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2022 Road Needs Study

Prepared by: Public Works Department

Date: 2023/02/22

Table of Contents

1.1 Introduction

Severn completed the 2022 Road Needs Study (RNS) update over the course of the summer 2022, for inspection and report preparation and delivery in early 2023. The purpose of this RNS is to obtain data in relation to the conditions of all existing roads (asphalt, surface treated, and gravel) so that an estimate of the existing and future needs of the roads within Severn can be determined.

The completed RNS will be used as a guide when determining the priority of future road improvements and to provide insight for renewal budgets for road improvement projects.

1.1.1 TotalPave Software

Township staff used a new technology "TotalPave" software to acquire International Roughness Index (ride quality ratings) of the roads, and measure the surface conditions as per the methods outlined in ASTM D6433 to determine the severity of defects in the roads. These two criteria combined was used to calculate a Pavement Condition Index (PCI), which is a rating system used to indicate the overall condition of the road.

The software provides a field collection mobile application and pavement condition data storage on a cloud-based server. This software also provided a simple tool to collect standard ride quality data with the existing sensors found on typical Android smartphones. The TotalPave WorkPlan Predictive Analytics Tool was used to assist with the development of the 5-year initial plan; however, staff refined the 10-year plan through in-depth local knowledge of the road network that could not be accurately analyzed using the machine-learning based analytic tools.

1.1.2 Hierarchy of Pavement Management

This RNS is part of a broader hierarchy of Pavement Management as shown in Figure 1 - Pavement Management Hierarchy. The following document types and processes form the broader term "Pavement Management".

Asset Management Plan: Set Level of Service (LOS) policies determine how pavement management should be carried out in order to ensure that pavements

are maintained at a satisfactory level. This involves setting standards for pavement performance and determining acceptable conditions.

Road Needs Study: A network level planning document that sets the 10-year strategy for managing road assets. The study will analyze the current state of the road network, identify areas that need improvement, and identify the most cost-effective ways to address those needs. This includes analyzing traffic and usage patterns, pavement distress type, and other factors. Renewal and preservation programs are generally identified however, each program will be further developed with site specific detail and refined cost estimates during annual program development.

Budget: Individual project scoping is the process of determining the scope of work for a specific project. This involves analyzing the project's goals, objectives, budget, timeline, and other factors to determine the best approach to meeting the project's goals. Each year, a list of projects is presented to Council for consideration of funding.

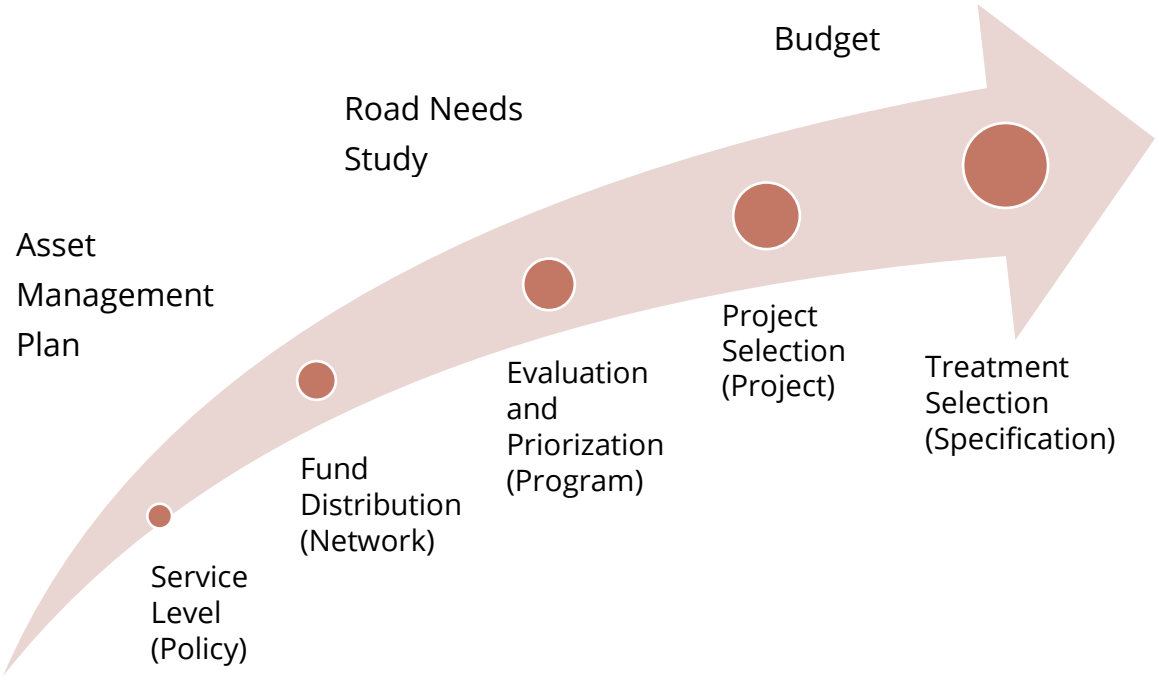

Figure 1 - Pavement Management Hierarchy

1.2 Previous Studies

The following previous studies and documents were reviewed as background information in the preparation of this RNS:

- 2017 Road Needs Study (R.J. Burnside & Associates Limited, October 2017).
- Transportation Master Plan (Ainley Group, January 2014)
- Asset Management Plan (Public Sector Digest, 2021)
- Ministry of Transportation SP-024 - Manual for Condition Rating of Flexible Pavements: Distress Manifestations
- ASTM D6433 - Standard Practice for. Roads and Parking Lots Pavement Condition Index. Surveys
- Engineering Design Standards (Tatham Engineering, May 2014)
- TotalPave Zendesk Software Support Guide https://totalpave.zendesk.com/

1.2.1 Township of Severn Road Needs Study 2017

The last RNS completed for the Township is the 2017 Road Needs Study (R.J. Burnside & Associates Limited, October 2017). The previous RNS included an inventory condition assessment of all roads under the Township's jurisdiction in 2017. Maintenance, repair, and rehabilitation needs were established, and a management system was recommended for Severn's road network.

Approximately 413.11 kilometres of roads were assessed in the 2017 RNS (73.57% rural, 25.71% semi-urban, and 0.72% urban). The road network consisted of the following surface types at the time: 13.90% gravel surface (GST), 2.13% low class bituminous (LCB), 43.62% intermediate class bituminous (ICB), 40.23% high class bituminous (HCB), 0.12% concrete (CON).

In the previous 2017 Road Needs Study, both the road condition and capacity were evaluated. This included collecting data regarding average annual daily traffic (AADT) and traffic counts at intersections. This RNS will focus on the existing condition of the roads and pavement management of current conditions; capacity requirements will be further considered in the Transportation Master Plan, that is currently being developed by McIntosh Perry (2023).

The 2017 RNS identified approximately 88.71 kilometres of road (21.40% of the road network) that required renewal within the 10-year horizon period, at an estimated cost of $17,941,165 (2017 $).

1.2.2 Township of Severn Transportation Master Plan

The Township of Severn Transportation Master Plan (TMP) (Ainley Group, January 2014) provides transportation data, criteria, standards, and guidelines that have been applied in this RNS. The TMP identifies short term, medium term, and long-term improvements to Severn roads.

The TMP identifies the following functional classifications for the roads under the jurisdiction of the Township:

- Arterial Roads – serve inter-municipal travel demands, connecting communities to the County or Provincial arterial roads. Arterial roads also provide internal truck routes.
- Collector Roads – connect neighbourhoods, distribute traffic to and from arterial roads, and provide access to adjacent land uses.
- Local Roads – provide access to abutting land uses, connect individual properties to collectors and arterials, and carry comparatively low volumes of traffic.

The roads within Severn that are not under the municipality's jurisdiction (Provincial Highways, County Roads, Private Roads) were not assessed in this RNS.

The TMP identifies a list of various road standards that will be applied to the roads in the Township to confirm if their existing conditions are adequate. It is noted in the TMP that the Ministry of Transportation Ontario's Geometric Design Standards for Ontario Highways and the Transportation Association of Canada's Geometric Design Guide for Canadian Roads should apply in conjunction with the road standards stated in the TMP. Table 1 - Road Standards, below summarizes the road standards set out in the current TMP.

