



BURNSIDE

2023 Norwich Road Needs Study

**Township of Norwich
285767 Airport Road
Norwich, ON N0J 1P0**

Draft

**R.J. Burnside & Associates Limited
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**December 2023
300056849.0000**



Distribution List

No. of Hard Copies	PDF	Email	Organization Name
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Record of Revisions

Revision	Date	Description
0	October 13, 2023	Draft Submission to Township of Norwich
1	November 15, 2023	Second Draft Submission to Township of Norwich
2	November 28, 2023	Third Draft Submission to Township of Norwich
3	December 7, 2023	Draft Submission to Township of Norwich Council

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Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the Corporation of the Township of Norwich (Township) to conduct a Road Needs Study (RNS). This RNS updates the Township's existing road section inventory and condition data, as well as addresses various road maintenance, improvement, and management issues in the Township. In particular, this RNS identifies the Township's Road capital and maintenance needs over the next ten-year period (2024 to 2033), provides recommendations related to on-going maintenance requirements and provides recommendations on minimum road budget levels.

Inventory of Roads

Road inventory information was collected, and road condition ratings were established in July 2023 for hardtop roads within the Townships' Road network. Approximately 364.42 centerline km of roads were inventoried as part of this study, comprised of:

- 144.81 centerline km of High Class Bituminous, HCB (asphalt) roads.
- 66.18 centerline km of Low Class Bituminous, LCB (surface treatment) roads.
- 153.43 centerline km of Gravel, GST roads.

For hardtop roads, severity, and extent of 15 pavement distresses as well as Ride Comfort Ratings (RCRs) were collected, in addition to various road inventory data. Hardtop condition data was used to estimate Pavement Condition Index (PCI) values.

The full lengths of the boundary roads with the adjacent municipalities (County of Brant, Norfolk County, Town of Tillsonburg, Township of Southwest Oxford, Township of Blandford-Blenheim, and the City of Woodstock) are included in the inventory, while acknowledging that the adjacent municipalities are fully responsible for maintenance on part of these boundary roads.

Maps presenting the overall surface types can be found in Appendix A, along with a spreadsheet database of the road network inventory data.

Traffic volume ranges are based on data that the Township provided to Burnside that was collected in 2022 and 2023 at various locations in the Township. Ten-year Annual Average Daily Traffic (AADT) forecasts were made for all roads reviewed.

Assessment of Road Needs

A Pavement Condition Index (PCI) was established for each road segment within the network, based on the rating system developed by the Ontario Ministry of Transportation (MTO). The PCI has been used to assess the improvement requirements for each road segment within the road network, together with functional needs of the road and local knowledge from the Township staff. An improvement matrix has been developed by

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Burnside for the Township that identifies the appropriate improvement type considering various factors such as the condition of the road, roadside environment, surface type, traffic volumes and recommended best practices for the life cycle management of road network assets. The lifecycle improvements include routine maintenance, preventive maintenance, resurfacing, rehabilitation, and reconstruction. A Priority Guide Number (PGN) and Priority Rating Number (PR) were developed to prioritize improvement needs.

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

Existing LCB roads that may warrant upgrading (i.e., to an HCB surface) have been identified.

- Road sections with the following issues / deficiencies have been identified in this RNS:
 - deficient horizontal / vertical curves or deficient sightlines.
 - less than tolerable (i.e., deficient) road widths.
 - drainage issues / deficiencies.
 - high (i.e., above-average) maintenance demands.
- The road improvement / maintenance needs determined in this study are shown on a map and spreadsheet in Appendix E of the report.
- The estimated total cost of hardtop improvement / maintenance needs in the Township is approximately \$10.2 million (M). This equates to an overall average of approximately \$48,398/km of existing hardtop roads (i.e., 210.98 km).
- Approximately 50.66% of all existing hardtop roads in the Township are in good condition, about 28.34% in satisfactory condition, about 17.67% in fair condition, about 1.82% in poor condition and about 1.50% in serious condition.
- Based on input from the Township staff, this study assumes a budget of \$1.5M for the development of a road improvement / maintenance program for hardtop roads. Based on the sensitivity analysis of the 10-year capital plan, the proposed budget of \$1.5M is calculated to result in a significant theoretical decline in the overall condition of the road network. In order for the Township to adequately sustain their current overall network condition (i.e., 81.4/100), an optimum annual road improvement budget of approximately \$3M would need to be allocated for capital improvements.
- The proposed Ten-Year Capital Plan is shown on a map in Appendix G of the report. Based on the ten-year budget sensitivity analysis, it was determined that the weighted overall condition of all roads in the Township will experience a theoretical decline from 81.4 (existing) to 67.3 out of 100 at the end of year ten (i.e., 2033), assuming the improvements will occur in each respective year outlined in the proposed Ten-Year Capital Plan. This analysis considered both the ongoing degradation of existing roads in the Township, in conjunction with the proposed improvements. The total cost to implement the road-specific improvements outlined in the Township's Ten-Year Capital Plan is approximately \$15.3M, or \$1,533,804 per year.

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- It is recommended that the Township establish an annual allowance specifically for applying cost-effective routine and/or preventive maintenance treatments on existing hardtop roads.

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

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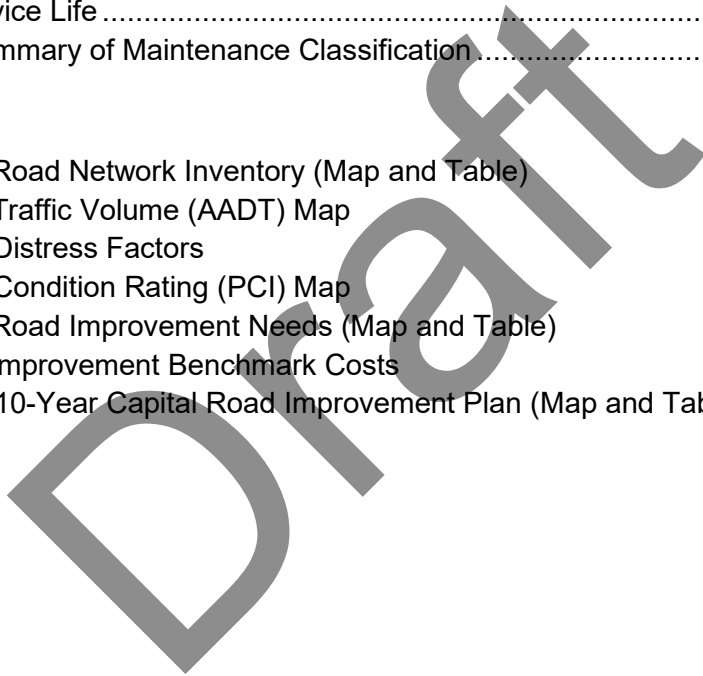
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Appendix D Condition Rating (PCI) Map
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1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the Corporation of the Township of Norwich (Township) to conduct a Road Needs Study (RNS). This RNS updates the Township's existing road section inventory and condition data, as well as addresses various road maintenance, improvement, and management issues in the Township. In particular, this RNS identifies the Township's Road capital and maintenance needs over the next ten-year period (2024 to 2033), provides recommendations related to on-going maintenance requirements and provides recommendations on minimum road budget levels.

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

1.1 Boundary Roads

The Township shares 50.67 centerline km of boundary roads with adjacent municipalities, consisting of 26.32 centerline km (51.94%) under full maintenance responsibility of the adjacent municipality, and 24.36 centerline km (48.07%) under full maintenance responsibility of the Township of Norwich. As follows:

- Beaconsfield Road (Cedar Line to Zenda Line) – 1.90 km – Norwich is responsible for routine summer and winter maintenance along this section.
- Cedar Line (Beaconsfield Road to Sweaburg Road) – 6.78 km – Southwest Oxford is responsible for routine summer and winter maintenance on the section between Beaconsfield Road and Gunn's Hill Road (3.33 km) with Norwich being responsible for routine summer and winter maintenance along the section from Gunn's Hill Road to Sweaburg Road (3.45 km)
- Mall Road (Westtown Line to Swimmingpool Road) – 16.32 km – Norfolk County is responsible for routine summer and winter maintenance along the section from Westtown Line to Middletown Line (7.51 km), with Norwich being responsible for routine summer and winter maintenance along the section from Middletown Line to Swimmingpool Road (8.81 km).
- Old Highway #2 (Oxford County Road 2 to Oxford County Road 2) – 1.46 km-Blandford-Blenheim is responsible for routine summer and winter maintenance as well as capital improvements along the "west" section (0.91 km) with Norwich responsible for routine summer and winter maintenance as well as capital improvements for the "east" section (0.55 km).
- Swimmingpool Road (New Road to Wendy's Road) – 1.01 km – Norfolk County is responsible for routine summer and winter maintenance along this section.
- Westtown Line (Mall Road to Potters Road) – 1.13 km – Norwich is responsible for routine summer and winter maintenance along this section.

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- Windham Line (Otterville Road to Caley Road) – 5.70 km – Norfolk County is responsible for routine summer and winter maintenance along the section from Otterville Road to Windham Road 2 (3.96 km) with Norwich responsible for routine summer and winter maintenance along the section from Windham Road 2 to Caley Road (1.74 km).
- Zenda Line (541 m south of Cornell Road to Beaconsfield Road) – 16.38 km – Norwich is responsible for routine summer and winter maintenance along the section from 541 m south of Cornell Road to Ninth Road (2.01 km) and from Quaker Street to Beaconsfield (4.77 km) and Southwest Oxford is responsible for routine summer and winter maintenance from Ninth Road to Quaker Street (9.60 km).

Capital improvement costs for the above-mentioned boundary roads, except for Old Highway #2 and Mall Road are split 50/50 between Norwich and the adjacent municipality. Mall Road, shared with Norfolk is shared 50/50 for all major capital improvements, however LCB improvements are not seen as a capital improvement by Norfolk and are therefore paid 100%.

1.2 Previous Planning Study

It is understood that a previous RNS was completed for the Township in 2015 with an update completed in 2017 and 2021, therefore this study is an update to the previous RNS condition and inventory data. Other previous planning study work has been reviewed in the completion of this RNS, including the following:

- Official Plan for Oxford County; Office Consolidation, March 2023.
- 2019 Development Charges Background Study, Township of Norwich; Watson & Associates Economists Ltd., April 18, 2019.
- Township of Norwich, 2020 Asset Management Plan; 2020.

2.0 The Road Study

2.1 Road Network Inventory

All road section data contained in this RNS is based on a field review conducted in July 2023 for hardtop roads by one Township staff member and one Burnside staff member. It was determined at the start of the project that the Township would like to have the gravel roads reviewed in the Spring of 2024, during the freeze / thaw period. Reviewing the gravel roads during the spring breakup period will capture the typical performance of each gravel road segment during the spring which will help indicate the adequacy of the subbase material.

A total of 364.42 centerline km of roads were inventoried and reviewed as part of this study, including 144.81 centerline km of High Class Bituminous (HCB) roads, 66.18 centerline km of Low Class Bituminous (LCB) and 153.43 centerline km of gravel roads. Roads have been identified by their road names and identification numbers, and road segments have been identified by reference to their location with respect to intersecting roads. The road database and road inventory mapping are provided in Appendix A for reference purposes.

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

- Road ID, Name, From, To.
- Length.
- Road Width.
- Boundary Road Status.
- Roadside Environment: Rural, Semi-urban and Urban.
- Platform Width.
- Shoulder Material.
- Shoulder Width.
- Speed Limit.
- Drainage Type.
- Structural Adequacy of the Road.
- Distress Manifestation Index (DMI): various types of road distresses with quantification of the density and severity of the distress.
- Ride Comfort Rating (RCR): qualitative assessment of the ride comfort.
- Calculation of the Pavement Condition Index (PCI): based on DMI and RCR, using the Ontario Ministry of Transportation (MTO) formulae.

2.2 Functional Road Classification

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

- **Provincial Highway:** Provincial highways serve high volume through traffic movement at high-speed free flow with limited access to abutting property. These highways provide vehicular and goods movement. The planned right-of-way for provincial highways is determined by the province.
- **County Roads:** County roads serve moderate to high volumes of inter-municipal and long-distance traffic movements. Direct access to abutting properties along county roads shall be limited where possible with parking restricted to improve traffic movement. County roads provide vehicular and goods movement for residential, commercial, and industrial land uses. The planned right-of-way width for County roads is 26 m within designated settlements and 31 m in rural areas.
- **Township Roads:** Township roads carry light volumes of traffic movement between points of origin and the road system. Full access to abutting properties is permitted where the road is maintained year round, with parking permitted except where restricted by municipal by-laws. The planned right-of-way width for Township roads is 15-20 m.

2.3 Traffic Considerations

Traffic volume is an important consideration in determining the road improvement needs for any particular road segment within the road network. Traffic range estimates (Annual Average Daily Traffic, AADT) for each road segment are included in the inventory database in Appendix A, as well as shown graphically on a map in Appendix B. AADT volume ranges are estimated based on traffic count data provided by the Township for various locations within the Township in 2022 and 2023. Most of the roads within the Township's network are gravel roads which will experience very little traffic growth over the 10-year period of the proposed capital improvement plan in this RNS. Some of the roads that are in proximity to County Roads, and / or planned development areas may experience some minor traffic growth over the next 10-year period.

The only major planned developments for the Township that will largely impact traffic volumes are summarized in Table 1 below. In addition to the developments listed in Table 1, there are single road developments (Herb Court, Delong Drive, August Crescent, and Otter View Drive) scattered throughout the villages which will increase the traffic volumes on surrounding roads once they are assumed by the Township.

Table 1: Major Developments Planned in the Township

Development Name	Location	Roads Expected to Receive Higher Traffic
Winzen Development	Southwest corner of Norwich	Dufferin Street, Robson Street, South Street, Palmer Street West, and Carman Street
Spring Meadow Estates	Southeast corner of Otterville	John Street, Dover Street and Queen Street

In the *Township of Norwich Development Charges Background Study* (Watson & Associates Economists Ltd., April 18, 2019), it is stated that the Township's population would be expected to increase to 12,240 by 2029. This would represent a total increase of 8.70% above the Township's population (2019) of 11,260, or an average of approximately 0.87% per annum.

To review how roads in the vicinity of the City of Woodstock may be impacted, anticipated growth rates in the City were reviewed. In the *City of Woodstock Development Charges Background Study* (Hemson Consulting Ltd., April 14, 2022), it was estimated that the population will increase from 46,705 in 2021 to 52,990 in 2031. This equates to an overall growth rate of approximately 13.46%, or approximately 1.35% per annum.

Based on the above considerations, a 1.0% annual growth rate was applied to the traffic volumes (i.e., AADT) for all roadways in this RNS, for the purpose of estimating 10-year (i.e., 2033) traffic volumes:

The length of roads under the jurisdiction of the Township in the various traffic ranges are summarized in Table 2.

Table 2: Length of Roads with Various AADT Traffic Ranges

AADT Traffic Range (vpd)	Total 2023 Existing (km)	Total 2033 Future (km)¹
0 – 49	55.11	55.11
50 – 199	139.37	136.55
200 – 499	67.45	67.01
500 – 999	50.62	41.62
1,000 – 1,999	43.71	52.19
2,000 – 2,999	8.15	11.93
Total	364.42	364.42

¹ Future AADT total represents the 1% per annum growth on all Township roads. Additional subdivision roads could affect this future total, if assumed over the 10-year horizon period.

Traffic volumes and traffic types are also important considerations in establishing the road surface needs for roads within the road network.

For AADTs in the range of 400 to 800 vpd upgrading to a low class bituminous (LCB) surface may be considered, whereas upgrading to a high class bituminous (HCB) surface is recommended for AADTs exceeding 800 vpd.

Truck volumes typically range from a low of 3% on low volume roads to a high of 15% on higher volume roads. Based on the traffic count data provided by the Township, large vehicle percentages of 0% to 30% were recorded. The higher truck traffic percentages reported in this study could be a result of agricultural traffic utilizing the low-volume gravel roads. Since most gravel roads in the Township have low AADT, the higher truck percentages are not considered to be an issue, as long as the overall number of trucks is not considered to be excessive. It is recommended that future traffic counting work in the Township continue to delineate truck volumes, particularly if consideration is being made to upgrade the road 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.

2.4 Roadside Environment and Road Surface Type

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

Roadside Environment

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

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

Surface Type

- High Class Bituminous (HCB, Asphalt).
- Low Class Bituminous (LCB, Surface Treatment/Tar and Chip).
- Gravel (GST).

The roadside environment and road surface types within the Township (i.e., including boundary roads maintained by adjacent municipalities) are summarized in Table 3.

Table 3: Road Summary by Surface Type and Roadside Environment

Surface Type	Roadside Environment	Length (km)	Percent of Total
Gravel	Rural	153.23	42.05%
	Semi-Urban	0.21	0.06%
LCB	Rural	64.61	17.73%
HCB	Rural	109.89	30.15%
	Semi-Urban	27.82	7.63%
	Urban	8.67	2.38%
Total		364.42	100.00%

Of the 364.42 km of roads inventoried, the roadside environment and surface type breakdowns can be summarized as follows:

- Roadside Environment: 327.72 km rural (89.93%), 28.03 km semi-urban (7.69%) and 8.67 km urban (2.38%).
- Road Surface Type: 153.43 km gravel (42.10%), 66.18 km LCB (18.16%) and 144.81 km HCB (39.74%).

3.0 Methodology and Analysis

3.1 Hardtop Road Condition Ratings

The road system has been reviewed in the field with Township staff in July 2023 to determine the hardtop road condition ratings. Specific pavement distress ratings were assigned for 15 distress types for all hardtop road sections in the Township, based generally on the Flexible Pavement Condition Evaluation Form and consistent with MTO methodology, as illustrated in Figure 1.

As shown in Figure 1, a Ride Comfort Rating (RCR) was also estimated for each road section. The RCR is a subjective measure of ride smoothness on a one to ten rating scale, with ten representing a very good RCR (i.e., very smooth ride). Distress Manifestation Index (DMI) and Pavement Condition Index (PCI) values are also obtained for all hardtop road sections in the Township, according to the formulae identified in Figure 1. The PCI, which is based on the individual distress and RCR values for each road section, results in a rating out of 100. Higher PCI ratings reflect better road conditions.

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Figure 1: Flexible Pavement Condition Evaluation Form

HARDTOP PAVEMENT CONDITION EVALUATION FORM

Survey Date: _____ Section ID: _____

Road (Street) Name: _____ Section Length _____ km

Location from: _____ to: _____

Comments: _____

**Ride Comfort Rating
(at posted speed)**

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	
Pavement										0.25	0.5	1	1.5	2	0.25	0.5	1	1.5	2	
Surface Defects		Ravelling & loss of surface aggregate			1	1.5														
		Flushing			2	0.5														
Surface Deformations		Rippling and Shoving			3	1.0														
		Wheel Track Rutting			4	3.0														
		Distortion			5	3.0														
Cracking	Longitudinal Wheel Track	Single and Multiple			6	1.0														
		Alligator			7	3.0														
	Centreline	Single and Multiple			8	0.5														
		Alligator			9	2.0														
	Pavement Edge	Single and Multiple			10	0.5														
		Alligator			11	1.5														
	Transverse	Half, full and multiple			12	1.0														
		Alligator			13	3.0														
	Longitudinal – meander or mid-lane					14	1.0													
	Potholes/Patching					15	3.0													

Asphalt: DMI = 10 x (208 – summation of W x (D+S))/208
Surface Treatment: DMI = 10 x (135-summmation of W x (D+S))/135.

Where W = Weighting factor for distress type; D = Density Factor; S = Severity Factor.

Asphalt: PCI = 13.75 + (9 x DMI) – (7.5 x e^{(8.5-RCR)/3.02})
Surface Treatment: PCI = 12.75 + (9 x DMI) – (5.5 x e^{(9.94-RCR)/3.48}).

Where DMI = Distress Manifestation Index and RCR = Ride Condition Rating

The PCI ratings for each hardtop road section inventoried are included in Appendix E. The distresses and PCI ratings have been updated to reflect the improvement work that was completed in 2023, after the period of the field review for this study.

3.2 Improvement Types

The different road 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 road maintenance and to prevent leaving roads until they slip into a more extensive category like rehabilitation or reconstruction.

Routine Maintenance (RM)

Routine maintenance for HCB (asphalt) roads consists of crack sealing. Routine maintenance can help to delay the need for more extensive rehabilitation or reconstruction. Routine maintenance is typically done when a road is in good condition. Typically, in the past the Township has not completed crack sealing as part of their maintenance efforts. However, crack sealing 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.

Preventive Maintenance (PM)

Preventive maintenance for HCB (asphalt) roads consists of micro surfacing or slurry seal and for LCB (surface treated) roads, preventive maintenance consists of the application of single surface treatment (SST). Preventive maintenance is typically done when a road is in good condition. Micro surfacing and SST 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 hardtop roads, resurfacing consists of either milling and paving (shave and pave), if sufficient asphalt thickness is present or a lift of Hot Mix Asphalt (HMA) over the existing surface. Given that the road is in fair condition, resurfacing treatments 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. Typically, in the past the Township has not performed resurfacing improvements, but rather would leave the roads until they degrade into the rehabilitation category. Implementing resurfacing treatments typically provides a lower cost alternative, over a road's overall lifecycle, as compared to allowing

the road to degrade into a condition that requires a more costly rehabilitation treatment. As a result, the 10-Year Capital Plan developed as part of this study considers resurfacing treatments to be applied to the hardtop roads within the Township.

Rehabilitation (REH)

For urban roads, rehabilitation consists of full depth removal, spot curb replacement and the application of HMA. For semi-urban or rural roads, rehabilitation consists of full depth removal or pulverizing followed by nominal base strengthening (thin lift of granular A) and finished with the application of either HMA or DST. For semi-Urban roads where a rehabilitation improvement is warranted, but the adequacy of drainage is low, the Township has recommended that they be placed into a “holding strategy” until they meet the warrants for full reconstruction at which point, they will be converted to a full urban cross-section. More extensive rehabilitation treatments are applied to pavements 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 pavement structure. This is achieved by eliminating age related deterioration of the pavement or increasing the thickness of pavement layers to address increases in traffic volume.

Reconstruction (REC)

Reconstruction for urban roads consists of full depth removal, total base strengthening, total curb replacement and the application of HMA. For semi-urban roads, reconstruction consists of a level of service upgrade to provide adequate drainage by urbanizing the cross-section, including full depth removal, total base strengthening, installation of curb and gutter, installation of storm sewers and the application of HMA. For rural roads, reconstruction consists of full depth removal, total base strengthening, and the application of either HMA or DST. Reconstruction is typically completed when a road is in poor condition, or if work is being done on infrastructure beneath a road which will require that the road be reconstructed. If the pavement structure is left to deteriorate, the road will become weak and lose its structural integrity. As the structural capacity is weakened, a pavement structure 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 re-establish 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 (i.e., filling of potholes) will typically increase significantly and / or safety or user complaints may become a concern. Reconstruction is also required when the

pavement structure needs to be improved to cater to significant increases in projected traffic volumes, or to accommodate road widening.

Determining Improvement Needs

To determine improvement types that are warranted for certain road sections, the PCI (hardtop) 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 4 for hardtop roads in addition to the improvement effects on road conditions (i.e., the net benefit to the PCI values after a certain improvement type). Specific details on what each improvement entails are included in Table 4 for hardtop roads based not only on the distress trigger ranges but also the surface type, roadside environment and traffic volumes. Estimated benchmark treatment costs are also provided in Table 4 for hardtop roads.

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

Draft

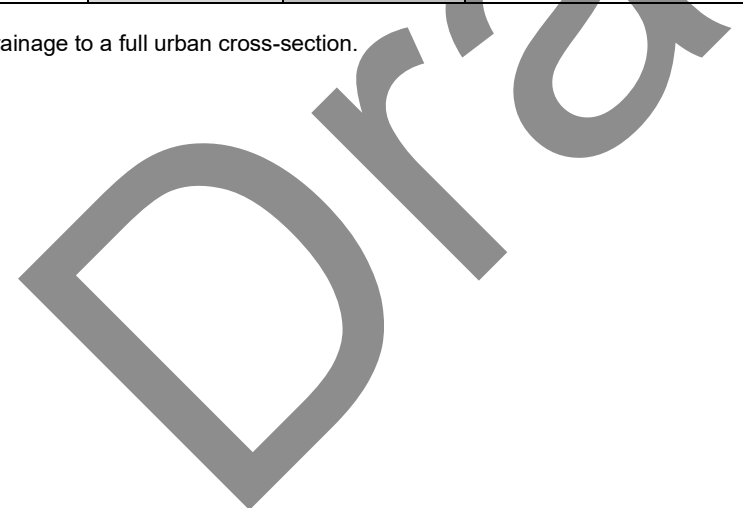
Table 4: Hardtop Road Improvement Decision Matrix

Improvement	Urban – Hardtop (HCB)			Semi-Urban or Rural – Hardtop (HCB/LCB)				
	Post-Treatment Condition	Any AADT	Distress Triggers	Post-Treatment Condition	AADT>1000	1000>AADT>=400	AADT<400	Distress Triggers
Routine Maintenance (RM)	PCI + 5	Crack Sealing (\$0.95 per m ²) ¹	95>PCI>=85	PCI + 5	HCB – Crack Sealing (\$0.95 per m ²) ¹ LCB – N/A (Responsive Maintenance)			95>PCI>=85
Preventive Maintenance (PM)	PCI + 10	Micro Surfacing (\$6 per m ²)	85>PCI>=75	PCI + 10	Micro Surfacing (\$6 per m ²)	Slurry Seal (\$4 per m ²)		85>PCI>=75
Resurfacing (R)	PCI + 20	Defer to Rehabilitation Category. If Asphalt Thickness Allows, Mill + 1 HMA (50 mm) + Patching (\$32 per m ²)	75>PCI>=65	PCI + 20	HCB – 1 HMA Overlay (50 mm) + Patching + Nominal Shoulder/Ditch Repair (\$25 per m ²) LCB – Single Surface Treatment (\$13 per m ²)	HCB – 1 HMA Overlay (50 mm) + Patching + Nominal Shoulder/Ditch Repair (\$25 per m ²) LCB – Single Surface Treatment (\$13 per m ²)	HCB – 1 HMA Overlay (50 mm) + Patching + Nominal Shoulder/Ditch Repair (\$25 per m ²) LCB – Single Surface Treatment (\$13 per m ²)	75>PCI>=65
Rehabilitation (REH)	PCI + 40	Full Depth Removal + 2 HMA (50 mm each) + Spot Curb Replacement + Nominal Storm Sewer Adjustments (\$66 per m ²)	65>PCI>=40	PCI + 40	Rural – (HCB) Pulverize + Granular A + 1 HMA (75 mm) + Nominal Shoulder/Ditch Repair (\$42 per m ²) (LCB) Pulverize + Granular A + DST (\$26 per m ²) Semi-Urban – Pulverize + Granular A + 2 HMA (50 mm each) + Nominal Shoulder/Ditch Repair (\$55 per m ²)	Rural – (HCB) Pulverize + Granular A + 1 HMA (75 mm) + Nominal Shoulder/Ditch Repair (\$42 per m ²) (LCB) Pulverize + Granular A + DST (\$26 per m ²) Semi-Urban – Pulverize + Granular A + 1 HMA (75 mm) + Nominal Shoulder/Ditch Repair (\$42 per m ²)	Rural – (HCB) Pulverize + Granular A + 1 HMA (75 mm) + Nominal Shoulder/Ditch Repair (\$42 per m ²) (LCB) Pulverize + Granular A + DST (\$26 per m ²) Semi-Urban – Pulverize + Granular A + 1 HMA (75 mm) + Nominal Shoulder/Ditch Repair (\$42 per m ²)	65>PCI>=40
Reconstruction (REC)	PCI = 100	Full Depth Removal + 2 HMA (50 mm each) + Total Base and Curb Replacement + Nominal Storm Sewer Adjustments (\$121 per m ²)	PCI<40	PCI = 100	Rural – (HCB) Full Depth Removal + 1 HMA (75 mm) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$80 per m ²) (LCB) Full Depth Removal + DST + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$64 per m ²)	Rural – (HCB) Full Depth Removal + 1 HMA (75mm) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$80 per m ²) (LCB) Full Depth Removal + DST + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$64 per m ²)	Rural – (HCB) Full Depth Removal + 1 HMA (75mm) + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$80 per m ²) (LCB) Full Depth Removal + DST + Total Base Replacement + Nominal Shoulder/Ditch Repair (\$64 per m ²)	PCI<40

Improvement	Urban – Hardtop (HCB)			Semi-Urban or Rural – Hardtop (HCB/LCB)				
	Post-Treatment Condition	Any AADT	Distress Triggers	Post-Treatment Condition	AADT>1000	1000>AADT>=400	AADT<400	Distress Triggers
					Semi-Urban – Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder Repair (\$94 per m ²) Semi-Urban (Convert to Urban Cross-Section)² – Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation (\$212 per m ²)	Semi-Urban – Full Depth Removal + 1 HMA (75 mm each) + Total Base Replacement + Nominal Shoulder Repair (\$80 per m ²) Semi-Urban (Convert to Urban Cross-Section)² – Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation (\$212 per m ²)	Semi-Urban – Full Depth Removal + 1 HMA (75 mm each) + Total Base Replacement + Nominal Shoulder Repair (\$80 per m ²) Semi-Urban (Convert to Urban Cross-Section)² – Full Depth Removal + 2 HMA (50 mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation (\$212 per m ²)	

1 If asphalt thickness is sufficient (i.e., two lifts of asphalt).

2 Override during analysis to convert the cross-section of semi-urban roads with poor drainage to a full urban cross-section.



3.3 Improvement Costs

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

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

It is recommended that standards be reviewed on a project specific basis as budgets are established.

Benchmark improvement costs (per square metre) are outlined in Table 4 for hardtop roads above and are based on recent data provided by the Township as well as available unit cost data from similar lower-tier Ontario municipalities (in terms of location, population, and climate). 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.

The breakdown of the unit costs applied in this RNS is provided in Appendix F.

3.4 Improvement Prioritization

There are two prioritization methodologies available for use in prioritizing road improvements. The Ministry of Transportation Ontario (MTO) has developed a Priority Rating (PR) and Priority Guide Number (PGN) formula in the *Inventory Manual for Municipal Roads*, 1991 that can be used to prioritize road improvements.

The Priority Rating (PR) developed by the MTO takes into account the condition ratings and traffic volumes to prioritize the improvements. The PR formula used in this RNS is as follows:

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

Where:

- CR = Condition Rating, out of 100
- AADT = Existing traffic volume

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

It is recommended that the Township adopt a lifecycle approach to allocate budgets towards road improvement needs. Road improvements, using a lifecycle management approach may be prioritized using a Priority Guide Number (PGN).

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 lifecycle. 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 either one of the following:
 - for hardtop (HCB and LCB) road sections, the Condition Rating is the Pavement Condition Index (PCI), which is out of 100.
 - for gravel road sections, the Condition Rating is the Gravel Condition Rating (GCR), which is out of 100.
- TF is the Traffic Factor, which is an estimate of the traffic served over the life cycle of the improvement as follows:
 - routine maintenance TF = (Existing AADT + Yr. 10 AADT) x 0.38.
 - preventive maintenance TF = (Existing AADT + Yr. 10 AADT) x 0.42.
 - resurfacing TF = (Existing AADT + Yr. 10 AADT) x 0.5.
 - rehabilitation or reconstruction TF = Yr. 10 AADT.
- LCF is the Life Cycle Factor, which is the typical number of days that is assumed to be added to the pavement life as a result of the treatment, as follows:
 - 1095 for routine maintenance treatments.
 - 1825 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).

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

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

3.5 Road Condition Degradation

Typically, roadways with poor condition ratings are considered maintenance intensive. It is recognized that budget constraints may result in road sections deteriorating to conditions that require more intensive improvements than would be the case if less intensive improvements were implemented earlier in the life cycle of the road. If routine and / or preventive maintenance is applied to a road section prior to the road surface or base being significantly impacted, then the overall life of the road section can be extended, beyond that achievable through a reconstruction / rehabilitation strategy alone, thus optimizing the use of the Township's resources. Figure 2 and Figure 3 below illustrate how preventative maintenance extends the useful life of asphalt (HCB) and surface treated (LCB) roads, respectively.

Figure 2: Benefit of Applying Preventive Maintenance - Asphalt (HCB) Road Service Life

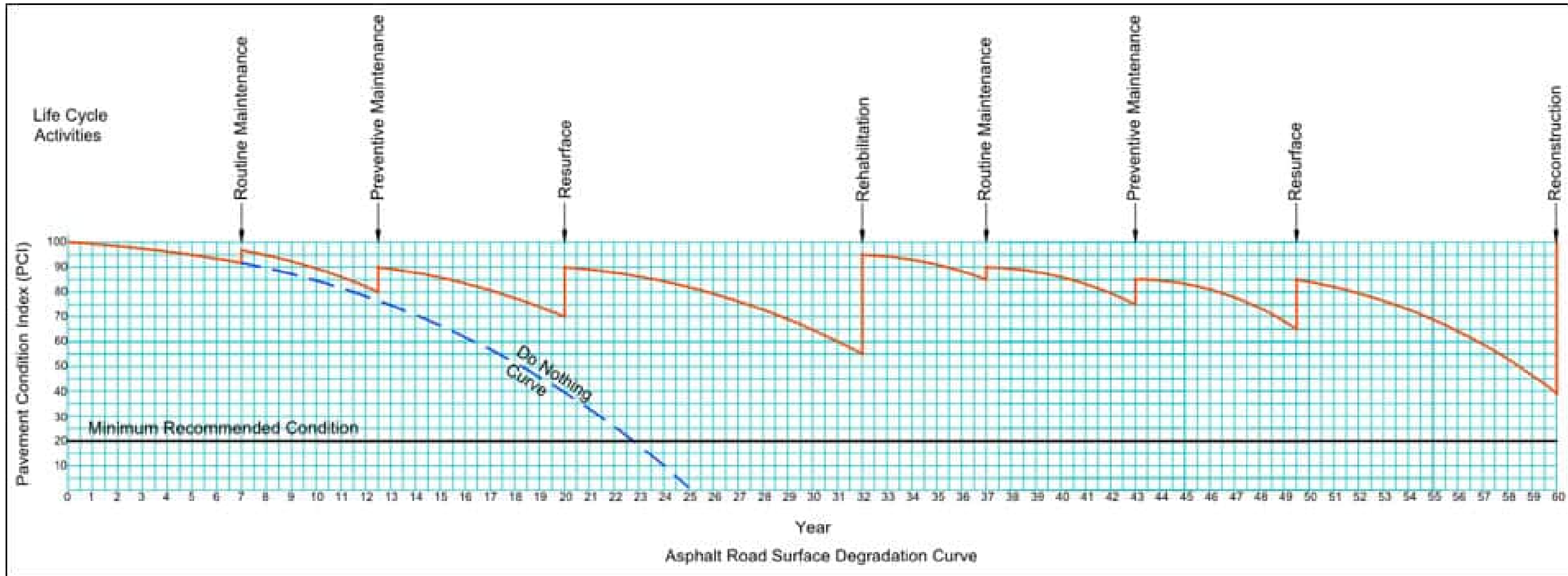
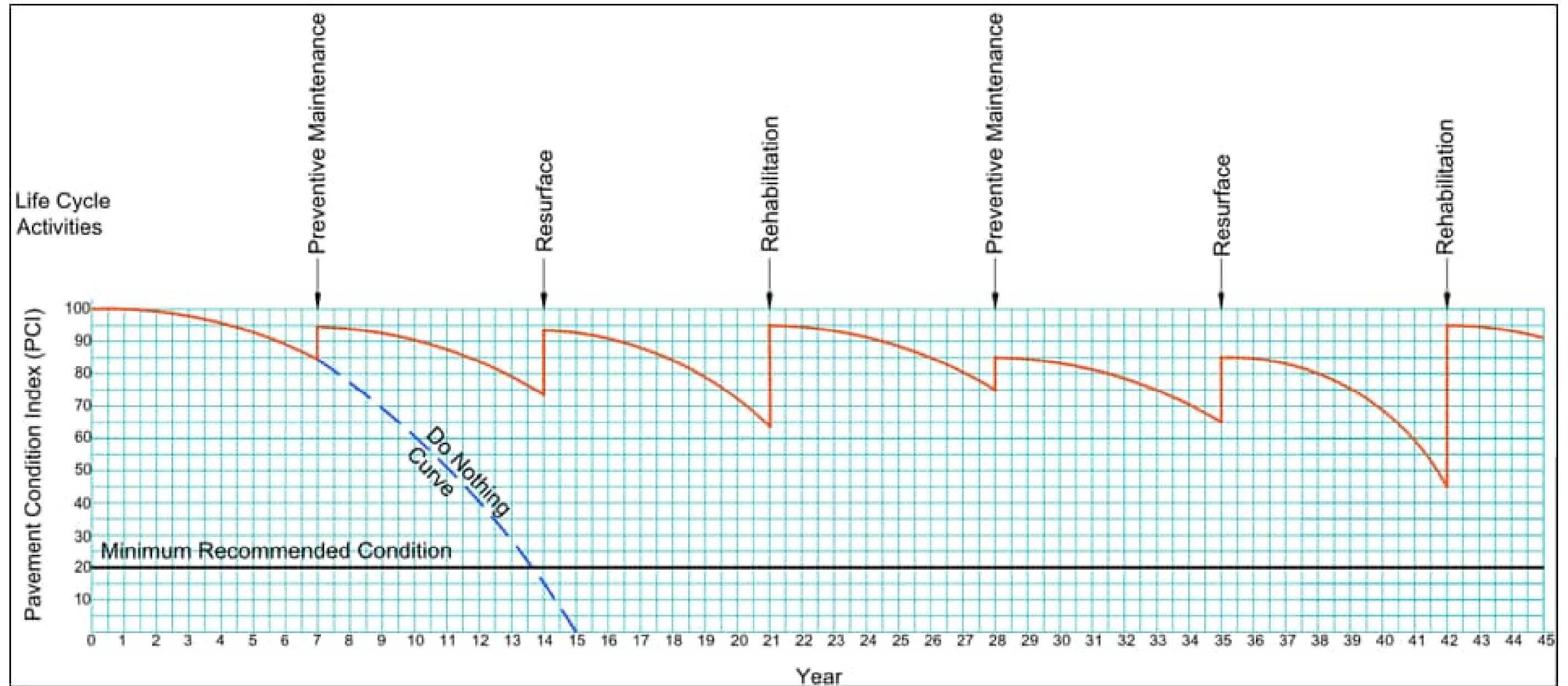


Figure 3: Benefit of Applying Preventive Maintenance - Surface Treated (LCB) Road Service Life



To account for the ongoing degradation of hardtop roads in the Township, Burnside has developed formulas to estimate the future condition of a road section in any given year. The road condition degradation formulae are described below.

This study assumes that the useful life of asphalt (HCB) and surface treated (LCB) roads is approximately 25 and 15 years, respectively. Based on these assumptions, a degradation formula has been developed for a hardtop road's (i.e., HCB or LCB) surface condition, as follows:

$$PCI \text{ in Year } Y = (\text{Current PCI}) \times e^{(M \times Y)}$$

Where:

- PCI in Year Y is the Pavement Condition Index value in the horizon year in which the PCI is being forecasted. For the purposes of this study, it is assumed that the PCI value will not degrade below 20 (out of 100), and that a “holding strategy” would be utilized at such poor conditions to keep the road section serviceable.
- Current PCI is the Pavement Condition Index value, out of 100, in the year at which the forecasting is beginning from.
- M is the PCI Decay Factor, which accounts for the surface type (i.e., HCB or LCB) and where the road section lies within its lifecycle (i.e., based on its current PCI value), as outlined in the following table:

Table 5: Decay Factor for Road Condition Degradation

Surface Type	Current Pavement Condition (PCI)	Decay Factor (M)
HCB	>=85	-0.0171
	85>PCI>=75	-0.0417
	75>PCI>=65	-0.0477
	65>PCI>=40	-0.1079
	<40	-0.2310
LCB	>=85	-0.0232
	85>PCI>=75	-0.0834
	75>PCI>=65	-0.0955
	65>PCI>=40	-0.1942
	<40	-0.4621

- Y is the year at which a road section's PCI value is estimated (for example Y would be ten if a road section's PCI value was being estimated ten years into the future).

3.6 Remaining Useful Life

In general, the remaining useful life of a physical asset is the length of time an asset is forecast to function / operate acceptably (i.e., remain “useful”) before it needs to be replaced. As noted previously, this study assumes that the useful life of asphalt and surface treated roads in the Township will be 25 and 15 years, respectively.

