	Bighorn Trail	Fairmont Ridge Trail (Traffic Circle)	Nobleton	High Class Bituminous	1837	95	Good Condition	7	81	8.70	705	Urban	Crack Sealing (Routine Maintenance)	\$528.52	\$0.75
NRRD-0181	Fairmont Ridge Trail	Kettle Valley Trail	Highway 27	Nobleton	High Class Bituminous	1876	95	Good Condition	7	303	8.50	2576	Urban	Crack Sealing (Routine Maintenance)	\$1,931.63	\$0.75
ORRD-0014	Keele Street	Kettleby Road	19th Sideroad	King Twp. (Rural)	High Class Bituminous	2368	95	Good Condition	7	831	6.10	5069	Rural	Crack Sealing (Routine Maintenance)	\$3,801.82	\$0.75
KRRD-0026	Patton Street	King Road	Hollingsworth Drive	King City	High Class Bituminous	1368	94	Good Condition	7	269	8.00	2152	Urban	Crack Sealing (Routine Maintenance)	\$1,614.00	\$0.75
KRRD-0038	Melrose Avenue	Martin Street	Charles Street	King City	High Class Bituminous	326	92	Good Condition	7	141	8.50	1199	Semi-Urban	Crack Sealing (Routine Maintenance)	\$898.88	\$0.75
KRRD-0090	Curran Court	Carmichael Crescent	End (Cul-de-Sac)	King City	High Class Bituminous	171	91	Good Condition	7	174	8.00	1392	Urban	Crack Sealing (Routine Maintenance)	\$1,044.00	\$0.75
KRRD-0096	Warren Road	Patricia Drive	Lavender Valley Road	King City	High Class Bituminous	827	94	Good Condition	7	151	8.50	1284	Urban	Crack Sealing (Routine Maintenance)	\$962.63	\$0.75
KRRD-0111	McClure Drive	Pellatt Grove	Curtis Crescent	King City	High Class Bituminous	168	91	Good Condition	7	59	8.50	502	Urban	Crack Sealing (Routine Maintenance)	\$376.13	\$0.75
KRRD-0126	Nicort Road	Lilly Valley Crescent	Terry View Drive	King City	High Class Bituminous	934	94	Good Condition	7	53	8.00	424	Urban	Crack Sealing (Routine Maintenance)	\$318.00	\$0.75
KRRD-0134	Chuck Ormsby Crescent	Ron Coles Lane	Richard Serra Court	King City	High Class Bituminous	497	93	Good Condition	7	416	8.00	3328	Urban	Crack Sealing (Routine Maintenance)	\$2,496.00	\$0.75
KRRD-0145	Elizabeth Grove	Keele Street	McBride Crescent	King City	High Class Bituminous	900	94	Good Condition	7	213	7.00	1491	Semi-Urban	Crack Sealing (Routine Maintenance)	\$1,118.25	\$0.75
KRRD-0162	McClure Drive	Curtis Crescent	Aukland Lane	King City	High Class Bituminous	168	91	Good Condition	7	205	8.00	1640	Urban	Crack Sealing (Routine Maintenance)	\$1,230.00	\$0.75
KRRD-0177	Dennison Street	610m E. of Valleycrest Drive	East Humber Drive	King City	High Class Bituminous	132	90	Good Condition	7	271	8.00	2168	Urban	Crack Sealing (Routine Maintenance)	\$1,626.00	\$0.75
Total Length (km)										7.913			Total Cost		\$40,773.45	
2027																
KRRD-0181	East Humber Drive	Dennison Street	End (East)	King City	High Class Bituminous	1033	94	Good Condition	7	97	8.00	776	Urban	Crack Sealing (Routine Maintenance)	\$582.00	\$0.75
KRRD-0184	Melrose Avenue	John Street	Martin Street	King City	High Class Bituminous	326	92	Good Condition	7	147	8.50	1250	Semi-Urban	Crack Sealing (Routine Maintenance)	\$937.13	\$0.75
KRRD-0190	Sir Henry Court	Elmers Lane	End (Cul-de-Sac)	King City	High Class Bituminous	519	93	Good Condition	7	129	8.00	1032	Urban	Crack Sealing (Routine Maintenance)	\$774.00	\$0.75
KRRD-0195	15th Sideroad	Cairns Gate	Elmers Lane	King City	High Class Bituminous	519	93	Good Condition	7	265	7.00	1855	Rural	Crack Sealing (Routine Maintenance)	\$1,391.25	\$0.75
KRRD-0226	Scott Crescent	Collard Drive (West Intersection)	Collard Drive (East Intersection)	King City	High Class Bituminous	244	91	Good Condition	7	699	6.40	4474	Semi-Urban	Crack Sealing (Routine Maintenance)	\$3,355.20	\$0.75
KRRD-0230	Sir Henry Court	Lake Marie Trail	Elmers Lane	King City	High Class Bituminous	519	93	Good Condition	7	247	8.00	1976	Urban	Crack Sealing (Routine Maintenance)	\$1,482.00	\$0.75
KRRD-0231	Elmers Lane	Lake Marie Trail	Sir Henry Court	King City	High Class Bituminous	519	93	Good Condition	7	315	8.00	2520	Urban	Crack Sealing (Routine Maintenance)	\$1,890.00	\$0.75
KRRD-0241	Hambly Avenue	Humber Crescent	50m S. of Humber Crescent	King City	High Class Bituminous	300	92	Good Condition	7	50	7.00	350	Urban	Crack Sealing (Routine Maintenance)	\$262.50	\$0.75
NRRD-0014	Ellis Avenue	Wellington Street	Robinson Road	Nobleton	High Class Bituminous	1216	94	Good Condition	7	314	8.50	2669	Urban	Crack Sealing (Routine Maintenance)	\$2,001.75	\$0.75
NRRD-0021	Parkheights Trail	Parkheights Trail (Traffic Circle)	West Coast Trail	Nobleton	High Class Bituminous	838	94	Good Condition	7	144	11.00	1584	Urban	Crack Sealing (Routine Maintenance)	\$1,188.00	\$0.75
NRRD-0030	Royal Avenue	King Road	Lynwood Crescent	Nobleton	High Class Bituminous	175	91	Good Condition	7	217	6.00	1302	Semi-Urban	Crack Sealing (Routine Maintenance)	\$976.50	\$0.75
NRRD-0072																