Rural Road Standards	
Minimum Design Speed	50 km/h
Minimum Lane Width	3.0 m
Minimum Gravel Shoulder Width	1.0 m
Minimum Paved Shoulder Width	0.5 m without bike lane, 1.5 m with bike lane, 2.0 m if trucks exceed 10% of total volume or AADT>6000, or 2.5 m if design speed exceeds 100 km/h
Minimum Multi-use Path Width	3.0 m
Minimum Sidewalk Width	1.5 m
Urban Road Standards	
Minimum Design Speed	50 km/h
Minimum Lane Width	3.0 m (preferred 3.5 m or more)
Minimum Boulevard Width	1.5 m
Minimum Bike Lane Width	1.5m (2.0 m if trucks exceed 10% of total volume or AADT>6000, 2.5 m if design speed exceeds 100 km/h)
Minimum Multi-use Path Width	3.0 m
Minimum Sidewalk Width	1.5 m (2.0 m if placed immediately beside a travel lane, measured from the face of the curb to the far side edge of the sidewalk)
Aggregate Truck Route Standards	
Minimum Design Speed	80 km/h
Minimum Lane Width	3.5 m
Minimum Shoulder Width	2.5 m (desirable), 2.0 m (absolute)

Table 1 - Road Standards

1.2.3 Township of Severn Asset Management Plan

The Asset Management Plan was updated in 2021 to meet the Regulation O. Reg. 588/17. The estimated replacement value of the road network was $120.5 million ($134.3 Million inflated to 2022 $), with an annual average capital reinvestment rate of $4.09 Million ($4.56 Million inflated to 2022 $) to sustain the network. It is estimated that Severn has an annual reinvestment gap of approximately -$1,760,000 related to its road network infrastructure. The assessment was based on the physical condition of the assets recorded during the 2017 RNS and 2021 structure assessments, as updated by staff over the years.

1.3 Severn Road Network Inventory

Severn's road network was summarized in the inventory table Appendix A for each road section in addition mapping is included as Appendix B, to identify the road sections and road surface types. Table 2 and Table 3 below summarize the existing 2022 road network that is under the Township's jurisdiction.

Table 2 - Existing Surface Types

Surface Type	Centerline Length (km)	Percentage of Network
Gravel	50.08	12%
Low Class Bituminous (LCB)	6.51	2%
Intermediate Class Bituminous (ICB)	142.75	35%
High Class Bituminous (HCB)	203.67	51%
Total	**403.01**	**100%**

Table 3 - Existing Roadside Environment

Roadside Environment	Centerline Length (km)	Percentage of Network
Rural	281.17	70%
Semi-Urban	99.77	25%
Urban	22.07	5%
Total	**403.01**	**100%**

The inventory and initial condition data was obtained through previous data from the 2017 RNS, and updated through field review completed by Township staff, which provides a current database in the TotalPave software that that was used for analysis in this RNS study.

1.3.1 Boundary Road Agreements

Approximately 18.0 km of boundary roads have been included in the roads inventoried and assessed as part of this RNS. In accordance with existing boundary road agreements that are currently in place, capital improvements (reconstruction and rehabilitation work) on these roads will be shared 50:50 between the abutting municipalities. Various arrangements have been made for the maintenance of these boundary roads within the boundary road agreements, as follows:

City of Orillia Agreement

- Uhthoff Line – from Murphy Road to approximately 638 m north – boundary road, all season maintenance by Severn Township.
- Huronia Road – from Wilson Point Road to approximately 61 m north – not a boundary road (it is in Orillia), winter maintenance by Severn Township.
- Wilsons Point Road – from Huronia Road to 300 m east – not a boundary road (it is in Orillia), winter maintenance is by Severn Township.

Township of Oro-Medonte Agreement

- Town Line – from Lot 1 to Lot 9, approximately 5,900 m – boundary road, all season maintenance by Severn Township.
- Town Line – from Lot 10 to Lot 16, approximately 3,500 m – boundary road, winter maintenance by Severn Township and summer maintenance by Oro-Medonte Township.
- Dunns Line – in Lot 16, approximately 800 m – not a boundary road (it is in Oro-Medonte), all season maintenance by Severn Township.
- Foxmead Road – from Anderson Line to Town Line, approximately 2,800m – not a boundary (it is in Oro-Medonte), winter maintenance by Severn Township.

- Anderson Line – in Lot 16, approximately 800 m – not a boundary road (it is in Oro-Medonte), all season maintenance by Severn Township.
- Steeles Line – from County Road 19 to Lower Big Chute Road, approximately 1,680m – not a boundary road (it is in Oro-Medonte), all season maintenance by Oro-Medonte Township.
- Reservoir Road – from Highway 400 to end, approximately 1,200 m – not a boundary road (it is in Severn), winter maintenance by Oro-Medonte Township.

All road sections, identified above, that are not within Severn Township boundaries have not been inventoried in this RNS.

1.3.2 Traffic Counts and Annual Average Daily Traffic (AADT)

The Average Annual Daily Traffic (AADT) provides one of the factors used in the analysis of the road network, including:

- The establishment of road segment maintenance/rehabilitation/reconstruction requirements and their costs.
- Establishing the relative priority of road segments to recommend for maintenance/rehabilitation/reconstruction.
- The adequacy of the capacity and traffic Level of Service (LOS) of road segments, to maintain acceptable traffic mobility and to be consistent with its operating environment.
- Establishing the design classifications for the roads and their width requirements.
- Establishing the maintenance classifications for roads.

AADT ranges have been calculated or estimated for all road sections in the Township based on traffic count data obtained during Transportation Master Plan update. Township staff have also updated AADT values during 2022 by completing traffic studies in the Township with the BlackCat radar device and traffic tube counters.

The road surface types within Severn are designed to respond to differences in traffic volumes and types; high traffic roads (i.e., roads with high AADTs) and/or roads with high truck volumes typically have an asphalt surface strategy (HCB), whereas roads with lower AADT and/or lower truck volumes typically have a surface treatment strategy (ICB/LCB) or are gravel.

1.3.3 Maintenance Classification

The Province of Ontario requires that minimum maintenance standards be followed for municipal roads. The maintenance classifications have been established for each road section, based on its traffic volumes and speeds, in accordance with Ontario Regulation 239/02 of the Municipal Act, 2001, as shown in Table 4 - Maintenance Class.

The maintenance class reported in the 2017 RNS was based on the regulations at that time, however, substantive changes were made to the regulation as of May 3, 2018, pursuant to Ontario Regulation 366/18. Many of Severn's roadways were Class 4 are now a Class 5, particularly in the range of 1,000 - 1,999 and speed limit of 50 km/h.

Table 4 - Maintenance Class

Annual Average Daily Traffic	Posted or Statutory Speed Limit (km/h)						
	91-100	81-90	71-80	61-70	51-60	41-50	1-40
53,000 or more	1	1	1	1	1	1	1
23,000 - 52,999	1	1	1	2	2	2	2
15,000 - 22,999	1	1	2	2	2	3	3
12,000 – 14,999	1	1	2	2	2	3	3
10,000 – 11,999	1	1	2	2	3	3	3
8,000 – 9,999	1	1	2	3	3	3	3
6,000 – 7,999	1	2	2	3	3	4	4
5,000 – 5,999	1	2	2	3	3	4	4
4,000 – 4,999	1	2	3	3	3	4	4
3,000 – 3,999	1	2	3	3	3	4	4
2,000 – 2,999	1	2	3	3	4	5	5
1,000 – 1,999	1	3	3	3	4	5	5
500 – 999	1	3	4	4	4	5	5
200 – 499	1	3	4	4	5	5	6
50 - 199	1	3	4	5	5	6	6
0 - 49	1	3	6	6	6	6	6

Maintenance classifications are based on known or estimated traffic volumes and posted traffic speed limit. Maintenance classifications in Severn are generally 2-6 with no roads under the jurisdiction having a posted speed limit above 80km/h and no known or estimated traffic volumes of greater than 15,000 vehicles per day (vpd). Consideration of these operational parameters also supports the identification of the inter-relationship of maintenance activities and rehabilitation activities. The updated maintenance classifications are shown on the Road Inventory Table in Appendix A and graphically on a map in Appendix C.

The length of roads in Severn under each of the maintenance classifications are summarized in Table 5 - Summary of Maintenance Classifications.

1.3.4 Road Surface Condition Assessment

All the roads in Severn have been visually reviewed in the field in the summer of 2022, according to different surface distress types and conditions.

TotalPave software was used in the field to collect and store pavement condition data on a cloud-based server. This software provided a simple tool to collect standard road condition data with existing Android smartphones.

Table 5 - Summary of Maintenance Classifications

Maintenance Classification	Length of Road	Percent of Road Network
1	0.00	0%
2	0.14	0%
3	5.48	1%
4	194.04	48%
5	126.92	31%
6	76.52	19%
Total	403.1	100%

Table 6 - Functional Classification

Functional Classification	Length of Road	Percent of Road Network
Arterial	26.7	7%
Collector	33.9	8%
Local – High	342.5	85%
Total	403.1	100%

The condition ratings of the hard top road network, based on its PCI values, are summarized in Table 7 - Summary of Road Network Weighted PCI Ratings for Hard Top Roads.

Table 7 - Summary of Road Network Weighted PCI Ratings for Hard Top Roads

Functional Class	Weighted PCI Condition	Rating Qualitative Description
Arterial	82	Good
Collector	66	Fair
Local – High	75	Good
Local – Medium	64	Fair
Local – Low	50	Poor
Total Hard Top Network	62	Fair

As shown in the table the condition of the rural roads is currently very good, the local and collector roads have a good condition, the arterial roads have a fair condition, and overall hard top network has a good condition. OGRA had also developed a decision matrix in conjunction with their PCI methodology, as shown in Table.