The remaining useful life of hard-top roads in the Township have been determined based on the following formula:

$$\text{Road Remaining Useful Life (in Years)} = \frac{\ln(20/\text{Current PCI})}{M}$$

where:

- Current PCI is the Pavement Condition Index value, out of one hundred, in the year at which the forecasting is beginning from.
- M is the Useful Life Decay Factor, which accounts for the surface type (i.e., HCB or LCB) and where the road section lies within its life cycle (i.e., based on its current PCI value), as outlined in the following table:

Table 6: Decay Factor for Determining Remaining Useful Life

Surface Type	Current Pavement Condition (PCI)	Decay Factor (M)
HCB	>=85	-0.0828
	85>PCI>=75	-0.1027
	75>PCI>=65	-0.1139
	65>PCI>=40	-0.1259
	<40	-0.1379
LCB	>=85	-0.1531
	85>PCI>=75	-0.1848
	75>PCI>=65	-0.2144
	65>PCI>=40	-0.2457
	<40	-0.2757

3.7 Replacement Costs

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

The benchmark improvement costs for “Reconstruction” improvements, as outlined in Table 4 for hardtop roads were used to estimate the replacement cost for all roads in the Township. For the purposes of estimating the replacement cost of gravel roads reviewed

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in this study, it is assumed that roads will retain their gravel surface (i.e., rather than be upgraded to a hardtop surface).

The estimated replacement cost for all roads reviewed in this study are contained in the inventory table in Appendix A. In summary, the total 2023 replacement cost for all roads inventoried in this study is estimated to be nearly \$144.86M. A breakdown of the replacement costs in the Township is provided in Table 7 below.

Table 7: Replacement Cost Breakdown

Road Asset	Replacement Cost
Gravel	\$ 32,237,484
LCB (surface treated)	\$ 28,643,648
HCB (asphalt)	\$ 83, 978,723
Township Road Network	\$ 144,859,855

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4.0 Hardtop Road Considerations

Hardtop roads within the Township's Road network include both High Class Bituminous (HCB) surfaces and Low Class Bituminous (LCB) surfaces. The Template for Lifecycle Improvements that has been developed in this study takes into consideration the following parameter in recommending improvement types (i.e., including type of surface).

- roadside environment (rural, semi-urban or urban).
- traffic volumes (i.e., AADT volumes).
- road condition.

Additional parameters that may be considered in the establishment of surface type include:

- traffic types (e.g., percentage of trucks).
- functional classifications (e.g., local or collector, residential or industrial / commercial).

The Township's urban roads have HCB surfaces, due to the constraints imposed by curbs, storm sewers. There are also a limited number of rural and semi-urban roads that have HCB surfaces, which have been developed to respond to additional structural requirements (e.g., higher traffic), to provide smoother surfaces, or for other maintenance or planning reasons (e.g., boundary roads etc.).

The Township has used LCB surfaces on their hardtop roads, together with a maintenance strategy (i.e., application of single surface treatment as preventive maintenance every seven years) that is intended to maintain the structural integrity of the road throughout its life cycle. It is well known that having water within a pavement structure is one of the most damaging factors in the performance of a pavement. The primary benefit of a thin surface treatment is the prevention of water from entering the pavement surface, since this treatment is not applied to make structural improvement (i.e., unlike an HCB surface which does provide structural improvement). Two primary assumptions are inherent in maintaining the success of this lifecycle strategy.

- The overall pavement structure and condition is sufficient to accommodate the vehicular loading (i.e., AADT volumes and truck percentages, without requiring the additional structural benefit of an HCB surface).
- The preventive maintenance (i.e., single surface treatment) is applied at a frequency that is commensurate with the estimated years of performance of this treatment. Typically, LCB surfaces are expected to have a pavement extension life of five to seven years.

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Considering that the parameters associated with these assumptions will vary among the various road segments within the Township's Road network, the condition model developed in this study has conservatively assumed that some strengthening may be required over time (i.e., due to ongoing structural deterioration or to increased traffic volumes or truck volumes). Therefore, the surface types and resulting cost estimates have been based on upgrading of surface types to HCB, for roads with AADT ≥ 400 vpd. This approach is consistent with the road standards proposed in the *Inventory Manual for Municipal Roads* (MTO, February 1991). However, it should be noted that LCB surfaces have been found to perform adequately for significantly higher AADT volumes, assuming appropriate design and maintenance practices are employed.

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5.0 Consideration of Other Needs for Establishing Road Network Improvements

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

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

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

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

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

5.1 Surface Type Needs

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

- Gravel roads are typically tolerable for traffic volumes of less than 200 vehicles per day (vpd), however, depending on the use of the gravel road (i.e., agricultural access, traffic movement within the network, etc.) as well as traffic type, gravel roads can be suitable for traffic volumes higher than 200 vpd. 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, as detailed in a previous section of this report.

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- Surface treated roads are tolerable for traffic volumes of between 200 vpd and 400 vpd, or even higher depending on maintenance initiatives, although consideration may be given to upgrading to asphalt for AADT \geq 400 vpd, as detailed in a previous section of this report.
- Asphalt roads may be considered where traffic volumes exceed 400 vpd, however HCB surfaced are recommended where AADT volumes exceed 800 vpd. Due to the cost of upgrading LCB roads to HCB and available budgets, these upgrades are not recommended / proposed currently. Although these improvements are not recommended, it should be noted that the roads meeting the criteria above should be upgraded when budget is available as traffic volume and traffic type can lead to premature surface failure as well as increased maintenance efforts.

The above surface type considerations are used as a guide to identify potential surface type needs. A review of the inventory data in Appendix A indicates there are several roads in the Township that presently meet these surface type criteria, as summarized in Table 8. Roads that are planned for upgrading should be reviewed at the detailed design stage, to ensure that the structural conditions and design conditions (i.e., widths, cross-section geometry, vertical and horizontal alignments, etc.) are conducive to such upgrading and / or whether additional work is required to achieve the upgrading. If additional work is required, the benchmark costs should be increased to account for any related upgrading required to support the updated surface type.

Table 8: Existing Surface Types that May Warrant Upgrading

Road	Road Length (km)	AADT (vpd)	Reason for Surface Need
Gravel Roads with AADT>200			
Semi-Urban Gravel Roads			
Smith's Lane from McNab Street to Church Street East	0.12	25	Land use (Semi-Urban)
Union Street from Stover Street South to West End	0.09	10	Land use (Semi-Urban)
Cecilia Street from Base Line to End	0.18	30	Land use (Semi-Urban)
LCB Road with AADT>400			
Mall Road from Middletown Line to Summerville Line	3.68	1395	Traffic Volume
Mall Road from Summerville Line to Highway 59	2.15	1137	Traffic Volume
Summerville Line from Coal Line to Potters Road	1.46	953	Traffic Volume
New Road from Base Line to Swimming Pool Road	1.15	692	Traffic Volume/Truck Percentage
Windham Line from Airport Road to Windham Road 2	0.92	635	Traffic Volume/Truck Percentage

5.2 Geometrics

5.2.1 Alignments

Road alignments were reviewed to determine the number of substandard horizontal / vertical curves and / or substandard gradients and / or substandard stopping sight distances (i.e., resulting from curves near driveway locations).

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

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Road segments that appear to have inadequate vertical or horizontal grades and / or sightlines in the field were flagged during the field investigations in July 2023 for hardtop roads. In general, the roads in the Township are relatively flat with sufficient sightlines on vertical and horizontal curves. The rural roads in the Township that have been flagged for alignment deficiencies are summarized in Table 9.

As shown in Table 9, limited warning signage has been placed to delineate operating conditions at a number of the locations that have substandard alignments. It is recommended that these locations be further reviewed, at the project level, if future improvements are planned to address condition deficiencies, to determine the following:

- Confirmation that warning signage is in compliance with the requirements set out in the Ontario Traffic Manuals.
- Determination of the cost / benefit for improving the substandard alignments as part of the overall condition improvement project.

Improvements to alignments and / or enhanced warning signage should particularly be considered at the following locations:

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

Table 9: Summary of Alignment Deficiencies on Rural Township Roads

ID	Road	Existing Warning Signage	AADT	No. Vertical Alignment Deficiencies	No. Vertical Alignment Sight Deficiencies	No. Horizontal Alignment Deficiencies	No. Horizontal Alignment Sight Deficiencies
072A	Cornell Road from Middletown Line to Furnace Road	Reduced speed (50 km/h), steep hill sign, intersection sign, advisory speed sign (with flashing beacon) and chevrons	1029		1		1
135	Rock Mills Line from Oxford Road 13 to Oxford County Road 37 (Potters Road)	N/A	116		1		

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ID	Road	Existing Warning Signage	AADT	No. Vertical Alignment Deficiencies	No. Vertical Alignment Sight Deficiencies	No. Horizontal Alignment Deficiencies	No. Horizontal Alignment Sight Deficiencies
128A	Zenda Line from Ninth Road to Cornell Road	Reduced speed limit (60 km/h) and hidden driveway	356		1		
063A	Milldale Road from Csont Line to Highway 59	Sharp curve and chevrons	137			2	

5.2.2 Road Widths

Minimum tolerable and recommended minimum road widths for hardtop roads have been assessed according to criteria outlined in the *Geometric Design Guide for Canadian Roads* (Transportation Association of Canada [TAC], June 2017). The surface (i.e., through lane) width requirements for hardtop roads are outlined below in Table 10.

Table 10: Tolerable & Recommended Surface Widths for Hardtop Roads

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

The TAC criteria apply to roads which have traffic volumes of less than 450 vph in the peak direction, while the volume of traffic on the Township roads is much lower than this. However, providing widths that are less than 6.0 m may not provide adequate access for fire equipment or for two-way travel at higher speeds. Therefore, considering these factors it is recommended that the recommended lower limit should apply.

The hardtop roads in the Township that have been identified to have widths that currently do not meet the recommended lower limit widths are summarized in Table 11.

Table 11: Summary of Hardtop Roads with Deficient Widths

ID	Road	Length (m)	AADT (vpd)	Speed (km/h)	Width (m)
206B	South Court Street West from John Street to Washington Street	107	250	20 km/h	5.9
215A.2	Palmer Street West from Otter Street to Stover Street South	100	250	50 km/h	5.7
134	Zenda Line from Cornell Road to 541 m South of Cornell Road	541	15	80 km/h	6.2
131	Furnace Road from Cornell Road to New Road	1243	256	80 km/h	6.95

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ID	Road	Length (m)	AADT (vpd)	Speed (km/h)	Width (m)
067B	Ninth Road from Coal Line to Highway 59	1135	405	80 km/h	5.9
085	Summerville Line from Potters Road to Mall Road	1636	488	80 km/h	6.7
064	Ninth Road from Zenda Line to Oxford Road 13	3788	78	80 km/h	6.2
141	Middletown Line from Potters Road to Mall Road	1627	483	80 km/h	6.7
075	New Road from Highway 59 to Base Line	3712	293	80 km/h	6.6
135	Rock's Mills Line from Oxford Road 13 to Potters Road	1715	116	80 km/h	6.4
052	Airport Road from Oxford Road 59 to Base Line	3603	1247	80 km/h	6.6
061	Milldale Road from Pick Line to Highway 59	2090	233	80 km/h	6.25
063B	Milldale Road from Csont Line to Base Line	2080	137	80 km/h	6.5
124	Csont Line from Milldale Road to Otterville Road	1623	80	80 km/h	6.5
115	Hanmer Line from Airport Road to Maple Dell Road	1637	96	80 km/h	5.8
117A	Windham Line from Airport Road to Windham Road 2	922	635	80 km/h	6.4
105A.2	Middletown Line from Evergreen Street to Quaker Street	1601	1545	80 km/h	6.8
037	Evergreen Street from Oxford Road 13 to Middletown Line	3734	143	80 km/h	6.6
092A	Old 14 Line from Oxford Centre Road to Old Stage Road	910	1919	80 km/h	4.3
008	Horn Road from Sweaburg Road to Old Stage Road	1167	136	80 km/h	6.8
273B	Nichol Lane from McNab Street to Church Street East	118	50	90 km/h	6.5
145B	Second Road from Slant Road to Base Line	136	104	80 km/h	6.8
086	Base Line from Potters Road to Mall Road	1673	369	80 km/h	6.7
133B	Base Line from Ninth Road to New Road	1468	1111	80 km/h	6.8

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ID	Road	Length (m)	AADT (vpd)	Speed (km/h)	Width (m)
048B	Caley Road from Base Line to Windham Line	625	208	80 km/h	6.8
053	Airport Road from Base Line to Windham Line	690	636	80 km/h	6.6
057C	Maple Dell Road from Base Line to Windham Line	792	165	80 km/h	6.7
133A	Base Line from Otterville Road to Ninth Road	1453	1111	80 km/h	6.7
076	New Road from Base Line to Swimming Pool Road	1152	692	80 km/h	6.7
084B	Mall Road from Base Line to Swimming Pool Road	1334	896	80 km/h	6.5
084A	Mall Road from Highway 59 to Base Line	1649	896	80 km/h	6.5
074B	Middletown Line from New Road to Potters Road	1529	200	80 km/h	6.7
074.1	New Road from Middletown Line to Furnace Road	2074	168	80 km/h	5.9
074.2	New Road from Furnace Road to Coal Line	1451	168	80 km/h	5.9
074.3	New Road from Coal Line to Highway 59	157	168	80 km/h	6.7
067A	Ninth Road from Cornell Road to Coal Line	639	405	80 km/h	6.5
132A.1	Coal Line from Cornell Road to Ninth Road	392	660	80 km/h	6.5
090A	Middletown Line from Pattullo Ave to 300 m North of Oxford Centre Road	1116	1063	80 km/h	6.9
091A	Middletown Line from Oxford Centre Road to Old Stage Road	448	904	80 km/h	6.8
092B	Old 14 Line from Oxford Centre Road to Firehall Road	408	1919	80 km/h	4.3
145A	Second Road from New Durham Road to Slant Road	73	104	80 km/h	6.8
038B	Evergreen Street from McCready Line to Oxford Road 59	1417	200	80 km/h	6.4
105A.1	Middletown Line from 387 m South of Church Street to Evergreen Street	1251	1545	80 km/h	6.8
038A	Evergreen Street from Middletown Line to McCready Line	2127	200	80 km/h	6.7

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ID	Road	Length (m)	AADT (vpd)	Speed (km/h)	Width (m)
105B.1	Middletown Line from Quaker Street to Norwich Road	1612	2542	80 km/h	6.8
057A	Maple Dell Road from Highway 59 to Hanmer Line	2627	165	80 km/h	6.4
112	Windham Line from Caley Road to Airport Road	819	359	80 km/h	6.4
123A	Pick Line from Milldale Road to Church Street	1375	200	80 km/h	6.5
062B	Seventh Road from Highway 59 to End	120	137	80 km/h	5.9
140B	Westtown Line from Simcoe Street to Mall Road	120	247	80 km/h	6.4
063A	Milldale Road from Highway 59 to Csont Line	1709	137	80 km/h	6.3
057B	Maple Dell Road from Hanmer Line to Base Line	1002	165	80 km/h	6.4
042B	Hatchley Road from Base Line to 231 m East of Base Line	231	158	80 km/h	6.8
104B.1	Zenda Line from 514 m North of Quaker Street to 672 m North of Quaker Street	403	121	80 km/h	6.7
121	Windham Line from Maple Dell Road to Oxford Road 19	3261	504	80 km/h	6.8
001	Old Highway 2 from Highway 2 to CPR	546	30	80 km/h	6.2
096A.1	Cedar Line from Rivers Road to Curries Road	391	76	80 km/h	6.5
117B	Windham Line from Windham Road 2 to Maple Dell Road	701	635	80 km/h	6.0

Many of the deficient road widths are located on roads with very low traffic volumes (i.e., less than 50 vpd) and / or low traffic speeds, and therefore may not be considered critical (i.e., not justifying widening to address the width deficiency alone in the short term), unless required to maintain acceptable emergency access. It is recommended that the Township consider widening requirements on a case-by-case basis, to assess whether such widening is critical in the short-term. 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 maintenance for the hardtop roads). It is recommended that widths be upgraded to meet minimum recommended lower limit standards when, or if such sections are rehabilitated or reconstructed to address condition needs. Costs associated with widening roads are not

included in the cost estimates in this study as this would be determined during the detailed design stage of each project.

Widening of the roads identified above has not been planned as part of the improvements identified in the 10-Year Capital Plan, however each road identified on the list above should be reviewed during the detailed design stage to determine if widening should be completed to accommodate emergency access and/or to adequately accommodate two-way traffic.

5.3 Drainage

Historical and existing drainage issues (e.g., flooding, ponding) were identified based on discussions with Township staff. In general, the Township does not have a history of flooding on any of their roads. The Township undertakes brushing as part of their regular maintenance practices.

The Township undertakes brushing as part of their regular maintenance practices (i.e., minimum once a year, with a second cut done as needed or as time allows).

The Township does not currently have a formal ditching program. Ditching is completed on an as-needed basis to respond to complaints or problems that are identified.

Where road works are proposed, it is recommended that additional investigations be completed to determine the requirements for drainage improvements. However, it is also recognized that the practicality of achieving sufficient drainage outlets may constrain the opportunities to improve roads in areas with drainage issues. Depending on traffic requirements in those areas, it may be more cost-effective to continue to undertake additional Spring maintenance, on a yearly basis, to address such drainage issues.

5.4 Maintenance Considerations

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

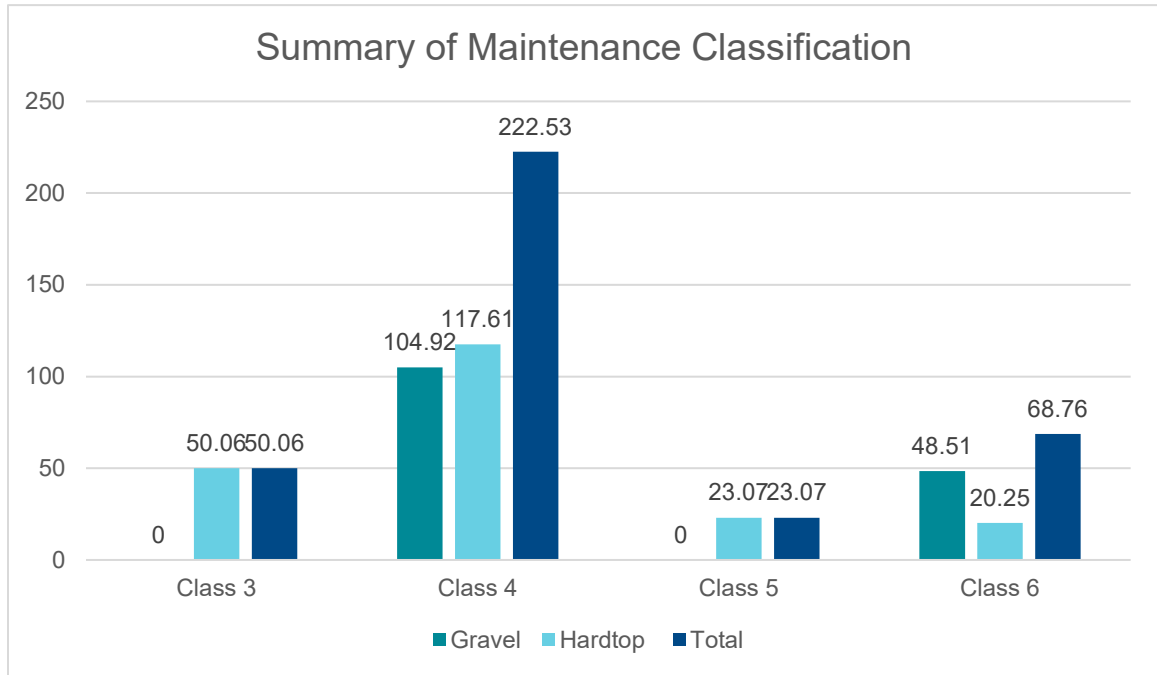
The Level of Service for maintenance of the Township's roads follows the Provincial Minimum Maintenance Standards (O. Reg. 239/02 as amended by O. Reg. 366/18). These regulations prescribe required monitoring of the roads and maintenance response requirements, based on the road's class. The road class is set by its Average Annual Daily Traffic and speed limit. The Township's minimum maintenance standard classes are summarized in Table 12.

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

Environment	Speed Limit (km/h)	AADT (vpd)	Minimum Maintenance Classification	Length of Road (km)
Built-Up Areas	20	200 – 499	6	1.67
	30	200 – 499	6	0.09
		500 – 999	5	0.14
	50	0 – 49	6	4.41
		50 – 199	6	10.63
		200 – 499	5	15.41
		500 – 999	5	3.09
	80	1,000 – 1,999	5	0.69
		500 – 999	3	0.45
90	50 – 199	3	0.12	
Rural	50	50 – 199	6	1.25
		200 – 499	5	1.01
		1,000 – 1,999	5	1.22
	60	200 – 499	5	1.51
		500 – 999	4	3.76
	80	0 – 49	6	50.71
		50 – 199	4	127.38
		200 – 499	4	47.76
		500 – 999	3	43.18
		1,000 – 1,999	3	41.79
	2,000 – 2,999	3	8.15	

Based on Burnside's review of the Minimum Maintenance Classes of the Township's roads, Figure 4 below summarizes the length of Township roads in the various Minimum Maintenance Classes.

Figure 4: Summary of Maintenance Classification



Road sections in the Township with above-average (i.e., high) maintenance demands have been identified through discussions with Township staff, as summarized in Table 13.

Table 13: Rural Roads with Above Average Maintenance Demands

Municipal ID	Road Segment	Length (km)	AADT (vpd)
123A	Pick Line from Milldale Road to Church Street	1.38	200
061	Milldale Road from Pick Line to Highway 59	2.09	233
067A & 067B	Ninth Road from Cornell Road to Highway 59	1.77	405
064	Ninth Road from Zenda Line to Oxford Road 13	3.79	78
074	New Road from Middletown Line to Highway 59	3.68	168
075	New Road from Highway 59 to Base Line	3.71	293
076	New Road from Base Line to Swimming Pool Road	1.15	692
084A & 084B	Mall Road from Highway 59 to Swimming Pool Road	2.98	896
074B	Middletown Line from New Road to Potters Road	1.53	200
141	Middletown Line from Potters Road to Mall Road	1.63	483
128A	Zenda Line from Cornell Road to Ninth Road	1.47	323
201A & 201B	Brock Street from Stover Street to end	0.51	250

6.0 Road Improvement Needs

6.1 Hardtop Road Needs

Based on the existing hardtop road condition data collected in the field in July 2023, the hardtop road improvement needs were determined according to the improvement trigger criteria and benchmark costs outlined in Table 4, as shown on the map in Appendix E. Table 14 below summarizes the hardtop road improvement need types and costs. As noted above in section 5.1, LCB to HCB surface upgrades are not proposed at this time due to the cost and level of service increase.

Table 14: Township of Norwich Hardtop Road Needs

Improvement Need Type	Amount of Hardtop Road Needs		
	Estimated Cost (\$)	Length (km)	Percentage of Total Length
No Current Improvement Need	N/A	24.27	11.50 %
Routine Maintenance	N/A	82.62	39.16 %
Preventive Maintenance	\$867,713	34.46	16.33 %
Resurface	\$3,679,497	42.94	20.35 %
Rehabilitation	\$4,173,667	23.52	11.15 %
Reconstruction	\$1,490,082	3.17	1.50 %
Total	\$10,224,601	210.98	100.00 %

It has been estimated that the existing cost of hardtop road needs in the Township is approximately \$10.2M. This equates to an overall average need of approximately \$48,398/km of existing hardtop roads (i.e., 210.98 km).

Table 15 provides a qualitative condition summary based on the PCI ranges of all hardtop roads in the Township.

Table 15: Qualitative Description of Hardtop Road Network

PCI Range	Condition	Length of Road (km)	Percentage of Total Length
85 to 100	Good	106.89	50.66 %
70 to 84	Satisfactory	59.80	28.34 %
55 to 69	Fair	37.29	17.67 %
40 to 54	Poor	3.83	1.82 %
Below 40	Very Poor	3.17	1.50
Total		210.99	100.00 %

As shown in Table 15, nearly 50.66% of all existing hardtop roads in the Township are in good condition.

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7.0 Ten-Year Budget Sensitivity Analysis

In order to assess minimum budget levels, Burnside has conducted a ten-year budget sensitivity analysis, considering all roads in the Township. In order to conduct the analysis, Burnside has applied all road-specific improvements outlined in the Township's 10-Year Capital Plan, which is updated annually by the Township, to forecast the impact that such improvements will have on roads in the Township after the ten-year period. The Township's Ten-Year Capital Plan improvement recommendations and estimated costs are summarized in the spreadsheet and on the map in Appendix G.

The following steps were employed in conducting the ten-year budget sensitivity analysis:

1. It was determined that the existing (2023) weighted average overall condition of all roads in the Township was approximately 81.4 out of 100.
2. Starting in year 2024, the PCI values for every hardtop road section in the Township were degraded based on the degradation formula outlined in Section 3.6.
3. Road section improvements identified in the proposed Ten-Year Capital Plan had their respective improvement type and costs applied in each year. After each improvement type was applied to a given road section, the PCI values were increased by the amounts outlined in Table 4 for hardtop roads. Untreated road sections continued to degrade annually.
4. Repeat step three for years one through ten (i.e., 2024 to 2033), based on the improvement types and costs outlined in the proposed Ten-Year Capital Plan.
5. At the end of year ten (i.e., after all the road improvements outlined in the proposed Ten-Year Capital Plan were applied in each respective year), the year ten (i.e., 2033) weighted average overall condition rating was determined, based on the new/current PCI values.

Based on the above analysis, it was determined that the average (weighted by length) overall condition of all roads in the Township will be approximately 67.3 out of 100 at the end of year ten (i.e., 2033), compared to the existing value of 81.4 out of 100. In addition to the improvements listed in the Ten-Year Capital plan, new roads being assumed by the Township will result in an increased overall condition rating. The total cost to implement the road-specific improvements outlined in the Ten-Year Capital Plan is forecast to be approximately \$15.3M, or an average of approximately \$1,533,804 per year.

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Based on the net degradation of approximately 17.32% over the next ten years, it is concluded that the Township's current budget for managing their hardtop roads is not sufficient enough to keep up with the increasing needs.

It is recommended that the Township continue to apply relatively cost-effective resurfacing treatments in the future. Also, it is recommended that the Township establish an annual allowance specifically for applying cost-effective maintenance treatments on hardtop roads early in their lifecycle. The amount of such an annual maintenance budget is subject to deliberations amongst Township Council and staff. It is recommended that the Township utilize the funds according to the Township's preferred maintenance treatment types (such as crack sealing, micro-surfacing, slurry sealing, FibreMat, etc.), based on historical benefits received by certain maintenance activities relative to their costs. Also, for maintenance treatment types that historically have not been employed in the Township, it is recommended that "test" treatments be applied on select road sections, so that the Township may observe the road section in the future to assess whether or not the benefits of the applied maintenance treatment justify the costs.

8.0 Conclusions and Recommendations

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

- Existing LCB roads that may warrant upgrading (i.e., to LCB surfaces) have been identified.
- Road sections with the following issues / deficiencies have been identified in this RNS:
 - deficient horizontal / vertical curves or deficient sightlines
 - less than tolerable (i.e., deficient) road widths
 - drainage issues/deficiencies
 - high (i.e., above-average) maintenance demands
- The road improvement / maintenance needs are shown on a map and spreadsheet in Appendix E of the report.
- The estimated total cost of hardtop improvement / maintenance needs in the Township is approximately \$10.2M. This equates to an overall average of approximately \$48,398/km of existing hardtop roads (i.e., 210.98 km).
- Approximately 50.66% of all existing hardtop roads in the Township are in good condition, about 28.34% in satisfactory condition, about 17.67% in fair condition, about 1.82% in poor condition and about 1.50% in serious condition.
- Based on input from the Township staff, this study assumes a budget of \$1.5M for the development of a road improvement / maintenance program for hardtop roads. Based on the sensitivity analysis of the 10-year capital plan, the proposed budget of \$1.5M is calculated to result in a significant theoretical decline in the overall condition of the road network. In order for the Township to adequately sustain their current overall network connection (i.e., 81.4/100), an optimum annual road improvement budget of approximately \$3M would need to be allocated for capital improvements.
- The proposed Ten-Year Capital Plan is shown on a map in Appendix G of the report. Based on the ten-year budget sensitivity analysis, it was determined that the weighted overall condition of all roads in the Township will decline from 81.4 (existing) to 67.3 out of 100 at the end of year ten (i.e., 2033), assuming the improvements will occur in each respective year outlined in the proposed Ten-Year Capital Plan. This analysis considered both the ongoing degradation of existing roads in the Township, in conjunction with the proposed improvements. The total cost to implement the road-specific improvements outlined in the Township's Ten-Year Capital Plan is approximately \$15.3M, or \$1,533,804 per year.
- It is recommended that the Township establish an annual allowance specifically for applying cost-effective routine and/or preventive maintenance treatments on existing hardtop roads.