Table 8 - Decision Matrix Based on OGRA PCI Methodology

Time of Improvement	Arterial	Collector	Local
Adequate	>85	>80	>80
6 to 10 years	76 – 85	71 – 80	66 – 80
1 to 5 years	56 – 75	51 – 70	46 – 65
NOW Rehabilitate	50 – 55	45 – 50	40 – 45
NOW Reconstruct	<50	<45	<40

The improvement algorithms developed in this current RNS have generally been based on the OGRA decision matrix.

1.4 Road Improvement Needs

The TotalPave WorkPlan Predictive Analytics Tools was used to prepare the 5-year initial plan for ten-year improvement plan shown in Appendix F. The software provided a user friendly machine-learning based analytics tools that produced optimized paving and maintenance plans based on the pavement condition data collected over the summer 2022.

The software provides a continuously learning from new data added to the system, making predictive capabilities more powerful over time. The tools not only show a future network condition estimated, it provides treatment level recommendations on how to reach those projections.

TotalPave Workplan was populated with a list of treatments that Severn's commonly utilizes and generally has good access to in region. The treatments noted below were used to model the future performance of the network.

1.4.1 Lifecycle Considerations for Road Improvement

Cost-effective expenditures, to address road condition needs, require that the right maintenance or rehabilitation treatment be applied to the right road at the right time throughout its life cycle. A complete pavement management system will

include Routine Maintenance (M), Preventive Maintenance (PM), Rehabilitation (PR) and Reconstruction (REC).

Routine maintenance and preventive maintenance are typically undertaken when a road pavement is in good to fair condition and aim to delay the need for more extensive rehabilitation or reconstruction. These treatments are a cost-effective method to seal or rejuvenate the surface, thereby extending the service life of structurally sound pavements.

Typically, investing one dollar ($1) in proactive, preventive maintenance treatments, when the pavements are in good condition, will eliminate or delay spending four to five dollars ($4 to $5) in reactive and disruptive rehabilitation or reconstruction repair treatments.

Rehabilitation is applied to pavements that have deteriorated to a point where partial or full depth replacement of the pavement is required, to protect the integrity of the underlying granular base and to delay more extensive reconstruction being required.

If pavements are left to deteriorate, they become weak and lose their structural integrity. As its structural capacity is weakened a pavement will begin to disintegrate, and extensive cracking, rutting, and potholes will develop. At this point, when the pavement is beyond repair, preventive maintenance or rehabilitation treatments will not be able to restore its structural integrity; reconstruction is also required when the pavement needs to be improved, to cater to significant increase in projected traffic volumes or to accommodate road widening.

Figure 2 shows graphically how preventive maintenance serves to modify the degradation curve of pavements, thereby extending their useful life.

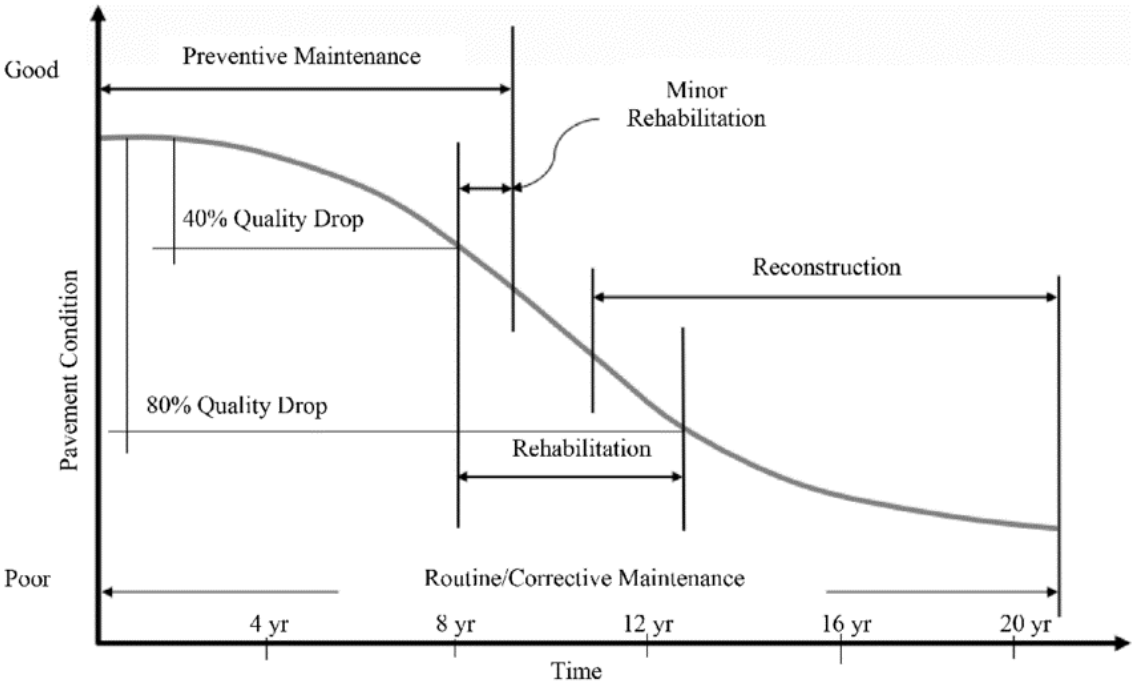

Figure 2 - Impact of Preventive Maintenance (from Timely Preventive Maintenance for Municipal Roads – A Primer, A Best Practice by the National Guide to Sustainable Municipal Infrastructure; September 2002; National Research Council) Graphic adapted from Abdulha

The template matrices for life cycle road improvements (hard top or gravel surface roads) are set out in Appendix E, including a general description of the improvement activity and typical PCI triggers for such improvement needs, as well as condition improvements that are assumed to result from such treatments.

1.4.2 Routine Road Maintenance

Routine road maintenance consists of sweeping, shoulder reclamation and grading, pothole repair, and debris removal.

1.4.3 Preventative Maintenance

Crack Seal

Crack sealing is the placement of special rubberized materials either above or into working cracks using unique configurations to prevent the intrusion of water and other incompressible materials into the pavement cracks. This work helps to delay

the degradation of asphalt pavements. Crack seal density is based on an average linear length of crack sealant applied for every 10 linear meters of road. This density determines the required funding in the RNS.

- Low Density = 10m of centreline crack plus infrequent transverse crack sealed. 12 m of sealant in 10m length of two-lane road.
- Medium Density = 10m of centreline crack plus two events of transverse crack sealed. 17m of sealant in 10m length of two-lane road.
- High Density = 10m of centreline crack plus frequent transverse crack sealed, trying to avoid alligatored pavements. 30m of sealant in 10m length of two-lane road.

Non-Routine Patching

Non routine patching means an aggressive hot mix patching program that improves the surface quality of the roadway by removing sections and the replacement of hot mix asphalt surface does not include base repair or granular application. Typical patch size ranges from 6m2 to 75m2.

- Low density patching program would consist of approximately 1- 5 medium to large patching per kilometre
- Medium density patching program would consist of approximately 5 to 10 medium to large patching per kilometre
- High density patching program would consist of approximately 10 or more medium to large patching per kilometre.

Slurry Seal

Slurry Seal is cost effective preventative road maintenance treatments which is applied to pavements that are still in fair to good condition The price for slurry seal was estimated based on contracts awarded in nearby municipality the project scope around 50,000m2 and a bid rate of $250,000. Micro surfacing is well suited for repairing minor ruts of such nature. The same is not appropriate for slurry seals. 2022 project cost per square meters is estimated to be $5.50 per square metre and includes tack coat application.

Micro surfacing

Micro Surfacing is similar to slurry seals however consists of a carefully designed mixture of polymer-modified asphalt emulsion, mineral aggregate, water and additives; to provide a thicker more durable coating. The price estimates used in the RNS is developed through an example project in nearby Tiny Township at a total cost of $181,000 and a project length of 3.2 kilometres long, generating a surface area of 25,000 square meters treated with double application micro surfacing. 2022 project cost per square meters is estimated to be $7.80 per square metre and includes tack coat application.

Thin Asphalt Overlays

A thin overlay (non-structural) involves placing a thin layer of asphalt mix over an existing pavement. The thickness of the overlay is typically from 12.5-37.5 mm (0.5-1.5 in.). Thin overlays are widely used as a technique for pavement preservation or rehabilitation. The purpose of the overlay is to restore the pavement surface, not to add structural support. This type of treatment is well suited for roads that do not have many structural defects, and have a solid base, but the asphalt surface itself is weathered or worn at the surface. A thin asphalt overlay restores the PCI of the road back to 100 without having to commit to the costs of a major reconstruction, however, is not intended to significantly extend the lifespan beyond the design service limits of the original structure.

1.4.4 Rehabilitation

Partial depth resurfacing

Partial depth resurfacing consists of the partial removal of existing asphalt concrete and overlaying it with hot mix asphalt, typically 50mm depth. This rehabilitation will extend the service life of pavement, by removing some deteriorated or distressed asphalt from the pavement surface and providing a new surface. Partial depth resurfacing has the potential for reflective cracking to occur, where cracking extends below the milling depth. Additionally, it will not address thermal cracking or asphalt deterioration below milling level.

It should be noted that some roads can benefit from a hybrid approach where some of the length if locally reconstructed and the remaining portions partial depth resurfaced. This project was recently used on Muskoka Street in 2021.

Double high float

Severn's tradition double high float surface treatment projects include the application of 150 HL Polymer and 1 part cover chip, 1 part base chip, and 0.2 part tar. The last project Severn completed with double high float was Telford Line between Cambrian Rd and Maple Valley. Prior to the placement of the surface treatment, most roads in this condition ranting will require the existing pavement surface to be pulverized and additional granular base applied.

Full depth resurfacing – Rural Local

Severn's traditional road rehabilitation process includes Full Depth Asphalt Pulverizing, new Granular 'A' Base (100mm depth), 70mm HL-4 Hot Mix Asphalt (Surface Course), Granular 'A' Shouldering, Reinstate Driveways, Pavement Markings and Mailbox Adjustment.

Full depth resurfacing – Rural Collector (RSR-COL)

Severn's traditional road rehabilitation process includes Full Depth Asphalt Pulverizing, new Granular 'A' Base (150mm depth), 70mm HL-4 Hot Mix Asphalt (Surface Course), 40mm HL-3 Hot Mix Asphalt (Surface Course), Granular 'A' Shouldering, Reinstate Driveways, Pavement Markings, and Mailbox Adjustment.

It is noted that Haul Route rehabilitation tends to require additional width and strength in material selection for the hot mix pavement surface. For example, Quarry Road was recently resurfaced in 2021 at a project value of $960,000 (2022 $) for the 2,500m of road.

1.4.5 Reconstruction

A typical road reconstruction includes removing the majority of the existing pavement structure including over excavation of un-suitable sub-base, placing a thick layer of granular base, drainage improvements, geometry improvements, the

construction of sub-drains or curb / gutter, and the placement of asphalt base and surface courses.

1.4.6 Benchmark Cost Estimate

Benchmark unit costs were developed based on various road construction items a recent construction projects within Severn as provided by staff and consulting engineers. Each treatment type was calculated for application in a linear benchmark cost using various distress severities to generate a treatment cost.

All prices have been indexed to their appropriate construction price index to the year 2022 and includes the non-recoverable portion of HST.

1.4.7 Summary Of Road Condition Needs

The total needs identified in the plan are $37,213,000. This is significantly more than the total needs identified in the last Road Needs Study. While accounting for inflation (approximately 17% over the 5 years), Severn has acquired 40% more needs than the previous study which is an indication that reinvestment levels are not sustaining the pavement network. The “Now” category is considered backlogged needs, and this has increased to just over $14 Million from the $3.5 Million in 2017.

Improvement	Now	1-5 Years	5-10 Years	> 10 Years
Preventive Maintenance	$0	$0	$4,000	$1,765,000
Rehabilitation / Resurfacing	$141,000	$11,239,000	$5,830,000	$447,000
Reconstruction	$13,932,000	$3,855,000	$0	$0
Total	$14,074,000	$15,094,000	$5,834,000	$2,212,000

1.5 Level of Service

The Township of Severn strategic plan for 2020 to 2022 includes goal to maintain or enhance Township levels of service to ensure resident expectations are met, ensuring the Township is appropriately resourced to provide the desired service levels. A key component of this goal was to follow the capital plan in place to address backlog of roads maintenance with a goal of demonstrating improvement to roads infrastructure as measured by the Pavement Condition Index.

The average PCI reported in the 2017 Road Needs Study was 85.9 with rural roadway types scoring the highest weighted average of 91.0. The weighted PCI for the network calculated in 2022 was 62.0. Indicating that the forecasted drop in overall network PCI was reached and exceeded due to insufficient funding levels.

Severn does not currently have a level of service target for the technical definition set in the Asset Management Plan. A future goal from the 2021 AMP was to identify Proposed Levels of Service and work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.

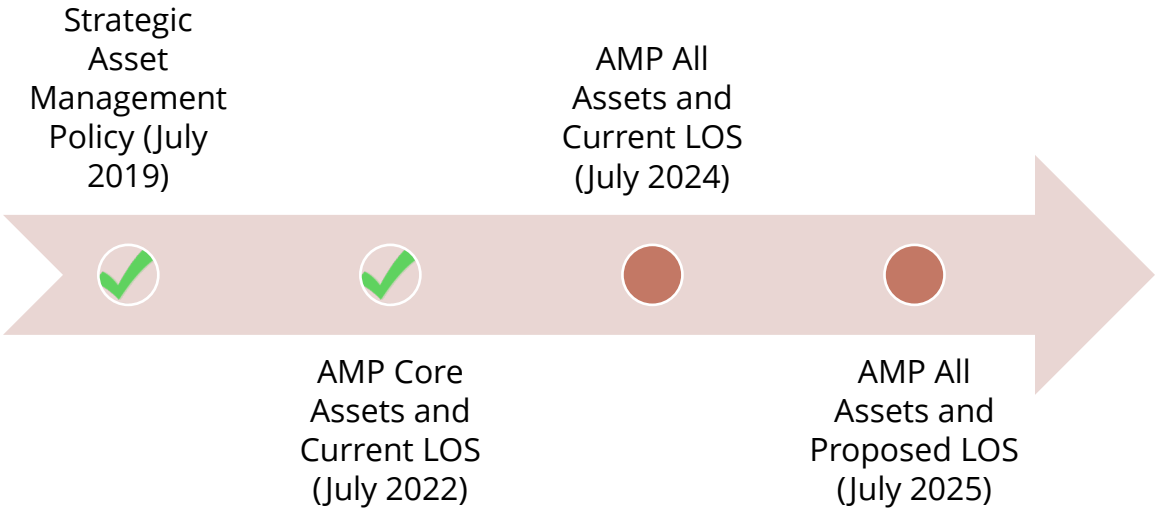

Figure 4 - O. Reg. 588/17 Timeline

A goal of the RNS is to also assist in the setting of proposed Levels of Service.

1.6 Ten Year Road Improvement Plan

1.6.1 Budget

A 10-year road improvement plan has been developed as part of the road need study update. The Asset Management Plan estimates the average annual investment required to sustain the pavement network to be approximately $4.09 million per year ($4.56 Million inflated to 2022 $). The asset management plan notes that a significant backlog of needs exists and will continue to grow under the current funding levels.

From the year 2012 to 2016 the average five-year road capital funding was approximately $2.5 Million (2022 $), between the years 2017-2021, this increased to an average five-year road capital funding of approximately $2.8 Million (2022 $).

From the 2017 Road Needs Study, the estimated cost to improve roads that fell below 70 PCI was estimated to grow from $8.65 Million to $20.35 Million, an increase of $11.7 Million in ten years.

The RNS recommends a steady increase in road renewal funding that eventually meets the required funding to sustain the existing network. Figure 3 - Road Pavement Reinvestment / Forecast, shows the historical funding levels, both actual and indexed to 2022 $, and projects the required increase in funding to reach over $5.0 Million per year by 2033.