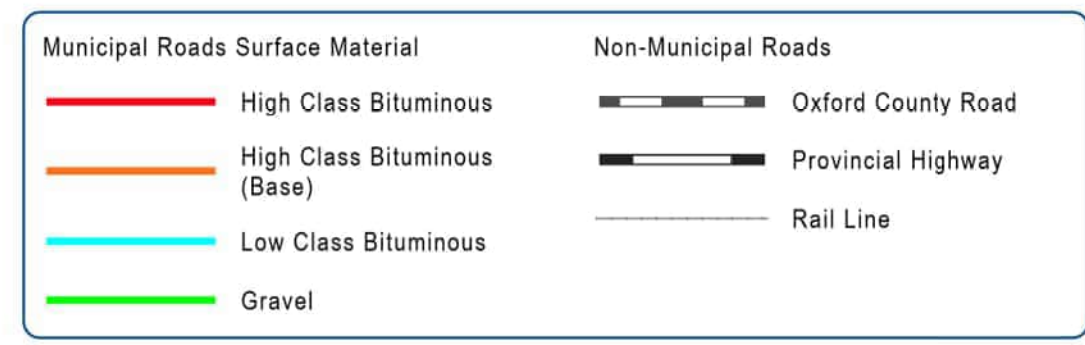
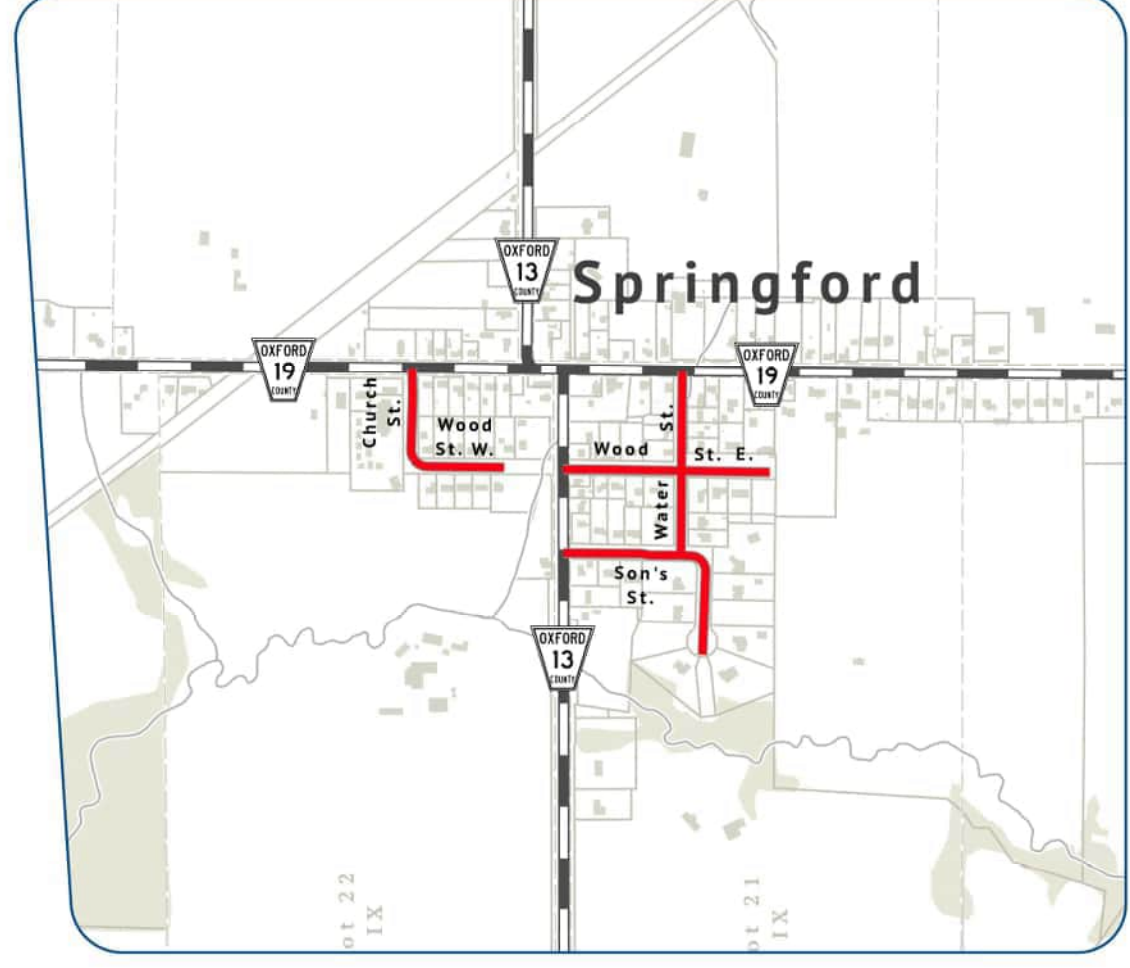
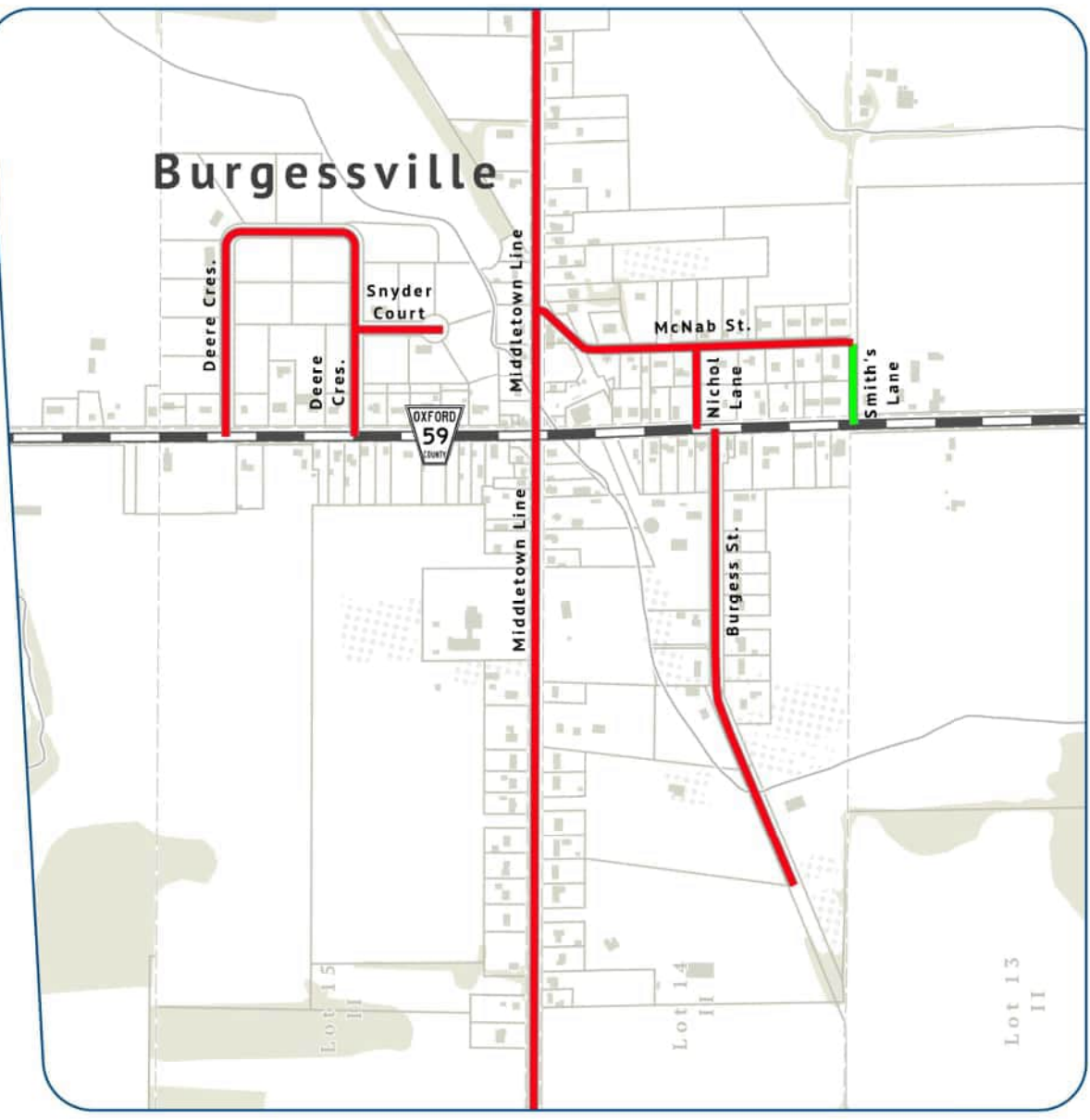
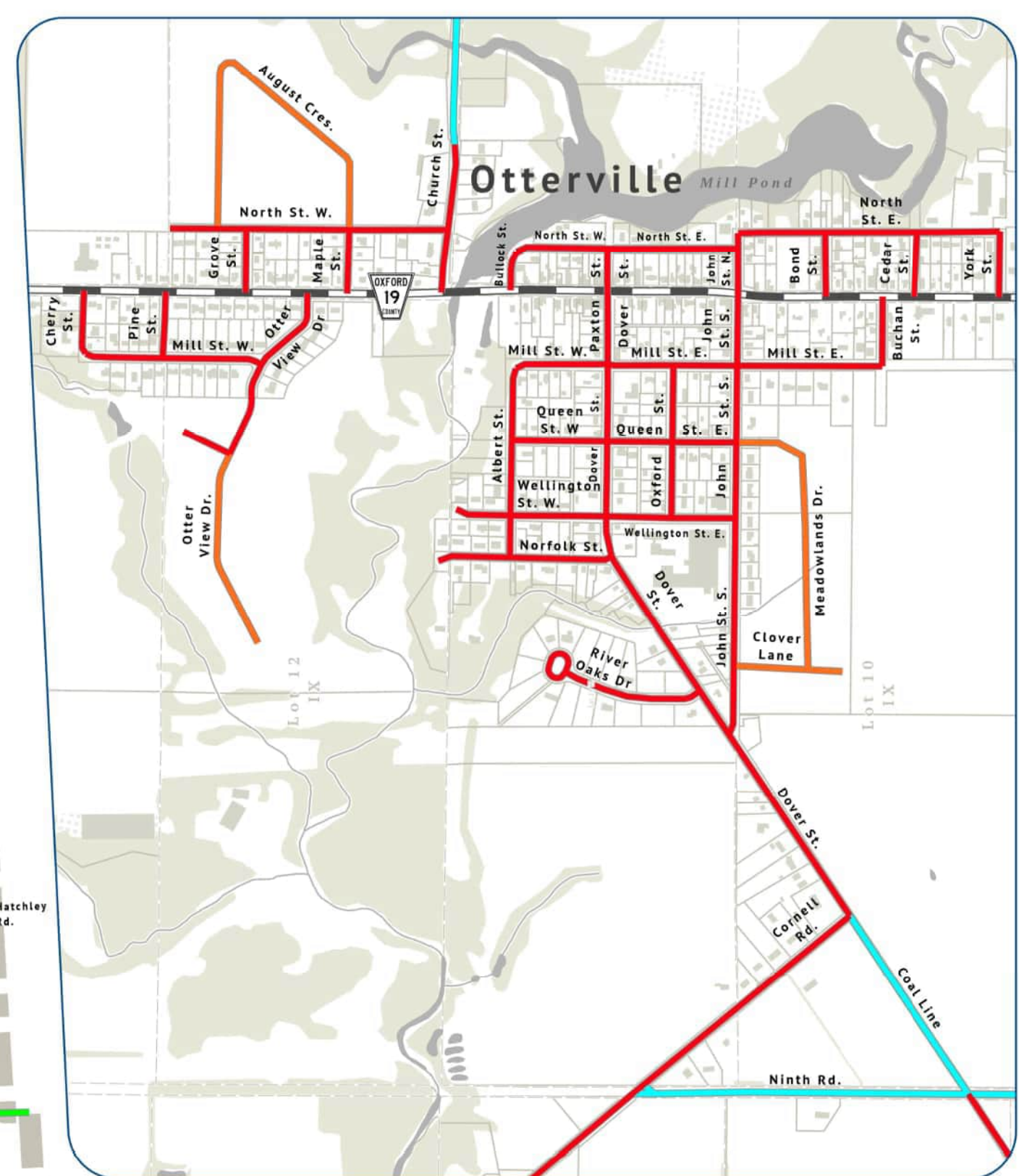
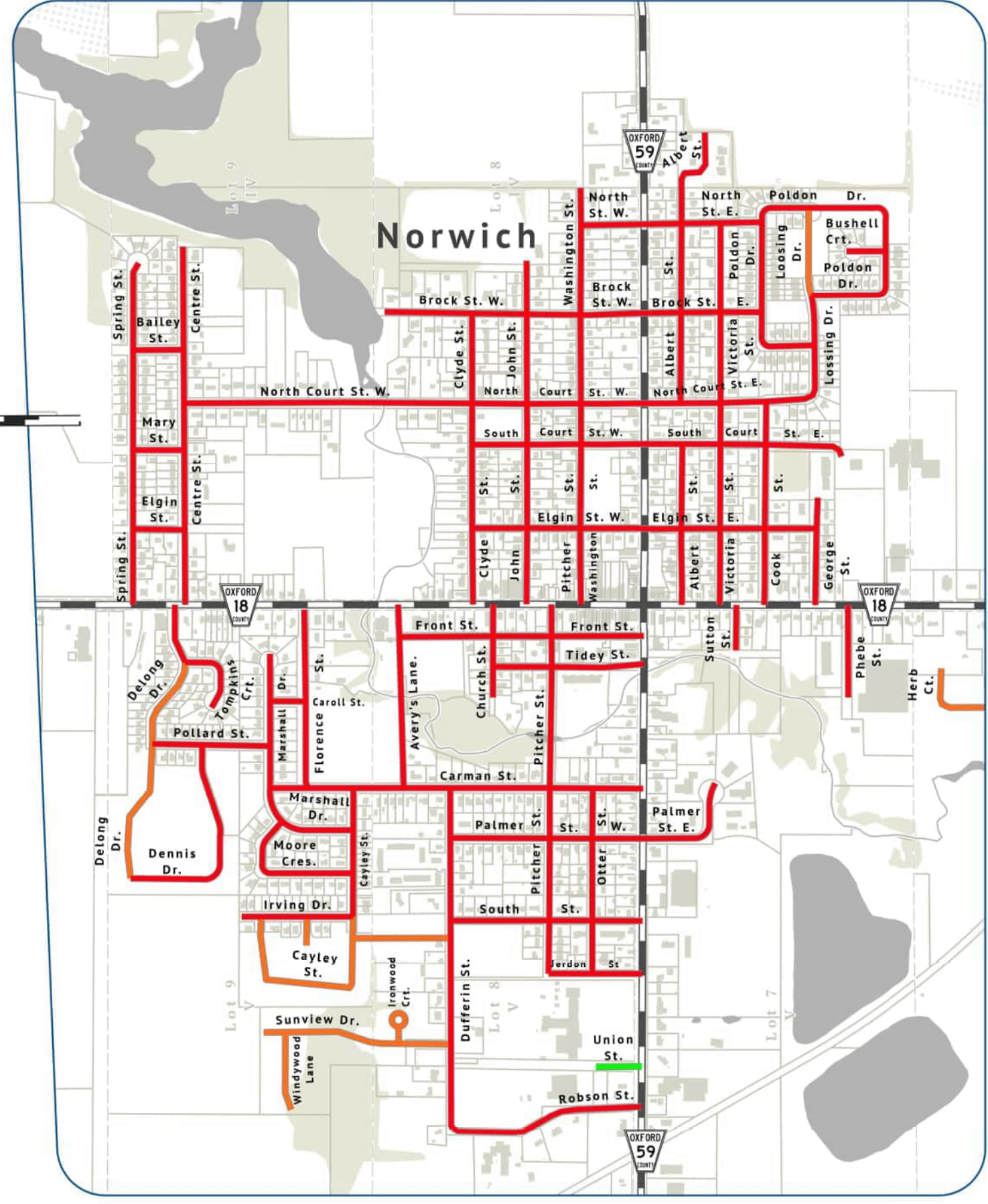
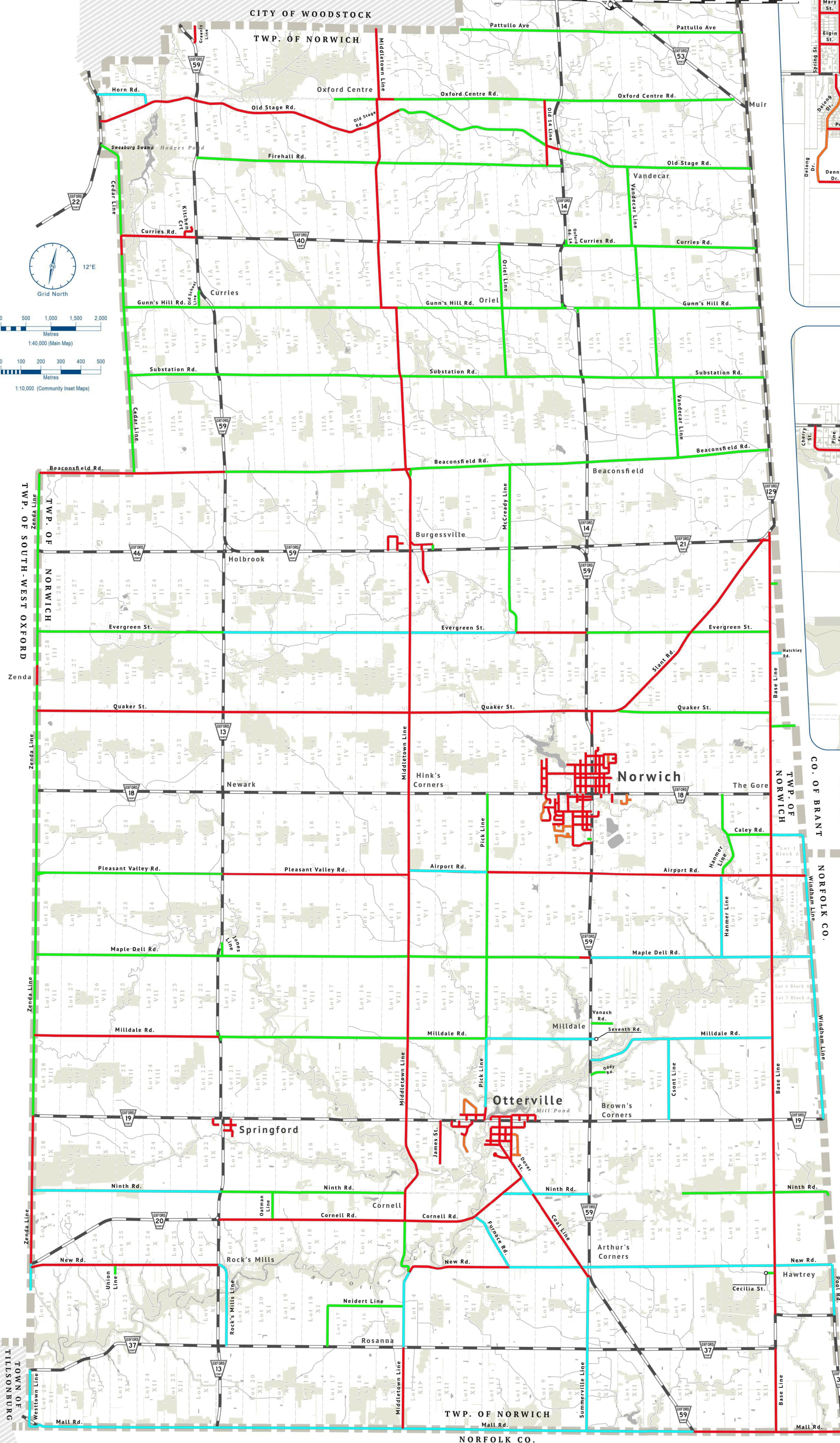
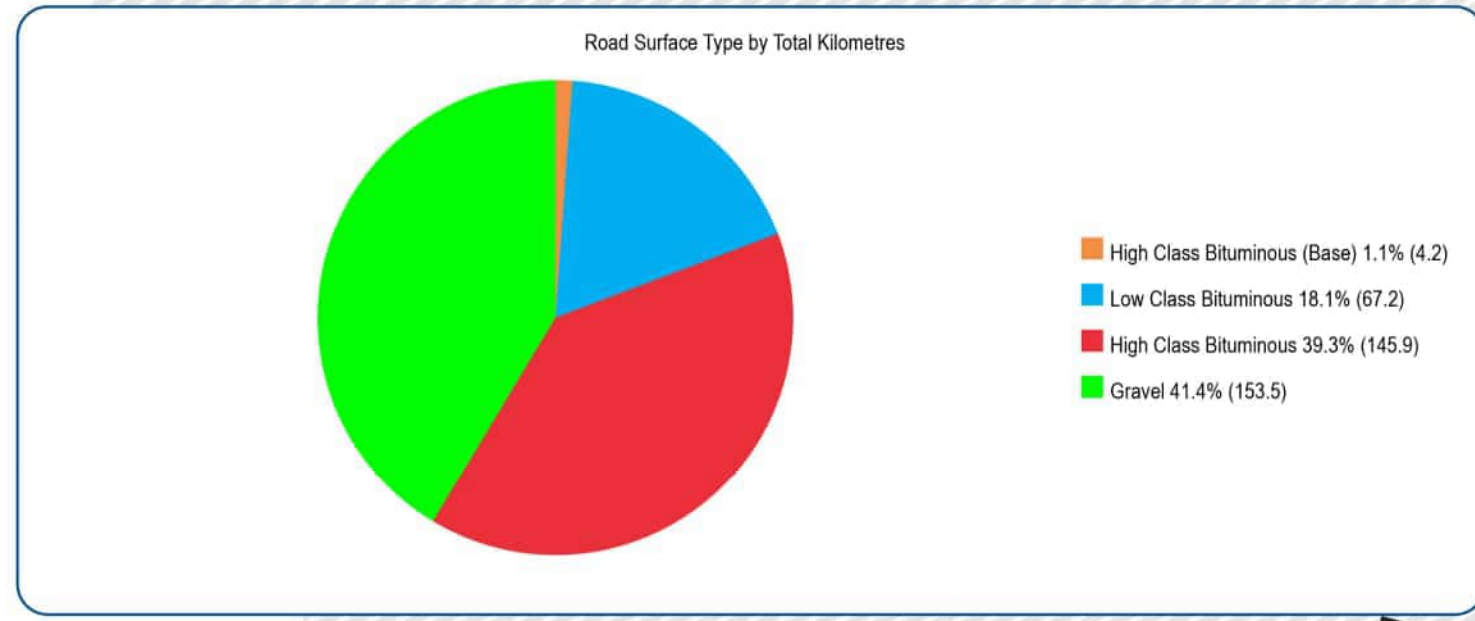
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Appendix A

Road Network Inventory (Map and Table)



Source: North American 1983 CSRS
 Coordinate System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00'00"W
 False Easting: 500,000m
 False Northing: 0m
 Scale Factor: 0.9998

Drawn by: PH
 Checked by: HC
 Client: Township of Norwich
 Project: Roads Needs Study 2023
 Project Number: 20230649
 Date: 2023/10/13

Appendix A - Road Inventory Database (All Roads in the Township)

2023 Evaluation Status	Municipal ID	Asset or PSAB ID	Community	Name	Name From	Name To	Maintenance Agency	Surface Material	Capital Percent	Boundaries	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Maintenance Class	Patrol Frequency (0 Reg 239-02)	Roadside Environment	Curbs/Shoulders Even	Curbs/Shoulders Odd	Shoulder Width (m) Even Side	Shoulder Width (m) Odd Side	Drainage Type Even Side	Drainage Type Odd Side	Posted Speed Limit (km/h)	AADT	AADT AADT Method	AADT Count Year	AADT Count Projected (10 Years)	Projected AADT Range	Truck Traffic Percent	No. Vert. Align. Grade Deficiencies	No. Vert. Align. Sight Deficiencies	No. Horiz. Align. Curve Deficiencies	No. Horiz. Align. Sight Deficiencies	Comments / Notes
Not Evaluated	042A	2357	Norwich (Township)	11th Concession Rd	Base Line	Township Boundary	Municipality Adjacent	Gravel	0	No	502	N/A	N/A	N/A	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	50-199	158	Estimate	N/A	174	50-199	0	0	0	0	
Not Evaluated	042C	2359	Norwich (Township)	13th Concession Rd	Base Line	Township Boundary	Municipality Adjacent	Gravel	0	No	502	N/A	N/A	N/A	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	50-199	158	Estimate	N/A	174	50-199	0	0	0	0	
Evaluated	051A	2738	Norwich (Township)	Airport Rd	Middletown Line	Highway 59	Municipality	Low Class Bituminous	100	No	1573	7.2	8.2	11326	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	No Ditch	No Ditch	80 km/h	1000-1999	1288	Actual Count	2022	1422	1000-1999	8	0	0	0	
Evaluated	051B	2590	Norwich (Township)	Airport Rd	Pick Line	Pickway Ln	Municipality	High Class Bituminous	100	No	2090	7.2	8.2	15048	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	1000-1999	1288	Actual Count	2022	1422	1000-1999	8	0	0	0	
Evaluated	052	2591	Norwich (Township)	Airport Rd	Overlook Cnc	Overlook Cnc	Municipality	High Class Bituminous	100	No	2603	6.6	6.6	23780	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	1000-1999	1247	Actual Count	2022	1377	1000-1999	7	0	0	0	The west end of this segment (by Timberlofts) has some edge breakup
Evaluated	053	2591	Norwich (Township)	Airport Rd	Base Line	Windham Line	Municipality	High Class Bituminous	100	No	690	6.6	7.8	4554	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	636	Actual Count	2022	702	500-999	6	0	0	0	
Evaluated	238A	N/A	Norwich	Albert St	67m N. of North St. E.	End (Cot-de-Sac)	Municipality	High Class Bituminous	100	No	145	8.7	8.7	1262	6	Patrol Not Required	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	0-49	35	Estimate	N/A	38	0-49	0	0	0	0	
Evaluated	238B	56	Norwich	Albert St	North St. E.	67m N. of North St. E.	Municipality	High Class Bituminous	100	No	67	8.7	8.7	583	6	Patrol Not Required	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	50-199	75	Estimate	N/A	82	50-199	0	0	0	0	
Evaluated	238C	55	Norwich	Albert St	North St. E.	Rock St. E.	Municipality	High Class Bituminous	100	No	176	6.8	6.8	1197	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	
Evaluated	238D	57	Norwich	Albert St	North St. E.	North Court St. E.	Municipality	High Class Bituminous	100	No	178	6.6	6.6	1175	5	Once Every 30 Days	Urban	Combination Curb	Combination Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	
Evaluated	238E	59	Norwich	Albert St	South Court St. E.	Eglin St. E.	Municipality	High Class Bituminous	100	No	168	6.8	6.8	1142	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	
Evaluated	238F	58	Norwich	Albert St	Eglin St. E.	Queen St. W.	Municipality	High Class Bituminous	100	No	150	6.8	6.8	1020	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	Storm Sewer Without Ditch	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	
Evaluated	258A	270	Ottawa	Albert St	Mill St. W.	Queen St. W.	Municipality	High Class Bituminous	100	No	133	6.4	6.4	851	5	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	40	Estimate	N/A	44	0-49	0	0	0	0	
Evaluated	258B	272	Ottawa	Albert St	Queen St. W.	Wellington St. W.	Municipality	High Class Bituminous	100	No	137	6.4	6.4	877	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	40	Estimate	N/A	33	0-49	0	0	0	0	
Evaluated	258C	279	Ottawa	Albert St	Wellington St. W.	Horford St.	Municipality	High Class Bituminous	100	No	77	6.4	6.4	493	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	15	Estimate	N/A	16	0-49	0	0	0	0	
Evaluated	242A	61	Norwich	Avery's Lane	Main St. W.	Front St.	Municipality	High Class Bituminous	100	No	65	6.5	6.5	423	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	300	Estimate	N/A	331	200-499	0	0	0	0	Tree trimming is required, stop sign obstructed
Evaluated	242B	60	Norwich	Avery's Lane	Front St.	Carman St.	Municipality	High Class Bituminous	100	No	297	6.1	6.1	1812	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	300	Estimate	N/A	331	200-499	0	0	0	0	
Evaluated	246	2638	Norwich	Bally St	Spring St.	Centre St.	Municipality	High Class Bituminous	100	No	180	8.5	8.5	850	6	Patrol Not Required	Semi-Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	50-199	100	Estimate	N/A	120	50-199	0	0	0	0	
Evaluated	086	66	Norwich (Township)	Base Line	Putnam Rd	Mail Rd	Municipality	High Class Bituminous	100	No	1873	6.7	6.7	11209	4	Once Every 14 Days	Rural	Grass Shoulder	Grass Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	200-499	389	Actual Count	2022	407	200-499	3	0	0	0	
Evaluated	107A	70	Norwich (Township)	Base Line	New Durham Rd	Second Rd	Municipality	High Class Bituminous	100	No	171	7.2	8.2	1231	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107B	71	Norwich (Township)	Base Line	Second Rd	Eleventh Conc Rd	Municipality	High Class Bituminous	100	No	866	7.2	8.2	6235	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107C	72	Norwich (Township)	Base Line	Seventh Conc Rd	Seventh Conc Rd	Municipality	High Class Bituminous	100	No	968	7.2	8.2	6970	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107D	73	Norwich (Township)	Base Line	Evergreen St	Hatchery Rd	Municipality	High Class Bituminous	100	No	428	7.2	8.2	3082	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107E	74	Norwich (Township)	Base Line	Hatchery Rd	Quaker Rd	Municipality	High Class Bituminous	100	No	1188	7.2	8.2	8554	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107F	75	Norwich (Township)	Base Line	13th Concession Rd	13th Concession Rd	Municipality	High Class Bituminous	100	No	1587	7.2	8.2	11087	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	107G	69	Norwich (Township)	Base Line	13th Conc Line	Norwich Rd	Municipality	High Class Bituminous	100	No	1348	7.2	8.2	9706	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	116A	76	Norwich (Township)	Base Line	Norwich Rd	Caley Rd	Municipality	High Class Bituminous	100	No	822	7.2	8.2	5918	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2022	1004	1000-1999	7	0	0	0	
Evaluated	116B	77	Norwich (Township)	Base Line	Caley Rd	Airport Rd	Municipality	High Class Bituminous	100	No	813	7.2	8.2	5854	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	500-1999	1406	Actual Count	2023	1553	1000-1999	10	0	0	0	
Evaluated	116C	78	Norwich (Township)	Base Line	Maple Dell Rd	Maple Dell Rd	Municipality	High Class Bituminous	100	No	1613	7.2	8.2	11760	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	909	Actual Count	2023	1553	1000-1999	10	0	0	0	
Evaluated	116D	80	Norwich (Township)	Base Line	Maple Dell Rd	Midvale Rd	Municipality	High Class Bituminous	100	No	1618	7.2	8.2	11850	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	928	Actual Count	2023	1025	1000-1999	6	0	0	0	
Evaluated	116E	68	Norwich (Township)	Base Line	Midvale Rd	Ottawa Rd (D'Orford Rd. 19)	Municipality	High Class Bituminous	100	No	1641	7.2	8.2	11815	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	500-999	928	Actual Count	2023	1025	1000-1999	6	0	0	0	
Evaluated	133A	79	Norwich (Township)	Base Line	North Rd	North Rd	Municipality	High Class Bituminous	100	No	1453	7.2	8.2	9735	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	500-999	1317	Actual Count	2023	1377	1000-1999	7	0	0	0	Breakup is present throughout the road segment
Evaluated	133B	67	Norwich (Township)	Base Line	North Rd	New Rd	Municipality	High Class Bituminous	100	No	1468	6.8	6.8	9982	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	500-1999	1111	Actual Count	2023	1277	1000-1999	10	0	0	0	
Evaluated	138A	65	Norwich (Township)	Base Line	New Rd	Cecilia St	Municipality	High Class Bituminous	100	No	155	6.7	7.7	1039	6	Patrol Not Required	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	50 km/h	50-199	128	Actual Count	2023	203	200-499	4	0	0	0	
Evaluated	138B	66	Norwich (Township)	Base Line	Cecilia St	Nelson St	Municipality	High Class Bituminous	100	No	963	6.7	6.7	6429	6	Patrol Not Required	Rural	Grass Shoulder	Grass Shoulder	0.50	0.50	Open Ditch	Open Ditch	50 km/h	50-199	184	Actual Count	2023	203	200-499	4	0	0	0	
Evaluated	138C	64	Norwich (Township)	Base Line	Nelson St	Beaconsfield Rd	Municipality	High Class Bituminous	100	No	1196	6.7	7.7	8084	6	Patrol Not Required	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	50-199	100	Actual Count	2023	203	200-499	4	0	0	0	
Evaluated	031A	83	Norwich (Township)	Beaconsfield Rd	Zenda Line	Trillium Line																													

Appendix A - Road Inventory Database (All Roads in the Township)

2023 Evaluation Status	Municipal ID	Asset or PSAB ID	Community	Name	Name From	Name To	Maintenance Agency	Surface Material	Capital Maintenance Percent	Boundaries	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Maintenance Class	Patrol Frequency (O Reg 239-02)	Roadside Environment	Curbs/Shoulders Even	Curbs/Shoulders Odd	Shoulder Width (m) Even Side	Shoulder Width (m) Odd Side	Drainage Type Even Side	Drainage Type Odd Side	Posted Speed Limit (km/h)	AADT Range	AADT AADT	AADT AADT Method	AADT Count Year	AADT Count Projected (10 Years)	Projected AADT Range	Truck Traffic Percent	No. Vert. Align. Deficiencies	No. Vert. Sight Deficiencies	No. Horiz. Align. Curve Deficiencies	No. Horiz. Sight Deficiencies	Comments / Notes			
Evaluated	0388	2583	Norwich (Township)	Evergreen St.	McCreedy Line	Orford Rd. 59	Municipality	High Class Bituminous	100	No	1447	6.4	6.4	9609	4	Once Every 14 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	80 km/h	200-499	200	Actual Count	2023	220	200-499	0	0	0	0					
Not Evaluated	0315	2586	Norwich (Township)	Evergreen St.	Evergreen St.	Highway 59	Municipality	Gravel	100	No	2087	6.4	6.4	13448	6	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	61	Actual Count	2022	61	50-199	13	0	0	0	0				
Not Evaluated	0417	2585	Norwich (Township)	Evergreen St.	Slant Rd.	Base Line	Municipality	Gravel	100	No	1586	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	61	Actual Count	2022	67	50-199	13	0	0	0	0				
Not Evaluated	0118	176	Norwich (Township)	Farah Rd.	Highway 59	Middleton Line	Municipality	Gravel	100	No	3638	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	32	Actual Count	2023	35	0-49	8	0	0	0	0				
Not Evaluated	0184	175	Norwich (Township)	Farah Rd.	Old 14 Rd.	Middleton Line	Municipality	Gravel	100	No	3397	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	37	Actual Count	2023	40	0-49	11	0	0	0	0				
Not Evaluated	0198	177	Norwich (Township)	Farah Rd.	Old 14 Line	Orford Rd. 14	Municipality	Gravel	100	No	296	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	37	Actual Count	2023	40	0-49	11	0	0	0	0				
Evaluated	2254	179	Norwich	Florence St.	Main St. W.	Carroll St.	Municipality	High Class Bituminous	100	No	184	6.8	6.8	1251	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	316	Estimate	N/A	349	200-499	0	0	0	0	0	Township noted that an overlay was completed on this segment due to heavy alligator cracking			
Evaluated	2258	178	Norwich	Florence St.	Carroll St.	Carnar St.	Municipality	High Class Bituminous	100	No	170	6.6	6.6	1122	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	316	Estimate	N/A	349	200-499	0	0	0	0	0	0	1 isolated patch of severe alligator cracking		
Evaluated	2124	180	Norwich	Frank St.	Avery's Lane	Church St.	Municipality	High Class Bituminous	100	No	185	6.4	6.4	1184	4	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	50-199	100	Estimate	N/A	110	50-199	0	0	0	0	0	0			
Evaluated	2328	182	Norwich	Frank St.	Church St.	Picher St.	Municipality	High Class Bituminous	100	No	115	6.2	6.2	713	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	100	Estimate	N/A	110	50-199	0	0	0	0	0	0			
Evaluated	2132	181	Norwich	Frank St.	Picher St.	Elmer St. S.	Municipality	High Class Bituminous	100	No	182	7.2	7.2	1330	5	Once Every 30 Days	Rural	Asphalt Shoulder	Grass Shoulder	0.50	0.50	Storm Sewer	Storm Sewer	50 km/h	200-499	315	Estimate	N/A	386	200-499	0	0	0	0	0	0			
Evaluated	2111	2739	Norwich (Township)	Furnace Rd.	Cornell Rd.	New Rd.	Municipality	Low Class Bituminous	100	No	1243	6.95	6.95	8639	4	Once Every 14 Days	Rural	Grass Shoulder	Grass Shoulder	0.50	0.50	No Ditch	No Ditch	80 km/h	200-499	256	Actual Count	2023	282	200-499	5	0	0	0	0	0			
Evaluated	211A	185	Norwich	George St.	Elgin St. E.	End	Municipality	High Class Bituminous	100	No	61	7.8	7.8	476	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	25	Estimate	N/A	27	0-49	0	0	0	0	0	0			
Evaluated	211B	184	Norwich	George St.	Elgin St. E.	Main St. E.	Municipality	High Class Bituminous	100	No	151	7.6	7.6	1148	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	150	Estimate	N/A	165	50-199	0	0	0	0	0	0			
Evaluated	0988	186	Norwich (Township)	Greenley Line	Patullo Ave	Highway 59	Municipality	High Class Bituminous	100	No	363	7.2	7.2	2614	5	Once Every 30 Days	Semi-Urban	Mountable Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	315	Actual Count	2023	347	200-499	8	0	0	0	0	0			
Evaluated	2508	2308	Ottawa	Grove St.	North St. W.	Main St. W.	Municipality	High Class Bituminous	100	No	117	6.5	6.5	761	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	55	Estimate	N/A	60	50-199	0	0	0	0	0	0			
Not Evaluated	202A	180	Norwich (Township)	Gum's Hill Rd.	Center Line	Old School Line	Municipality	Gravel	100	No	1532	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	60	Actual Count	2022	66	50-199	10	0	0	0	0	0			
Not Evaluated	020B	190	Norwich (Township)	Gum's Hill Rd.	Old School Line	Highway 59	Municipality	Gravel	100	No	2069	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	60	Actual Count	2022	66	50-199	10	0	0	0	0	0			
Not Evaluated	023	191	Norwich (Township)	Gum's Hill Rd.	Highway 59	Middleton Line	Municipality	Gravel	100	No	3352	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	148	Actual Count	2022	163	50-199	7	0	0	0	0	0			
Evaluated	004A	N/A	Norwich (Township)	Gum's Hill Rd.	30m W. of Middleton Line	30m E. of Middleton Line	Municipality	High Class Bituminous	100	No	356	7.1	9.1	2528	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	1.00	1.00	Open Ditch	Open Ditch	80 km/h	50-199	58	Actual Count	2022	64	50-199	8	0	0	0	0	0	0		
Not Evaluated	034B	193	Norwich (Township)	Gum's Hill Rd.	Middleton Line	Old Line	Municipality	Gravel	100	No	2089	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	58	Actual Count	2022	64	50-199	8	0	0	0	0	0	0		
Not Evaluated	024C	194	Norwich (Township)	Gum's Hill Rd.	Old Line	Orford Rd. 14	Municipality	Gravel	100	No	1298	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	58	Actual Count	2022	64	50-199	8	0	0	0	0	0	0		
Not Evaluated	025A	198	Norwich (Township)	Gum's Hill Rd.	Orford Rd. 14	Vanderlee Line	Municipality	Gravel	100	No	1311	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	61	Actual Count	2022	67	50-199	7	0	0	0	0	0	0		
Not Evaluated	025B	199	Norwich (Township)	Gum's Hill Rd.	Vanderlee Line	Vanderlee Line	Municipality	Gravel	100	No	1388	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	61	Actual Count	2022	67	50-199	7	0	0	0	0	0	0		
Not Evaluated	025C	188	Norwich (Township)	Gum's Hill Rd.	Vanderlee Line	Muir Line	Municipality	Gravel	100	No	2130	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	61	Actual Count	2022	67	50-199	7	0	0	0	0	0	0		
Not Evaluated	111A	202	Norwich (Township)	Hammer Line	Norwich Rd.	Caley Rd.	Municipality	Gravel	100	No	856	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	51	Actual Count	2023	56	50-199	10	0	0	0	0	0	0		
Not Evaluated	111B	201	Norwich (Township)	Hammer Line	Caley Rd.	Airport Rd.	Municipality	Gravel	100	No	906	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	51	Actual Count	2023	56	50-199	10	0	0	0	0	0	0		
Not Evaluated	115	200	Norwich (Township)	Hammer Line	Hammer Rd.	Hammer Rd.	Municipality	Low Class Bituminous	100	No	1643	N/A	N/A	N/A	4	Once Every 14 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	203	Estimate	N/A	203	50-199	0	0	0	0	0	0			
Evaluated	042B	2058	Norwich (Township)	Hatchery Rd.	Base Line	231m E. of Base Line	Municipality/Adjacent	Low Class Bituminous	0	Yes	221	6.8	7.8	1571	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	50-199	158	Estimate	N/A	174	50-199	0	0	0	0	0	0	0		
Evaluated	008	203	Norwich (Township)	Horn Rd.	Sewaburg Rd. (Orford Rd. 12)	Old Stage Rd.	Municipality	Low Class Bituminous	100	No	1167	6.8	6.8	798	4	Once Every 14 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	80 km/h	50-199	136	Actual Count	2022	150	50-199	4	0	0	0	0	0	0	FiberMat and Surface Treatment to be installed this year	
Evaluated	2613	206	Norwich (Township)	Jackman Dr.	Orford Rd. 19	Orford Rd. 19	Municipality	High Class Bituminous	100	No	86	6.6	6.6	560	5	Once Every 30 Days	Semi-Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	350	Estimate	N/A	355	200-499	0	0	0	0	0	0	0		
Evaluated	264	2058	Norwich (Township)	James St.	Otterville Rd. (Orford Rd. 12)	End	Municipality	High Class Bituminous	100	No	882	6.2	6.2	5468	5	Once Every 30 Days	Semi-Urban	No Shoulder	No Shoulder	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	350	Estimate	N/A	276	200-499	0	0	0	0	0	0	0	0	
Evaluated	218A	207	Norwich	Jardon St.	Picher St.	Old Stage Rd.	Municipality	High Class Bituminous	100	No	87	7.5	7.5	653	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Non-Applicable	Storm Sewer	50 km/h	200-499	350	Estimate	N/A	386	200-499	0	0	0	0	0	0	0	0	
Evaluated	218B	206	Norwich	Jardon St.	Picher St.	Old Stage Rd.	Municipality	High Class Bituminous	100	No	99	7.5	7.5	743	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	350	Estimate	N/A	386	200-499	0	0	0	0	0	0	0	0	
Evaluated	232A	213	Norwich	John St.	John St. W.	John St.	Municipality	High Class Bituminous	100	No	269	6.6	6.6	2009	4	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	350	Estimate	N/A	386	200-499	0	0	0	0	0	0	0	0	
Evaluated	232B	210	Norwich	John St.	Brook St. W.	North Court St. W.	Municipality	High Class Bituminous	100	No	177	6.7	6.7	1186	6	Patrol Not Required	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	20 km/h	200-499	350	Estimate	N/A	386	200									

Appendix A - Road Inventory Database (All Roads in the Township)

2023 Evaluation Status	Municipal ID	Asset or PSAB ID	Community	Name	Name From	Name To	Maintenance Agency	Surface Material	Capital Maintenance Percent	Boundaries	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Maintenance Class	Patrol Frequency (0 Reg 239-02)	Roadside Environment	Curbs/Shoulders Even	Curbs/Shoulders Odd	Shoulder Width (m) Even Side	Shoulder Width (m) Odd Side	Drainage Type Even Side	Drainage Type Odd Side	Posted Speed Limit (km/h)	AADT Range	AADT AADT	AADT Method	AADT Count Year	AADT Count Projected (10 Years)	Projected AADT Range	Truck Traffic Percent	No. Vert. Align. Grade Deficiencies	No. Vert. Align. Sight Deficiencies	No. Horiz. Align. Curve Deficiencies	No. Horiz. Align. Sight Deficiencies	Comments / Notes
Evaluated	2048	303	Ottewille	Norfolk St.	Albert St.	Dover St.	Municipality	High Class Bituminous	100	No	187	6.2	6.2	1159	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	75	Estimate	N/A	82	50-199	0	0	0	0		
Evaluated	2048	307	Norwich	North Court St. E.	Albert St.	Edison St.	Municipality	High Class Bituminous	100	No	71	7	7	497	6	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	2048	305	Norwich	North Court St. E.	Albert St.	Victoria St.	Municipality	High Class Bituminous	100	No	79	7	7	551	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	204C	306	Norwich	North Court St. E.	Victoria St.	Cook St.	Municipality	High Class Bituminous	100	No	90	7.9	7.9	713	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	204D	310	Norwich	North Court St. E.	Cook St.	Howe St.	Municipality	High Class Bituminous	100	No	193	8.6	8.6	1660	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	203A	311	Norwich	North Court St. W.	Centre St.	Clyde St.	Municipality	High Class Bituminous	100	No	569	6.7	6.7	3812	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer	Storm Sewer	20 km/h	200-499	300	Estimate	N/A	430	200-499	0	0	0	0		
Evaluated	203B	314	Norwich	North Court St. W.	Clyde St.	John St.	Municipality	High Class Bituminous	100	No	108	6.7	6.7	724	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	20 km/h	200-499	300	Estimate	N/A	430	200-499	0	0	0	0		
Evaluated	203C	313	Norwich	North Court St. W.	John St.	Washington St.	Municipality	High Class Bituminous	100	No	107	6.7	6.7	717	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	20 km/h	200-499	300	Estimate	N/A	430	200-499	0	0	0	0		
Evaluated	2038	312	Norwich	North Court St. W.	Washington St.	Stover St. N.	Municipality	High Class Bituminous	100	No	126	6.2	6.2	793	4	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	300	Estimate	N/A	430	200-499	0	0	0	0		
Evaluated	2358	323	Norwich	North St. E.	Stover St. N.	Albert St.	Municipality	High Class Bituminous	100	No	74	6.7	6.7	496	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	2358	322	Norwich	North St. E.	Albert St.	Victoria St.	Municipality	High Class Bituminous	100	No	77	6.8	6.8	524	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Adjacent Road, Storm Sewer	Adjacent Road, Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	2358	324	Norwich	North St. E.	Victoria St.	Edison Dr.	Municipality	High Class Bituminous	100	No	82	6.6	6.6	703	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	300	Estimate	N/A	311	200-499	0	0	0	0		
Evaluated	254F	315	Ottewille	North St. E.	John St. N.	John St. N.	Municipality	High Class Bituminous	100	No	238	6.5	6.5	1547	5	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	150	Estimate	N/A	165	50-199	0	0	0	0		
Evaluated	254F	316	Ottewille	North St. E.	John St. N.	Bond St.	Municipality	High Class Bituminous	100	No	159	6.2	6.2	886	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	140	Estimate	N/A	154	50-199	0	0	0	0		
Evaluated	254F	319	Ottewille	North St. E.	Bond St.	Cedar St.	Municipality	High Class Bituminous	100	No	159	6.5	6.5	1031	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	140	Estimate	N/A	154	50-199	0	0	0	0		
Evaluated	254F	318	Ottewille	North St. E.	Cedar St.	York St.	Municipality	High Class Bituminous	100	No	152	6.3	6.3	958	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	140	Estimate	N/A	154	50-199	0	0	0	0		
Evaluated	2358	325	Norwich	North St. W.	Washington St.	Stover St. N.	Municipality	High Class Bituminous	100	No	125	6.6	6.6	825	6	Patrol Not Required	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	50-199	100	Estimate	N/A	110	50-199	0	0	0	0		
Evaluated	250A	2311	Ottewille	North St. W.	Grove St.	End	Municipality	High Class Bituminous	100	No	139	6.4	6.4	890	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	100	Estimate	N/A	55	50-199	0	0	0	0		
Evaluated	250A	2309	Ottewille	North St. W.	Grove St.	Maple St.	Municipality	High Class Bituminous	100	No	188	6.4	6.4	1203	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	50-199	80	Estimate	N/A	44	50-199	0	0	0	0		
Evaluated	250A	2310	Ottewille	North St. W.	Church St.	Maple St.	Municipality	High Class Bituminous	100	No	180	6.9	6.9	1242	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	50-199	80	Estimate	N/A	66	50-199	0	0	0	0		
Evaluated	2538	320	Ottewille	North St. W.	Patton St.	Buffalo St.	Municipality	High Class Bituminous	100	No	168	6.4	6.4	1075	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	150	Estimate	N/A	165	50-199	0	0	0	0		
Not Evaluated	144	326	Norwich (Township)	North Rd.	Oakton Rd.	Oakton Rd.	Municipality	Gravel	100	No	554	N/A	N/A	N/A	5	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	0-49	7	Actual Count	2023	7	0-49	0	0	0	0		
Not Evaluated	062C	330	Norwich (Township)	Oddy Rd.	E. of Highway 59	End	Municipality	Gravel	100	No	315	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	137	Actual Count	2023	151	50-199	8	0	0	0		
Evaluated	092A	331	Norwich (Township)	Old 14 Line	Old Stage Rd.	Old Stage Rd.	Municipality	High Class Bituminous	100	No	910	4.3	4.3	3913	6	Patrol Not Required	Rural	No Shoulder	No Shoulder	N/A	N/A	No Ditch	No Ditch	80 km/h	0-49	19	Estimate	N/A	20	0-49	0	0	0	0		
Evaluated	092B	332	Norwich (Township)	Old 14 Line	Old Stage Rd.	Farewell Rd.	Municipality	High Class Bituminous	100	No	608	4.3	4.3	2748	6	Patrol Not Required	Rural	No Shoulder	No Shoulder	N/A	N/A	No Ditch	No Ditch	80 km/h	0-49	19	Estimate	N/A	20	0-49	0	0	0	0		
Evaluated	092C	333	Norwich (Township)	Old Highway # 1 Rd	Old Highway # 1 Rd	CPB	Municipality	High Class Bituminous	100	No	546	6.2	6.2	3385	6	Patrol Not Required	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	80 km/h	0-49	80	Estimate	N/A	33	0-49	0	0	0	0		
Not Evaluated	143	333	Norwich (Township)	Old School Line	Gunn's Hill Rd.	Gunn's Hill Rd.	Municipality	Gravel	100	No	344	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	87	Estimate	N/A	107	50-199	0	0	0	0		
Evaluated	009	334	Norwich (Township)	Old Stage Rd.	Sewenburg Rd. (Oford Rd 12)	Horn Rd.	Municipality	High Class Bituminous	100	No	988	7	8.6	6916	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.80	0.80	Open Ditch	Open Ditch	80 km/h	1000-1999	1349	Actual Count	2022	1490	1000-1999	10	0	0	0	0	
Evaluated	012	337	Norwich (Township)	Highway 59	Highway 59	Highway 59	Municipality	High Class Bituminous	100	No	1023	7.2	7.2	7407	6	Patrol Not Required	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	1000-1999	1644	Actual Count	2022	1644	1000-1999	10	0	0	0	0	
Evaluated	01A	2573	Norwich (Township)	Old Stage Rd.	320m W. of Middletown Line	Middletown Line	Municipality	High Class Bituminous	100	No	321	7.2	7.2	2311	4	Once Every 14 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer Without Ditch	Storm Sewer Without Ditch	50 km/h	200-499	451	Actual Count	2022	498	200-499	4	0	0	0	0	
Evaluated	01B	2573	Norwich (Township)	Old Stage Rd.	Highway 59	320m W. of Middletown Line	Municipality	High Class Bituminous	100	No	3481	7.4	7.4	25759	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	200-499	451	Actual Count	2022	498	200-499	4	0	0	0	0	
Not Evaluated	018	2578	Norwich (Township)	Old Stage Rd.	320m W. of Middletown Line	320m W. of Middletown Line	Municipality	High Class Bituminous	100	No	348	6.5	6.5	2178	4	Once Every 14 Days	Rural	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	83	Actual Count	2023	96	50-199	11	0	0	0	0	
Not Evaluated	016B	2534	Norwich (Township)	Old Stage Rd.	480m E. of Middletown Line	Old 14 Line	Municipality	High Class Bituminous	100	No	3156	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	83	Actual Count	2023	91	50-199	11	0	0	0	0	
Not Evaluated	016C	338	Norwich (Township)	Old Stage Rd.	Old 14 Line	Oldford Rd. 14	Municipality	High Class Bituminous	100	No	271	7	8	1897	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	50-199	86	Estimate	N/A	94	50-199	0	0	0	0		
Not Evaluated	002A	2575	Norwich (Township)	Old Stage Rd.	Oldford Rd. 14	Vandercor Line	Municipality	Gravel	100	No	1424	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	100	Estimate	N/A	71	50-199	8	0	0	0		
Not Evaluated	002B	2574	Norwich (Township)	Old Stage Rd.	Vandercor Line	Maur Line	Municipality	Gravel	100	No	1475	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	50-199	100	Estimate	N/A	71	50-199	8	0	0	0		
Not Evaluated	097A	341	Norwich (Township)	Oriet Line	Curries Rd.	Gunn's Hill Rd.	Municipality	Gravel	100	No	1292	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	No Ditch	No Ditch	80 km/h	0-49	18	Actual Count	2023	19	0-49	28	0	0	0	0	
Not Evaluated	097B	342	Norwich (Township)	Oriet Line	Gunn's Hill Rd.	Substation Rd.	Municipality</																													

Appendix A - Road Inventory Database (All Roads in the Township)

2023 Evaluation Status	Municipal ID	Asset or PSAB ID	Community	Name	Name From	Name To	Maintenance Agency	Surface Material	Capital Maintenance Percent	Boundary Road	Road Length (m)	Road Width (m)	Platform Width (m)	Surface Area (m ²)	Maintenance Class	Patrol Frequency (O Reg 239-02)	Roadside Environment	Curb/Shoulders Even	Curb/Shoulders Odd	Shoulder Width (m) Even Side	Shoulder Width (m) Odd Side	Drainage Type Even Side	Drainage Type Odd Side	Posted Speed Limit (km/h)	AAADT Range	AAADT	AAADT Method	AAADT Count Year	AAADT Count Projected (10 Years)	Projected AAADT Range	Truck Traffic Percent	No. Vert. Align. Grade Deficiencies	No. Vert. Align. Sight Deficiencies	No. Horiz. Align. Curve Deficiencies	No. Horiz. Align. Sight Deficiencies	Comments / Notes			
Evaluated	245	2563	Norwich	Union St.	Shover St. S.	End	Municipality	Gravel	100	No	91	6	8	N/A	6	Patrol Not Required	Semi-Urban	Granular A Shoulder	Granular A Shoulder	1.00	1	Open Ditch	Open Ditch	50 km/h	0-49	30	Estimate	N/A	11	0-49	0	0	0	0					
Evaluated	110	2616	Norwich (Township)	Lobby Line	Quaker St.	Highway 59	Municipality	High Class Bituminous	100	No	456	7	8	3152	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	200-499	400	Estimate	N/A	441	200-499	0	0	0	0					
Not Evaluated	291	N/A	Otterville	Van Parys Dr.	Otter View Dr.	End (Cul-de-Sac)	Municipality	High Class Bituminous	100	No	84	8.2	8.2	771	6	Patrol Not Required	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	0-49	20	Estimate	N/A	22	0-49	0	0	0	0					
Not Evaluated	062A	427	Norwich (Township)	Vanash Rd.	E. of Highway 59	End	Municipality	Gravel	100	No	440	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	137	Actual Count	2023	151	50-199	8	0	0	0	0				
Not Evaluated	095A	426	Norwich (Township)	Vandecar Line	Old Stage Rd.	Currie Rd.	Municipality	Gravel	100	No	1584	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	9	Actual Count	2023	9	0-49	12	0	0	0	0				
Not Evaluated	095B	428	Norwich (Township)	Vandecar Line	Currie Rd.	Gunn's Hill Rd.	Municipality	Gravel	100	No	1250	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	9	Actual Count	2023	9	0-49	12	0	0	0	0				
Not Evaluated	100A	431	Norwich (Township)	Vandecar Line	Gunn's Hill Rd.	Substation Rd.	Municipality	Gravel	100	No	1389	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	24	Actual Count	2023	26	0-49	4	0	0	0	0				
Not Evaluated	100B	430	Norwich (Township)	Vandecar Line	Substation Rd.	Beaconsfield Rd.	Municipality	Gravel	100	No	1601	N/A	N/A	N/A	6	Patrol Not Required	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	0-49	34	Actual Count	2023	26	0-49	4	0	0	0	0				
Evaluated	235A.1	433	Norwich	Victoria St.	North St. E.	Brook St. E.	Municipality	High Class Bituminous	100	No	177	6	6	1052	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0				
Evaluated	235A.2	432	Norwich	Victoria St.	Brook St. E.	North Court St. E.	Municipality	High Class Bituminous	100	No	179	6.8	6.8	1217	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0				
Evaluated	240A	436	Norwich	Victoria St.	North Court St. E.	South Court St. E.	Municipality	High Class Bituminous	100	No	81	6.7	6.7	543	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Adjacent Road: Storm Sewer	Adjacent Road: Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	240B	434	Norwich	Victoria St.	South Court St. E.	Eglin St. E.	Municipality	High Class Bituminous	100	No	187	6.7	6.7	1119	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	240C	435	Norwich	Victoria St.	South Court St. E.	Eglin St. E.	Municipality	High Class Bituminous	100	No	150	6.7	6.7	1005	5	Once Every 30 Days	Urban	Mountable Curb	Mountable Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	234A	442	Norwich	Washington St.	North St. W.	Brook St. W.	Municipality	High Class Bituminous	100	No	178	6.6	6.6	1175	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road: Storm Sewer	Adjacent Road: Storm Sewer	50 km/h	50-199	100	Estimate	N/A	110	50-199	0	0	0	0	0	0			
Evaluated	234B	438	Norwich	Washington St.	North St. W.	End	Municipality	High Class Bituminous	100	No	74	6.6	6.6	488	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	10	Estimate	N/A	11	0-49	0	0	0	0	0	0			
Evaluated	236A	437	Norwich	Washington St.	Brook St. W.	North Court St. W.	Municipality	High Class Bituminous	100	No	175	6.6	6.6	1155	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road: Storm Sewer	Adjacent Road: Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	236B	443	Norwich	Washington St.	North Court St. W.	South Court St. W.	Municipality	High Class Bituminous	100	No	80	6.6	6.6	528	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Adjacent Road: Storm Sewer	Adjacent Road: Storm Sewer	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	237A	440	Norwich	Washington St.	Eglin St. W.	Main St. W.	Municipality	High Class Bituminous	100	No	150	6.7	6.7	1005	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	Storm Sewer	Storm Sewer	50 km/h	200-499	300	Estimate	N/A	331	200-499	0	0	0	0	0	0			
Evaluated	237B	439	Norwich	Washington St.	South Court St. W.	Wood St.	Municipality	High Class Bituminous	100	No	166	8	8	1328	5	Once Every 30 Days	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	200-499	250	Estimate	N/A	276	200-499	0	0	0	0	0	0			
Evaluated	2770.1	444	Springford	Water St.	Main St.	Wood St.	Municipality	High Class Bituminous	100	No	132	6.2	6.2	818	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	40	Estimate	N/A	44	0-49	0	0	0	0	0				
Evaluated	2770.2	445	Springford	Water St.	Wood St.	Son's St.	Municipality	High Class Bituminous	100	No	111	6.3	6.3	699	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	18	Estimate	N/A	19	0-49	0	0	0	0	0	0			
Evaluated	259C	446	Otterville	Wellington St. E.	Dover St.	John St. S.	Municipality	High Class Bituminous	100	No	236	6.4	6.4	1530	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	75	Estimate	N/A	82	50-199	0	0	0	0	0	0			
Evaluated	259A	447	Otterville	Wellington St. W.	Albert St.	End	Municipality	High Class Bituminous	100	No	101	6.3	6.3	636	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	35	Estimate	N/A	38	0-49	0	0	0	0	0	0			
Evaluated	259B	448	Otterville	Wellington St. W.	Albert St.	Dover St.	Municipality	High Class Bituminous	100	No	175	6.2	6.2	1085	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	Open Ditch	50 km/h	50-199	75	Estimate	N/A	82	50-199	0	0	0	0	0	0			
Evaluated	140A	449	Norwich (Township)	Westtown Line	Patterson Rd.	Ontario Rd. S1	Municipality	Low Class Bituminous	50	Yes	1013	6.6	6.6	6686	5	Once Every 30 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	50 km/h	200-499	247	Actual Count	2023	272	200-499	0	0	0	0	0	0			
Evaluated	140B	450	Norwich (Township)	Westtown Line	Shince Rd.	Mail Rd.	Municipality	Low Class Bituminous	50	Yes	120	6.4	6.4	768	4	Once Every 14 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	No Ditch	No Ditch	80 km/h	200-499	247	Actual Count	2023	272	200-499	0	0	0	0	0	0	0	0	Significant asphalt patch work has been completed
Evaluated	112	452	Norwich (Township)	Windham Line	Caley Rd.	Airport Rd.	Municipality	Low Class Bituminous	50	Yes	819	6.4	7.4	5242	4	Once Every 14 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	No Ditch	No Ditch	80 km/h	200-499	359	Actual Count	2023	396	200-499	6	0	0	0	0	0	0	0	Asphalt edge patching has been completed
Evaluated	117A	451	Norwich (Township)	Windham Line	Airport Rd.	Windham Rd. 2	Municipality	Low Class Bituminous	50	Yes	922	6.4	7.4	5901	3	Once Every 7 Days	Rural	Granular A Shoulder	Granular A Shoulder	0.50	0.50	Open Ditch	Open Ditch	80 km/h	500-999	635	Actual Count	2023	701	500-999	14	0	0	0	0	0	0	0	
Evaluated	117B	091A	Norwich (Township)	Windham Line	Maple Dell Rd.	Maple Dell Rd.	Municipality-Adjacent	Low Class Bituminous	50	Yes	701	6	6	4206	3	Once Every 7 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	80 km/h	500-999	635	Actual Count	2023	701	500-999	14	0	0	0	0	0	0	0	
Evaluated	121	2554	Norwich (Township)	Windham Line	Maple Dell Rd.	Ontario Rd. 19	Municipality-Adjacent	Low Class Bituminous	50	Yes	3261	6.8	6.8	22175	3	Once Every 7 Days	Rural	No Shoulder	No Shoulder	N/A	N/A	Open Ditch	Open Ditch	80 km/h	500-999	504	Estimate	N/A	556	500-999	0	0	0	0	0	0	0		
Evaluated	277C.1	453	Springford	Wood St. E.	West St.	Water St.	Municipality	High Class Bituminous	100	No	157	6.4	6.4	1005	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	20	Estimate	N/A	22	0-49	0	0	0	0	0	0			
Evaluated	277C.2	454	Springford	Wood St. E.	Water St.	End	Municipality	High Class Bituminous	100	No	157	6.5	6.5	761	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	15	Estimate	N/A	16	0-49	0	0	0	0	0	0			
Evaluated	277B	123	Springford	Wood St. W.	Church St.	End	Municipality	High Class Bituminous	100	No	123	6.2	6.2	763	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	0-49	25	Estimate	N/A	27	0-49	0	0	0	0	0	0	0		
Evaluated	254E	2566	Otterville	York St.	North St. E.	Main St. E.	Municipality	High Class Bituminous	100	No	121	7.1	7.1	859	6	Patrol Not Required	Semi-Urban	No Curb	No Curb	N/A	N/A	No Ditch	No Ditch	50 km/h	50-199	150	Estimate	N/A	165	50-199	0	0	0	0	0	0	0		
Not Evaluated	101	2607	Norwich (Township)	Zenda Line	Beaconsfield Rd.	Safford Rd.	Municipality	Gravel	50	Yes	1560	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	178	Actual Count	2023	196	50-199	3	0	0	0	0	0	0		
Not Evaluated	104A.1	458	Norwich (Township)	Zenda Line	Safford Rd.	Evergreen St.	Municipality	Gravel	50	Yes	1617	N/A	N/A	N/A	4	Once Every 14 Days	Rural	N/A	N/A	N/A	N/A	N/A	N/A	80 km/h	50-199	121	Actual Count	2023	133	50-199	10	0	0	0	0	0	0		
Not Evaluated	104A.2	456	Norwich (Township)	Zenda Line	6																																		

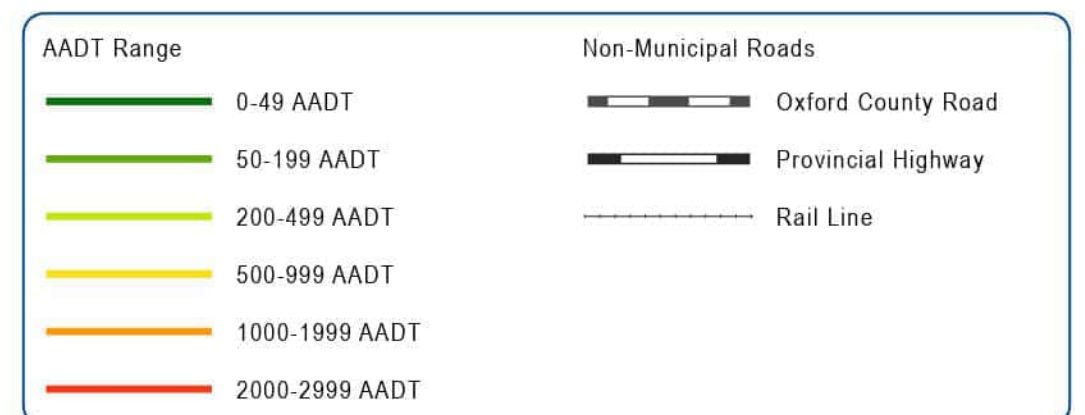
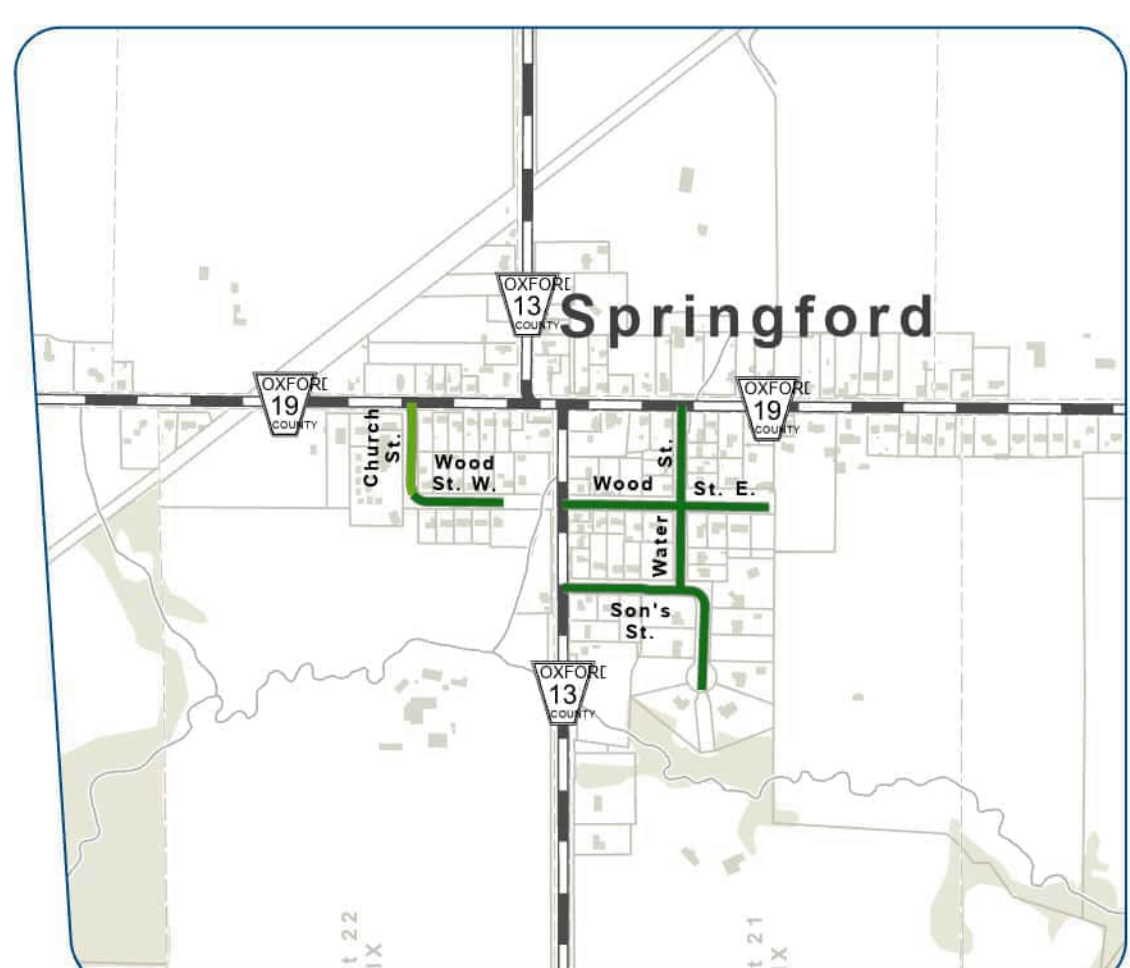
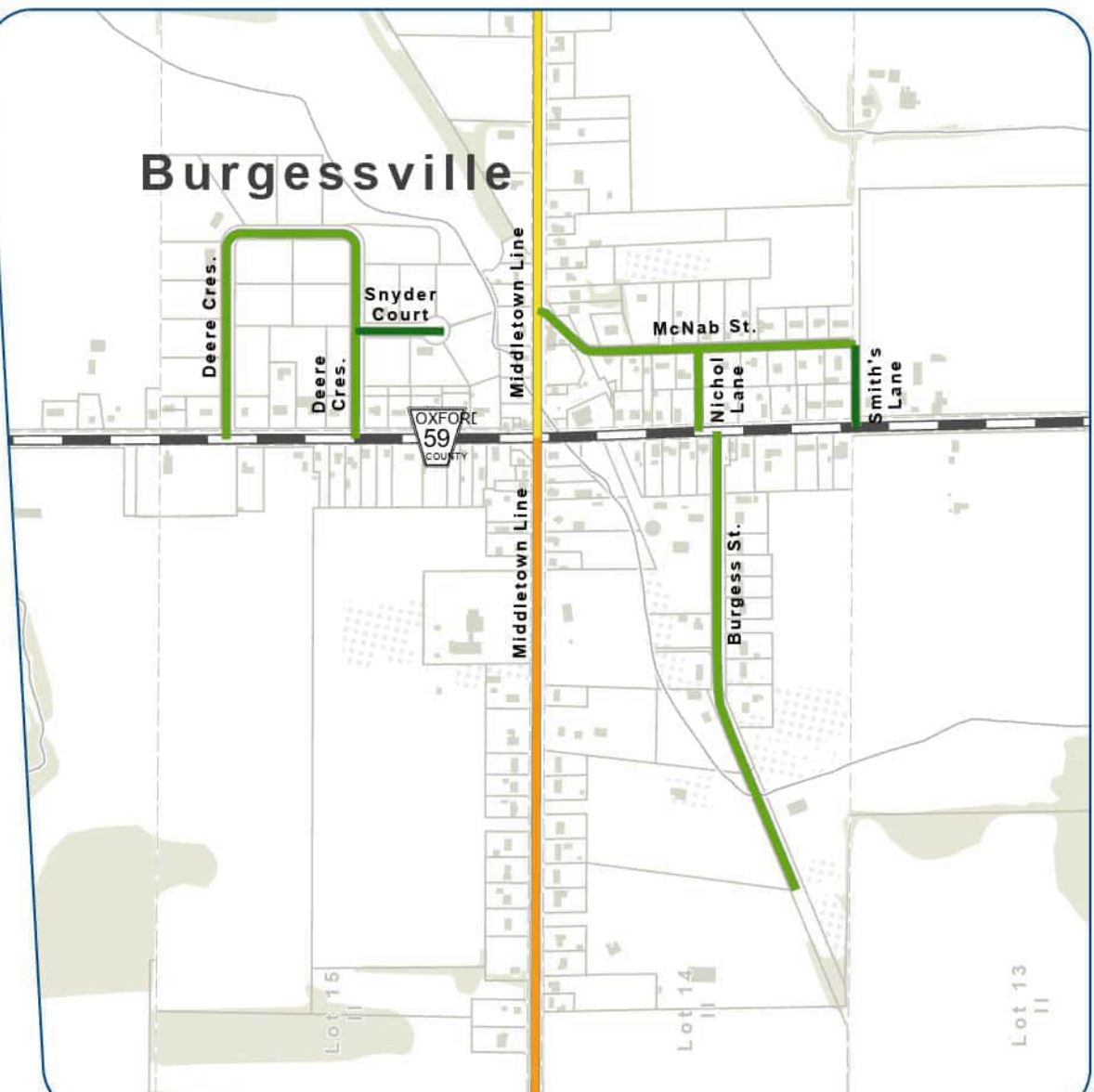
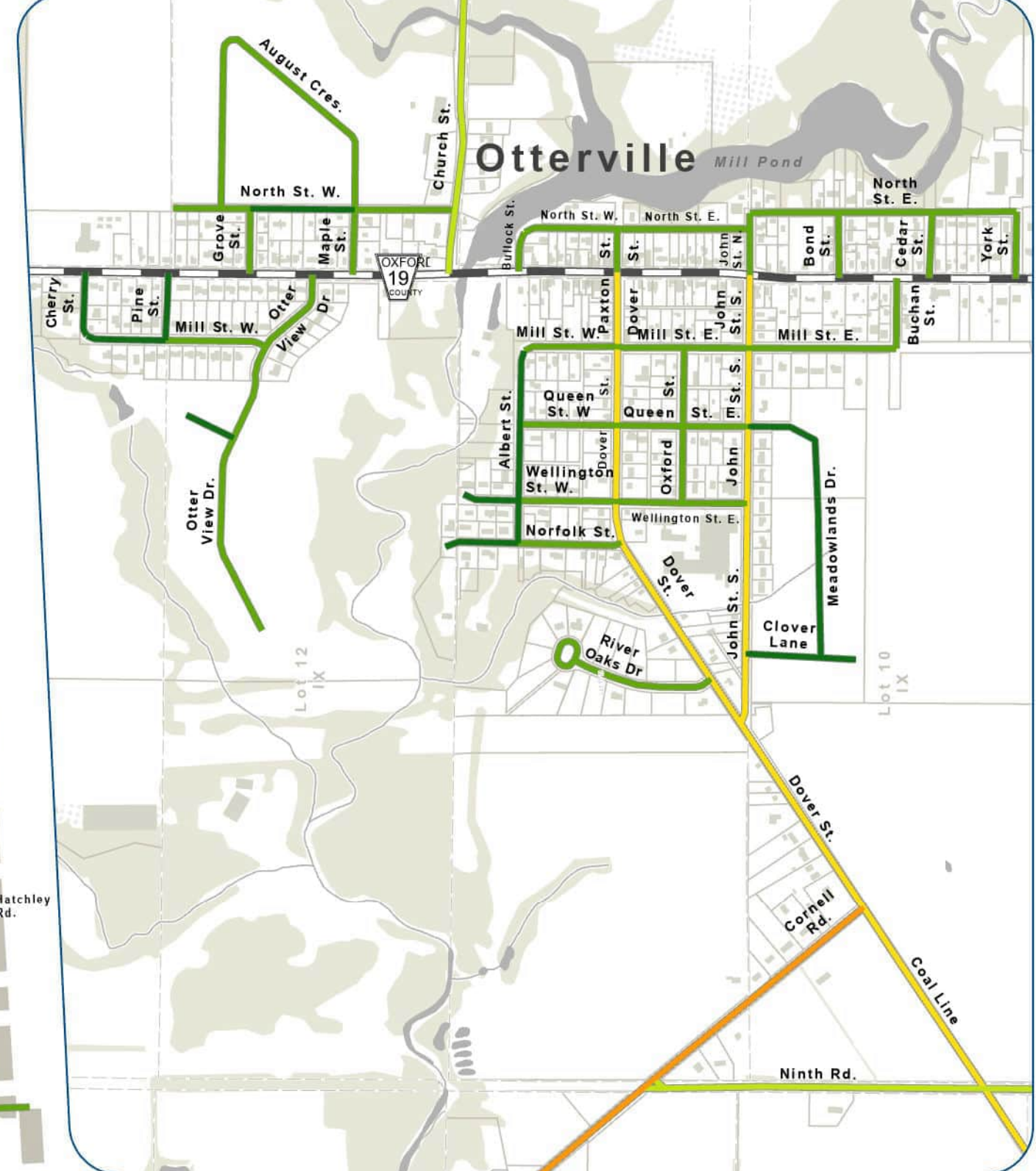
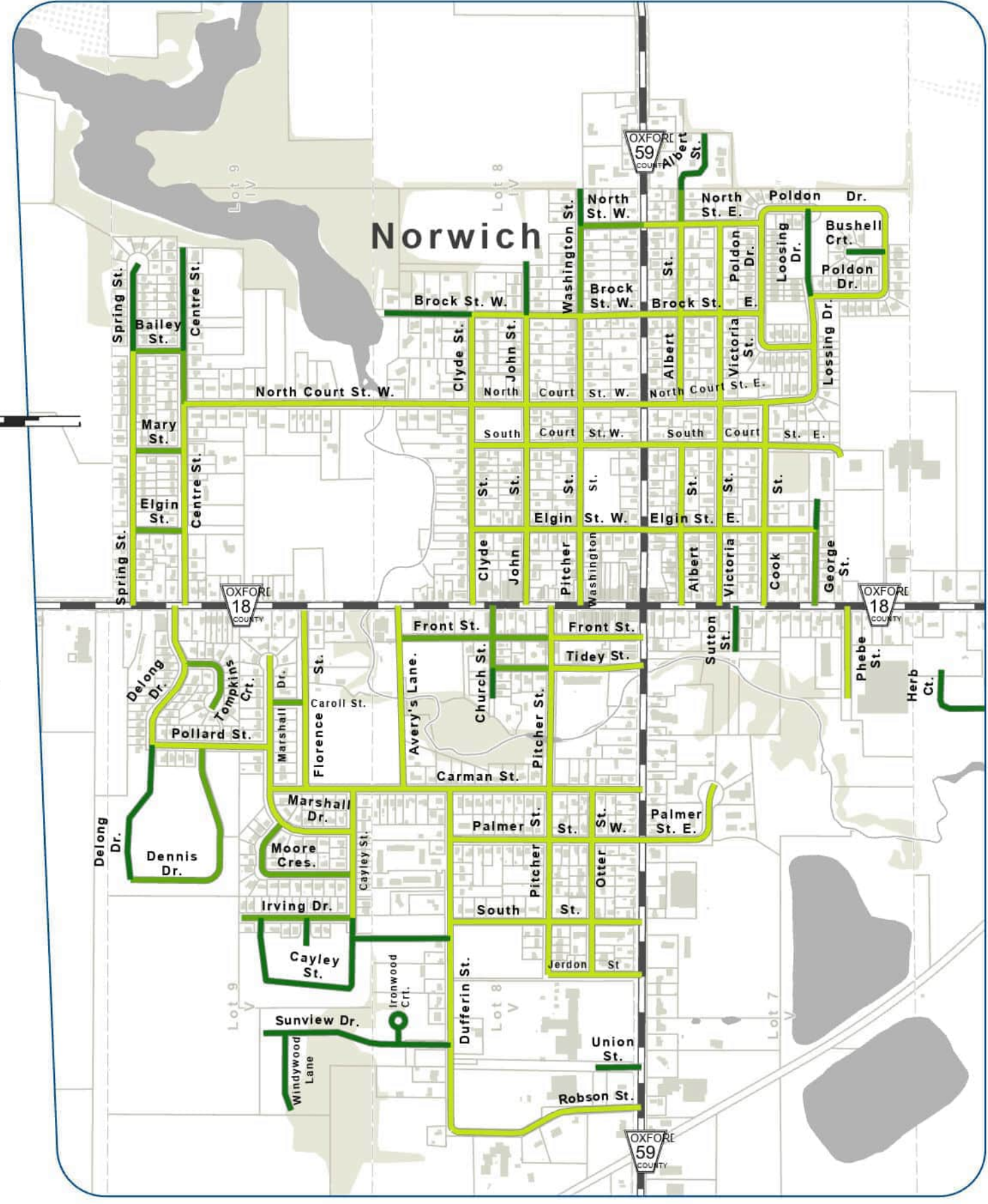
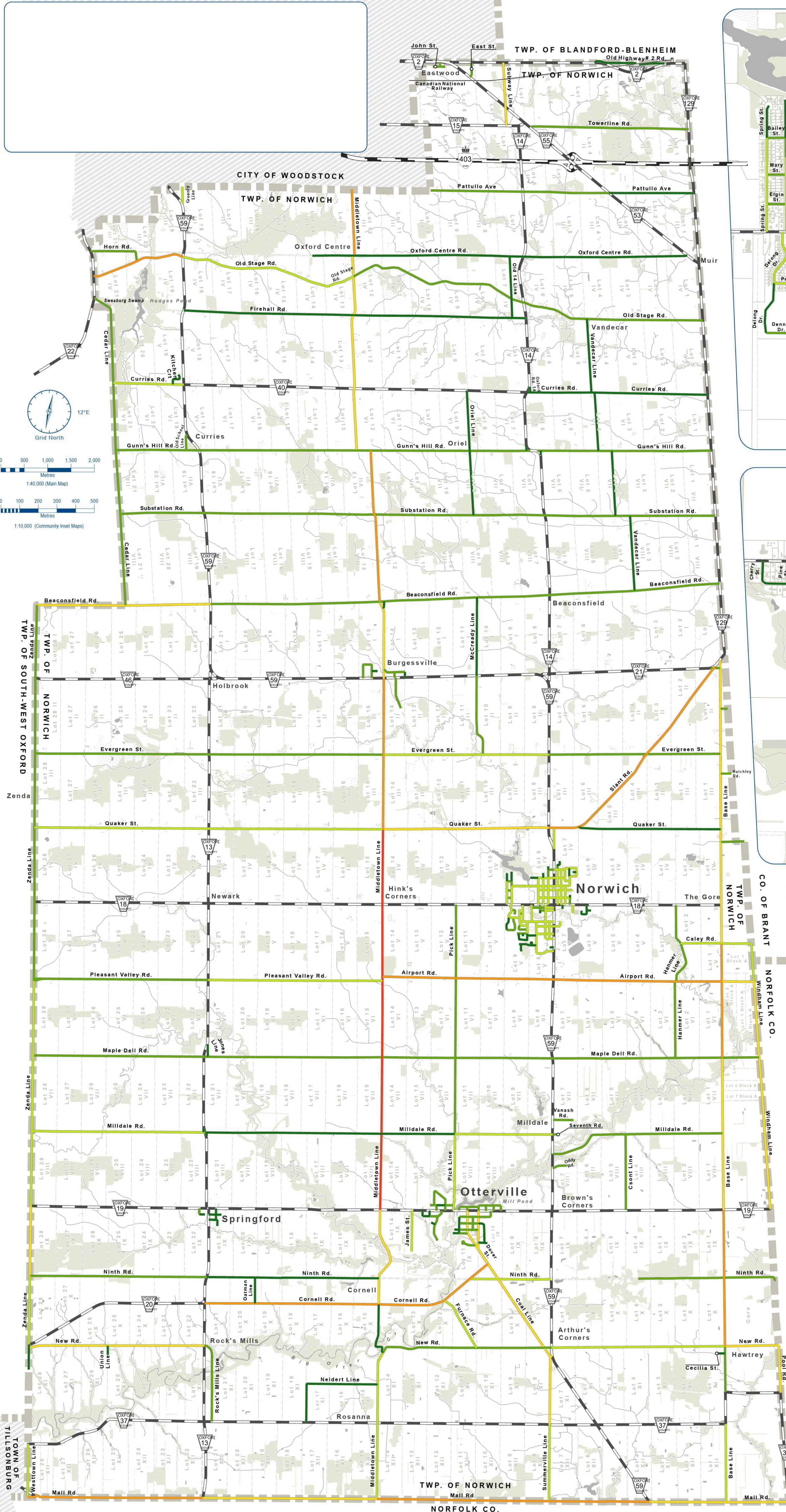


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Appendix B

Traffic Volume (AADT) Map



Source: North American 1983 CGRS
 Coordinate System: NAD 1983 CGRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00'00"W
 False Easting: 500,000m
 False Northing: 0m
 Scale Factor: 0.9996

Drawn by: PR
 Checked by: HC
 Client: Township of Norwich
 Project: Roads Needs Study 2023
 Project Number: 202005649
 Date: 2023/11/14