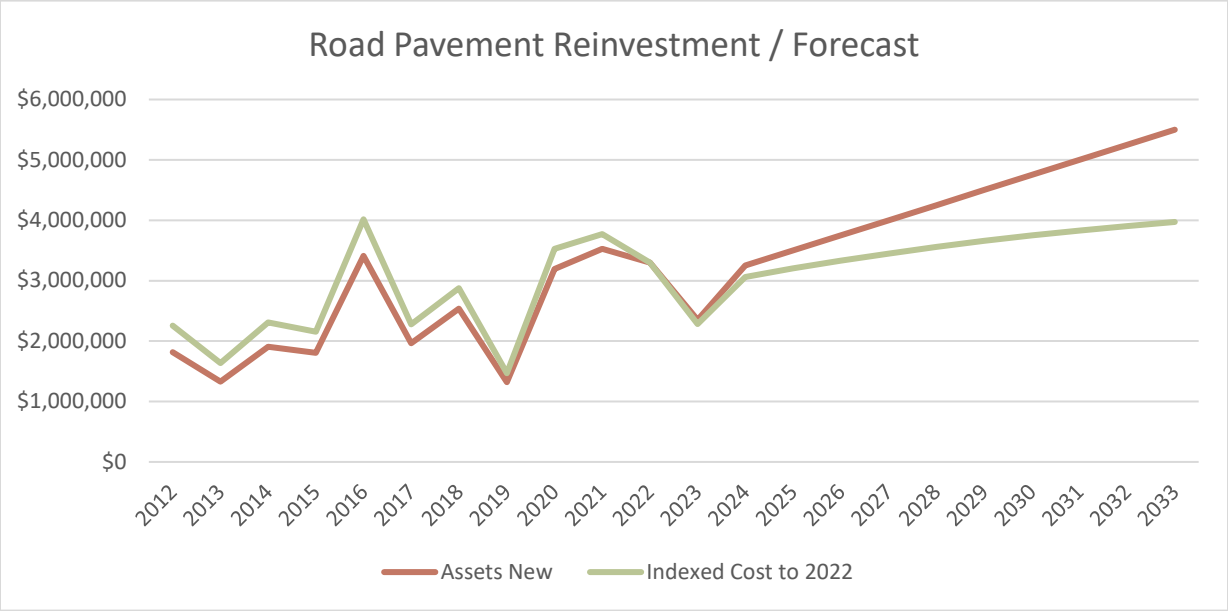

Figure 3 - Road Pavement Reinvestment / Forecast

1.6.2 Pavement Management Plan

A ten-year capital program has been selected from those projects that have conditions that have deteriorated below a minimum condition value (PCI 35), followed by life cycle improvements to the remainder of the hard top road network, based on an assessment of their Priority Guide Number (PGN). The PGN considers the pavement condition, traffic volumes, and improvement costs. While the PCI is a factor in the PGN, this methodology does not result in prioritization of the "worst-first" roads, but rather is based on life-cycle considerations. The effectiveness of proposed improvements was analyzed according to an empirical Priority Guide Number (PGN) formula developed by the MTO, as follows:

$$PGN = [(100 - PCI) / (100 \times [cost\ per\ km])] \times AADT \times LCF$$

Where Life-cycle Factor (LCF) = 3650 for an improvement type that has a service life of ten years or 7300 for an improvement type that has a twenty year service life; AADT is the average AADT for the service period.

The ten year LCF is applied to maintenance (M or PM) or resurfacing (PR) projects, the twenty year LCF is applied to reconstruction (REC) projects.

For the purpose of this RNS, it's been assumed that the budget of approximately $3.5 Million per year will be available for road improvements, escalating to approximately $4.5 million by the end of the plan. In addition to this capital funding levels, allowances for routine road maintenance / operating budgets should continue to increase from the current $314,000 per year to $500,000 by the end of the 10-year plan for routine and preventative maintenance.

The forecasted 10-year capital plan is shown in Appendix F and sets an average annual budget available for the 10-year improvement plan to $4.2 Million per year. It is noted that the years 2032 and 2033 require additional funding level due to competing growth related projects from the draft Transportation Master Plan (2023) that will challenge these funding levels.

Ten Year Plan	Project Costs
2023	$ 3,662,880
2024	$ 4,022,615
2025	$ 3,807,152
2026	$ 4,232,783
2027	$ 4,146,839
2028	$ 4,246,297
2029	$ 4,166,474
2030	$ 4,140,709
2031	$ 4,162,534
2032	$ 5,287,572
2033	$ 5,285,852

Table 9 - Ten Year Plan Costs

For the purpose of the RNS, both budgets and expenditure estimates are shown in 2022 $ and therefore will need to be adjusted in future years to respond to inflationary increases life cycle improvements are triggered for the various road surface types and roadside environments in accordance with the life cycle model matrices in Appendix E.

1.6.3 Non-Pavement Management Plan

The management of gravel roads is not through major rehabilitation and replacement, but rather through perpetual maintenance, therefore, the RNS does

not focus of these road types over than providing adequate operating funding for the maintenance of gravel roads, including cycles for grading; re-graveling of roadways (approximately 75mm every 3-5 years); dust suppression and stabilization; and ditch maintenance. There is no industry standard for the cost of gravel road maintenance or the frequency at which the maintenance activities should be completed.

Severn has upgraded 94.9 km of gravel roads to a hard top surface since the road study performed in 2000. A default amount of gravel resurfacing costs (i.e. $1000/km of gravel road) was included in the routine maintenance costs reported in this RNS.

Gravel roads are tolerable for Annual Average Daily Traffic (AADT) volumes of less than 400 vpd. Upgrades to hard top roads may be considered if the roadside environment is semi-urban or if through traffic volume monitoring, the traffic increases to 400+ AADT range, upgrading of gravel roads to surface treatment may be required.

1.7 Summary and Conclusion

The total road needs identified in the RNS are $37.2 Million. The RNS recommends a steady increase in road renewal funding that eventually meets the required AMP $4.09 Million ($4.56 Million inflated to 2022 $) per year to sustain the existing network.

Current funding between the years 2017-2021, has increased to an average five-year road capital funding of approximately $2,800,000 (2022$). The forecasted 10-year capital plan is shown in Appendix F and associated mapping of Appendix G. This plan sets an average annual budget available for the 10-year improvement plan to $4.2 Million per year. Routine road maintenance / operating budgets should continue to increase from the current $314,000 per year to $500,000 by the end of the 10-year plan.

Appendices

Appendix A - Road Inventory Table

Appendix B - Road Inventory Map

Appendix C - Maintenance Classification Map

Appendix D - Road Needs Map

Appendix E - Life Cycle Improvement Matrices

Appendix F - Ten Year Improvement Plan Table

Appendix G - Ten Year Improvement Plan Map

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
4749	Abbey Road	Birkeshire Woods Lane	Jilem Court	Semi-Urban	HCB	50	6	324	6.7	111	4.2	75	PR - 70mm HMA on 100mm A	$ 72,859	5	N
2488	Agnew Road	Grass Lake Line	Shoreview Drive	Rural	HCB	60	5	1308	7.0	279	7.9	67	PR - Dbl Surface Treatment	$ 117,682	4	N
2691	Agnew Road	Huffman Road	Grass Lake Line	Rural	HCB	60	5	502	7.0	279	6.6	68	PR - Dbl Surface Treatment	$ 45,206	4	N
2840	Agnew Road	Agnew Road	Huffman Road	Rural	HCB	60	5	547	7.0	279	6.4	65	PR - Dbl Surface Treatment	$ 49,259	4	N
2945	Agnew Road	South Sparrow Lake Road	Agnew Road	Rural	HCB	60	5	583	7.0	279	5.8	42	REC - Dbl ST on 150mm A	$ 84,527	8	N
2852B	Agnew Road	Highway 11 South Off-Ramp to Agnew Road South	Agnew Road	Semi-Urban	HCB	50	5	28	7.0	389	5.9	65	PR - 70mm HMA on 100mm A	$ 6,222	2	N
1382	Albany Street	Edgar Street	Muskoka Street	Semi-Urban	ICB	50	6	159	5.5	56	9.4	61	PR - 70mm HMA on 100mm A	$ 35,715	0	N
1384	Albany Street	Muskoka Street	Hepinstall Landing	Semi-Urban	ICB	50	6	63	8.0	183	6.4	91	Crackseal	$ 219	17	N
1386	Albany Street	Hepinstall Landing	End	Semi-Urban	GST	50	6	41	4.0	10			Maintenance Gravel	$ -		N
3157	Aldershott Place	Goldstein Road	End	Semi-Urban	ICB	50	6	156	6.4	89	12.7	11	REC - 90mm HMA on 150mm A	$ 52,951	2	N
3781	Amigo Drive	Menoke Beach Road	End	Semi-Urban	ICB	50	5	1167	6.4	333	8.7	48	REC - 90mm HMA on 150mm A	$ 396,721	4	N
2223	Anchor Drive	Highway 11 North Off-Ramp to Anchor Drive North	Shoreview Drive	Rural	HCB	50	5	166	7.1	209	5.0	91	Crackseal	$ 582	20	N
3197	Anderson Line	Upper Big Chute Road (County Road 17)	Gray Street	Rural	HCB	50	5	957	7.0	333	4.0	88	Surface Treatment or Slurry	$ 47,836	3	N
3785	Anderson Line	Southorn Road	Rail Line	Rural	HCB	60	5	138	5.3	333	7.0	67	PR - Dbl Surface Treatment	$ 12,392	4	N
19056	Anderson Line	Gray Street	Donlands Court	Rural	HCB	50	5	91	7.0	333	3.8	82	Surface Treatment or Slurry	$ 4,574	4	N
19057	Anderson Line	Donlands Court	Southorn Road	Rural	HCB	60	5	1240	7.6	333	2.5	78	PR - Dbl Surface Treatment	$ 111,577	3	N
19057	Anderson Line	Donlands Court	Southorn Road	Rural	HCB	50	5	197	7.6	333	2.5	78	PR - Dbl Surface Treatment	$ 17,740	3	N
21138A	Anderson Line	Municipal Boundary	1.6km North of Municipal Boundary	Rural	ICB	60	5	1136	7.0	333	3.6	58	PR - Dbl Surface Treatment	$ 102,272	6	N
21138B	Anderson Line	1.6km North of Municipal Boundary	Rail Line	Rural	HCB	60	5	1189	7.0	333	3.2	58	PR - Dbl Surface Treatment	$ 107,038	6	N
4491	Antonio Court	Brodie Drive	End	Semi-Urban	HCB	40	6	173	6.4	111	8.7	55	PR - 70mm HMA on 100mm A	$ 38,908	1	N
3946	Ardtrea	Big Chief Road	Weald Way	Semi-Urban	ICB	40	6	855	6.4	167	6.1	54	PR - 70mm HMA on 100mm A	$ 192,442	1	N
3947	Ardtrea	Thomson Crescent	Big Chief Road	Semi-Urban	ICB	40	6	148	6.4	222	7.4	45	REC - 90mm HMA on 150mm A	$ 50,337	3	N
3851	Ardtrea Drive	Menoke Beach Road	Eastside Drive	Rural	HCB	60	5	1351	6.7	419	5.0	100	Crackseal	$ 4,730	0	N
3338	Armand Avenue	Buena Vista Drive	Lakeside Drive	Urban	HCB	50	6	252	6.7	167	5.2	79	PR - 40mm Mill and Pave	$ 42,905	1	N
4559	Avery Lane	Hale Street	Gillett Drive	Semi-Urban	LCB	50	6	246	6.7	111	8.8	45	REC - 90mm HMA on 150mm A	$ 83,657	1	N
4597	Avery Lane	Gillett Drive	Town Line	Semi-Urban	LCB	50	6	337	6.7	111	7.3	52	PR - 70mm HMA on 100mm A	$ 75,820	1	N
3366	Azcona Avenue	Buena Vista Drive	Cumberland Road	Urban	HCB	50	6	205	6.7	178	6.6	86	Crackseal	$ 718	26	N
3387	Azcona Avenue	Cumberland Road	The Lane	Urban	HCB	50	6	105	6.7	67	5.7	80	PR - 40mm Mill and Pave	$ 17,925	0	N
420	Baguley Road	Point Bush Court	Baguley Road (Pvt. Sect.)	Semi-Urban	HCB	40	6	245	6.7	83	3.9	100	Crackseal	$ 857	0	N
510	Baguley Road	Point Bush Court	Saint Amant Road	Semi-Urban	HCB	40	6	1119	4.1	250	6.6	100	Crackseal	$ 3,915	0	N
3326	Balkwill Line	Mount Stephen Road	Foxmead Road	Rural	HCB	80	4	5416	7.0	278	1.7	70	PR - Dbl Surface Treatment	$ 487,439	3	N
3426	Balkwill Line	Foxmead Road	End	Rural	GST	80	6	295	5.0	10			Maintenance Gravel	$ -		N
3455	Bayou Road	Cumberland Road	Bayou Road / New Brailey Line Overpass	Urban	HCB	50	5	131	7.0	1206	8.6	55	PR - 40mm Mill and Pave	$ 22,308	12	N
3471	Bayou Road	Bayou Road / / New Brailey Line Overpass	Grand Tamarack Crescent	Urban	HCB	50	5	143	6.7	1146	6.5	48	REC - 90mm HMA on 150mm A	$ 114,369	5	N
3496	Bayou Road	Grand Tamarack Crescent	Bell Avenue	Urban	HCB	50	5	105	6.4	1387	10.9	11	REC - 90mm HMA on 150mm A	$ 84,327	11	N
3510	Bayou Road	Bell Avenue	Bayou Road	Semi-Urban	HCB	50	5	80	6.4	1146	2.9	83	Crackseal	$ 280	203	N
3530	Bayou Road	Bayou Road	Shadow Creek Road	Semi-Urban	HCB	50	5	132	6.7	1116	8.2	62	PR - 70mm HMA on 100mm A	$ 29,792	7	N
3594	Bayou Road	North Intersection with Shadow Creek Road	South Intersection with Shadow Creek Road	Semi-Urban	HCB	50	5	475	6.7	1628	5.8	58	PR - 70mm HMA on 100mm A	$ 106,810	11	N
3628	Bayou Road	Shadow Creek Road	Westshore Crescent	Semi-Urban	HCB	50	5	210	6.7	679	7.7	61	PR - 70mm HMA on 100mm A	$ 47,203	4	N
3645	Bayou Road	Westshore Crescent	End	Semi-Urban	HCB	50	5	66	6.7	444	10.1	53	PR - 70mm HMA on 100mm A	$ 14,961	3	N
3428B	Bayou Road	Highway 11 North Off-Ramp to Bayou Road North	Cumberland Road	Urban	HCB	50	5	42	7.0	2413	4.0	56	PR - 40mm Mill and Pave	$ 7,092	23	N
3475	Beachview Avenue	Cumberland Road	Lakeside Drive	Urban	HCB	50	5	372	7.3	416	10.7	36	REC - 90mm HMA on 150mm A	$ 126,405	6	N
3489	Beachview Avenue	Bell Avenue	Lakeside Drive	Urban	HCB	50	6	53	6.7	139	4.1	44	REC - 90mm HMA on 150mm A	$ 18,010	2	N
1607	Beard Farm Trail	Mount Stephen Road	End	Rural	GST	60	6	588	5.5	10			Maintenance Gravel	$ -		N
3306	Beckett Place	Highway 11 North Off-Ramp to Beckett Place North	Lakeside Drive	Urban	HCB	50	5	198	5.2	278	6.4	71	PR - 40mm Mill and Pave	$ 33,636	2	N
3536	Beechwood Drive	Gloucester Road	Gloucester Road (Completion of Loop)	Semi-Urban	HCB	50	5	1666	6.7	222	0.0	100	Crackseal	$ 5,831	1	N
3495	Bell Avenue	Bayou Road	Beachview Avenue	Urban	HCB	50	5	98	7.6	222	8.4	19	REC - 90mm HMA on 150mm A	$ 33,412	4	N
606	Bennett Avenue	North Intersection of Peninsula Point Road	South Intersection of Peninsula Point Road	Semi-Urban	GST	50	6	205	5.0	30			NO	$ -		N
3982	Big Chief Road	Soules Road	Thomson Crescent	Semi-Urban	ICB	50	5	772	6.4	419	4.8	58	PR - 70mm HMA on 100mm A	$ 173,689	3	N
4009B	Big Chief Road	Highway 11 North Off-Ramp to Big Chief Road North	Soules Road	Semi-Urban	HCB	50	5	704	6.7	419	4.6	71	PR - 70mm HMA on 100mm A	$ 158,394	2	N