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Appendix C

Distress Factors

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

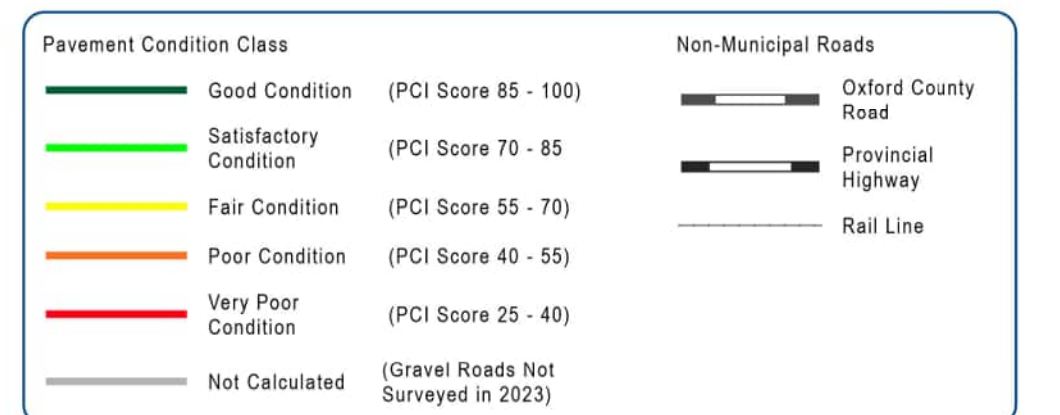
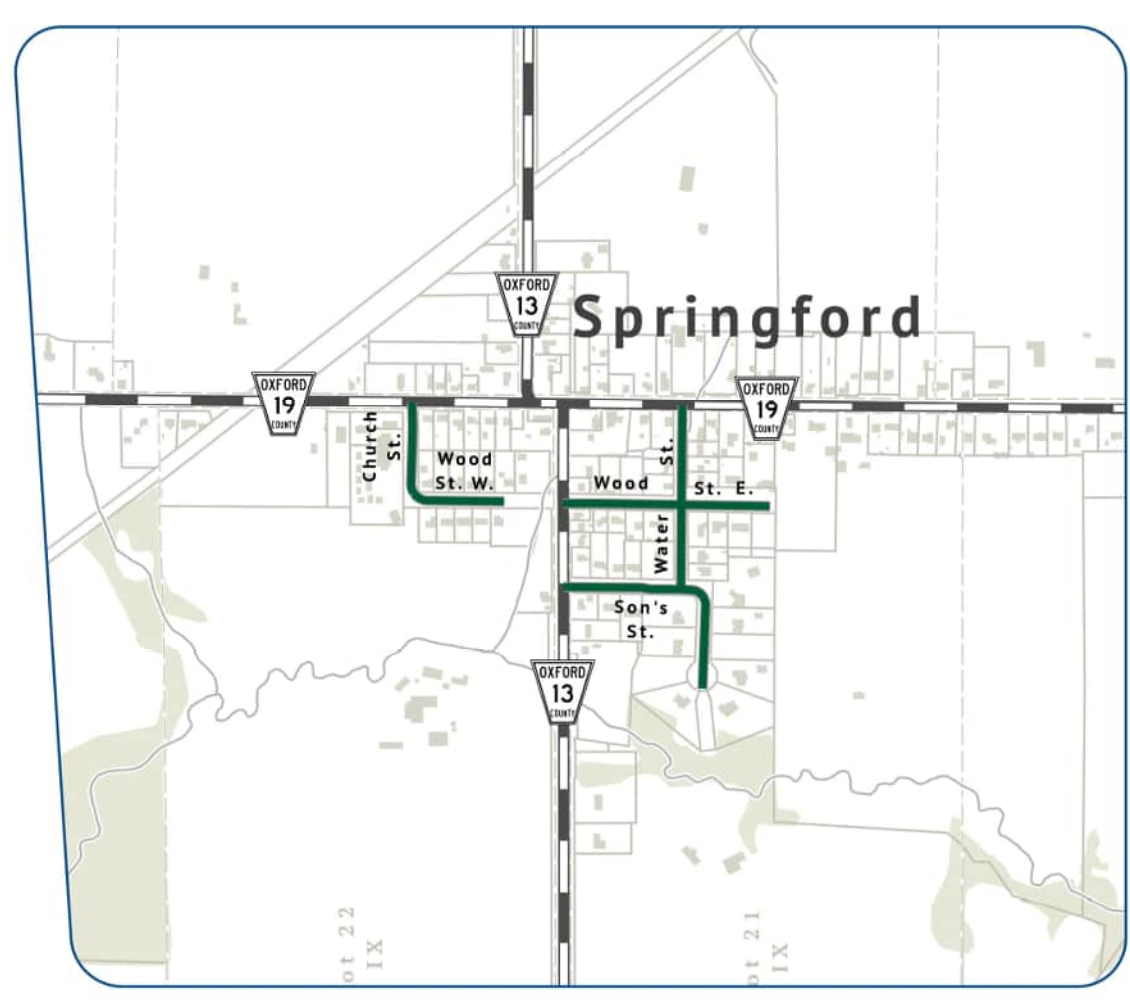
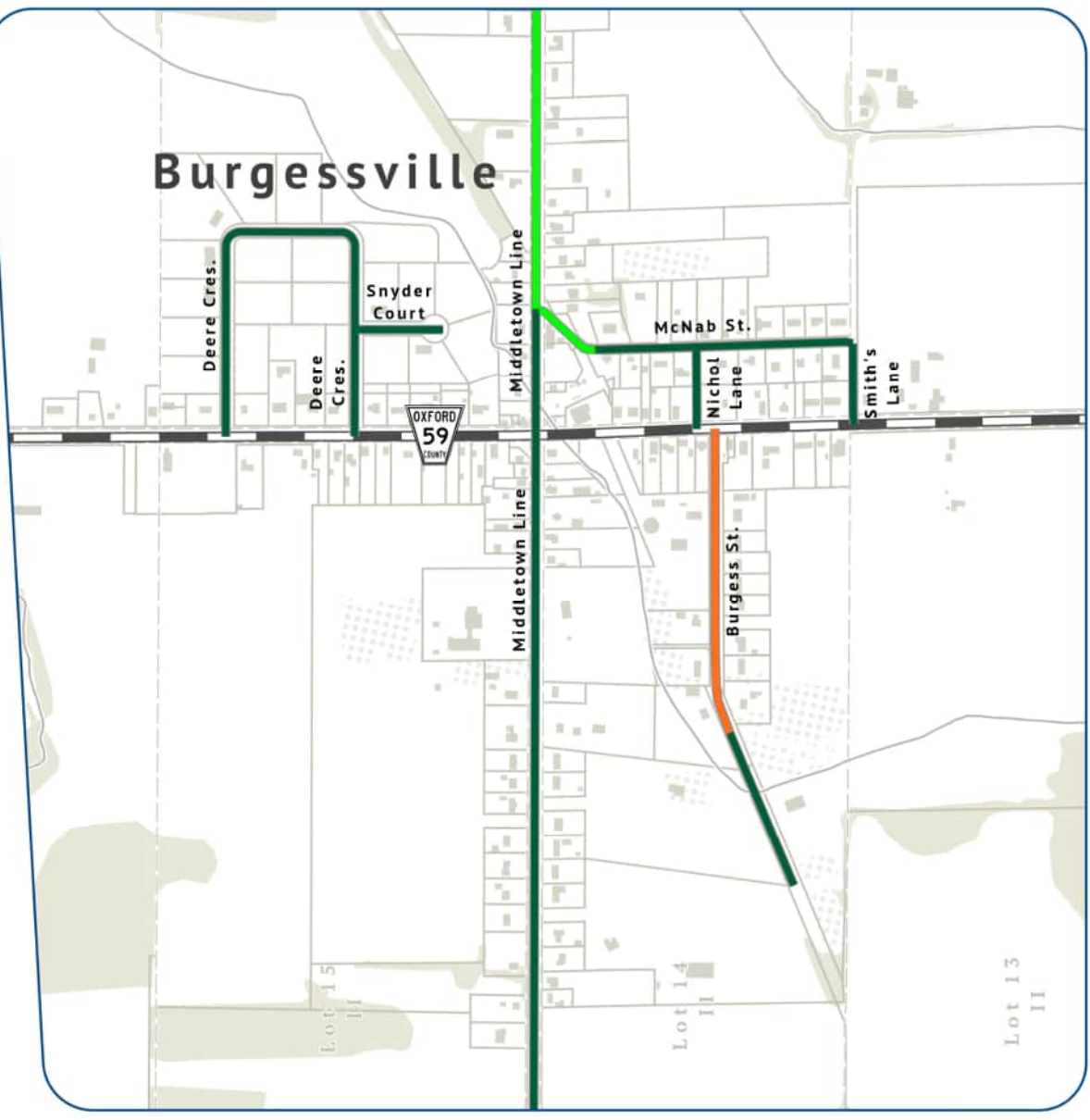
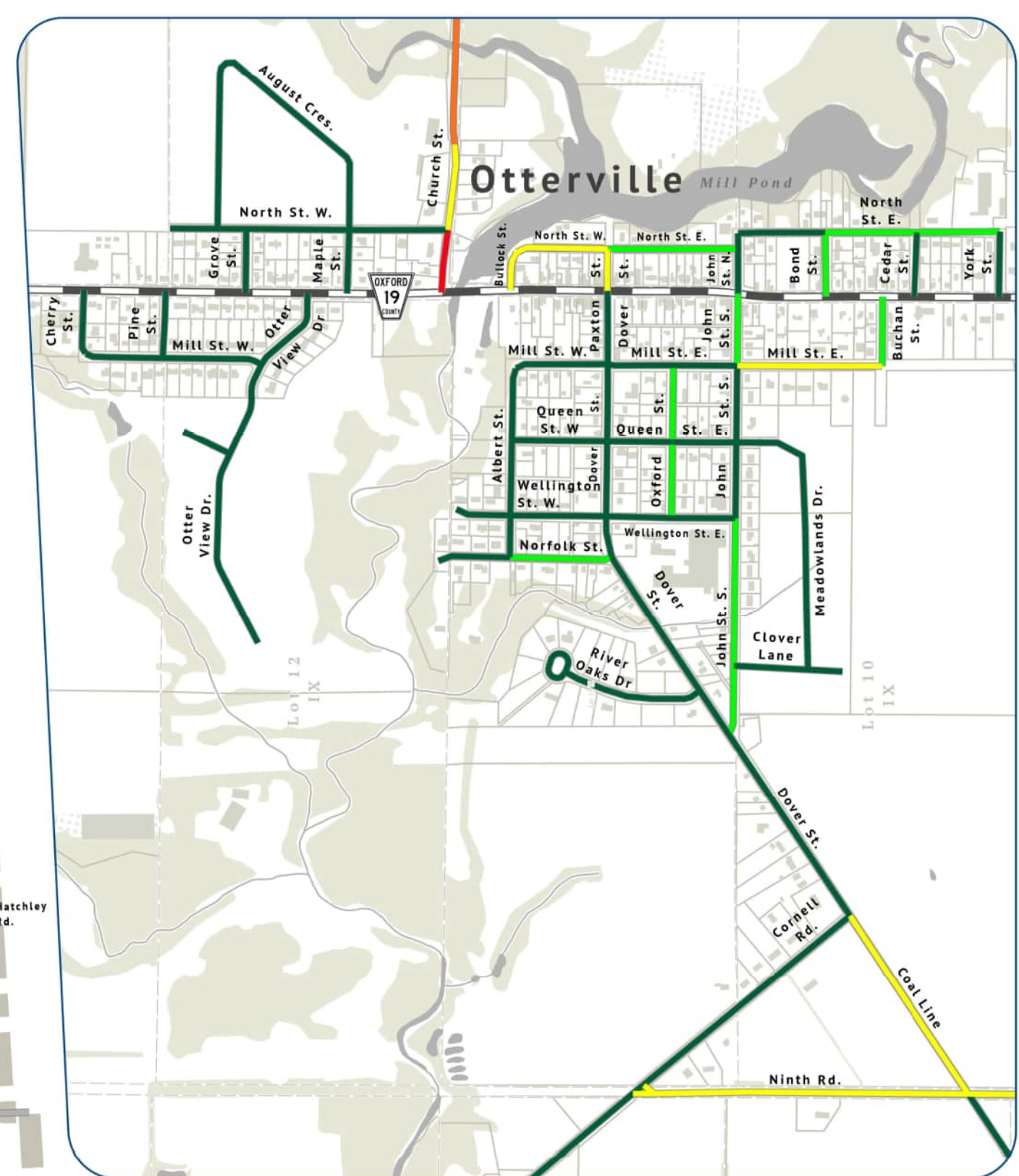
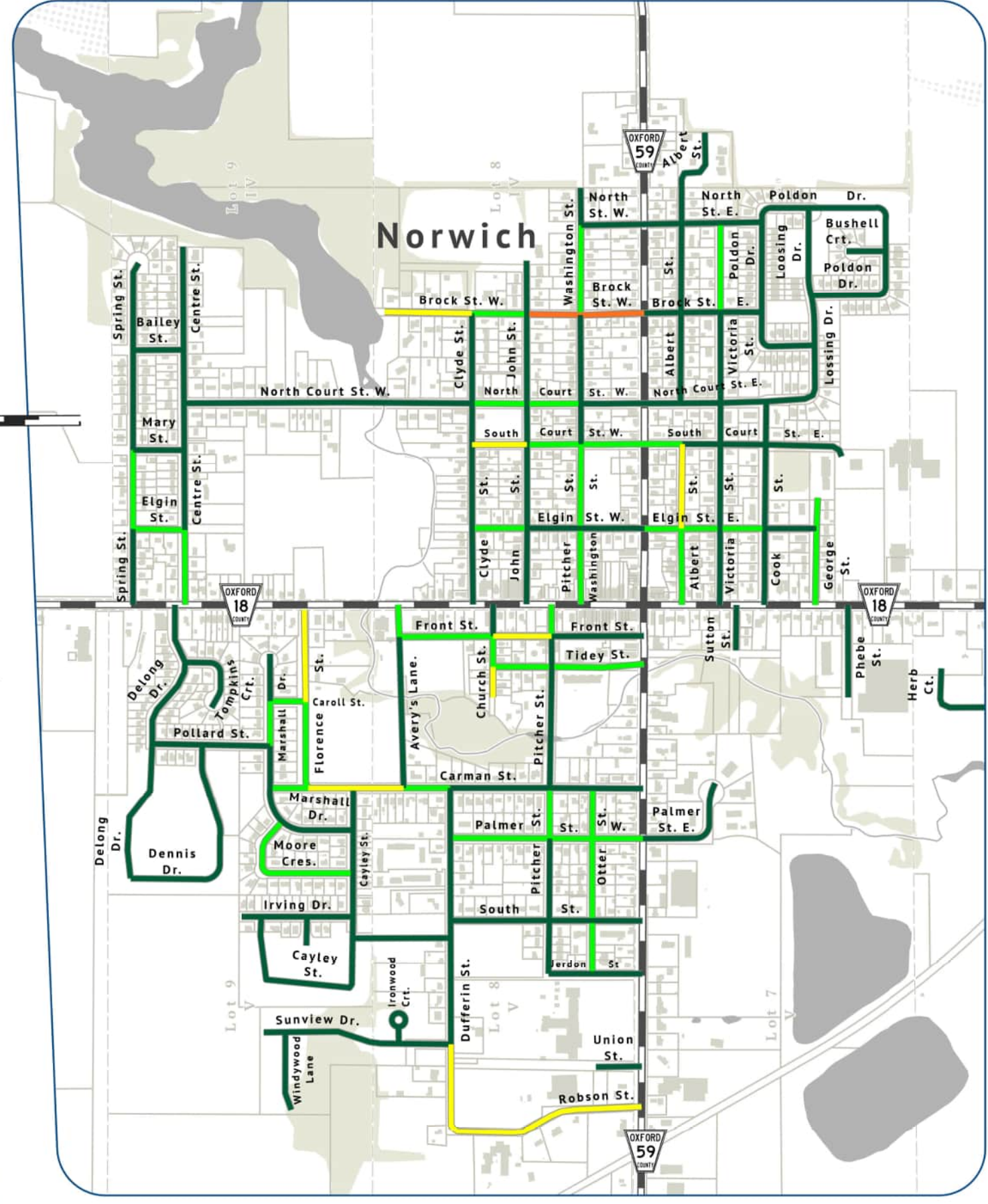
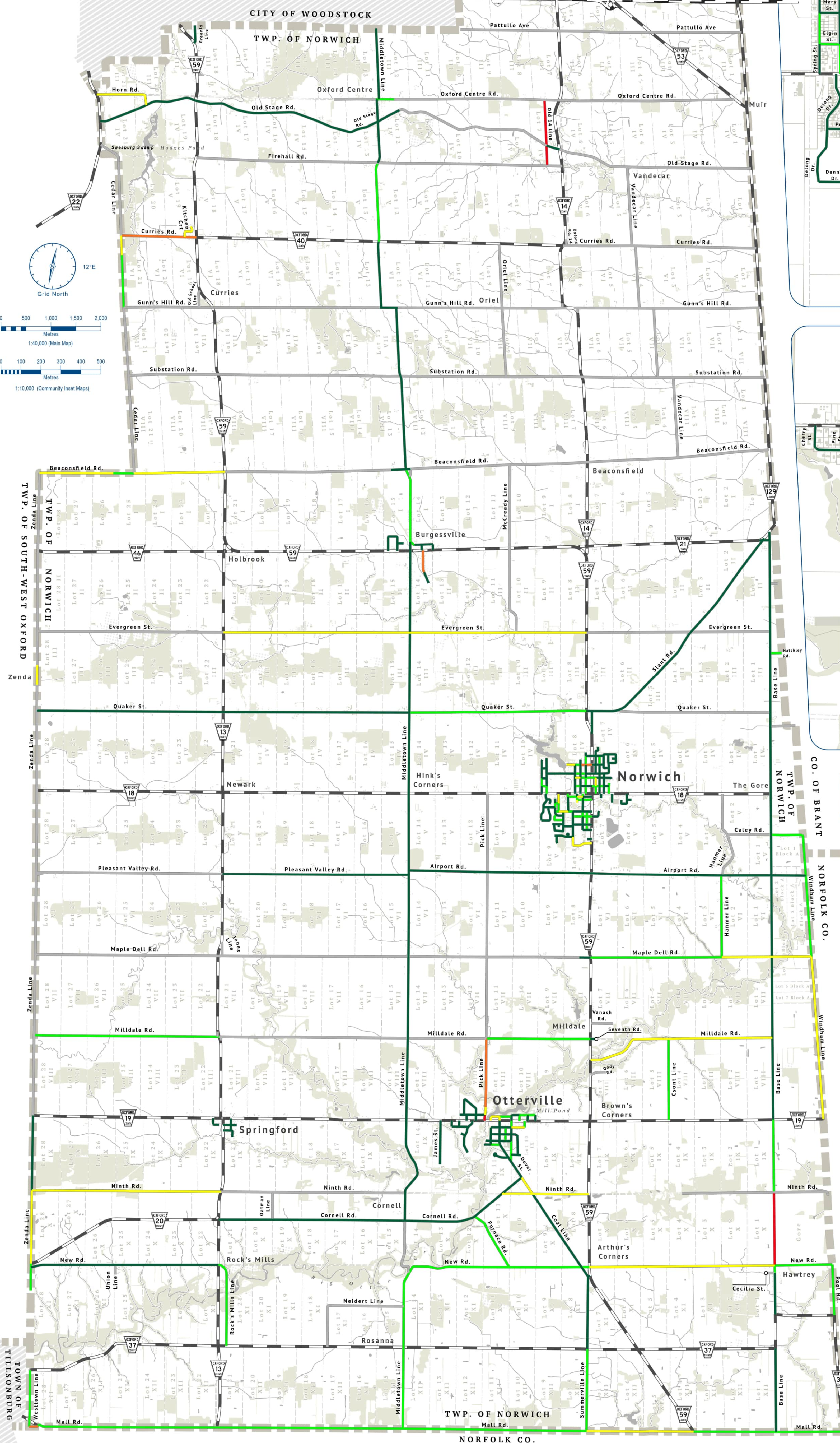
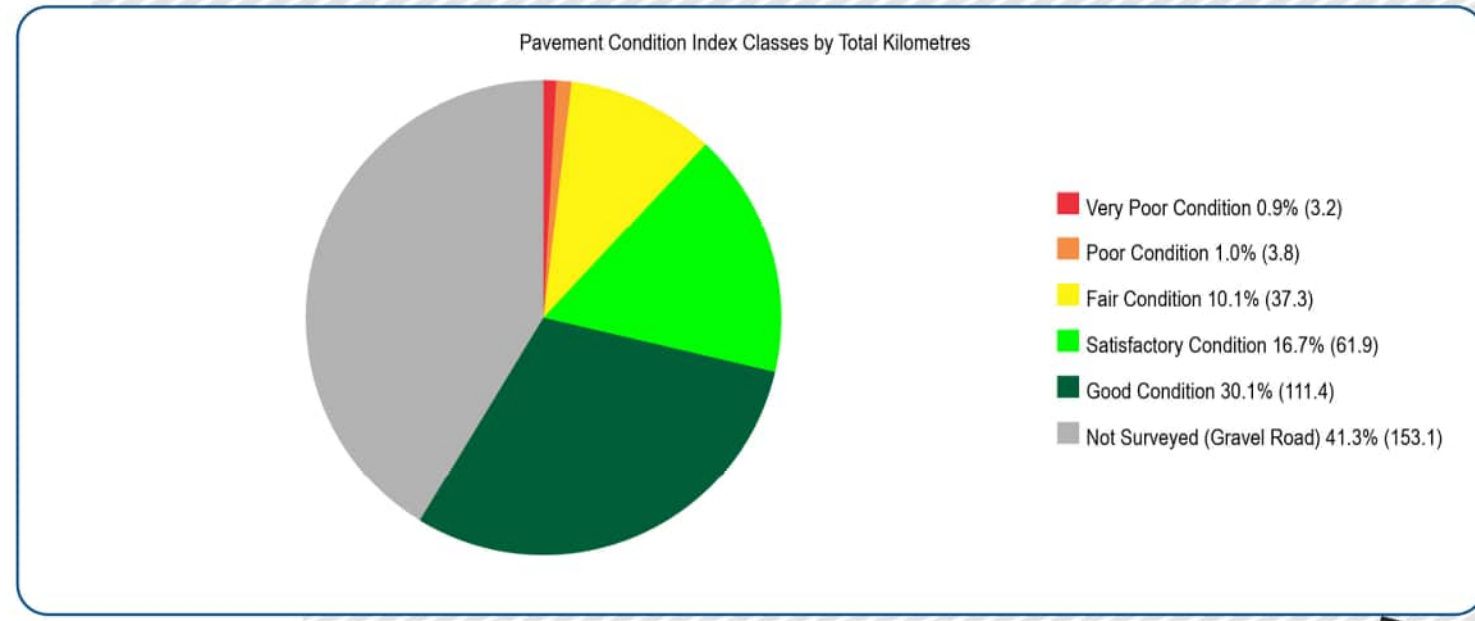


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Appendix D

Condition Rating (PCI) Map



Source: North American 1983 CSRS
 Coordinate System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00' 00"W
 False Easting: 500,000m
 False Northing: 0m
 Scale Factor: 0.9996

Drawn by: PH
 Checked by: HC
 Client: Township of Norwich
 Project: Roads Needs Study 2023
 Project Number: 202306049
 Date: 2023/10/13

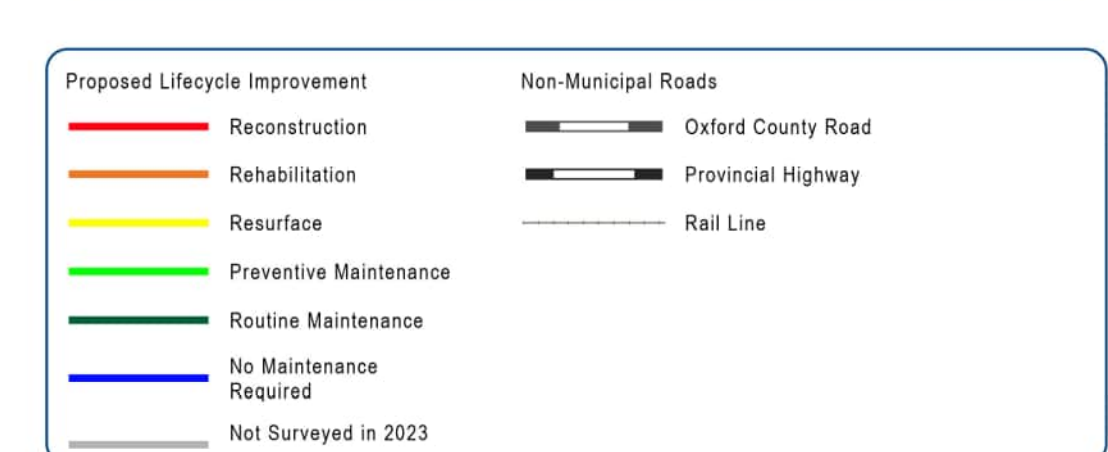
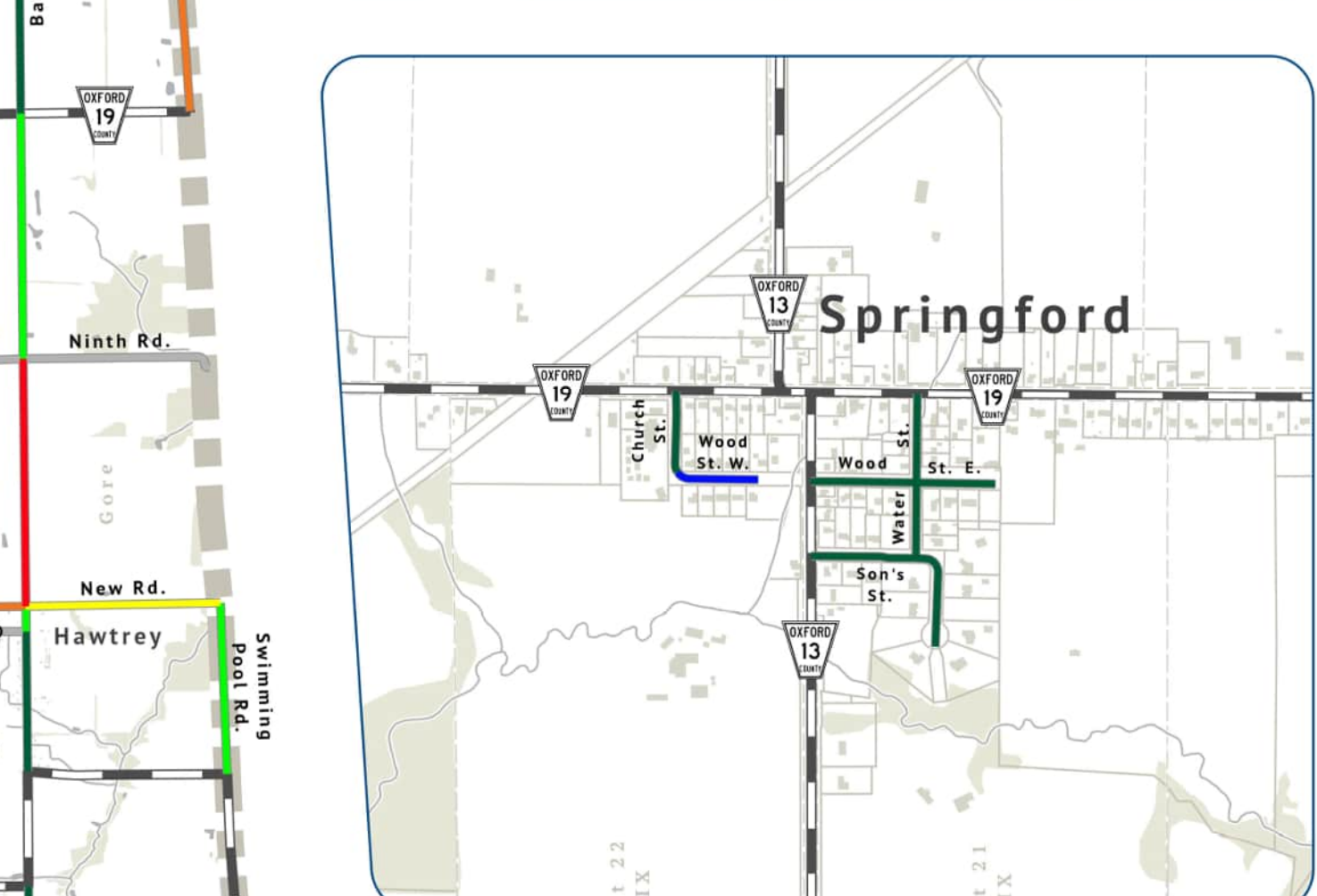
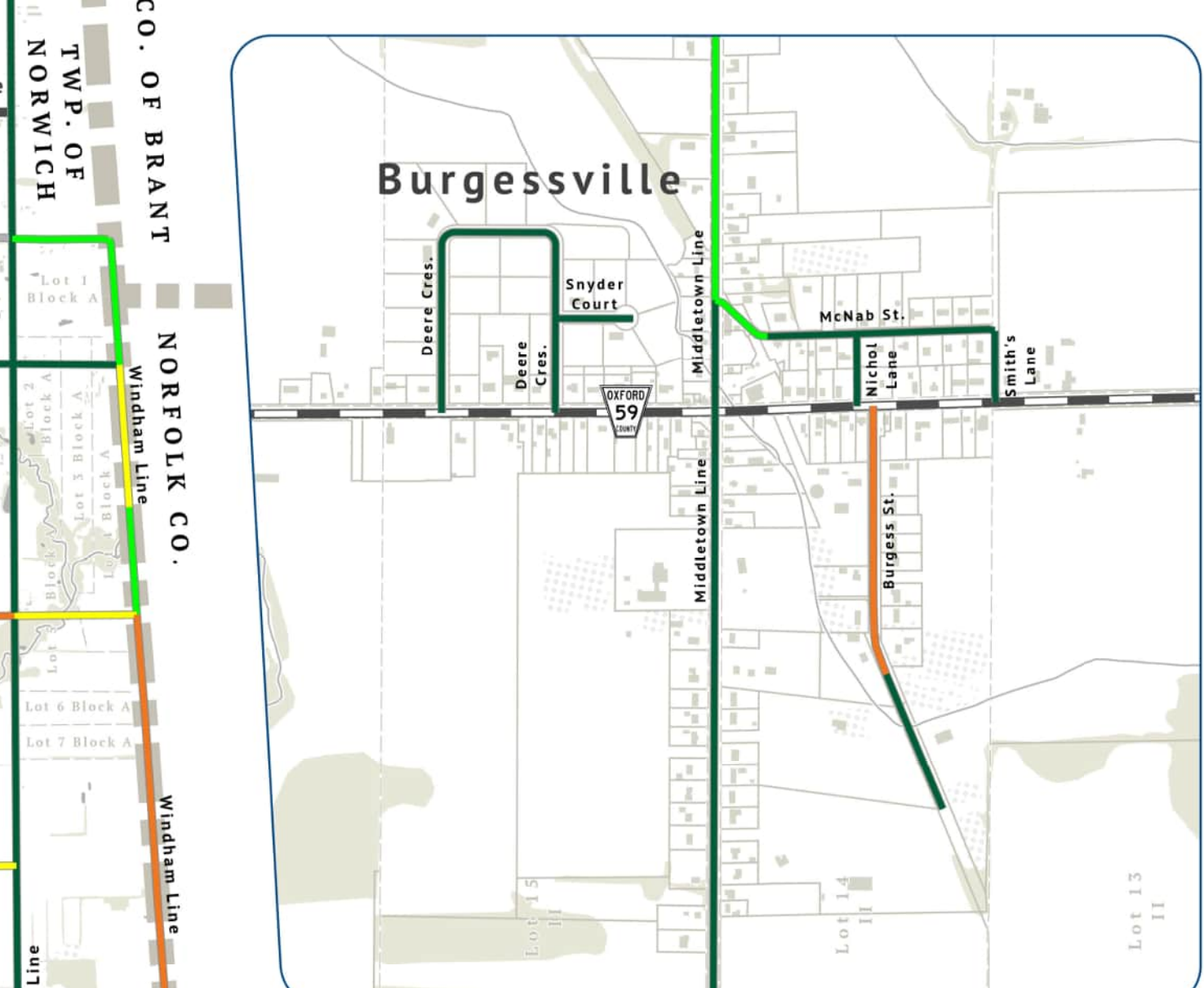
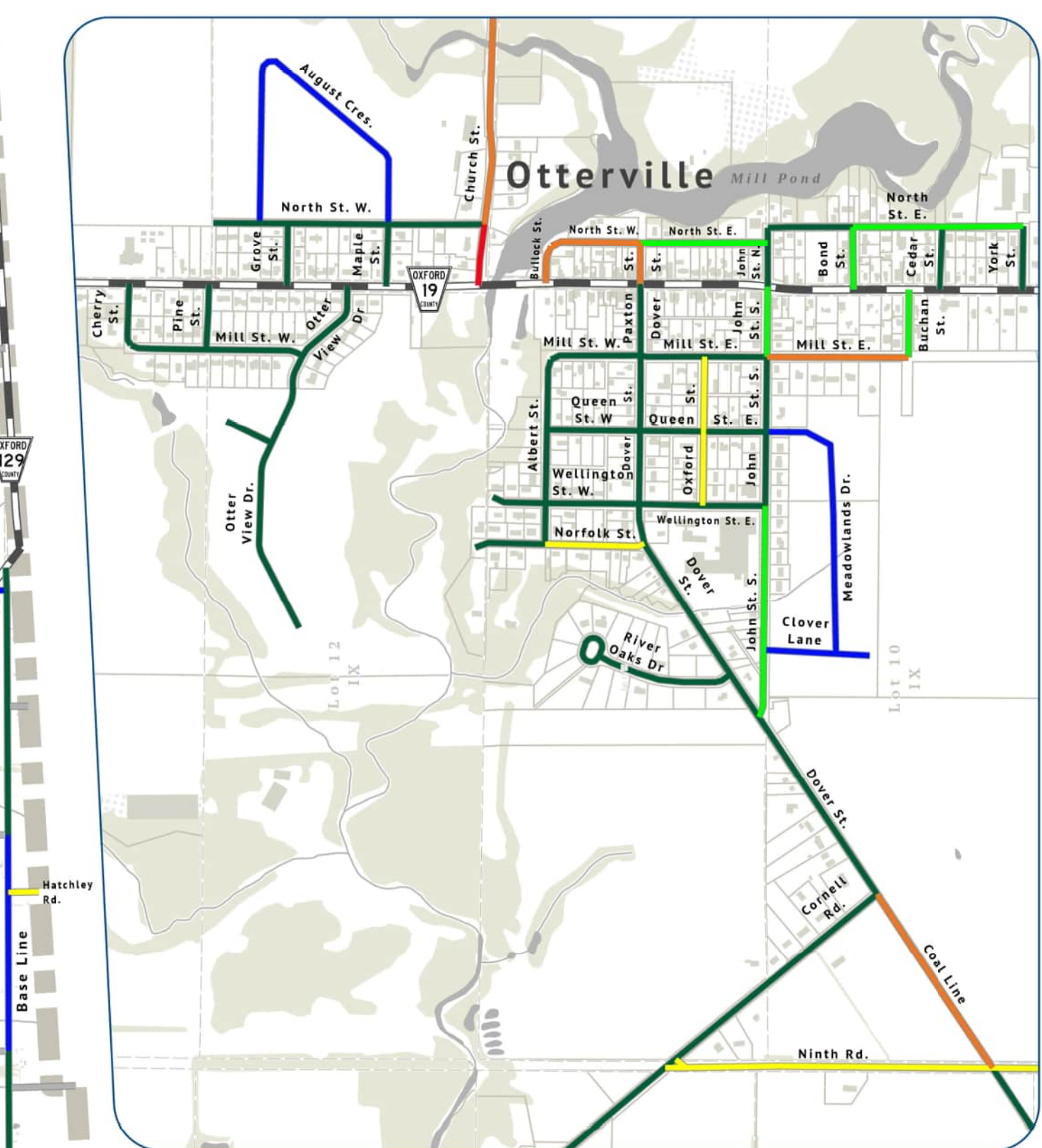
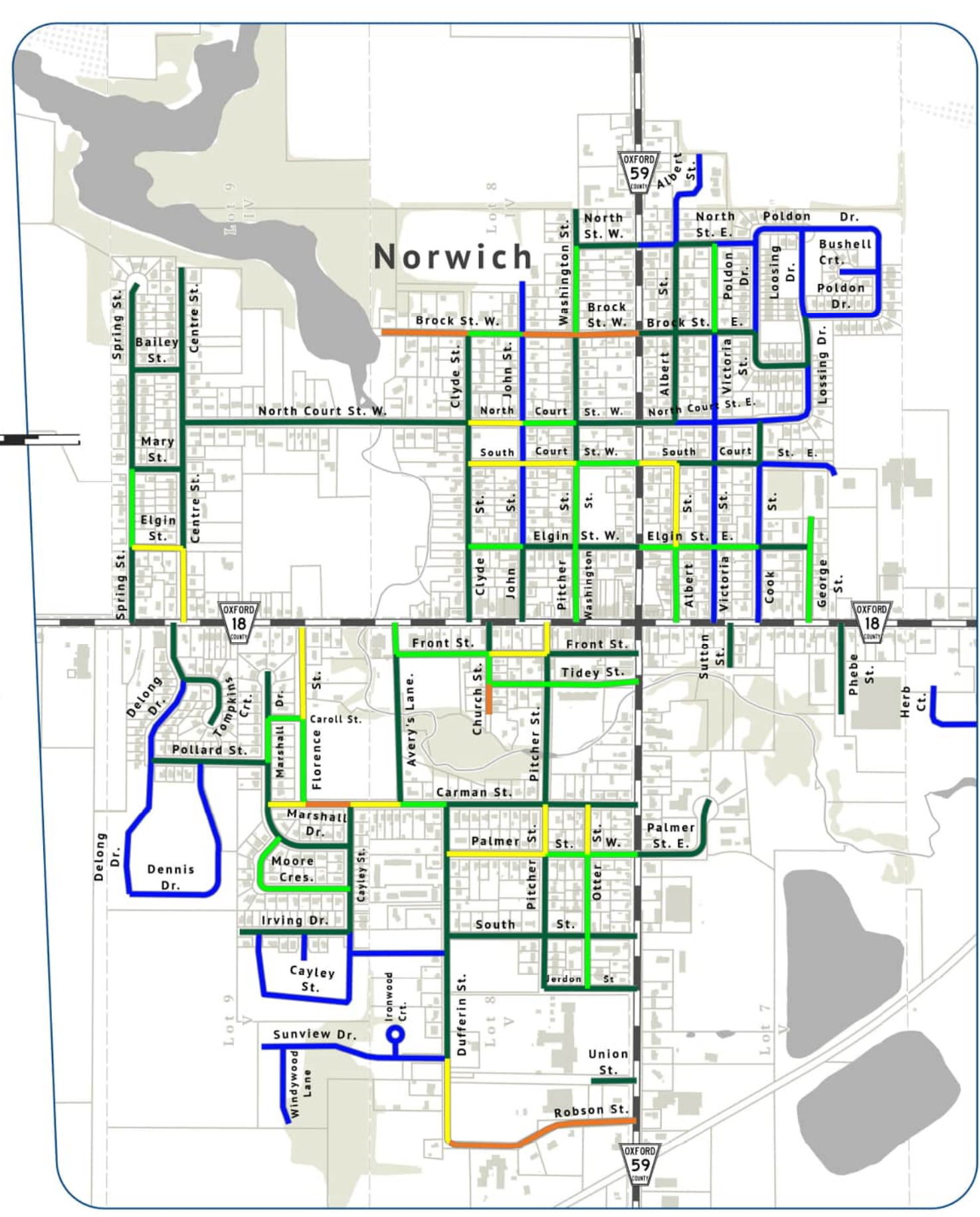
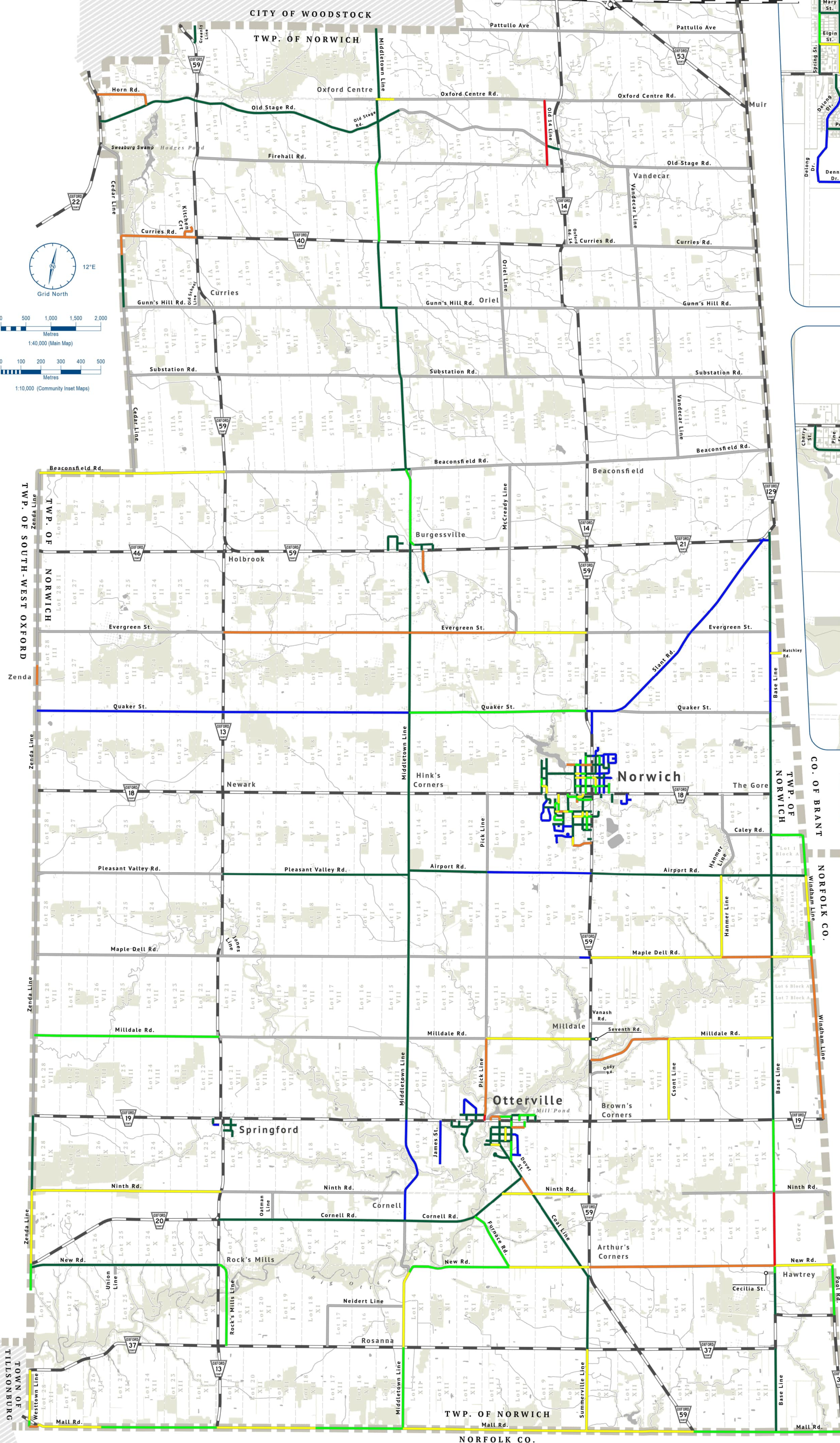
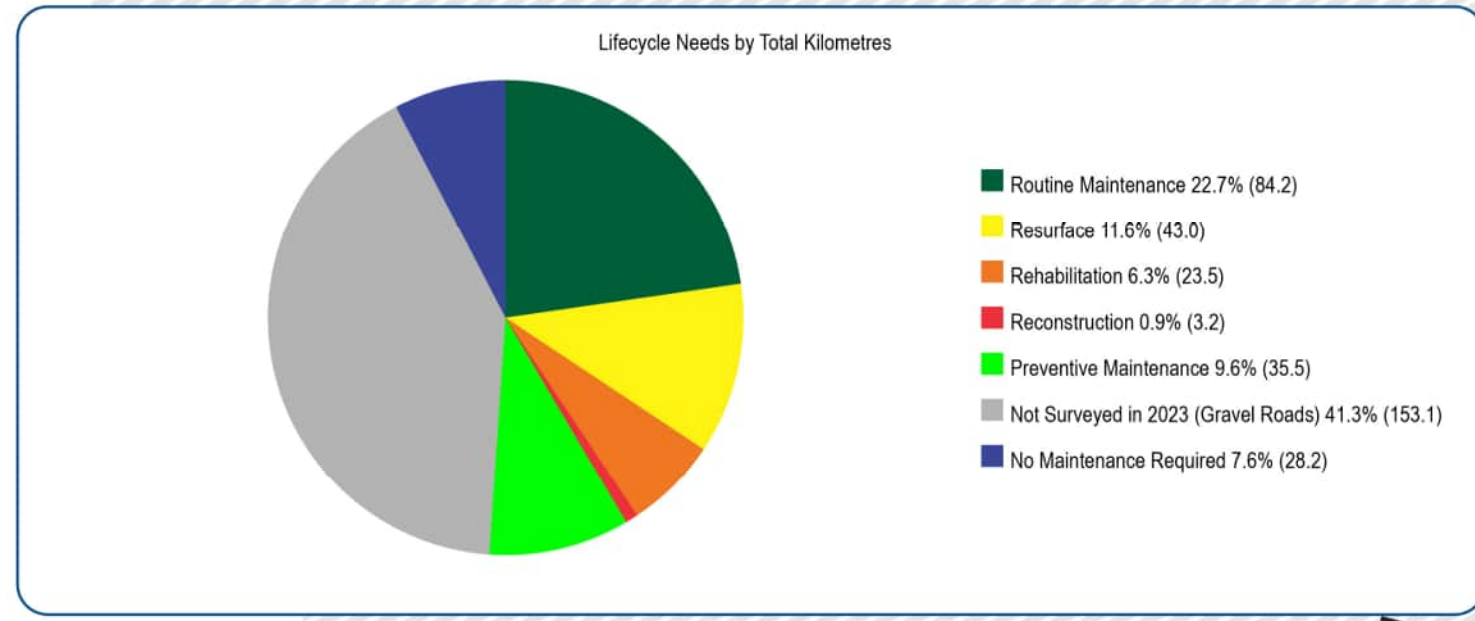


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Appendix E

Road Improvement Needs (Map and Table)



Source: North American 1983 CSRS
 Coordinate System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00'00"W
 False Easting: 500,000m
 False Northing: 0m
 Scale Factor: 0.9996

Drawn by: PH
 Checked by: HC
 Client: Township of Norwich
 Project: Roads Needs Study 2023
 Project Number: 202306049
 Date: 2023/10/13

Appendix E - Road Improvement Needs (All Roads in the Township)

2023 Evaluation Status	Municipal ID	Asset or PSAB ID	Community	Name	Name From	Name To	AADT Range	AADT	Priority Guide Number (PGN)	Priority Rating (PR)	2023 Lifecycle Improvement Need	2023 Improvement Need Cost	Benchmark Cost (m ²)	Comments / Notes
Evaluated	278A	2370	Springford	Son's St.	West St. S. (Oxford Rd. 13)	Water St.	0-49	40	0	5.98	Routine Maintenance	\$0.00	\$0.00	
Evaluated	277D.1	444	Springford	Water St.	Main St.	Wood St.	0-49	40	0	4.79	Routine Maintenance	\$0.00	\$0.00	
Evaluated	277C.1	453	Springford	Wood St. E.	West St.	Water St.	0-49	20	0	6.68	Routine Maintenance	\$0.00	\$0.00	
Evaluated	277B	123	Springford	Wood St. W.	Church St.	End	0-49	25	0	2.27	No Maintenance Required	\$0.00	\$0.00	
Evaluated	264	2358	Norwich (Township)	James St.	Otterville Rd. (Oxford Rd. 19)	End	200-499	250	0	3.3	No Maintenance Required	\$0.00	\$0.00	
Evaluated	255C.2	2629	Otterville	Mill St. W.	Pine St.	Otter View Dr	50-199	65	0	7.04	Routine Maintenance	\$0.00	\$0.00	
Evaluated	265A	2627	Otterville	Otter View Dr	Main St. W.	Mill St. W.	50-199	140	0	8.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	255A	2365	Otterville	Pine St.	Main St. W.	Mill St. W.	0-49	30	0	5.79	Routine Maintenance	\$0.00	\$0.00	
Evaluated	250B	2308	Otterville	Grove St.	North St. W.	Main St. W.	50-199	55	0	6.87	Routine Maintenance	\$0.00	\$0.00	
Evaluated	251	2307	Otterville	Maple St.	North St. W.	Main St. W.	50-199	65	0	7.68	Routine Maintenance	\$0.00	\$0.00	
Evaluated	250A.2	2309	Otterville	North St. W.	Grove St.	Maple St.	0-49	40	0	7.78	Routine Maintenance	\$0.00	\$0.00	
Evaluated	254F.1	315	Otterville	North St. E.	William St.	John St. N.	50-199	150	15.8	12.62	Preventive Maintenance	\$6,188.00	\$4.00	
Evaluated	254A	2630	Otterville	Paxton St.	North St.	Main St.	50-199	150	18.1	28.96	Rehabilitation	\$38,610.00	\$66.00	
Evaluated	254D	2283	Otterville	Cedar St.	North St. E.	Main St. E.	50-199	75	0	6.55	Routine Maintenance	\$0.00	\$0.00	
Evaluated	254F.2	316	Otterville	North St. E.	John St. N.	Bond St.	50-199	140	0	9.52	Routine Maintenance	\$0.00	\$0.00	
Evaluated	254C	90	Otterville	Bond St.	North St. E.	Main St. E.	50-199	75	7.9	12.44	Preventive Maintenance	\$3,400.00	\$4.00	
Evaluated	263A	268	Otterville	Mill St. E.	John St. S.	Buchan St.	50-199	100	21.4	25.45	Rehabilitation	\$70,140.00	\$42.00	
Evaluated	256C.2	382	Otterville	Queen St. E.	Dover St.	Oxford St.	50-199	75	0	5.24	Routine Maintenance	\$0.00	\$0.00	
Evaluated	259C	446	Otterville	Wellington St. E.	Dover St.	John St. S.	50-199	75	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	260B	303	Otterville	Norfolk St.	Albert St.	Dover St.	50-199	75	4.7	17.03	Resurface	\$28,975.00	\$25.00	
Evaluated	262D	214	Otterville	John St. S.	Wellington St. E.	Dover St.	500-999	684	91.9	22.82	Preventive Maintenance	\$10,480.00	\$4.00	
Evaluated	261B	151	Otterville	Dover St.	Mill St.	Queen St.	500-999	815	0	10.81	Routine Maintenance	\$0.00	\$0.00	
Evaluated	071	138	Norwich (Township)	Cornell Rd.	Oatman Line	Middletown Line	1000-1999	1553	0	10.11	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	144	329	Norwich (Township)	Oatman Line	Ninth Rd.	Cornell Rd.	0-49	7	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	134	2619	Norwich (Township)	Zenda Line	Cornell Rd.	541m S. of Cornell Rd.	0-49	15	1.6	9.26	Preventive Maintenance	\$6,708.00	\$4.00	
Evaluated	073B	292	Norwich (Township)	New Rd.	Union Rd.	Oxford Rd. 13	500-999	615	0	13.15	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	295	425	Norwich (Township)	Union Line	South of New Rd.	End	0-49	10	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	131	2739	Norwich (Township)	Furnace Rd.	Cornell Rd.	New Rd.	200-499	256	26.7	14.93	Preventive Maintenance	\$34,556.00	\$4.00	
Evaluated	067B	297	Norwich (Township)	Ninth Rd.	Coal Line	Highway 59	200-499	405	63.3	29.39	Resurface	\$87,061.00	\$13.00	
Evaluated	085	419	Norwich (Township)	Summerville Line	Potters Rd.	Mall Rd.	200-499	488	63	28.76	Resurface	\$142,493.00	\$13.00	FibreMat has been completed on this section
Evaluated	132A.2	2741	Norwich (Township)	Coal Line	Ninth Rd.	New Rd.	500-999	660	0	11.32	Routine Maintenance	\$0.00	\$0.00	Few potholes and minor edge cracking. FibreMat has been completed
Not Evaluated	130	2617	Norwich (Township)	Middletown Line	Cornell Rd.	New Rd.	0-49	25	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	064	2598	Norwich (Township)	Ninth Rd.	Zenda Line	Oxford Rd. 13	50-199	78	12.7	23.07	Resurface	\$305,318.00	\$13.00	Township noted this segment is maintenance intensive for potholes and patching
Evaluated	082	221	Norwich (Township)	Mall Rd.	Middletown Line	Summerville Line	1000-1999	1395	147.2	32	Resurface	\$170,014.00	\$13.00	FibreMat has been completed on this section
Evaluated	141	262	Norwich (Township)	Middletown Line	Potters Rd. (Oxford Rd. 37)	Mall Rd.	200-499	483	52.3	17.22	Preventive Maintenance	\$43,604.00	\$4.00	
Evaluated	075	290	Norwich (Township)	New Rd.	Highway 59	Base Line	200-499	293	94.3	30.76	Rehabilitation	\$636,974.00	\$26.00	
Not Evaluated	136	2620	Norwich (Township)	Neidert Line	Potters Rd.	Middletown Line	0-49	16	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	140A	449	Norwich (Township)	Westown Line	Potters Rd.	Oxford Rd. 51	200-499	247	32.3	24.7	Resurface	\$43,459.00	\$13.00	
Evaluated	135	2562	Norwich (Township)	Rock's Mills Line	Oxford Rd. 13	Oxford Rd. 37 (Potters Rd.)	50-199	116	17.5	16.96	Preventive Maintenance	\$43,904.00	\$4.00	Significant asphalt patch work has been completed
Not Evaluated	068	2601	Norwich (Township)	Ninth Rd.	W. of Base Line	End	50-199	192	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	069	296	Norwich (Township)	Ninth Rd.	E. of Base Line	Township Boundary	50-199	52	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	142	2621	Norwich (Township)	Pleasant Valley Rd.	E. of Zenda Line (dog leg)	Pleasant Valley Rd.	50-199	64	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	049	375	Norwich (Township)	Pleasant Valley Rd.	Zenda Line	Middletown Line	50-199	94	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	052	51	Norwich (Township)	Airport Rd.	Oxford Rd. 59	Base Line	1000-1999	1247	0	13.18	Routine Maintenance	\$0.00	\$0.00	The west end of this segment (by TimHortons) has some edge breakup
Not Evaluated	056B	225	Norwich (Township)	Maple Dell Rd.	Pick Line	Hwy 59	50-199	83	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	054	226	Norwich (Township)	Maple Dell Rd.	Zenda Line	Jones Line	50-199	135	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	061	2596	Norwich (Township)	Milldale Rd.	Pick Line	Highway 59	200-499	233	27.9	21.14	Resurface	\$169,819.00	\$13.00	
Not Evaluated	062A	427	Norwich (Township)	Vanash Rd.	E. of Highway 59	End	50-199	137	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	062C	330	Norwich (Township)	Oddy Rd.	E. of Highway 59	End	50-199	137	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	063B	277	Norwich (Township)	Milldale Rd.	Csont Line	Base Line	50-199	137	18.8	22.61	Resurface	\$175,760.00	\$13.00	
Evaluated	124	143	Norwich (Township)	Csont Line	Milldale Rd.	Otterville Rd. (Oxford Rd. 19)	50-199	80	10.6	19.86	Resurface	\$137,150.00	\$13.00	
Not Evaluated	146	218	Norwich (Township)	Jones Line	Oxford Rd. 13	Maple Dell Rd.	0-49	25	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	048A	2589	Norwich (Township)	Caley Rd.	Hanmer Line	Base Line	200-499	208	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	115	200	Norwich (Township)	Hanmer Line	Airport Rd.	Maple Dell Rd.	50-199	96	12.9	18.44	Resurface	\$123,435.00	\$13.00	
Not Evaluated	111B	201	Norwich (Township)	Hanmer Line	Caley Rd.	Airport Rd.	50-199	51	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	117A	451	Norwich (Township)	Windham Line	Airport Rd.	Windham Rd. 2	500-999	635	74.3	26.51	Resurface	\$38,357.00	\$13.00	
Evaluated	119A	2610	Norwich (Township)	Middletown Line	Maple Dell Rd.	Milldale Rd.	2000-2999	2133	0	13.66	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	114C	363	Norwich (Township)	Pick Line	Maple Dell Rd.	Milldale Rd.	50-199	113	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	105A.2	2320	Norwich (Township)	Middletown Line	Evergreen St.	Quaker St.	1000-1999	1545	0	13.88	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	103B	238	Norwich (Township)	McCready Line	Highway 59	Evergreen St.	50-199	54	0	0	Not Calculated	\$0.00	-\$1.00	

Evaluated	044	377	Norwich (Township)	Quaker St.	Oxford Rd. 13	Middletown Line	200-499	258	0	2.49	No Maintenance Required	\$0.00	\$0.00	
Not Evaluated	104A.1	458	Norwich (Township)	Zenda Line	Salford Rd.	Evergreen St.	50-199	121	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	037	2582	Norwich (Township)	Evergreen St.	Oxford Rd. 13	Middletown Line	50-199	143	52.3	30.16	Rehabilitation	\$640,744.00	\$26.00	
Evaluated	110	426	Norwich (Township)	Utility Line	Quaker St.	Highway 59	200-499	400	0	3.66	No Maintenance Required	\$0.00	\$0.00	
Evaluated	106B	2735	Norwich (Township)	Slant Rd.	Evergreen St.	552m N. of Quaker St.	1000-1999	1773	0	5.22	No Maintenance Required	\$0.00	\$0.00	
Not Evaluated	047	381	Norwich (Township)	Quaker St.	Base Line	Stover St.	0-49	42	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	235B.1	325	Norwich	North St. W.	Washington St.	Stover St. N.	50-199	100	0	7.57	Routine Maintenance	\$0.00	\$0.00	
Evaluated	201A.1	92	Norwich	Brock St. W.	Clyde St.	End	0-49	25	6	24.42	Rehabilitation	\$47,250.00	\$42.00	Heavy alligator cracking, and lots of patched potholes
Evaluated	203A	311	Norwich	North Court St. W.	Centre St.	Clyde St.	200-499	390	0	11.84	Routine Maintenance	\$0.00	\$0.00	
Evaluated	206B	400	Norwich	South Court St. W.	John St.	Washington St.	200-499	250	17.1	22.28	Resurface	\$15,775.00	\$25.00	
Evaluated	210B.2	2623	Norwich	Elgin St. W.	John St.	Washington St.	200-499	250	0	10.73	Routine Maintenance	\$0.00	\$0.00	
Evaluated	237B	439	Norwich	Washington St.	South Court St. W.	Elgin St. W.	200-499	250	22.7	14.86	Preventive Maintenance	\$5,312.00	\$4.00	
Evaluated	232B	209	Norwich	John St.	Brock St. W.	North Court St. W.	200-499	350	0	4.44	No Maintenance Required	\$0.00	\$0.00	
Evaluated	231C	128	Norwich	Clyde St.	South Court St. W.	Elgin St. W.	200-499	303	0	8.61	Routine Maintenance	\$0.00	\$0.00	
Evaluated	230B.2	118	Norwich	Centre St.	Mary St.	Elgin St.	200-499	392	0	8.21	Routine Maintenance	\$0.00	\$0.00	
Evaluated	229C	406	Norwich	Spring St.	Mary St.	Elgin St.	200-499	300	25.8	13.74	Preventive Maintenance	\$4,680.00	\$4.00	
Evaluated	246	2638	Norwich	Bailey St.	Spring St.	Centre St.	50-199	100	0	6.88	Routine Maintenance	\$0.00	\$0.00	
Evaluated	205	237	Norwich	Spring St.	Mary St.	Centre St.	50-199	100	0	6.88	Routine Maintenance	\$0.00	\$0.00	
Evaluated	209	162	Norwich	Elgin St.	Spring St.	Centre St.	50-199	100	6.7	19.95	Resurface	\$16,575.00	\$25.00	
Evaluated	235B.3	322	Norwich	North St. E.	Albert St.	Victoria St.	200-499	300	0	5.15	Routine Maintenance	\$0.00	\$0.00	
Evaluated	202B	95	Norwich	Brock St. E	Victoria St.	Poldon Dr.	200-499	300	0	6.01	Routine Maintenance	\$0.00	\$0.00	
Evaluated	204B	305	Norwich	North Court St. E.	Albert St.	Victoria St.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	207B.1	396	Norwich	South Court St. E.	Albert St.	Victoria St.	200-499	350	0	8.89	Routine Maintenance	\$0.00	\$0.00	Hydro poles are in the road limits
Evaluated	208	161	Norwich	Elgin St. E.	Cook St.	George St.	200-499	250	0	12.38	Routine Maintenance	\$0.00	\$0.00	
Evaluated	228B	361	Norwich	Phebe St.	Main St. E.	End	200-499	300	0	5.15	Routine Maintenance	\$0.00	\$0.00	
Evaluated	228A	2644	Norwich	Sutton St.	Main St. E.	End	0-49	25	0	4.54	Routine Maintenance	\$0.00	\$0.00	
Evaluated	211B	184	Norwich	George St.	Elgin St. E.	Main St. E.	50-199	150	15.1	14.11	Preventive Maintenance	\$4,592.00	\$4.00	
Evaluated	239A	59	Norwich	Albert St.	South Court St. E.	Elgin St. E.	200-499	250	18.2	27.24	Resurface	\$28,550.00	\$25.00	
Evaluated	241B.1	136	Norwich	Cook St.	South Court St. E.	Elgin St. E.	200-499	276	0	2.53	No Maintenance Required	\$0.00	\$0.00	
Evaluated	240B	434	Norwich	Victoria St.	South Court St. E.	Elgin St. E.	200-499	250	0	2.48	No Maintenance Required	\$0.00	\$0.00	
Evaluated	238C	55	Norwich	Albert St.	North St. E.	Brock St. E.	200-499	250	0	6.6	Routine Maintenance	\$0.00	\$0.00	
Evaluated	222A.1	369	Norwich	Pitcher St.	Palmer St. W.	South St.	200-499	350	0	10.67	Routine Maintenance	\$0.00	\$0.00	
Evaluated	218B	206	Norwich	Jerdon St.	Otter St.	Stover St. S.	200-499	350	0	10.67	Routine Maintenance	\$0.00	\$0.00	
Evaluated	245	2563	Norwich	Union St.	Stover St. S.	End	0-49	10	0	5.32	Routine Maintenance	\$0.00	\$0.00	
Evaluated	220D	159	Norwich	Dufferin St.	Sunview Dr.	Robson St.	200-499	379	27.5	28.96	Resurface	\$27,550.00	\$25.00	
Evaluated	242B	60	Norwich	Avery's Lane.	Front St.	Carman St.	200-499	300	0	11.16	Routine Maintenance	\$0.00	\$0.00	
Evaluated	225A	179	Norwich	Florence St.	Main St. W.	Carroll St.	200-499	316	21.6	26.93	Resurface	\$31,275.00	\$25.00	
Evaluated	249B.3	109	Norwich	Cayley St.	Moore Cres.	Irving Dr.	200-499	250	0	11.55	Routine Maintenance	\$0.00	\$0.00	
Evaluated	250	2631	Norwich	Irving Dr.	Cayley St.	End	50-199	50	0	7.39	Routine Maintenance	\$0.00	\$0.00	
Evaluated	243	2639	Norwich	Moore Cres.	Marshall Dr.	Cayley St.	50-199	100	7.2	15.82	Preventive Maintenance	\$14,862.00	\$6.00	
Evaluated	224D	2645	Norwich	Marshall Dr.	Carman St.	Cayley St.	200-499	250	0	9.08	Routine Maintenance	\$0.00	\$0.00	
Evaluated	249	2636	Norwich	Carroll St.	Marshall Dr.	Florence St.	50-199	50	3.7	14.78	Preventive Maintenance	\$3,654.00	\$6.00	
Evaluated	214B.2	103	Norwich	Carman St.	Dufferin St.	Pitcher St.	200-499	350	0	10.67	Routine Maintenance	\$0.00	\$0.00	Township noted that an overlay was completed on this segment due to heavy alligator cracking
Evaluated	215B	355	Norwich	Palmer St. W.	Dufferin St.	Pitcher St.	200-499	250	15.2	21.46	Resurface	\$31,350.00	\$25.00	
Evaluated	216	403	Norwich	South St.	Dufferin St.	Pitcher St.	200-499	250	0	12.38	Routine Maintenance	\$0.00	\$0.00	
Evaluated	223B	343	Norwich	Otter St.	Palmer St. W.	South St.	200-499	250	31.5	16.51	Preventive Maintenance	\$4,120.00	\$4.00	
Evaluated	244	352	Norwich	Palmer St. E.	Stover St. S.	End (Cul-de-Sac)	200-499	300	0	6.87	Routine Maintenance	\$0.00	\$0.00	
Evaluated	213D	423	Norwich	Tidey St.	Pitcher St.	Stover St. S.	200-499	300	45.1	21.47	Preventive Maintenance	\$4,904.00	\$4.00	
Evaluated	213B	124	Norwich	Church St.	Tidey St.	End	0-49	25	4.5	20.44	Rehabilitation	\$18,144.00	\$42.00	
Evaluated	212C	181	Norwich	Front St.	Pitcher St.	Stover St. S.	200-499	350	0	9.78	Routine Maintenance	\$0.00	\$0.00	
Evaluated	249C	2632	Norwich	Pollard St.	Marshall Dr.	Delong Dr.	200-499	250	0	4.95	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	025C	188	Norwich (Township)	Gunn's Hill Rd.	Vandecar Line	Muir Line	50-199	61	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	143	333	Norwich (Township)	Old School Line	Highway 59	Gunn's Hill Rd.	50-199	97	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	096A.2	113	Norwich (Township)	Cedar Line	Rivers Rd.	Gunn's Hill Rd.	50-199	76	0	11.16	Routine Maintenance	\$0.00	\$0.00	
Evaluated	132	245	Norwich (Township)	Middletown Line	Curries Rd.	Gunn's Hill Rd.	500-999	582	0	8.99	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	097A	341	Norwich (Township)	Oriel Line	Curries Rd.	Gunn's Hill Rd.	0-49	18	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	095B	428	Norwich (Township)	Vandecar Line	Curries Rd.	Gunn's Hill Rd.	0-49	9	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	019A	175	Norwich (Township)	Firehall Rd.	Middletown Line	Old 14 Line	0-49	37	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	21C	2736	Norwich (Township)	Kitchen Crt	Curries Rd.	End	0-49	10	2.1	22.87	Rehabilitation	\$107,226.00	\$42.00	
Not Evaluated	093A	114	Norwich (Township)	Cedar Line	426m N. of Curries Rd.	Sweaburg Rd.	50-199	75	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	092A	331	Norwich (Township)	Old 14 Line	Oxford Centre Rd.	Old Stage Rd.	0-49	19	5.1	34.37	Reconstruction	\$313,040.00	\$80.00	
Not Evaluated	095A	429	Norwich (Township)	Vandecar Line	Old Stage Rd.	Curries Rd.	0-49	9	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	021A.2	146	Norwich (Township)	Curries Rd.	Vandecar Line	Muir Line	0-49	41	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	094	247	Norwich (Township)	Middletown Line	Firehall Rd.	Curries Rd.	500-999	582	61.9	18.98	Preventive Maintenance	\$45,676.00	\$4.00	
Evaluated	088	186	Norwich (Township)	Greenly Line	Pattullo Ave	Highway 59	200-499	315	0	9.55	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	005	359	Norwich (Township)	Pattullo Ave	Middletown Line	Oxford Rd. 14	50-199	63	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	014A	348	Norwich (Township)	Oxford Centre Rd.	0.34km E. of Middletown Line	Old 14 Line	0-49	28	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	008	203	Norwich (Township)	Horn Rd.	Sweaburg Rd. (Oxford Rd 12)	Old Stage Rd.	50-199	136	46.1	28.41	Rehabilitation	\$206,336.00	\$26.00	FibreMat and Surface Treatment to be installed this year

Not Evaluated	020B	2574	Norwich (Township)	Old Stage Rd.	Vanecar Line	Muir Line	50-199	65	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	003	424	Norwich (Township)	Towerline Rd.	Highway 53	Muir Line	50-199	97	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	002	2737	Norwich (Township)	Subway Line	Highway 2	Highway 53	500-999	552	49.4	15.78	Preventive Maintenance	\$27,332.00	\$4.00	
Evaluated	280	160	Norwich (Township)	East St. (Eastwood)	Highway 2	Highway 53	50-199	50	0	4.93	Routine Maintenance	\$0.00	\$0.00	
Evaluated	279A	2569	Norwich (Township)	Main St. (Eastwood)	Highway 2	John St	50-199	75	23.2	33.4	Rehabilitation	\$24,696.00	\$42.00	
Evaluated	279B	210	Norwich (Township)	John St. (Eastwood)	East End	West End	50-199	50	9.4	37.58	Reconstruction	\$131,440.00	\$80.00	Very poor condition, no drainage and no cul-de-sac
Evaluated	272B	240	Burgessville	McNab St.	100m E. of Middletown Line	Nichol Lane	50-199	50	0	5.54	Routine Maintenance	\$0.00	\$0.00	
Evaluated	274	393	Burgessville	Smith's Lane	McNab St.	Church St. E.	0-49	25	0	3.98	Routine Maintenance	\$0.00	\$0.00	
Evaluated	273B	294	Burgessville	Nichol Lane	McNab St.	Church St. E.	50-199	50	0	8.62	Routine Maintenance	\$0.00	\$0.00	
Evaluated	275B	148	Burgessville	Deere Cres.	Church St. W.	Snyder Court	50-199	50	0	4.93	Routine Maintenance	\$0.00	\$0.00	
Evaluated	276	394	Burgessville	Snyder Court	Deere Cres.	End (Cul-de-Sac)	0-49	25	0	4.54	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	296		Norwich (Township)	Oxford Rd. 13	Oxford Rd. 13	Milldale Rd.	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	297		Norwich (Township)	Oxford Rd. 13	Oxford Rd. 13	Milldale Rd.	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	251E		Norwich	Bushell Dr.	Poldon Dr.	Lossing Dr.	200-499	275	0	4.21	No Maintenance Required	\$0.00	\$0.00	
Evaluated	252		Norwich	Bushell Dr.	Poldon Dr.	End (Cul-de-Sac)	0-49	25	0	2.27	No Maintenance Required	\$0.00	\$0.00	
Evaluated	251B		Norwich	Poldon Dr.	North St. E.	Brock St. E.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	282		Norwich	Tompkins Cr.	Delong Dr.	End (Cul-de-Sac)	50-199	50	0	3.7	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	299		Norwich (Township)	Oxford Rd. 14	Oxford Rd. 14	Gunn's Hill Rd.	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	300		Norwich (Township)	Oxford Rd. 14	Oxford Rd. 14	Gunn's Hill Road	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	298		Norwich (Township)	Oxford Rd. 14	Oxford Rd. 14	Curries Rd.	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	273C.1	98	Burgessville	Burgess St.	Church St. E.	440m S. of Church St. E.	50-199	100	28.8	35.77	Rehabilitation	\$121,422.00	\$42.00	
Evaluated	145B	386	Norwich (Township)	Second Rd.	Slant Rd.	Base Line	50-199	104	0	2.08	No Maintenance Required	\$0.00	\$0.00	
Not Evaluated	101	2607	Norwich (Township)	Zenda Line	Beaconsfield Rd.	Salford Rd.	50-199	178	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	035A.1	2579	Norwich (Township)	Beaconsfield Rd.	Oxford Rd. 14	Vandecar Line	50-199	59	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	100B	430	Norwich (Township)	Vandecar Line	Substation Rd.	Beaconsfield Rd.	0-49	24	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	103A	239	Norwich (Township)	McCreedy Line	Beaconsfield Rd.	Highway 59	0-49	27	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	099B	264	Norwich (Township)	Middletown Line	Substation Rd.	Beaconsfield Rd.	1000-1999	1075	0	11.56	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	100A	431	Norwich (Township)	Vandecar Line	Gunn's Hill Rd.	Substation Rd.	0-49	24	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	097B	342	Norwich (Township)	Oriel Line	Gunn's Hill Rd.	Substation Rd.	0-49	18	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	030	410	Norwich (Township)	Substation Rd.	Vandecar Line	Muir Line	50-199	116	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	086	66	Norwich (Township)	Base Line	Potters Rd.	Mall Rd.	200-499	369	0	13.49	Routine Maintenance	\$0.00	\$0.00	
Evaluated	133B	67	Norwich (Township)	Base Line	Ninth Rd.	New Rd.	1000-1999	1111	229	85.04	Reconstruction	\$798,560.00	\$80.00	
Evaluated	116E	68	Norwich (Township)	Base Line	Milldale Rd.	Otterville Rd. (Oxford Rd. 19)	500-999	928	0	16.73	Routine Maintenance	\$0.00	\$0.00	
Evaluated	107G	69	Norwich (Township)	Base Line	13th Conc Line	Norwich Rd.	500-999	909	0	9.99	Routine Maintenance	\$0.00	\$0.00	
Evaluated	031A	83	Norwich (Township)	Beaconsfield Rd.	Zenda Line	Trillium Line	500-999	548	34.4	30.53	Resurface	\$136,900.00	\$25.00	
Evaluated	031B	84	Norwich (Township)	Beaconsfield Rd.	Trillium Line	Cedar Line	500-999	548	32.2	28.56	Resurface	\$38,763.00	\$25.00	
Evaluated	032	82	Norwich (Township)	Beaconsfield Rd.	Cedar Line	Hwy 59	500-999	548	35.5	31.52	Resurface	\$336,525.00	\$25.00	Heavily rutted at the start of the segment
Not Evaluated	033A	2576	Norwich (Township)	Beaconsfield Rd.	Hwy 59	299m E. of Middletown Line	50-199	128	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	102B	242	Norwich (Township)	Middletown Line	Beaconsfield Rd.	831m S. of Beaconsfield Rd.	500-999	929	83.3	17.85	Preventive Maintenance	\$24,020.00	\$4.00	
Not Evaluated	034B	2577	Norwich (Township)	Beaconsfield Rd.	Middletown Line	McCreedy Line	50-199	90	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	035A.2	2580	Norwich (Township)	Beaconsfield Rd.	Vandecar Line	Muir Line	50-199	59	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	107A	70	Norwich (Township)	Base Line	New Durham Rd.	Second Rd.	500-999	909	0	14.43	Routine Maintenance	\$0.00	\$0.00	
Evaluated	107B	71	Norwich (Township)	Base Line	Second Rd.	Eleventh Conc Rd.	500-999	909	0	14.43	Routine Maintenance	\$0.00	\$0.00	
Evaluated	107C	72	Norwich (Township)	Base Line	Eleventh Conc Rd.	Evergreen St.	500-999	909	0	14.43	Routine Maintenance	\$0.00	\$0.00	
Evaluated	107D	73	Norwich (Township)	Base Line	Evergreen St.	Hatchley Rd.	500-999	909	0	5.55	No Maintenance Required	\$0.00	\$0.00	
Evaluated	107E	74	Norwich (Township)	Base Line	Hatchley Rd.	Quaker St.	500-999	909	0	5.55	No Maintenance Required	\$0.00	\$0.00	
Evaluated	107F	75	Norwich (Township)	Base Line	Quaker St.	13th Concession Rd.	500-999	909	0	9.99	Routine Maintenance	\$0.00	\$0.00	
Evaluated	116A	76	Norwich (Township)	Base Line	Norwich Rd.	Caley Rd.	500-999	909	0	11.1	Routine Maintenance	\$0.00	\$0.00	
Evaluated	048B	100	Norwich (Township)	Caley Rd.	Base Line	Windham Line	200-499	208	24.5	15.86	Preventive Maintenance	\$17,000.00	\$4.00	
Evaluated	053	2591	Norwich (Township)	Airport Rd.	Base Line	Windham Line	500-999	636	0	7.14	Routine Maintenance	\$0.00	\$0.00	
Evaluated	116B	77	Norwich (Township)	Base Line	Caley Rd.	Airport Rd.	1000-1999	1406	0	16.03	Routine Maintenance	\$0.00	\$0.00	
Evaluated	116C	78	Norwich (Township)	Base Line	Airport Rd.	Maple Dell Rd.	1000-1999	1406	0	14.8	Routine Maintenance	\$0.00	\$0.00	
Evaluated	057C	2592	Norwich (Township)	Maple Dell Rd.	Base Line	Windham Line	50-199	165	24.1	25.73	Resurface	\$68,978.00	\$13.00	
Evaluated	133A	79	Norwich (Township)	Base Line	Otterville Rd.	Ninth Rd.	1000-1999	1111	111.4	29.12	Preventive Maintenance	\$58,410.00	\$6.00	Breakup is present throughout the road segment
Evaluated	076	2603	Norwich (Township)	New Rd.	Base Line	Swimming Pool Rd.	500-999	692	89.3	31.21	Resurface	\$100,334.00	\$13.00	
Evaluated	138B	63	Norwich (Township)	Base Line	Cecilia St	Nelson St	50-199	184	0	10.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	138C	64	Norwich (Township)	Base Line	Nelson St.	Wendy's Rd.	50-199	184	0	10.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	138A	65	Norwich (Township)	Base Line	New Rd.	Cecilia St.	50-199	184	17.7	12.38	Preventive Maintenance	\$4,156.00	\$4.00	
Evaluated	084B	2605	Norwich (Township)	Mall Rd.	Base Line	Swimming Pool Rd.	500-999	896	122.3	24.34	Preventive Maintenance	\$17,342.00	\$4.00	
Evaluated	084A	220	Norwich (Township)	Mall Rd.	Highway 59	Base Line	500-999	896	138.9	27.66	Preventive Maintenance	\$21,438.00	\$4.00	
Evaluated	083	223	Norwich (Township)	Mall Rd.	Summerville Line	Hwy 59	1000-1999	1137	152.2	38.66	Resurface	\$99,041.00	\$13.00	some gullies present that require ditching
Evaluated	074B	253	Norwich (Township)	Middletown Line	New Rd.	Potters Rd. (Oxford Rd. 37)	200-499	200	22.3	20.47	Resurface	\$133,172.00	\$13.00	
Evaluated	074.1	291	Norwich (Township)	New Rd.	Middletown Line	Furnace Rd.	50-199	168	26.4	17.47	Preventive Maintenance	\$48,948.00	\$4.00	minor edge breakup present
Evaluated	074.2	289	Norwich (Township)	New Rd.	Furnace Rd.	Coal Line	50-199	168	22.9	21.27	Resurface	\$111,293.00	\$13.00	Potholes and edge breakup are present on this segment
Evaluated	132B	2618	Norwich (Township)	Coal Line	New Rd.	Highway 59	500-999	660	0	14.4	Routine Maintenance	\$0.00	\$0.00	FibreMat has been completed on this section
Evaluated	074.3	288	Norwich (Township)	New Rd.	Coal Line	Highway 59	50-199	168	18.8	19.75	Resurface	\$13,676.00	\$13.00	
Evaluated	067A	299	Norwich (Township)	Ninth Rd.	Cornell Rd.	Coal Line	200-499	405	61	31.23	Resurface	\$54,002.00	\$13.00	
Evaluated	132A.1	2740	Norwich (Township)	Coal Line	Cornell Rd.	Ninth Rd.	500-999	660	252	43.21	Rehabilitation	\$66,248.00	\$26.00	
Evaluated	261F	152	Norwich (Township)	Dover St.	John St. S.	Cornell Rd.	500-999	815	0	10.81	Routine Maintenance	\$0.00	\$0.00	

Evaluated	261E	153	Otterville	Dover St.	Norfolk St.	John St. S.	500-999	815	0	9.73	Routine Maintenance	\$0.00	\$0.00	
Evaluated	260A	304	Otterville	Norfolk St.	Albert St.	End (Cul-de-Sac)	0-49	40	0	7.78	Routine Maintenance	\$0.00	\$0.00	
Evaluated	259A	447	Otterville	Wellington St. W.	Albert St.	End	0-49	35	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	258C	273	Otterville	Albert St.	Wellington St. W.	Norfolk St.	0-49	15	0	3.27	Routine Maintenance	\$0.00	\$0.00	Tree trimming is required, stop sign is obstructed
Evaluated	259B	448	Otterville	Wellington St. W.	Albert St.	Dover St.	50-199	75	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	261D	154	Otterville	Dover St.	Wellington St.	Norfolk St.	500-999	815	0	8.65	Routine Maintenance	\$0.00	\$0.00	
Evaluated	256C.1	383	Otterville	Queen St. W	Albert St.	Dover St.	50-199	75	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	261C	155	Otterville	Dover St.	Queen St.	Wellington St.	500-999	815	0	8.65	Routine Maintenance	\$0.00	\$0.00	
Evaluated	258B	272	Otterville	Albert St.	Queen St. W.	Wellington St. W.	0-49	30	0	4.05	Routine Maintenance	\$0.00	\$0.00	
Evaluated	261A	156	Otterville	Dover St.	Main St.	Mill St.	500-999	815	0	11.9	Routine Maintenance	\$0.00	\$0.00	
Evaluated	262A	215	Otterville	John St. S.	Main St. E.	Mill St. E.	500-999	684	75.2	18.67	Preventive Maintenance	\$3,460.00	\$4.00	
Evaluated	256A.2	271	Otterville	Mill St. E.	Oxford St.	John St. S.	50-199	100	0	8.94	Routine Maintenance	\$0.00	\$0.00	
Evaluated	263B	269	Otterville	Buchan St.	Main St. E.	Mill St. E.	50-199	100	10.2	11.01	Preventive Maintenance	\$3,200.00	\$4.00	
Evaluated	254E	2566	Otterville	York St.	North St. E.	Main St. E.	50-199	150	0	8.17	Routine Maintenance	\$0.00	\$0.00	
Evaluated	254F.4	318	Otterville	North St. E.	Cedar St.	York St.	50-199	140	16.1	13.19	Preventive Maintenance	\$3,832.00	\$4.00	
Evaluated	254F.3	319	Otterville	North St. E.	Bond St.	Cedar St.	50-199	140	17.5	13.92	Preventive Maintenance	\$4,124.00	\$4.00	
Evaluated	254B	2565	Otterville	John St. N.	Main St. E.	North St. E.	50-199	150	0	8.91	Routine Maintenance	\$0.00	\$0.00	
Evaluated	253B	320	Otterville	North St. W.	Paxton St.	Bullock St.	50-199	150	35.9	31.19	Rehabilitation	\$45,150.00	\$42.00	
Evaluated	253A	317	Otterville	Bullock St.	Main St. W.	North St. W.	50-199	150	31.8	26.73	Rehabilitation	\$18,732.00	\$42.00	
Evaluated	256B	266	Otterville	Mill St. W.	Albert St.	Dover St.	50-199	100	0	5.5	Routine Maintenance	\$0.00	\$0.00	
Evaluated	258A	270	Otterville	Albert St.	Mill St. W.	Queen St. W.	0-49	40	0	6.58	Routine Maintenance	\$0.00	\$0.00	
Evaluated	256C.3	384	Otterville	Queen St. E	Oxford St.	John St. S.	50-199	75	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	262B	216	Otterville	John St. S.	Mill St. E.	Queen St. E.	500-999	684	0	12.45	Routine Maintenance	\$0.00	\$0.00	
Evaluated	262C	217	Otterville	John St. S.	Queen St. E.	Wellington St. E.	500-999	684	0	13.49	Routine Maintenance	\$0.00	\$0.00	
Evaluated	250A.3	2310	Otterville	North St. W.	Church St.	Maple St.	50-199	60	0	7.59	Routine Maintenance	\$0.00	\$0.00	
Evaluated	250A.1	2311	Otterville	North St. W.	Grove St.	End	50-199	50	0	6.16	Routine Maintenance	\$0.00	\$0.00	
Evaluated	255B	2364	Otterville	Cherry St.	Main St. W.	Mill St. W.	0-49	35	0	6.47	Routine Maintenance	\$0.00	\$0.00	
Evaluated	255C.1	2367	Otterville	Mill St. W.	Cherry St.	Pine St.	0-49	40	0	6.58	Routine Maintenance	\$0.00	\$0.00	
Evaluated	265B	2628	Otterville	Otter View Dr	Mill St. W.	Van Parys Dr.	50-199	115	0	7.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	127	2614	Norwich (Township)	Middletown Line	Otterville Rd. (Oxford Rd. 19)	Ninth Rd.	500-999	574	0	1	No Maintenance Required	\$0.00	\$0.00	To be paved in 2023 (pulverized at the time of inspection)
Evaluated	072A	139	Norwich (Township)	Cornell Rd.	Middletown Line	Furnace Rd.	1000-1999	1029	0	10.29	Routine Maintenance	\$0.00	\$0.00	
Evaluated	129	2616	Norwich (Township)	Middletown Line	Ninth Rd.	Cornell Rd.	500-999	574	0	1	No Maintenance Required	\$0.00	\$0.00	To be paved in 2023 (pulverized at the time of inspection)
Evaluated	070	140	Norwich (Township)	Cornell Rd.	Oxford Rd. 13	Oatman Line	1000-1999	1553	0	11.37	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	066B	2599	Norwich (Township)	Ninth Rd.	Oatman Line	Middletown Line	0-49	40	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	066A	2600	Norwich (Township)	Ninth Rd.	Oxford Rd. 13	Oatman Line	0-49	40	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	058B	2381	Norwich (Township)	Milldale Rd.	Oxford Rd. 13	1.9km W. of Oxford Rd. 13	200-499	386	38.4	16.36	Preventive Maintenance	\$54,924.00	\$4.00	
Not Evaluated	013A	349	Norwich (Township)	Oxford Centre Rd.	W. of Middletown Line	Not Recorded	0-49	13	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	090A	260	Norwich (Township)	Middletown Line	Pattullo Ave	300m N. of Oxford Centre Rd.	1000-1999	1063	0	12.68	Routine Maintenance	\$0.00	\$0.00	
Evaluated	011B	2573	Norwich (Township)	Old Stage Rd.	Highway 59	320m W. of Middletown Line	200-499	451	0	5.65	Routine Maintenance	\$0.00	\$0.00	
Evaluated	091A	259	Norwich (Township)	Middletown Line	Oxford Centre Rd.	Old Stage Rd.	500-999	904	0	7.76	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	017	176	Norwich (Township)	Firehall Rd.	Highway 59	Middletown Line	0-49	32	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	092B	332	Norwich (Township)	Old 14 Line	Oxford Centre Rd.	Firehall Rd.	0-49	19	5.1	34.37	Reconstruction	\$140,320.00	\$80.00	
Not Evaluated	016B	2334	Norwich (Township)	Old Stage Rd.	480m E. of Middletown Line	Old 14 Line	50-199	83	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	020A	2575	Norwich (Township)	Old Stage Rd.	Oxford Rd. 14	Vandecar Line	50-199	65	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	021A.1	144	Norwich (Township)	Curries Rd.	Oxford Rd. 14	Vandecar Line	0-49	41	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	022A	189	Norwich (Township)	Gunn's Hill Rd.	Cedar Line	Old School Line	50-199	60	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	022B	190	Norwich (Township)	Gunn's Hill Rd.	Old School Line	Highway 59	50-199	60	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	023	191	Norwich (Township)	Gunn's Hill Rd.	Highway 59	Middletown Line	50-199	148	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	024B	193	Norwich (Township)	Gunn's Hill Rd.	Middletown Line	Oriel Line	50-199	58	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	024C	194	Norwich (Township)	Gunn's Hill Rd.	Oriel Line	Oxford Rd. 14	50-199	58	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	025A	198	Norwich (Township)	Gunn's Hill Rd.	Oxford Rd. 14	Vandecar Line	50-199	61	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	025B	199	Norwich (Township)	Gunn's Hill Rd.	Vandecar Line	Vandecar Line	50-199	61	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	026	411	Norwich (Township)	Substation Rd.	Cedar Line	Highway 59	50-199	85	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	027	412	Norwich (Township)	Substation Rd.	Highway 59	Middletown Line	50-199	84	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	099A	248	Norwich (Township)	Middletown Line	Gunn's Hill Rd.	Substation Rd.	1000-1999	1075	0	9.25	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	028A	413	Norwich (Township)	Substation Rd.	Middletown Line	Oriel Line	50-199	60	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	028B	414	Norwich (Township)	Substation Rd.	Oriel Line	Oxford Rd. 14	50-199	60	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	029A	415	Norwich (Township)	Substation Rd.	Oxford Rd. 14	Vandecar Line	50-199	85	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	029B	416	Norwich (Township)	Substation Rd.	Vandecar Line	Vandecar Line	50-199	116	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	034C	2578	Norwich (Township)	Beaconsfield Rd.	McCready Line	Oxford Rd. 14	50-199	90	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	145A	387	Norwich (Township)	Second Rd.	New Durham Rd.	Slant Rd.	50-199	104	0	2.08	No Maintenance Required	\$0.00	\$0.00	
Evaluated	106A.1	2581	Norwich (Township)	Slant Rd.	Second Rd.	New Durham Rd.	1000-1999	1773	0	6.53	No Maintenance Required	\$0.00	\$0.00	
Evaluated	106A.2	2734	Norwich (Township)	Slant Rd.	New Durham Line	Evergreen St.	1000-1999	1773	0	6.53	No Maintenance Required	\$0.00	\$0.00	
Not Evaluated	041B	2585	Norwich (Township)	Evergreen St.	Slant Rd.	Base Line	50-199	61	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	041A	2586	Norwich (Township)	Evergreen St.	Highway 59	Slant Rd.	50-199	61	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	038B	2583	Norwich (Township)	Evergreen St.	McCready Line	Oxford Rd. 59	200-499	200	15.9	26.76	Resurface	\$226,725.00	\$25.00	
Evaluated	105A.1	2319	Burgessville	Middletown Line	387m S. of Church St.	Evergreen St.	1000-1999	1545	0	16.41	Routine Maintenance	\$0.00	\$0.00	
Evaluated	038A	2584	Norwich (Township)	Evergreen St.	Middletown Line	McCready Line	200-499	200	77.4	34.64	Rehabilitation	\$370,526.00	\$26.00	
Not Evaluated	036	174	Norwich (Township)	Evergreen St.	Zenda Line	Oxford Rd. 13	50-199	85	0	0	Not Calculated	\$0.00	-\$1.00	