4098	Birchcliffe Crescent	North Intersection with Burnside Line	South Intersection with Burnside Line	Semi-Urban	HCB	50	5	1290	7.0	222	4.1	73	PR - 70mm HMA on 100mm A	$ 290,250	1	N
4722	Birkeshire Woods Lane	Wainman Line	Fern Glen Court	Semi-Urban	HCB	50	5	244	6.7	422	2.5	83	Crackseal	$ 854	25	N
4748	Birkeshire Woods Lane	Fern Glen Court	Abbey Road	Semi-Urban	HCB	50	5	206	6.7	333	2.5	83	Crackseal	$ 720	25	N
4765	Birkeshire Woods Lane	Abbey Road	Elana Drive	Semi-Urban	HCB	50	5	199	6.7	250	3.2	85	Crackseal	$ 696	39	N
21514	Birkeshire Woods Lane	East Intersection with Elana Drive	West Intersection with Elana Drive	Semi-Urban	HCB	50	5	220	6.7	250	2.4	84	Crackseal	$ 769	42	N
21515	Birkeshire Woods Lane	Elana Drive	End	Semi-Urban	HCB	50	6	173	6.7	32	4.9	87	Crackseal	$ 607	4	N
965	Black River Road	Riverdale Drive	End	Semi-Urban	ICB	50	6	713	6.4	94	7.0	59	PR - 70mm HMA on 100mm A	$ 160,426	1	N
1458	Bond Road	Bond Road On-Ramp to Highway 11 North	End	Semi-Urban	HCB	50	6	78	6.4	140	25.5	44	REC - 90mm HMA on 150mm A	$ 26,396	2	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
1576	Bond Road	Highway 11 North Off-Ramp to Bond Road North	End	Semi-Urban	HCB	50	6	258	6.7	140	11.1	52	PR - 70mm HMA on 100mm A	$ 58,150	1	N
4216	Bonnybrook Drive	Burnside Line	End	Semi-Urban	HCB	50	6	327	6.7	83	8.8	48	REC - 90mm HMA on 150mm A	$ 111,296	1	N
893	Bonsor Road	Canal Road	End	Semi-Urban	LCB	50	6	79	6.0	111	13.3	63	PR - 70mm HMA on 100mm A	$ 17,735	1	N
1037	Boyd Road	Cambrian Road	Canal Road	Rural	LCB	80	4	1405	6.7	303	12.1	42	REC - Dbl ST on 150mm A	$ 203,670	9	N
911	Brady Drive	Severn Street	Coopers Falls Road (County Road 52)	Rural	ICB	50	6	1050	7.3	56	5.3	66	PR - Dbl Surface Treatment	$ 94,502	1	N
920	Brady Drive	Coopers Falls Road (County Road 52)	Highway 11 North	Rural	HCB	50	5	174	7.0	555	5.8	70	PR - Dbl Surface Treatment	$ 15,621	7	N
928	Brady Drive	Highway 11 South	Canal Road	Rural	HCB	50	5	563	7.0	555	6.9	55	PR - Dbl Surface Treatment	$ 50,693	10	N
3163	Bramshott Avenue	First Street	Highway 11 North Off-Ramp to Bramshott Avenue North	Urban	HCB	50	5	20	7.0	444	15.8	62	PR - 40mm Mill and Pave	$ 3,334	4	N
3178	Bramshott Avenue	Highway 11 North Off-Ramp to Bramshott Avenue North	Second Street	Urban	HCB	50	5	93	6.0	389	8.3	65	PR - 40mm Mill and Pave	$ 15,794	3	N
3196	Bramshott Avenue	Second Street	Third Street	Urban	HCB	50	5	110	6.0	278	5.4	78	PR - 40mm Mill and Pave	$ 18,686	1	N
3214	Bramshott Avenue	Third Street	Lakeside Drive	Urban	HCB	50	6	179	6.0	194	6.4	41	REC - 90mm HMA on 150mm A	$ 89,255	2	N
2122	Brennan Line	Maple Valley Road	End	Rural	GST	80	6	2347	6.0	30			Maintenance Gravel	$ -		N
3556	Brennan Line	Cambrian Road	Stockdale Road	Rural	ICB	80	4	2812	7.2	133	5.2	15	REC - Dbl ST on 150mm A	$ 407,688	6	N
3556	Brennan Line	Cambrian Road	Stockdale Road	Rural	ICB	50	6	300	7.2	133	5.2	15	REC - Dbl ST on 150mm A	$ 43,528	6	N
3067A	Brennan Line	Maple Valley Road	Cambrian Road	Rural	HCB	80	4	751	7.3	102	2.4	83	Surface Treatment or Slurry	$ 37,527	1	N
3067B	Brennan Line	Maple Valley Road	Cambrian Road	Rural	ICB	80	4	2355	7.3	102	6.5	39	REC - Dbl ST on 150mm A	$ 341,493	3	N
3721B	Brennan Line	Stockdale Road	Brennan Line On-Ramp to Highway 11 South	Rural	ICB	50	6	970	6.7	133	3.7	28	REC - Dbl ST on 150mm A	$ 140,580	5	N
3167	Brick Pond Road	River Street	John Street	Urban	HCB	50	5	273	6.7	555	7.7	67	PR - 40mm Mill and Pave	$ 46,335	4	N
3193	Brick Pond Road	John Street	Earls Court	Urban	HCB	50	5	374	6.7	250	9.9	38	REC - 90mm HMA on 150mm A	$ 127,093	3	N
4500	Brodie Drive	Burnside Line	Antonio Court	Urban	HCB	60	3	232	7.1	8374	4.4	67	PR - 40mm Mill and Pave	$ 39,413	59	N
4516	Brodie Drive	Hurlwood Lane	Burnside Line	Urban	HCB	60	3	111	8.8	8367	3.6	81	Crackseal	$ 387	1658	N
4488A	Brodie Drive	Antonio Court	Carlyon Line	Semi-Urban	HCB	60	4	1124	7.1	533	4.2	45	REC - 90mm HMA on 150mm A	$ 561,972	4	N
891	Buck Lake Bend	North Intersection with South Sparrow Lake Road	South Intersection with South Sparrow Lake Road	Rural	GST	50	6	242	3.7	10			Maintenance Gravel	$ -		N
3304	Buena Vista Drive	Highway 11 North Off-Ramp to Armand Avenue North	Simcoe Avenue	Urban	HCB	50	5	73	6.7	244	6.5	75	PR - 40mm Mill and Pave	$ 12,412	1	N
3320	Buena Vista Drive	Simcoe Avenue	Azcona Avenue	Urban	HCB	50	5	123	6.7	475	4.5	77	PR - 40mm Mill and Pave	$ 20,908	2	N
3339	Buena Vista Drive	Azcona Avenue	Highview Avenue	Urban	HCB	50	5	103	6.7	698	5.1	65	PR - 40mm Mill and Pave	$ 17,437	5	N
3119	Burnside Line	Maple Valley Road	Foxmead Road	Rural	ICB	80	4	322	7.0	153	7.6	48	REC - Dbl ST on 150mm A	$ 46,629	4	N
3580	Burnside Line	Foxmead Road	Thorburn Road	Rural	HCB	80	4	2870	7.3	684	2.0	70	PR - Dbl Surface Treatment	$ 258,305	8	N
3927	Burnside Line	Cambrian Road	Warminster Road	Rural	HCB	80	4	3192	7.3	725	3.1	58	PR - Dbl Surface Treatment	$ 287,325	12	N
4052	Burnside Line	Warminster Road	Birchcliffe Crescent	Rural	HCB	80	3	1511	7.3	1273	2.6	67	PR - Dbl Surface Treatment	$ 135,985	17	N
4071	Burnside Line	Birchcliffe Crescent (N. Intersection)	Birchcliffe Crescent (S. Intersection)	Rural	HCB	60	4	180	7.3	1385	2.0	71	PR - Dbl Surface Treatment	$ 16,241	16	N
4217	Burnside Line	Birchcliffe Crescent	Bonnybrook Drive	Rural	HCB	60	4	1115	7.3	1492	2.5	63	PR - Dbl Surface Treatment	$ 100,381	22	N
4269	Burnside Line	Bonnybrook Drive	Division Road West	Rural	HCB	60	4	385	7.3	1652	4.2	66	PR - Dbl Surface Treatment	$ 34,628	23	N
4517	Burnside Line	Division Road East	Hurlwood Lane	Rural	HCB	60	3	1939	8.0	3596	2.3	70	PR - Dbl Surface Treatment	$ 174,532	44	N
4556	Burnside Line	Hurlwood Lane	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	Urban	HCB	60	3	293	10.0	10328	3.4	84	Crackseal	$ 1,026	1723	N
4558	Burnside Line	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	Burnside Line On-Ramp to Highway 11 South	Urban	HCB	60	2	21	12.1	19776	2.1	83	Crackseal	$ 73	3506	N
3092A	Burnside Line	Maple Valley Road	0.43km North of Maple Valley Road	Rural	ICB	80	4	304	7.0	102	8.8	50	PR - Dbl Surface Treatment	$ 27,357	2	
3092B	Burnside Line	0.43km North of Maple Valley Road	Jeremy Road	Rural	GST	80	4	2876	6.5	100			Maintenance Gravel	$ -		N
4584A	Burnside Line	Burnside Line On-Ramp to Highway 11 South	Highway 11 South	Urban	HCB	60	2	124	11.6	19539	5.4	76	PR - 40mm Mill and Pave	$ 21,134	101	N
4555	Burnside Line (Off-Ramp)	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	Brodie Drive	Urban	HCB	60	4	371	11.6	1340	4.4	77	PR - 40mm Mill and Pave	$ 63,139	7	N
3327	Bush Street	Sturgeon Bay Road	Mill Street	Urban	HCB	50	6	167	6.7	133	6.6	89	Crackseal	$ 585	15	N