Evaluated	272C	241	Burgessville	McNab St.	Nichol Lane	Smith's Lane	50-199	50	0	5.54	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	104A.2	456	Norwich (Township)	Zenda Line	672m S. of Evergreen St.	Evergreen St.	50-199	121	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	043	378	Norwich (Township)	Quaker St.	Zenda Line	Oxford Rd. 13	200-499	255	0	0.83	No Maintenance Required	\$0.00	\$0.00	To be paved in 2023 (crews were pulverizing the road at the time of inspection)
Evaluated	105B.1	2321	Norwich (Township)	Middletown Line	Quaker St.	Norwich Rd.	2000-2999	2542	0	21.39	Routine Maintenance	\$0.00	\$0.00	
Evaluated	045	379	Norwich (Township)	Quaker St.	Middletown Line	Highway 59	500-999	628	67.7	19.32	Preventive Maintenance	\$100,736.00	\$4.00	
Evaluated	046A	2587	Norwich (Township)	Quaker St.	Highway 59	Utility Line	1000-1999	1185	0	4.73	No Maintenance Required	\$0.00	\$0.00	
Evaluated	046B	2588	Norwich (Township)	Quaker St.	Utility Line	Slant Rd.	1000-1999	1185	0	5.92	No Maintenance Required	\$0.00	\$0.00	
Evaluated	235B.2	323	Norwich	North St. E.	Stover St. N.	Albert St.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	238B	56	Norwich	North St. E.	North St. E.	67m N. of North St. E.	50-199	75	0	3.27	No Maintenance Required	\$0.00	\$0.00	
Evaluated	235B.4	2640	Norwich	North St. E.	Victoria St.	Poldon Dr.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	247B	2637	Norwich	Lossing Dr.	Poldon Dr.	Lossing Dr.	200-499	311	0	6.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	204D	310	Norwich	North Court St. E.	Polden Dr	Cook St.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	204C	306	Norwich	North Court St. E.	Victoria St.	Cook St.	200-499	300	0	4.29	No Maintenance Required	\$0.00	\$0.00	
Evaluated	235A.2	432	Norwich	Victoria St.	Brock St. E.	North Court St. E.	200-499	250	0	3.3	No Maintenance Required	\$0.00	\$0.00	
Evaluated	204A	307	Norwich	North Court St. E.	Stover St. N.	Albert St.	200-499	300	0	5.15	Routine Maintenance	\$0.00	\$0.00	
Evaluated	202A.1	96	Norwich	Brock St. E	Stover St. N.	Albert St.	200-499	300	0	6.87	Routine Maintenance	\$0.00	\$0.00	
Evaluated	238D	57	Norwich	Brock St. E.	Brock St. E.	North Court St. E.	200-499	250	0	7.43	Routine Maintenance	\$0.00	\$0.00	
Evaluated	235A.1	433	Norwich	Victoria St.	North St. E.	Brock St. E.	200-499	250	37	18.16	Preventive Maintenance	\$4,248.00	\$4.00	
Evaluated	202A.2	97	Norwich	Brock St. E	Albert St.	Victoria St.	200-499	300	0	7.73	Routine Maintenance	\$0.00	\$0.00	
Evaluated	234A	442	Norwich	Washington St.	North St. W.	Brock St. W.	50-199	100	9.8	11.01	Preventive Maintenance	\$4,700.00	\$4.00	
Evaluated	201B	93	Norwich	Brock St. W.	Washington St.	Stover St. N.	200-499	300	81	41.22	Rehabilitation	\$34,398.00	\$42.00	Lots of alligator cracking as well as pothole and edge patches
Evaluated	236A	437	Norwich	Washington St.	Brock St. W.	North Court St. W.	200-499	250	0	6.6	Routine Maintenance	\$0.00	\$0.00	
Evaluated	203B.3	312	Norwich	North Court St. W.	Washington St.	Stover St. N.	200-499	390	0	9.11	Routine Maintenance	\$0.00	\$0.00	
Evaluated	206C	402	Norwich	South Court St. W.	Washington St.	Stover St. N.	200-499	250	34.6	18.16	Preventive Maintenance	\$3,200.00	\$4.00	
Evaluated	236B	443	Norwich	Washington St.	North Court St. W.	South Court St. W.	200-499	250	0	6.6	Routine Maintenance	\$0.00	\$0.00	
Evaluated	210A.1	2622	Norwich	Elgin St. W.	Washington St.	Stover St. N.	200-499	250	0	12.38	Routine Maintenance	\$0.00	\$0.00	
Evaluated	237A	440	Norwich	Washington St.	Elgin St. W.	Main St. W.	200-499	300	41.5	19.75	Preventive Maintenance	\$4,020.00	\$4.00	
Evaluated	210B.1	2624	Norwich	Elgin St. W.	Clyde St.	John St.	200-499	250	18.1	14.86	Preventive Maintenance	\$4,344.00	\$6.00	
Evaluated	233	2641	Norwich	John St.	Elgin St. W.	Main St. W.	200-499	395	0	8.22	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	102A		Norwich (Township)	Middletown Line	Beaconsfield Rd.	Middletown Line	0-49		0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	091C		Norwich (Township)	Middletown Line	335m S. of Old Stage Rd.	Firehall Rd.	500-999	904	0	8.87	Routine Maintenance	\$0.00	\$0.00	
Evaluated	206A	401	Norwich	South Court St. W.	Clyde St.	John St.	200-499	250	21.1	28.89	Resurface	\$16,900.00	\$25.00	
Evaluated	232D	211	Norwich	John St.	South Court St. W.	Elgin St. W.	200-499	350	0	4.44	No Maintenance Required	\$0.00	\$0.00	
Evaluated	203B.2	313	Norwich	North Court St. W.	John St.	Washington St.	200-499	390	53.9	20.95	Preventive Maintenance	\$2,868.00	\$4.00	
Evaluated	232C	212	Norwich	John St.	North Court St. W.	South Court St. W.	200-499	350	0	4.44	No Maintenance Required	\$0.00	\$0.00	
Evaluated	201A.3	94	Norwich	Brock St. W.	John St.	Washington St.	200-499	250	77.4	45.39	Rehabilitation	\$28,938.00	\$42.00	
Evaluated	232A	213	Norwich	John St.	Brock St. W.	End	0-49	10	0	2.66	No Maintenance Required	\$0.00	\$0.00	
Evaluated	203B.1	314	Norwich	North Court St. W.	Clyde St.	John St.	200-499	390	22.7	23.68	Resurface	\$18,100.00	\$25.00	
Evaluated	231A	129	Norwich	Clyde St.	Brock St. W.	North Court St. W.	200-499	303	0	9.47	Routine Maintenance	\$0.00	\$0.00	
Evaluated	231B	130	Norwich	Clyde St.	North Court St. W.	South Court St. W.	200-499	303	0	6.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	231D	131	Norwich	Clyde St.	Elgin St. W.	Main St. W.	200-499	303	0	10.33	Routine Maintenance	\$0.00	\$0.00	
Evaluated	210A.2	166	Norwich	Elgin St. E.	Stover St. N.	Albert St.	200-499	250	18.5	15.68	Preventive Maintenance	\$2,982.00	\$6.00	
Evaluated	239B	58	Norwich	Albert St.	Elgin St. E.	Main St. E.	200-499	250	31.1	17.33	Preventive Maintenance	\$4,080.00	\$4.00	
Evaluated	210A.3	167	Norwich	Albert St.	Elgin St. E.	Victoria St.	200-499	250	20.5	17.33	Preventive Maintenance	\$3,144.00	\$6.00	This road segment has a well established crown
Evaluated	240C	435	Norwich	Victoria St.	Elgin St. E.	Main St. E.	200-499	250	0	2.48	No Maintenance Required	\$0.00	\$0.00	
Evaluated	210A.4	168	Norwich	Elgin St. E.	Victoria St.	Cook St.	200-499	250	29.5	15.68	Preventive Maintenance	\$2,288.00	\$4.00	
Evaluated	241B.2	137	Norwich	Cook St.	Elgin St. E.	Main St. E.	200-499	276	0	2.53	No Maintenance Required	\$0.00	\$0.00	
Evaluated	211A	185	Norwich	George St.	Elgin St. E.	End	0-49	25	2.9	13.06	Preventive Maintenance	\$1,904.00	\$4.00	
Evaluated	207B.3	397	Norwich	South Court St. E.	Cook St.	End	200-499	350	0	3.56	No Maintenance Required	\$0.00	\$0.00	
Evaluated	241A	135	Norwich	Cook St.	North Court St. E.	South Court St. E.	200-499	276	0	5.06	Routine Maintenance	\$0.00	\$0.00	
Evaluated	207B.2	398	Norwich	South Court St. E.	Victoria St.	Cook St.	200-499	350	0	7.11	Routine Maintenance	\$0.00	\$0.00	
Evaluated	240A	436	Norwich	Victoria St.	North Court St. E.	South Court St. E.	200-499	250	0	3.3	No Maintenance Required	\$0.00	\$0.00	
Evaluated	207A	399	Norwich	South Court St. E.	Stover St. N.	Albert St.	200-499	350	20.3	23.11	Resurface	\$12,575.00	\$25.00	
Evaluated	230A.1	2642	Norwich	Centre St.	Bailey St.	End	0-49	25	0	7.38	Routine Maintenance	\$0.00	\$0.00	
Evaluated	230A.2	121	Norwich	Centre St.	Bailey St.	North Court St. W.	50-199	100	0	4.13	Routine Maintenance	\$0.00	\$0.00	
Evaluated	230B.1	122	Norwich	Centre St.	North Court St. W.	Mary St.	200-499	392	0	5.47	Routine Maintenance	\$0.00	\$0.00	
Evaluated	230C	119	Norwich	Centre St.	Elgin St.	Main St. W.	200-499	392	22.1	23.71	Resurface	\$25,350.00	\$25.00	
Evaluated	229A	2643	Norwich	Spring St.	Bailey St.	End	0-49	35	0	5.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	229B	409	Norwich	Spring St.	Bailey St.	Mary St.	200-499	200	0	10.23	Routine Maintenance	\$0.00	\$0.00	
Evaluated	229D	407	Norwich	Spring St.	Elgin St.	Main St. W.	200-499	300	0	9.45	Routine Maintenance	\$0.00	\$0.00	
Evaluated	224A	2646	Norwich	Marshall Dr.	Carroll St.	End (Cul-de-Sac)	200-499	250	0	9.08	Routine Maintenance	\$0.00	\$0.00	
Evaluated	224B	2647	Norwich	Marshall Dr.	Carroll St.	Pollard St.	200-499	250	15	15.68	Preventive Maintenance	\$4,488.00	\$6.00	
Evaluated	224C	2648	Norwich	Marshall Dr.	Pollard St.	Carman St.	200-499	250	0	9.9	Routine Maintenance	\$0.00	\$0.00	
Evaluated	225B	178	Norwich	Florence St.	Carroll St.	Carman St.	200-499	316	40.5	18.24	Preventive Maintenance	\$4,488.00	\$4.00	Township noted that an overlay was completed on this segment due to heavy alligator cracking
Evaluated	214C.1	104	Norwich	Carman St.	Marshall Dr.	Florence St.	200-499	350	12.4	23.11	Resurface	\$20,640.00	\$32.00	
Evaluated	214C.2	105	Norwich	Carman St.	Florence St.	Cayley St.	200-499	350	52.3	32	Rehabilitation	\$32,886.00	\$42.00	
Evaluated	214C.3	106	Norwich	Carman St.	Cayley St.	Avery's Lane	200-499	350	19.7	29.33	Resurface	\$21,775.00	\$25.00	

Evaluated	214B.1	107	Norwich	Carman St.	Avery's Lane	Dufferin St.	200-499	350	47.7	19.55	Preventive Maintenance	\$2,392.00	\$4.00	
Evaluated	214A.2	101	Norwich	Carman St.	Otter St.	Stover St. S.	200-499	350	0	8	Routine Maintenance	\$0.00	\$0.00	
Evaluated	222C	2625	Norwich	Pitcher St.	Tidey St.	Carman St.	200-499	350	0	12.44	Routine Maintenance	\$0.00	\$0.00	
Evaluated	214A.1	102	Norwich	Carman St.	Pitcher St.	Otter St.	200-499	350	0	8.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	215A.2	353	Norwich	Palmer St. W.	Otter St.	Stover St. S.	200-499	250	38.9	18.16	Preventive Maintenance	\$2,280.00	\$4.00	
Evaluated	223A	344	Norwich	Otter St.	Carman St.	Palmer St. W.	200-499	250	17	23.93	Resurface	\$16,000.00	\$25.00	
Evaluated	215A.1	354	Norwich	Palmer St. W.	Pitcher St.	Otter St.	200-499	250	26.8	14.03	Preventive Maintenance	\$2,152.00	\$4.00	
Evaluated	222B	371	Norwich	Pitcher St.	Carman St.	Palmer St. W.	200-499	350	23.3	24.89	Resurface	\$15,750.00	\$25.00	
Evaluated	218A	207	Norwich	Jerdon St	Pitcher St	Otter St	200-499	350	0	9.78	Routine Maintenance	\$0.00	\$0.00	
Evaluated	222A.2	368	Norwich	Pitcher St.	South St.	Jerdon St.	200-499	350	0	10.67	Routine Maintenance	\$0.00	\$0.00	
Evaluated	217A	404	Norwich	South St.	Pitcher St.	Otter St.	200-499	250	0	4.95	Routine Maintenance	\$0.00	\$0.00	
Evaluated	217B	405	Norwich	South St.	Otter St.	Stover St. S.	200-499	250	0	8.25	Routine Maintenance	\$0.00	\$0.00	Tree trimming is required, stop sign is obstructed
Evaluated	223C	345	Norwich	Otter St.	South St.	Jerdon St.	200-499	250	37.8	19.81	Preventive Maintenance	\$2,712.00	\$4.00	
Evaluated	220B	157	Norwich	Dufferin St.	Palmer St. W.	South St.	200-499	379	0	13.57	Routine Maintenance	\$0.00	\$0.00	
Evaluated	219	385	Norwich	Robson St.	Dufferin St.	Stover St. S.	200-499	350	73.7	33.77	Rehabilitation	\$106,428.00	\$42.00	
Evaluated	213C	422	Norwich	Tidey St.	Church St.	Pitcher St.	50-199	100	10.5	11.7	Preventive Maintenance	\$3,016.00	\$4.00	
Evaluated	222D	372	Norwich	Pitcher St.	Front St.	Tidey St.	200-499	350	0	8.89	Routine Maintenance	\$0.00	\$0.00	
Evaluated	213A.1	125	Norwich	Church St.	Main St. W.	Front St.	50-199	75	0	9.82	Routine Maintenance	\$0.00	\$0.00	
Evaluated	212A	180	Norwich	Front St.	Avery's Lane	Church St.	50-199	100	13.8	15.14	Preventive Maintenance	\$4,736.00	\$4.00	1 isolated patch of severe alligator cracking
Evaluated	212B	182	Norwich	Front St.	Church St.	Pitcher St.	50-199	100	8.2	23.39	Resurface	\$17,825.00	\$25.00	
Evaluated	222E	373	Norwich	Pitcher St.	Main St. W.	Front St.	200-499	350	21.5	26.66	Resurface	\$11,675.00	\$25.00	Township noted this road is to be improved/widened when the property to the northeast is developed
Evaluated	213A.2	126	Norwich	Church St.	Front St.	Tidey St.	50-199	75	11.4	16.37	Preventive Maintenance	\$1,584.00	\$4.00	
Not Evaluated	114A	364	Norwich (Township)	Pick Line	Norwich Rd.	Airport Rd.	50-199	113	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	051A	2738	Norwich (Township)	Airport Rd.	Middletown Line	Pick Line	1000-1999	1288	0	9.66	Routine Maintenance	\$0.00	\$0.00	
Evaluated	105B.2	256	Norwich (Township)	Middletown Line	Norwich Rd.	Airport Rd.	2000-2999	2542	0	12.83	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	055	228	Norwich (Township)	Maple Dell Rd.	Jones Line	Middletown Line	50-199	94	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	109	261	Norwich (Township)	Middletown Line	Airport Rd.	Maple Dell Rd.	2000-2999	2542	0	14.26	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	059	2595	Norwich (Township)	Milldale Rd.	Oxford Rd. 13	Middletown Line	0-49	38	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	119B	254	Norwich (Township)	Middletown Line	Milldale Rd.	Otterville Rd. (Oxford Rd. 19)	2000-2999	2133	0	13.66	Routine Maintenance	\$0.00	\$0.00	
Evaluated	137	420	Norwich (Township)	Summerville Line	Coal Line	Potters Rd.	500-999	953	0	16.84	Routine Maintenance	\$0.00	\$0.00	FibreMat has been completed on this section
Evaluated	057A	2593	Norwich (Township)	Maple Dell Rd.	Highway 59	Hammer Line	50-199	165	22.3	22.7	Resurface	\$218,569.00	\$13.00	
Not Evaluated	019B	177	Norwich (Township)	Firehall Rd.	Old 14 Line	Oxford Rd. 14	0-49	37	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	270	252	Burgessville	Middletown Line	McNab St.	Church St. W.	500-999	698	0	9.38	Routine Maintenance	\$0.00	\$0.00	
Evaluated	009	334	Norwich (Township)	Old Stage Rd.	Sweaburg Rd. (Oxford Rd 12)	Horn Rd.	1000-1999	1349	0	9.77	Routine Maintenance	\$0.00	\$0.00	
Evaluated	010	337	Norwich (Township)	Old Stage Rd.	Horn Rd.	Highway 59	1000-1999	1507	0	10.03	Routine Maintenance	\$0.00	\$0.00	
Evaluated	087	2733	Norwich (Township)	Subway Line	Highway 53	Towerline Rd.	500-999	508	0	2.9	No Maintenance Required	\$0.00	\$0.00	
Not Evaluated	007	360	Norwich (Township)	Pattullo Ave	Highway 53	Muir Line	0-49	36	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	006	2572	Norwich (Township)	Pattullo Ave	Oxford Rd. 14	Highway 53	50-199	72	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	015	350	Norwich (Township)	Oxford Centre Rd.	Oxford Rd. 14	Highway 53	0-49	23	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	014B	351	Norwich (Township)	Oxford Centre Rd.	Old 14 Line	Oxford Rd. 14	0-49	28	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	016C	338	Norwich (Township)	Old Stage Rd.	Old 14 Line	Oxford Rd. 14	50-199	86	0	6.7	Routine Maintenance	\$0.00	\$0.00	
Evaluated	252A	2613	Norwich (Township)	Church St.	North St. W.	Main St. W.	200-499	225	25.5	54.87	Reconstruction	\$106,722.00	\$121.00	
Evaluated	072C	141	Norwich (Township)	Cornell Rd.	Dover St.	Ninth Rd.	1000-1999	1029	0	8.01	Routine Maintenance	\$0.00	\$0.00	
Evaluated	072B	142	Norwich (Township)	Cornell Rd.	Ninth Rd.	Furnace Rd.	1000-1999	1029	0	8.01	Routine Maintenance	\$0.00	\$0.00	
Evaluated	112	452	Norwich (Township)	Windham Line	Caley Rd.	Airport Rd.	200-499	359	43	16.98	Preventive Maintenance	\$10,484.00	\$4.00	Asphalt edge patching has been completed
Not Evaluated	114B	366	Norwich (Township)	Pick Line	Airport Rd.	Maple Dell Rd.	50-199	113	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	056A	230	Norwich (Township)	Maple Dell Rd.	Middletown Line	Pick Line	50-199	83	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	060	282	Norwich (Township)	Milldale Rd.	Middletown Line	Pick Line	0-49	40	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	123A	2612	Norwich (Township)	Pick Line	Milldale Rd.	Church St.	200-499	200	83.5	36.21	Rehabilitation	\$232,388.00	\$26.00	
Evaluated	062B	2560	Norwich (Township)	Seventh Rd.	Highway 59	End	50-199	137	0	5.84	Routine Maintenance	\$0.00	\$0.00	
Evaluated	051B	2590	Norwich (Township)	Airport Rd.	Pick Line	Highway 59	1000-1999	1288	0	3.62	No Maintenance Required	\$0.00	\$0.00	
Evaluated	277C.2	454	Springford	Wood St. E.	Water St.	End	0-49	15	0	5.45	Routine Maintenance	\$0.00	\$0.00	
Evaluated	277D.2	445	Springford	Water St.	Wood St.	Son's St.	0-49	18	0	6.07	Routine Maintenance	\$0.00	\$0.00	
Evaluated	277A	127	Springford	Church St.	Main St	Wood St. W.	50-199	75	0	4.58	Routine Maintenance	\$0.00	\$0.00	
Evaluated	073A	2602	Norwich (Township)	New Rd.	Zenda Line	Union Line	500-999	615	0	13.15	Routine Maintenance	\$0.00	\$0.00	
Evaluated	140B	450	Norwich (Township)	Westtown Line	Simcoe St.	Mall Rd.	200-499	263	41.4	20.86	Preventive Maintenance	\$1,536.00	\$4.00	Significant asphalt patch work has been completed
Evaluated	034A	2375	Norwich (Township)	Beaconsfield Rd.	Middletown Line	Middletown Line	50-199	90	0	6.75	Routine Maintenance	\$0.00	\$0.00	
Evaluated	275A	149	Burgessville	Deere Cres.	Snyder Court	Church St. W.	50-199	50	0	4.93	Routine Maintenance	\$0.00	\$0.00	
Evaluated	234B	438	Norwich	Washington St.	North St. W.	End	0-49	10	0	7.45	Routine Maintenance	\$0.00	\$0.00	
Evaluated	201A.2	91	Norwich	Brock St. W.	Clyde St.	John St.	200-499	250	26.4	14.03	Preventive Maintenance	\$2,808.00	\$4.00	
Evaluated	220A	158	Norwich	Dufferin St	Carman St	Palmer St W	200-499	379	0	13.57	Routine Maintenance	\$0.00	\$0.00	
Evaluated	242A	61	Norwich	Avery's Lane.	Main St. W.	Front St.	200-499	300	29.8	13.74	Preventive Maintenance	\$1,692.00	\$4.00	
Evaluated	249B.1	2633	Norwich	Cayley St.	Carman St.	Marshall Dr.	200-499	250	0	9.9	Routine Maintenance	\$0.00	\$0.00	
Evaluated	249B.2	2634	Norwich	Moore Cres.	Marshall Dr.	Moore Cres.	200-499	250	0	11.55	Routine Maintenance	\$0.00	\$0.00	
Evaluated	063A	2597	Norwich (Township)	Milldale Rd.	Highway 59	Csont Line	50-199	137	51.3	29.18	Rehabilitation	\$279,942.00	\$26.00	Township noted this segment is maintenance intensive for cold patch
Not Evaluated	111A	202	Norwich (Township)	Hanmer Line	Norwich Rd.	Caley Rd.	50-199	51	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	116D	80	Norwich (Township)	Base Line	Maple Dell Rd.	Milldale Rd.	500-999	928	0	11.16	Routine Maintenance	\$0.00	\$0.00	
Evaluated	256A.1	267	Otterville	Mill St. E.	Dover St.	Oxford St.	50-199	100	0	9.63	Routine Maintenance	\$0.00	\$0.00	

Evaluated	057B	2594	Norwich (Township)	Maple Dell Rd.	Hammer Line	Base Line	50-199	165	56.3	28	Rehabilitation	\$166,738.00	\$26.00	
Evaluated	021B	145	Norwich (Township)	Curries Rd.	Cedar Line	Oxford Rd. 59	200-499	307	98.5	49.2	Rehabilitation	\$412,230.00	\$42.00	
Evaluated	125	464	Norwich (Township)	Zenda Line	Ninth Rd.	1.5 km N. of Ninth Rd.	500-999	771	0	7.47	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	077	2561	Norwich (Township)	Cecilia St.	Not Recorded	Not Recorded	0-49	30	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	096B	115	Norwich (Township)	Cedar Line	Substation Rd.	Gunn's Hill Rd.	50-199	76	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	098	116	Norwich (Township)	Cedar Line	Beaconsfield Rd.	Substation Rd.	50-199	154	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	093B	2547	Norwich (Township)	Cedar Line	426m N. of Curries Rd.	Curries Rd.	50-199	176	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	108B	460	Norwich (Township)	Zenda Line	Pleasant Valley Rd.	Quaker St.	50-199	121	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	113	461	Norwich (Township)	Zenda Line	Maple Dell Rd.	Pleasant Valley Rd.	200-499	229	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	079	2548	Norwich (Township)	Mall Rd.	Jackson Sideroad	Oxford Rd. 13	1000-1999	1874	172.6	33.07	Preventive Maintenance	\$50,763.00	\$6.00	
Evaluated	078B	2604	Norwich (Township)	Mall Rd.	Oxford Rd. 51	Jackson Sideroad	1000-1999	1874	221.9	39.69	Resurface	\$60,834.00	\$13.00	
Evaluated	080	2550	Norwich (Township)	Mall Rd.	Oxford Rd. 13	Byerlay Sideroad	500-999	776	85	28.86	Resurface	\$91,241.00	\$13.00	
Evaluated	271	2551	Burgessville	Middletown Line	Church St.	387m S. of Church St.	1000-1999	1641	0	10.24	Routine Maintenance	\$0.00	\$0.00	
Evaluated	050	2552	Norwich (Township)	Pleasant Valley Rd.	Middletown Line	Oxford Rd. 13	200-499	311	0	5.19	Routine Maintenance	\$0.00	\$0.00	
Evaluated	042B	2558	Norwich (Township)	Hatchley Rd.	Base Line	231m E. of Base Line	50-199	158	18.7	21.01	Resurface	\$0.00	\$13.00	
Not Evaluated	042C	2559	Norwich (Township)	13th Concession Rd.	Base Line	Township Boundary	50-199	158	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	042A	2557	Norwich (Township)	11th Concession Rd.	Base Line	Township Boundary	50-199	158	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	257	2567	Otterville	Oxford St.	Mill St. E.	Wellington St. E.	50-199	75	5.2	18.34	Resurface	\$41,850.00	\$25.00	
Evaluated	104B.1	2608	Norwich (Township)	Zenda Line	514m N. of Quaker St.	672m S. of Evergreen St.	50-199	121	25	27.07	Rehabilitation	\$56,700.00	\$42.00	
Evaluated	106C	2609	Norwich (Township)	Slant Rd.	Quaker St.	552m N. of Quaker St.	1000-1999	1119	0	5.83	No Maintenance Required	\$0.00	\$0.00	
Evaluated	128A	2615	Norwich (Township)	Zenda Line	Cornell Rd.	Ninth Rd.	200-499 AADT	323	20	27.06	Resurface	\$137,538.00	\$25.00	This road is scheduled to be improved in 2024 (Shared with SWOX)
Not Evaluated	122	2611	Norwich (Township)	Zenda Line	Otterville Rd.	Milldale Rd.	200-499	229	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	266	2626	Otterville	River Oaks Dr	Dover St.	End (Cul-de-Sac)	50-199	75	0	6.55	Routine Maintenance	\$0.00	\$0.00	
Evaluated	081	2549	Norwich (Township)	Mall Rd.	Byerlay Sideroad	Middletown Line	500-999	776	104.3	26.72	Preventive Maintenance	\$26,206.00	\$4.00	Township noted that Norfolk will probably install a lift of surface treatment this year
Evaluated	058A	2503	Norwich (Township)	Milldale Rd.	Zenda Line	1.9km W. of Oxford Rd. 13	200-499	386	42.6	18.17	Preventive Maintenance	\$53,376.00	\$4.00	
Evaluated	016A	2338	Norwich (Township)	Old Stage Rd.	Middletown Line	480m E. of Middletown Line	50-199	178	0	7.69	Routine Maintenance	\$0.00	\$0.00	
Not Evaluated	118	462	Norwich (Township)	Zenda Line	Milldale Rd.	Maple Dell Rd.	200-499	229	0	0	Not Calculated	\$0.00	-\$1.00	
Evaluated	121	2554	Norwich (Township)	Windham Line	Maple Dell Rd.	Oxford Rd. 19	500-999	504	179.4	39.6	Rehabilitation	\$288,275.00	\$26.00	
Evaluated	281A		Norwich	Delong Dr.	Main St. W. (Oxford Rd. 18)	Tompkins Cr.	200-499	350	0	5.33	Routine Maintenance	\$0.00	\$0.00	
Evaluated	278B		Springford	Son's St.	Water St.	End	0-49	25	0	6.81	Routine Maintenance	\$0.00	\$0.00	
Evaluated	251A		Norwich	Poldon Dr.	Lossing Dr.	Brock St. E.	200-499	200	0	4.72	Routine Maintenance	\$0.00	\$0.00	
Evaluated	238A		Norwich	Albert St.	67m N. of North St. E.	End (Cul-de-Sac)	0-49	35	0	2.94	No Maintenance Required	\$0.00	\$0.00	
Evaluated	251D		Norwich	Poldon Dr.	Lossing Dr.	Bushell Cr.	200-499	275	0	2.53	No Maintenance Required	\$0.00	\$0.00	
Evaluated	283		Norwich	Dennis Dr.	Pollard St.	Delong Dr.	50-199	50	0	3.08	No Maintenance Required	\$0.00	\$0.00	Surface asphalt was completed last year (2022)
Evaluated	291		Otterville	Van Parys Dr.	Otter View Dr.	End (Cul-de-Sac)	0-49	20	0	3.9	Routine Maintenance	\$0.00	\$0.00	
Evaluated	033B	2576	Norwich (Township)	Beaconsfield Rd.	299m E. of Middletown Line	Middletown Line	50-199	128	0	7.2	Routine Maintenance	\$0.00	\$0.00	
Evaluated	001	2570	Norwich (Township)	Old Highway # 2 Rd.	Highway 2	CPR	0-49	30	0	6.94	Routine Maintenance	\$0.00	\$0.00	FibreMat has been completed on this section
Evaluated	013B	348	Norwich (Township)	Oxford Centre Rd.	23m W. of Middletown Line	300m E. of Middletown Line	0-49	27	1.8	17.17	Resurface	\$60,550.00	\$25.00	
Evaluated	056C		Norwich (Township)	Maple Dell Rd.	Highway 59	225m W. of Highway 59	50-199	83	0	2.66	No Maintenance Required	\$0.00	\$0.00	Township noted that this segment was upgraded to remove the load restriction as part of the premier dealership development
Evaluated	024A		Norwich (Township)	Gunn's Hill Rd.	30m W. of Middletown Line	30m E. of Middletown Line	50-199	58	0	4.4	Routine Maintenance	\$0.00	\$0.00	
Evaluated	091B		Norwich (Township)	Middletown Line	Old Stage Rd.	335m S. of Old Stage Rd.	500-999	904	0	7.76	Routine Maintenance	\$0.00	\$0.00	
Evaluated	090B		Norwich (Township)	Middletown Line	Oxford Centre Rd.	300m N. of Oxford Centre Rd.	1000-1999	1063	0	9.22	Routine Maintenance	\$0.00	\$0.00	
Evaluated	272A		Burgessville	McNab St.	Middletown Line	100m E. of Middletown Line	50-199	50	6.3	12.94	Preventive Maintenance	\$2,816.00	\$4.00	
Evaluated	273C.2		Burgessville	Burgess St.	440m S. of Church St. E.	End	50-199	100	0	4.13	Routine Maintenance	\$0.00	\$0.00	
Evaluated	096A.1	113	Norwich (Township)	Cedar Line	Rivers Rd.	Curries Rd.	50-199	76	17	26.25	Rehabilitation	\$53,382.00	\$42.00	
Evaluated	102C	242	Norwich (Township)	Middletown Line	831m S. of Beaconsfield Rd.	McNab St.	500-999	929	83.3	17.85	Preventive Maintenance	\$18,432.00	\$4.00	
Evaluated	011A	2573	Norwich (Township)	Old Stage Rd.	Middletown Line	320m W. of Middletown Line	200-499	451	0	8.47	Routine Maintenance	\$0.00	\$0.00	
Evaluated	078A	2604	Norwich (Township)	Mall Rd.	Westtown Line	Oxford Rd. 51	1000-1999	1874	669.9	64.82	Rehabilitation	\$19,058.00	\$26.00	
Evaluated	123B		Otterville	Church St.	North St. W.	Pick Line	200-499	200	37.5	30.7	Rehabilitation	\$50,106.00	\$42.00	
Evaluated	220C		Norwich	Dufferin St.	South St.	Sunview Dr.	200-499	379	0	8.14	Routine Maintenance	\$0.00	\$0.00	
Evaluated	117B		Norwich (Township)	Windham Line	Windham Rd. 2	Maple Dell Rd.	500-999	635	93.9	22.43	Preventive Maintenance	\$8,412.00	\$4.00	
Not Evaluated	104B.2	456	Norwich (Township)	Zenda Line	Quaker St.	514m N. of Quaker St.	50-199	121	0	0	Not Calculated	\$0.00	-\$1.00	
Not Evaluated	108A	460	Norwich (Township)	Zenda Line	Pleasant Valley Rd.	Quaker St.	50-199	121	0	0	Not Calculated	\$0.00	-\$1.00	



BURNSIDE

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Appendix F

Improvement Benchmark Costs

Unit Costs	Units	Unit Cost
Granular A	t	\$18.00
150mm Granular A	m2	\$6.48
Granular B	t	\$16.00
300mm Granular B	m2	\$9.60
Asphalt	t	\$125.00
Asphalt (50mm)	m2	\$15.31
Asphalt (75mm)	m2	\$22.97
Earth Excavation	m3	\$16.50
Earth Excavation (partial depth)	m2	\$2.48
Earth Excavation (full depth)	m2	\$7.43
Milling	m2	\$8.26
Asphalt Removal	m2	\$13.92
Pulverizing	m2	\$3.50
Microsurfacing	m2	\$6.00
Crack Sealing	m2	\$0.95
Catch Basin/Manhole Adjustments	m2	\$2.41
Crack Sealing + Patching	m2	\$1.75
Maintenance Gravel + Calcium Chloride*	m2	\$0.55
Curb and Gutter Removal	m2	\$3.19
Curb and Gutter Replacement	m2	\$21.23
Tack Coat	m2	\$2.10
Gravel Shoulders	m2	\$2.00
Ditch Repairs	m2	\$0.75
FibreMat	m2	\$7.00
Single Surface Treatment	m2	\$6.00
Double Surface Treatment	m2	\$11.00
Triple Surface Treatment	m2	\$16.00
Storm Sewer PVC Pipe (375mm)	m2	\$50.08
Standard Single Storm Sewer Catchbasin	m2	\$12.68
Storm Sewer Manhole (1200mm dia.)	m2	\$10.33

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

Urban HCB Resurfacing

Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Milling			50		m2		\$8.26	\$8.26
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Contingencies	25%							\$6.42
							Total =	\$32.09

Semi-Urban or Rural HCB Resurfacing AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.04
							Total =	\$25.20
Semi-Urban or Rural LCB Resurfacing AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Crack Sealing + Patching					m2		\$1.75	\$1.75
Single Surface Treatment					m2		\$6.00	\$6.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$2.63
							Total =	\$13.13
Semi-Urban or Rural HCB Resurfacing 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.04
							Total =	\$25.20
Semi-Urban or Rural LCB Resurfacing 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Crack Sealing + Patching					m2		\$1.75	\$1.75
Single Surface Treatment					m2		\$6.00	\$6.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$2.63
							Total =	\$13.13
Semi-Urban or Rural HCB Resurfacing AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.04
							Total =	\$25.20
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		\$1.75	\$1.75
Single Surface Treatment					m2		\$6.00	\$6.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$2.63
							Total =	\$13.13

Urban HCB Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Curb and Gutter Removal	15%				m2		\$3.19	\$0.48
Curb and Gutter Replacement	15%				m2		\$21.23	\$3.18
Catch Basin/Manhole Adjustments					m2	30	\$2.41	\$2.41
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Contingencies	25%							\$13.18
							Total =	\$65.89

30 structures per km at \$542 each

Rural HCB Rehabilitation AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$8.37
					m2			
							Total =	\$41.83
Semi-Urban HCB Rehabilitation AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Gravel Shoulders			100		m2		\$2.00	\$4.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$11.05
					m2			
							Total =	\$55.26
Semi-Urban or Rural LCB Rehabilitation AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.12
					m2			
							Total =	\$25.61
Rural HCB Rehabilitation 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$8.37
							Total =	\$41.83
Semi-Urban HCB Rehabilitation 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.1225t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$8.37
							Total =	\$41.83
Semi-Urban or Rural LCB Rehabilitation 1000>AADT>=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.12
							Total =	\$25.61
Rural HCB Rehabilitation AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%			2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$8.37
							Total =	\$41.83
Semi-Urban HCB Rehabilitation AADT<400								

Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%				m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$8.37
Total =							\$41.83	
Semi-Urban or Rural LCB Rehabilitation AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Pulverizing					m2		\$3.50	\$3.50
Granular A	50%				m2		\$6.48	\$3.24
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$5.12
Total =							\$25.61	

Urban HCB Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Curb and Gutter Removal					m2		\$3.19	\$3.19
Curb and Gutter Replacement					m2		\$21.23	\$21.23
Catchbasin/Manhole Adjustments					m2	30	\$2.41	\$2.41
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225t/m2	m2		\$15.31	\$15.31
Contingencies	25%							\$24.25
Total =								\$121.23

30 structures per km at \$542 each

Rural HCB Reconstruction AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			75	0.1225/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$16.04
Total = 380.19								
Semi-Urban HCB Reconstruction AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			50	0.1225/m2	m2		\$15.31	\$15.31
Tack Coat					m2		\$2.10	\$2.10
Asphalt			50	0.1225/m2	m2		\$15.31	\$15.31
Gravel Shoulders			100		m2		\$2.00	\$4.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$18.78
Total = 293.63								
Semi-Urban HCB Reconstruction AADT>=1000 (Convert to Urban Cross-Section)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Storm Sewer Pipe (175mm PVC)					m		\$50.08	\$50.08
Catch Basin (Standard Single)					m2		\$12.68	\$12.68
Manhole (1200mm)					m		\$10.33	\$10.33
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$42.31
Total = 321.53								
Semi-Urban or Rural LCB Reconstruction AADT>=1000								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.80
Total = 563.98								
Rural HCB Reconstruction 1000<AADT<=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			75	0.18375/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$16.04
Total = 380.19								
Semi-Urban HCB Reconstruction 1000<AADT<=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			75	0.1225/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$16.04
Total = 380.19								
Semi-Urban HCB/LCB Reconstruction 1000<AADT<=400 (Convert to Urban Cross-Section)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Storm Sewer Pipe (175mm PVC)					m		\$50.08	\$50.08
Catch Basin (Standard Single)					m2		\$12.68	\$12.68
Manhole (1200mm)					m		\$10.33	\$10.33
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$42.31
Total = 321.53								
Semi-Urban or Rural LCB Reconstruction 1000<AADT<=400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.80
Total = 563.98								
Rural HCB Reconstruction AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			75	0.18375/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$16.04
Total = 380.19								
Semi-Urban HCB Reconstruction AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Asphalt			75	0.1225/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$16.04
Total = 380.19								
Semi-Urban HCB Reconstruction AADT<400 (Convert to Urban Cross-Section)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Storm Sewer Pipe (175mm PVC)					m		\$50.08	\$50.08
Catch Basin (Standard Single)					m2		\$12.68	\$12.68
Manhole (1200mm)					m		\$10.33	\$10.33
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$42.31
Total = 321.53								
Semi-Urban or Rural LCB Reconstruction AADT<400								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Asphalt Removal					m2		\$13.92	\$13.92
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4/m3	m2		\$6.48	\$6.48
Granular B			300	2.0/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.80
Total = 563.98								

2 CBs every 90m (22 per km)
1 MH every 90m (11 per km)

2 CBs every 90m (22 per km)
1 MH every 90m (11 per km)

2 CBs every 90m (22 per km)
1 MH every 90m (11 per km)

Semi-Urban or Rural Gravel AADT>=400 Upgrade								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A	50%		150	2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$7.49
							Total =	\$37.45
Semi-Urban or Rural Gravel AADT>=400 Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$9.71
							Total =	\$48.56
Semi-Urban or Rural Gravel AADT>=400 Rehabilitation (Remain as Gravel)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$3.22
							Total =	\$16.10
Semi-Urban or Rural Gravel AADT>=400 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Asphalt			75	0.18375	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.56
							Total =	\$62.79
Semi-Urban or Rural Gravel AADT>=400 Reconstruction (Remain as Gravel)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Nonminal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$6.07
							Total =	\$30.33

Rural Gravel 400>AADT>=200 Upgrade								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A	50%		150	2.4t/m3	m2		\$6.48	\$3.24
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$4.25
							Total =	\$21.24
Semi-Urban Gravel 400>AADT>=200 Upgrade								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A	50%		150	2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$7.49
							Total =	\$37.45
Rural Gravel 400>AADT>=200 Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$6.47
							Total =	\$32.35
Semi-Urban Gravel 400>AADT>=200 Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$9.71
							Total =	\$48.56
Rural or Semi-Urban Gravel 400>AADT>=200 Rehabilitation (Remain as Gravel)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$3.22
							Total =	\$16.10
Rural Gravel 400>AADT>=200 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$9.32
							Total =	\$46.58
Semi-Urban Gravel 400>AADT>=200 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.56
							Total =	\$62.79
Rural Gravel 400>AADT>=200 Reconstruction (Remain as Gravel)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$6.07
							Total =	\$30.33

Rural Gravel AADT<200 Upgrade								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A	50%		150	2.4t/m3	m2		\$6.48	\$3.24
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$4.25
							Total =	\$21.24
Semi-Urban Gravel AADT<200 Upgrade								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Granular A	50%		150	2.4t/m3	m2		\$6.48	\$3.24
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$7.49
							Total =	\$37.45
Rural Gravel AADT<200 Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders					m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$6.47
							Total =	\$32.35
Semi-Urban Gravel AADT<200 Rehabilitation								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$9.71
							Total =	\$48.56
Semi-Urban Gravel AADT<200 Rehabilitation (Remain as Gravel)								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			150		m2		\$2.48	\$2.48
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B	33%		300	2.0t/m3	m2		\$9.60	\$3.17
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$3.22
							Total =	\$16.10
Rural Gravel AADT<200 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Double Surface Treatment					m2		\$11.00	\$11.00
Gravel Shoulders			50		m2		\$2.00	\$2.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$9.32
							Total =	\$46.58
Semi-Urban Gravel AADT<200 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Asphalt			75	0.18375t/m2	m2		\$22.97	\$22.97
Gravel Shoulders			75		m2		\$2.00	\$3.00
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$12.56
							Total =	\$62.79
Rural Gravel AADT<200 Reconstruction								
Item	Amount	Width (m)	Depth (mm)	Conversion Factor	Unit	Quantity	Unit Cost	Cost/m2
Earth Excavation			450		m2		\$7.43	\$7.43
Granular A			150	2.4t/m3	m2		\$6.48	\$6.48
Granular B			300	2.0t/m3	m2		\$9.60	\$9.60
Nominal Ditch Repair					m2		\$0.75	\$0.75
Contingencies	25%							\$6.07
							Total =	\$30.33



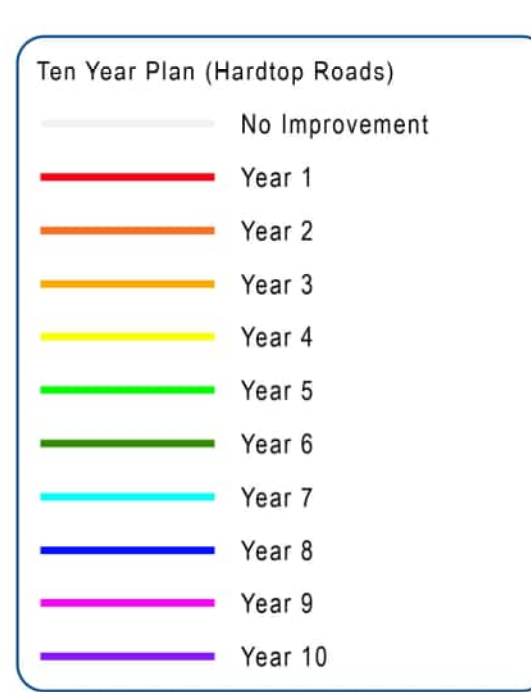
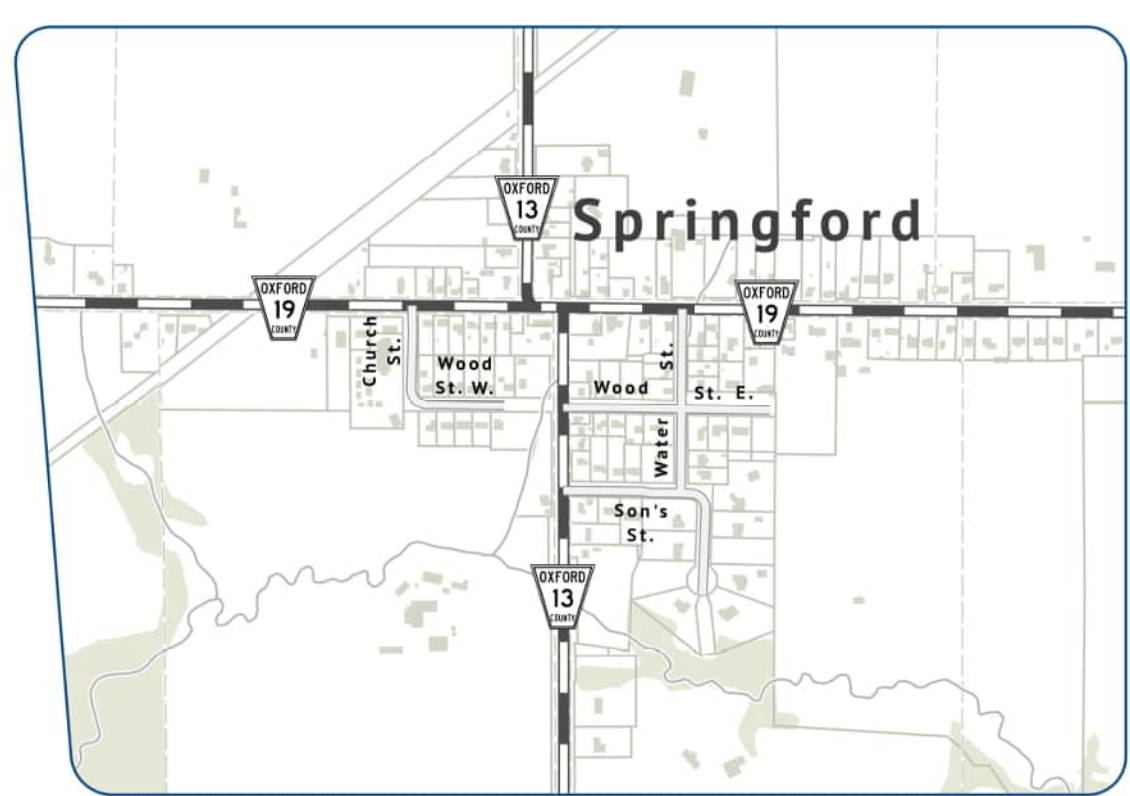
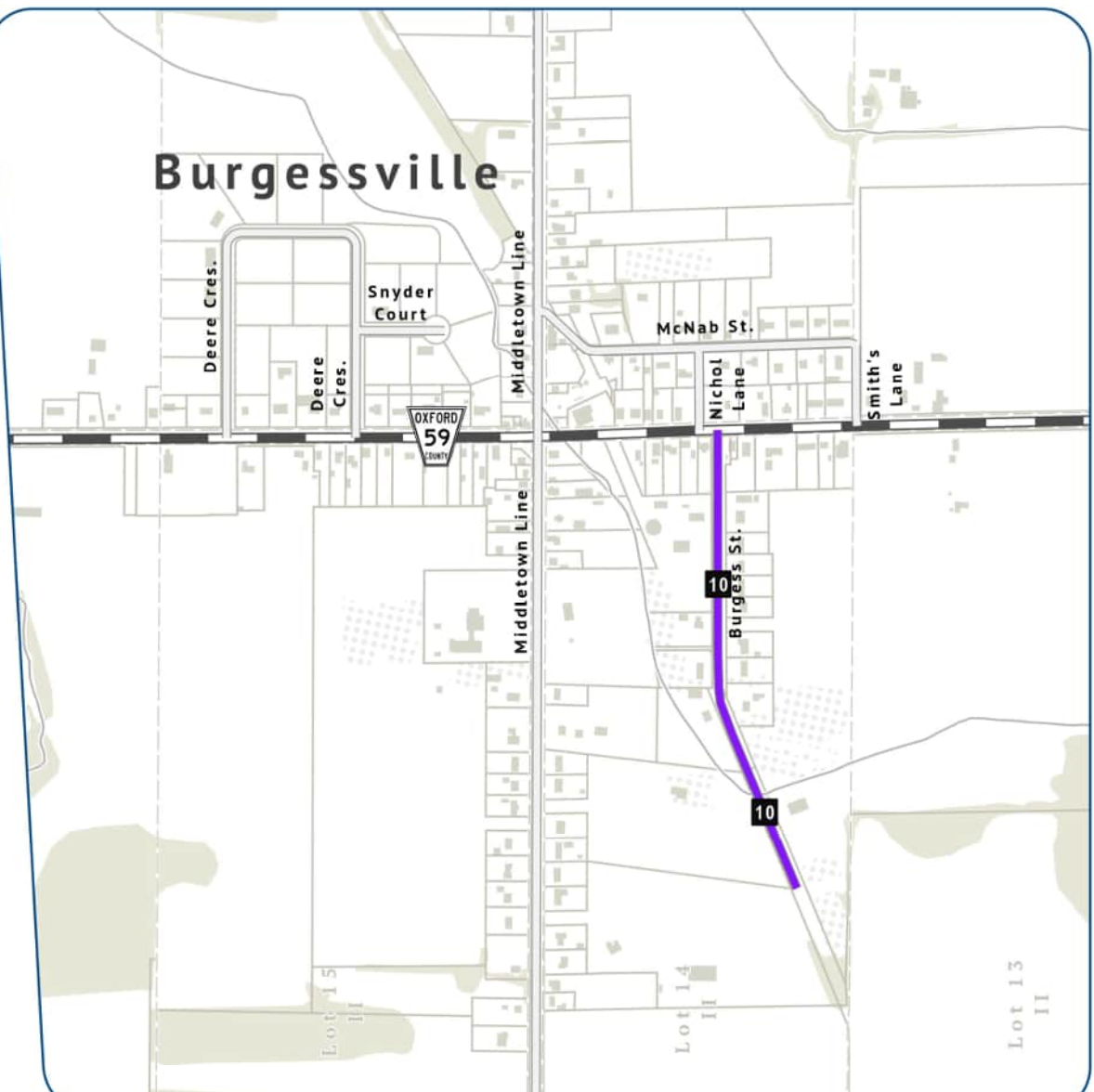
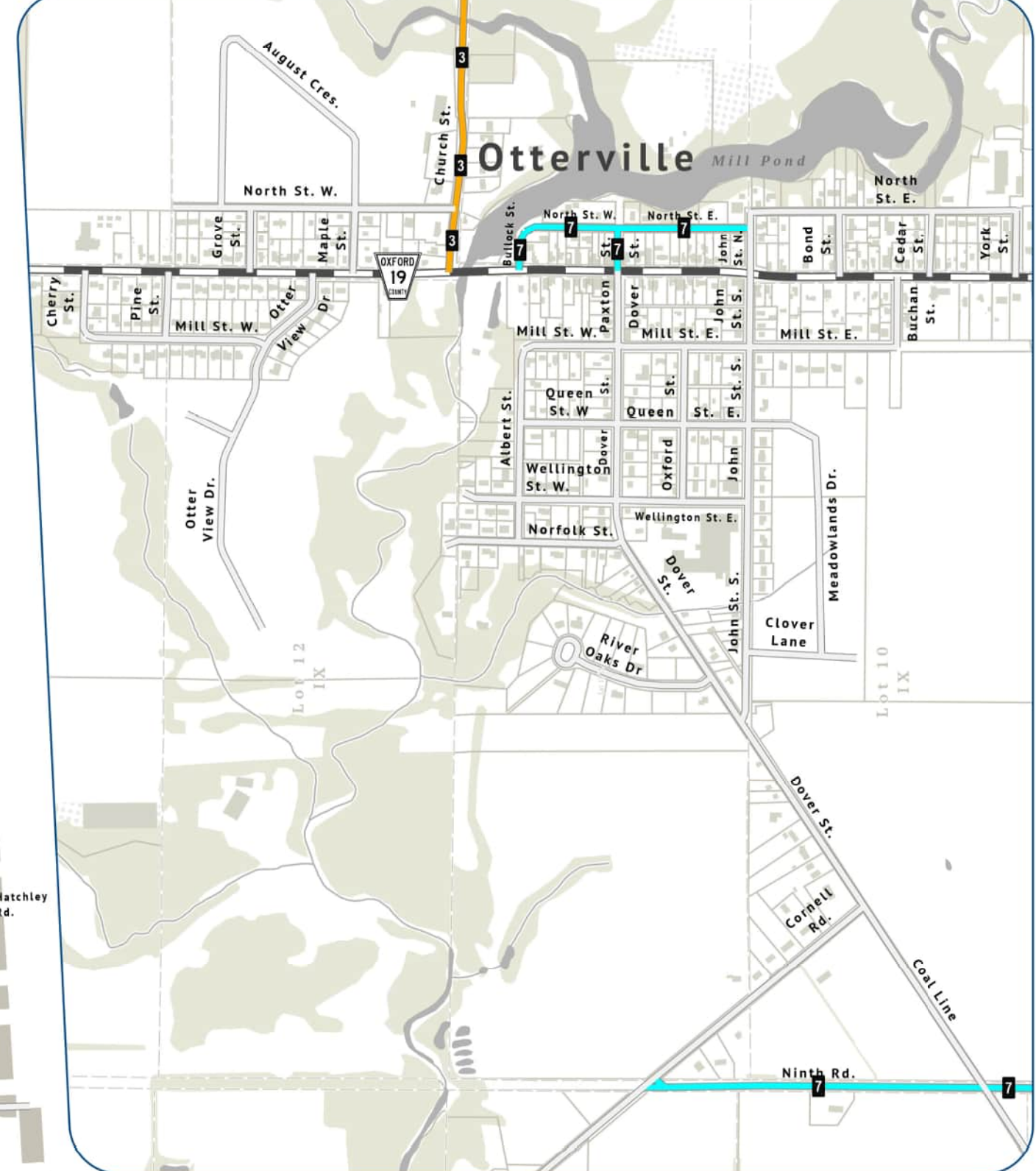
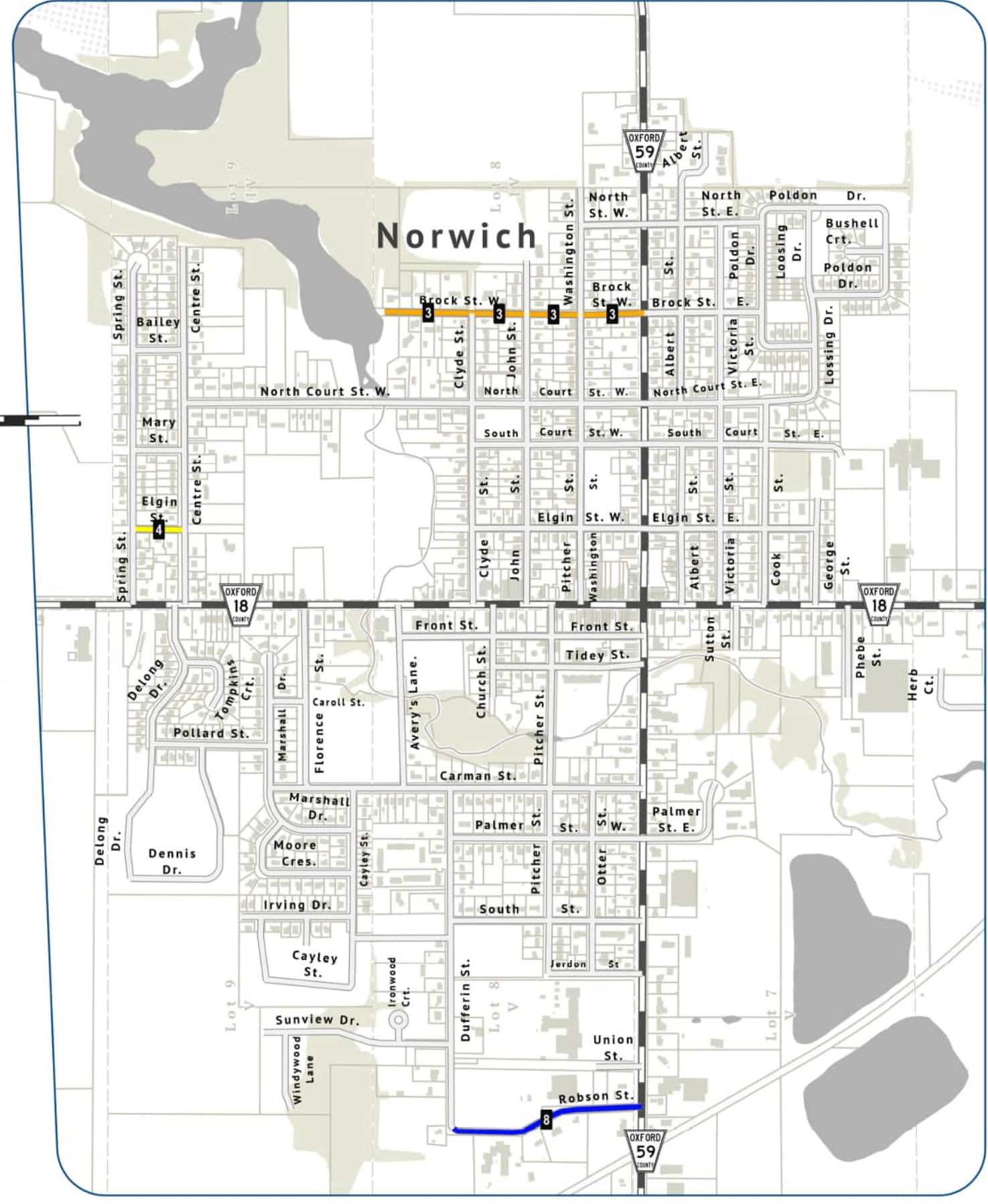
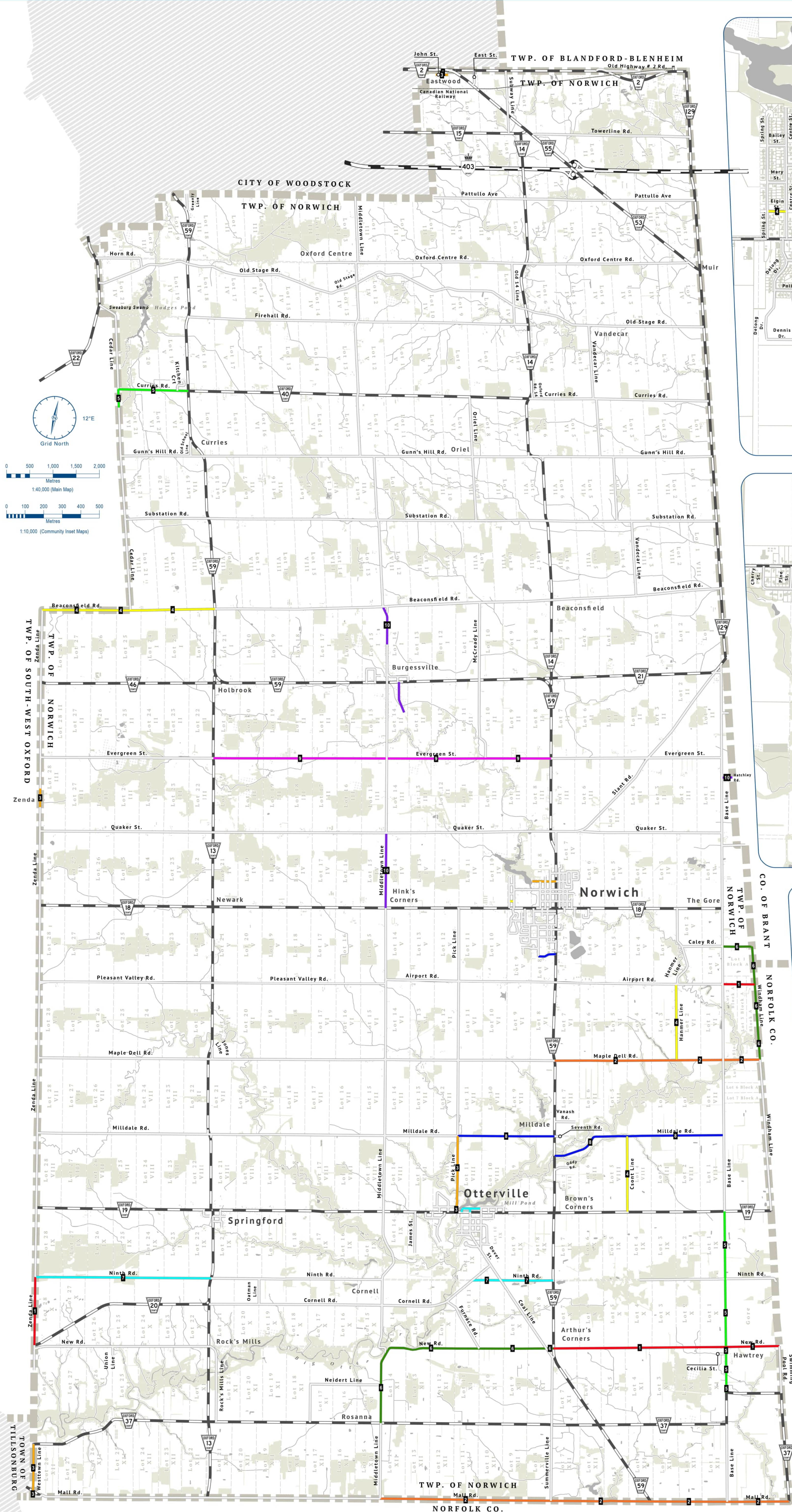
BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

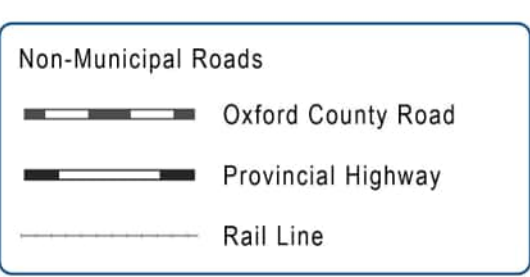
Appendix G

10-Year Capital Road Improvement Plan (Map and Table)

Draft



Map shows planned road construction as of 2023. Road construction is evaluated on an annual basis.



Drawn: North American 1983 CSRS
 Coast System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Central Meridian: 81°00'00"W
 False Easting: 500,000m
 False Northing: 0m
 Scale Factor: 0.9998

Drawn By: PH
 Checked By: HC
 Client: Township of Norwich
 Project: Roads Needs Study 2023
 Project Number: 10005649
 Date: 2023/11/22

Draft 10-Year Road Improvement Plan

Municipal ID	Community	Name	Name From	Name To	Surface Material	Capital Maintenance Percent	Road Length (m)	Road Width (m)	Surface Area (m ²)	Roadside Environment	AADT Range	AADT	Truck Traffic Percent	Ride Comfort Rating (RCR)	Structural Adequacy (1-20)	Drainage Adequacy (1-15)	Pavement Condition Index (PCI)	PCI Class	Priority Guide Number (PGN)	Priority Rating (PR)	2023 Lifecycle Improvement	2023 Need Improvement Cost	2023 Benchmark Cost (\$/m ²)	Proposed Lifecycle Improvement	Proposed Improvement Type	Proposed Improvement Cost	Proposed Benchmark Cost (\$/m ²)																										
Year 1 (2024)																																																					
075	Norwich (Township)	New Rd.	Highway 59	Base Line	Low Class Bituminous	100	3712	6.60	24499	Rural	200-499	293	10	8	19	14	64	Fair Condition	94.3	30.76	Resurfacing	\$636,974.00	\$26.00	Rehabilitation	Pulverize + Granular A + DST	\$636,974.00	\$26.00																										
076	Norwich (Township)	New Rd.	Base Line	Swimming Pool Rd.	Low Class Bituminous	100	1152	6.70	7718	Rural	500-999	692	10	8	19	14	70	Satisfactory Condition	89.3	31.21	Resurfacing	\$100,334.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$200,668.00	\$26.00																										
128A	Norwich (Township)	Zenda Line	Cornell Rd.	Ninth Rd.	High Class Bituminous	50	1467	7.50	11003	Rural	200-499	323	6	8	18	12	69	Fair Condition	20	27.06	Resurfacing	\$137,538.00	\$25.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$231,063.00	\$42.00																										
053	Norwich (Township)	Airport Rd.	Base Line	Windham Rd.	High Class Bituminous	100	690	6.60	4554	Rural	500-999	636	6	9	19	14	93	Good Condition	0	7.14	Routine Maintenance	\$0.00	\$0.00	Resurfacing	1 HMA (50mm) Overlay + Patching + Nominal Shoulder/Ditch Repair	\$113,850.00	\$25.00																										
																									Year 1 (2024) Total	\$1,182,555.00																											
Year 2 (2025)																																																					
083	Norwich (Township)	Mall Rd.	Summerville Line	Hwy 59	Low Class Bituminous	50	2146	7.10	15237	Rural	1000-1999	1137	5	7	19	14	67	Fair Condition	152.2	38.66	Resurfacing	\$99,041.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$198,075.00	\$26.00																										
082	Norwich (Township)	Mall Rd.	Middletown Line	Summerville Line	Low Class Bituminous	50	3684	7.10	26156	Rural	1000-1999	1395	6	8	19	14	74	Satisfactory Condition	147.2	32	Resurfacing	\$170,014.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$340,033.00	\$26.00																										
084A	Norwich (Township)	Mall Rd.	Highway 59	Base Line	High Class Bituminous	50	1649	6.50	10719	Rural	500-999	896	4	8	19	14	75	Satisfactory Condition	138.9	27.66	Preventive Maintenance	\$21,438.00	\$4.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$225,088.00	\$42.00																										
084B	Norwich (Township)	Mall Rd.	Base Line	Swimming Pool Rd.	High Class Bituminous	50	1334	6.50	8671	Rural	500-999	896	4	7	19	13	78	Satisfactory Condition	122.3	24.34	Preventive Maintenance	\$17,342.00	\$4.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$182,091.00	\$42.00																										
057C	Norwich (Township)	Maple Dell Rd.	Base Line	Windham Line	Low Class Bituminous	100	792	6.70	5306	Rural	50-199	165	10	9	20	15	66	Fair Condition	22.1	25.73	Resurfacing	\$68,978.00	\$13.00	Resurfacing	Patching + Single Surface Treatment	\$68,983.00	\$13.00																										
057A	Norwich (Township)	Maple Dell Rd.	Highway 59	Hammer Line	Low Class Bituminous	100	2627	6.40	16813	Rural	50-199	165	10	9	20	15	70	Satisfactory Condition	22.3	22.7	Resurfacing	\$218,569.00	\$13.00	Resurfacing	Patching + Single Surface Treatment	\$218,566.00	\$13.00																										
057B	Norwich (Township)	Maple Dell Rd.	Hammer Line	Base Line	Low Class Bituminous	100	1002	6.40	6413	Rural	50-199	165	10	9	20	15	63	Fair Condition	56.3	28	Rehabilitation	\$166,738.00	\$26.00	Resurfacing	Patching + Single Surface Treatment	\$83,366.00	\$13.00																										
																									Year 2 (2025) Total	\$1,316,202.00																											
Year 3 (2026)																																																					
252A	Norwich (Township)	Church St.	North St. W.	Main St. W.	High Class Bituminous	100	116	7.60	882	Urban	200-499	225	0	5	15	10	32	Very Poor Condition	25.5	54.87	Reconstruction	\$106,722.00	\$121.00	Reconstruction	Full Depth Asphalt Removal + 2 HMA (50mm each) + Total Base and Curb Replacement + Nominal Storm Sewer Adjustment	\$106,722.00	\$121.00																										
123A	Norwich (Township)	Pick Line	Mildale Rd.	Church St.	Low Class Bituminous	100	1375	6.50	8938	Rural	200-499	200	4	6	20	15	54	Poor Condition	83.5	36.21	Rehabilitation	\$232,388.00	\$26.00	Rehabilitation	Pulverize + Granular A + DST	\$232,388.00	\$26.00																										
123B	Otterville	Church St.	North St. W.	Church St.	High Class Bituminous	100	157	7.60	1193	Semi-Urban	200-499	200	4	7	15	12	61	Fair Condition	37.5	30.7	Rehabilitation	\$50,106.00	\$42.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair + Spot Curb Replacements	\$52,492.00	\$44.00																										
279B	Norwich (Township)	John St. (Eastwood)	East End	West End	High Class Bituminous	100	265	6.20	1643	Semi-Urban	50-199	50	0	5	16	13	39	Very Poor Condition	9.4	37.58	Reconstruction	\$131,440.00	\$80.00	Reconstruction	Full Depth Removal + 1 HMA (75mm) + Total Base Replacement + Nominal Shoulder Repair	\$131,440.00	\$80.00																										
279A	Norwich (Township)	Main St. (Eastwood)	Highway 2	John St.	High Class Bituminous	100	98	6.00	588	Semi-Urban	50-199	75	0	7	16	13	49	Poor Condition	23.2	34.1	Rehabilitation	\$24,696.00	\$42.00	Reconstruction	Full Depth Removal + 1 HMA (75mm) + Total Base Replacement + Nominal Shoulder Repair	\$47,040.00	\$80.00																										
104B.1	Norwich (Township)	Zenda Line	S14m N. of Quaker St.	672m S. of Evergreen St.	High Class Bituminous	50	403	6.70	2700	Rural	50-199	121	0	7	18	15	62	Fair Condition	25	27.07	Rehabilitation	\$56,700.00	\$42.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$113,400.00	\$42.00																										
201A.3	Norwich	Brock St. W.	John St.	Washington St.	High Class Bituminous	100	106	6.50	689	Semi-Urban	200-499	250	0	6	16	13	45	Poor Condition	77.4	45.39	Rehabilitation	\$28,938.00	\$42.00	Reconstruction	Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation	\$146,068.00	\$212.00																										
201B	Norwich	Brock St. W.	Washington St.	Stover St. N.	High Class Bituminous	100	126	6.50	819	Semi-Urban	200-499	300	0	7	17	13	52	Poor Condition	81	41.22	Rehabilitation	\$34,398.00	\$42.00	Reconstruction	Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation	\$173,628.00	\$212.00																										
201A.1	Norwich	Brock St. W.	Clyde St.	End	High Class Bituminous	100	173	6.50	1125	Semi-Urban	0-49 AADT	25	0	7	17	15	57	Fair Condition	6	24.42	Rehabilitation	\$47,250.00	\$42.00	Reconstruction	Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation	\$238,500.00	\$212.00																										
201A.2	Norwich	Brock St. W.	Clyde St.	End	High Class Bituminous	100	108	6.50	702	Semi-Urban	200-499	250	0	8	18	14	83	Satisfactory Condition	26.4	14.03	Preventive Maintenance	\$2,808.00	\$4.00	Reconstruction	Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation	\$148,824.00	\$212.00																										
140A	Norwich (Township)	Westtown Line	Potters Rd.	Oxford Rd. 51	Low Class Bituminous	50	1013	6.60	6686	Rural	200-499	247	0	9	20	15	70	Satisfactory Condition	32.3	24.7	Resurfacing	\$42,469.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$84,938.00	\$26.00																										
140B	Norwich (Township)	Westtown Line	Simcoe St.	Mall Rd.	Low Class Bituminous	50	120	6.40	768	Rural	200-499	247	0	9	20	15	75	Satisfactory Condition	41.4	20.86	Preventive Maintenance	\$1,536.00	\$4.00	Rehabilitation	Pulverize + Granular A + DST	\$9,984.00	\$26.00																										
																									Year 3 (2026) Total	\$1,487,404.00																											
Year 4 (2027)																																																					
124	Norwich (Township)	Csont Line	Mildale Rd.	Otterville Rd. (Oxford Rd. 19)	Low Class Bituminous	100	1623	6.50	10550	Rural	50-199	80	25	8	20	15	70	Satisfactory Condition	10.6	19.86	Resurfacing	\$137,150.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$274,300.00	\$26.00																										
032	Norwich (Township)	Beaconsfield Rd.	Cedar Line	Hwy 59	High Class Bituminous	100	1819	7.40	13461	Rural	500-999	548	8	7	18	13	68	Fair Condition	35.5	31.52	Resurfacing	\$986,525.00	\$25.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$565,362.00	\$42.00																										
031A	Norwich (Township)	Beaconsfield Rd.	Zenda Line	Trillium Line	High Class Bituminous	50	1480	7.40	10952	Rural	500-999	548	8	8	20	15	69	Fair Condition	34.4	30.53	Resurfacing	\$133,900.00	\$25.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$229,992.00	\$42.00																										
031B	Norwich (Township)	Beaconsfield Rd.	Trillium Line	Cedar Line	High Class Bituminous	50	419	7.40	3101	Rural	500-999	548	8	8	18	13	71	Satisfactory Condition	32.2	28.56	Resurfacing	\$38,789.00	\$25.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$65,121.00	\$42.00																										
115	Norwich (Township)	Hammer Line	Airport Rd.	Maple Dell Rd.	Low Class Bituminous	100	1637	5.80	9495	Rural	50-199	96	8	9	20	15	73	Satisfactory Condition	12.9	18.44	Resurfacing	\$123,435.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$246,870.00	\$26.00																										
209	Norwich	Elgin St.	Spring St.	Centre St.	High Class Bituminous	100	102	6.50	663	Semi-Urban	50-199	100	0	9	20	15	71	Satisfactory Condition	6.7	19.95	Resurfacing	\$16,575.00	\$26.00	Reconstruction	Full Depth Removal + 2 HMA (50mm each) + Total Base Replacement + Nominal Shoulder Repair + Curb and Gutter Installation + Storm Sewer Installation	\$140,556.00	\$212.00																										
																									Year 4 (2027) Total	\$1,522,201.00																											
Year 5 (2028)																																																					
133B	Norwich (Township)	Base Line	Ninth Rd.	New Rd.	High Class Bituminous	100	1468	6.80	9982	Rural	1000-1999	1111	10	5	8	9	27	Very Poor Condition	229	85.04	Reconstruction	\$798,560.00	\$90.00	Reconstruction	Full Depth Removal + 1 HMA (75mm) + Total Base Replacement + Nominal Shoulder Repair	\$798,560.00	\$80.00																										
133A	Norwich (Township)	Base Line	Otterville Rd.	Ninth Rd.	High Class Bituminous	100	1453	6.70	9725	Rural	1000-1999	1111	10	8	19	14	75	Satisfactory Condition	111.4	29.12	Preventive Maintenance	\$58,410.00	\$6.00	Resurfacing	1 HMA (50mm) Overlay + Patching + Nominal Shoulder/Ditch Repair	\$243,375.00	\$25.00																										
138A	Norwich (Township)	Base Line	New Rd.	Cecilia St.	High Class Bituminous	100	155	6.70	1039	Rural	50-199	184	4	9	18	14	84	Satisfactory Condition	17.7	12.38	Preventive Maintenance	\$4,156.00	\$4.00	Resurfacing	1 HMA (50mm) Overlay + Patching + Nominal Shoulder/Ditch Repair	\$25,975.00	\$25.00																										
138B	Norwich (Township)	Base Line	Cecilia St.	Nelson St.	High Class Bituminous	100	661	6.70	4429	Rural	50-199	184	4	9	19	14	87	Good Condition	0	10.06	Routine Maintenance	\$0.00	\$0.00	Resurfacing	1 HMA (50mm) Overlay + Patching + Nominal Shoulder/Ditch Repair	\$110,725.00	\$25.00																										
138C	Norwich (Township)	Base Line	Nelson St.	Wendy's Rd.	High Class Bituminous	100	165	6.70	1106	Rural	50-199	184	4	9	19	14	87	Good Condition	0	10.06	Routine Maintenance	\$0.00	\$0.00	Resurfacing	1 HMA (50mm) Overlay + Patching + Nominal Shoulder/Ditch Repair	\$27,650.00	\$25.00																										
021B	Norwich (Township)	Curries Rd.	Cedar Line	Oxford Rd. 59	High Class Bituminous	100	1510	6.50	9815	Rural	200-499	307	0	5	17	13	43	Poor Condition	98.5	49.2	Rehabilitation	\$412,230.00	\$42.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$412,230.00	\$42.00																										
096A.1	Norwich (Township)	Cedar Line	Rivers Rd.	Curries Rd.	High Class Bituminous	50	391	6.50	2542	Rural	50-199	76	9	6	17	13	60	Fair Condition	17	26.25	Rehabilitation	\$58,387.00	\$42.00	Rehabilitation	Pulverize + Granular A + 1 HMA (75mm) + Nominal Shoulder Repair	\$53,382.00	\$42.00																										
																									Year 5 (2028) Total	\$1,671,897.00																											
Year 6 (2029)																																																					
117A	Norwich (Township)	Windham Line	Airport Rd.	Windham Rd. 2	Low Class Bituminous	50	922	6.40	5901	Rural	500-999	635	14	8	18	14	74	Satisfactory Condition	74.8	36.51	Resurfacing	\$38,357.00	\$13.00	Rehabilitation	Pulverize + Granular A + DST	\$153,426.0																											