1038	Cambrian Road	West Canal Road	Canal Road	Semi-Urban	ICB	80	4	233	6.0	303	3.4	89	Crackseal	$ 815	35	N
1840	Cambrian Road	Grass Lake Line	Boyd Road	Rural	HCB	80	4	3045	6.7	379	2.5	92	Crackseal	$ 10,657	32	N
2433	Cambrian Road	South Sparrow Lake Road	Grass Lake Line	Rural	HCB	80	4	1411	6.4	194	3.4	88	Surface Treatment or Slurry	$ 70,542	2	N
2775	Cambrian Road	Nichols Line	South Sparrow Lake Road	Rural	HCB	80	4	1409	7.0	179	2.8	87	Surface Treatment or Slurry	$ 70,469	2	N
2939	Cambrian Road	New Brailey Line	Nichols Line	Rural	HCB	60	5	1284	7.0	158	3.5	80	Surface Treatment or Slurry	$ 64,182	2	N
3066	Cambrian Road	Brennan Line	New Brailey Line	Rural	HCB	60	5	1456	7.0	163	3.3	82	Surface Treatment or Slurry	$ 72,822	2	N
3172	Cambrian Road	Telford Line	Brennan Line	Rural	ICB	80	4	1430	7.0	168	2.5	77	PR - Dbl Surface Treatment	$ 128,700	2	N
3290	Cambrian Road	Hampshire Mills Line	Telford Line	Rural	ICB	80	4	1361	7.0	173	1.9	86	Surface Treatment or Slurry	$ 68,027	2	N
3466	Cambrian Road	Carlyon Line	Hampshire Mills Line	Rural	ICB	80	4	1423	6.7	179	1.8	84	Surface Treatment or Slurry	$ 71,152	2	N
3579	Cambrian Road	Burnside Line	Carlyon Line	Rural	ICB	80	4	1533	6.7	179	2.0	84	Surface Treatment or Slurry	$ 76,647	2	N
21288	Cambrian Road	Boyd Road	West Canal Road	Rural	ICB	80	4	885	6.0	303	2.9	85	Surface Treatment or Slurry	$ 44,245	3	N
3841	Campbell Road	Highway 11 North Off-Ramp to Campbell Road North	Eastside Drive	Semi-Urban	HCB	50	5	212	6.7	698	4.1	61	PR - 70mm HMA on 100mm A	$ 47,648	4	N
3902	Campbell Road	Eastside Drive	Soules Road	Semi-Urban	HCB	50	5	348	6.7	698	5.3	63	PR - 70mm HMA on 100mm A	$ 78,392	4	N
819	Canal Road	Cambrian Road	Canal Road	Semi-Urban	HCB	50	5	1718	7.0	947	2.3	90	Crackseal	$ 6,012	99	N
822	Canal Road	Old Boyd Road	Brady Drive	Semi-Urban	HCB	50	5	54	7.0	557	5.2	78	PR - 70mm HMA on 100mm A	$ 12,136	2	N
861	Canal Road	Cambrian Road	Boyd Road	Semi-Urban	ICB	50	5	205	7.0	460	4.3	94	Crackseal	$ 717	29	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
863	Canal Road	Trent Trail	Old Boyd Road	Semi-Urban	HCB	50	5	468	7.0	557	3.6	87	Crackseal	$ 1,639	76	N
879	Canal Road	Boyd Road	Bonsor Road	Semi-Urban	ICB	50	6	68	7.0	39	2.6	93	Crackseal	$ 239	3	N
881	Canal Road	Bonsor Road	Channel Point Lane	Semi-Urban	ICB	50	5	164	6.7	557	4.9	93	Crackseal	$ 574	41	N
885	Canal Road	Channel Point Lane	Norton Road	Semi-Urban	HCB	50	5	18	6.7	557	3.7	91	Crackseal	$ 63	52	N
894	Canal Road	The Birches	Pinecone Trail	Semi-Urban	HCB	50	5	133	6.7	882	3.2	90	Crackseal	$ 465	92	N
922	Canal Road	Canal Road	The Birches	Semi-Urban	HCB	50	5	153	6.7	882	2.5	95	Crackseal	$ 535	46	N
923	Canal Road	Norton Road	Canal Road	Semi-Urban	HCB	50	5	279	6.7	557	2.6	93	Crackseal	$ 976	41	N
19445	Canal Road	Pinecone Trail	Trent Trail	Semi-Urban	HCB	50	5	141	6.7	557	2.7	88	Crackseal	$ 493	70	N
836B	Canal Road	Brady Drive	Canal Road On-Ramp to Highway 11 S	Semi-Urban	HCB	50	5	17	7.0	882	4.5	81	Crackseal	$ 61	175	N
3017	Carlyon Line	Jermey Road	Maple Valley Road	Rural	ICB	80	4	3327	7.0	51	3.6	50	PR - Dbl Surface Treatment	$ 299,428	1	N
3467	Carlyon Line	Maple Valley Road	Cambrian Road	Rural	ICB	80	4	3112	6.4	82	3.2	69	PR - Dbl Surface Treatment	$ 280,080	1	N
3828	Carlyon Line	Cambrian Road	Stockdale Road	Rural	HCB	70	5	3109	6.7	153	2.0	78	PR - Dbl Surface Treatment	$ 279,770	1	N
4191	Carlyon Line	Division Road East	J V Parkway	Semi-Urban	ICB	50	5	385	6.8	794	5.0	25	REC - 90mm HMA on 150mm A	$ 192,575	9	N
4282	Carlyon Line	J V Parkway	Ryerson Boulevard	Semi-Urban	ICB	50	5	611	6.8	799	7.3	11	REC - 90mm HMA on 150mm A	$ 305,666	10	N
4289	Carlyon Line	Ryerson Boulevard	Clearview Drive	Semi-Urban	ICB	50	5	87	6.7	799	4.7	13	REC - 90mm HMA on 150mm A	$ 43,732	10	N
1659A	Carlyon Line	Swift Rapids Road	Jermey Road	Rural	ICB	80	4	820	7.0	51	3.8	53	PR - Dbl Surface Treatment	$ 73,776	1	N
1659B	Carlyon Line	Swift Rapids Road	Jermey Road	Rural	GST	80	4	1459	4.5	50			Maintenance Gravel	$ -		N
4107A	Carlyon Line	Division Road East	0.6km North of Division Road East	Rural	ICB	70	4	427	6.7	383	6.4	16	REC - Dbl ST on 150mm A	$ 61,892	16	N
4107B	Carlyon Line	0.6km North of Division Road East	Stockdale Road	Rural	HCB	70	4	2699	6.7	383	3.0	74	PR - Dbl Surface Treatment	$ 242,895	4	N
4341A	Carlyon Line	Clearview Drive	Brodie Drive	Semi-Urban	ICB	50	5	433	6.8	799	5.6	17	REC - 90mm HMA on 150mm A	$ 216,355	10	N
4587	Carriage Court	Wainman Line	Surrey Crescent	Semi-Urban	HCB	50	6	382	7.0	83	9.9	38	REC - 90mm HMA on 150mm A	$ 129,720	1	N
4664	Carriage Court	Surrey Crescent	Division Road West	Semi-Urban	HCB	50	6	542	7.0	83	6.5	47	REC - 90mm HMA on 150mm A	$ 184,315	1	N
4514	Cedar Rapids Drive	Marchmont Road	End	Semi-Urban	HCB	50	6	61	4.5	28	0.0	95	Crackseal	$ 212	1	N
3859	Centre Avenue	Highway 11 South Off-Ramp to Centre Avenue South	Telford Line	Semi-Urban	HCB	50	5	404	7.0	819	4.8	89	Crackseal	$ 1,413	94	N
3294	Charles Street	Sturgeon Bay Road	End	Urban	HCB	50	6	156	5.2	72	6.7	88	Crackseal	$ 548	9	N
662A	Church Line North	Kitchen Sideroad	0.2km North of Kitchen Sideroad	Rural	ICB	80	4	142	6.7	89	6.4	60	PR - Dbl Surface Treatment	$ 12,761	1	N
662B	Church Line North	0.2km North of Kitchen Sideroad	End	Rural	HCB	80	4	648	6.0	89	4.6	89	Surface Treatment or Slurry	$ 32,420	1	N
4288	Clearview Drive	Carlyon Line	Elm Avenue	Semi-Urban	ICB	50	6	142	5.5	111	5.9	33	REC - 90mm HMA on 150mm A	$ 48,165	2	N
3253	Cleveland Avenue	Highway 11 North Off-Ramp to Cleveland Avenue North	Lakeside Drive	Urban	HCB	50	5	170	5.2	278	5.0	62	PR - 40mm Mill and Pave	$ 28,832	2	N
3312	Coldwater Road	Gray Street	Mill Street	Urban	HCB	40	4	159	13.0	3650	3.2	69	PR - 40mm Mill and Pave	$ 27,077	24	N
3319	Coldwater Road	Mill Street	Michael Anne Drive	Urban	HCB	40	4	31	13.0	3623	3.5	68	PR - 40mm Mill and Pave	$ 5,335	25	N
3331	Coldwater Road	Michael Anne Drive	Robinson Street	Urban	HCB	40	4	54	13.0	3570	4.3	67	PR - 40mm Mill and Pave	$ 9,250	25	N
3378	Coldwater Road	Robinson Street	Community Centre Drive	Urban	HCB	50	4	98	13.0	3463	4.7	68	PR - 40mm Mill and Pave	$ 16,586	24	N
3378	Coldwater Road	Robinson Street	Community Centre Drive	Urban	HCB	40	4	94	13.0	3463	4.7	68	PR - 40mm Mill and Pave	$ 15,928	24	N
3448	Coldwater Road	Community Centre Drive	Gill Street	Urban	HCB	50	4	295	10.0	3303	4.4	64	PR - 40mm Mill and Pave	$ 50,195	26	N
3550A	Coldwater Road	Gill Street	Southorn Road	Urban	HCB	50	4	553	8.0	3197	4.2	70	PR - 40mm Mill and Pave	$ 93,949	21	N
3390	Community Centre Drive	Coldwater Road	Community Centre Drive	Urban	HCB	50	5	166	5.0	222	8.0	70	PR - 40mm Mill and Pave	$ 28,140	1	N
3407	Community Centre Drive	Community Centre Drive	End	Urban	HCB	50	6	86	5.0	111	7.5	71	PR - 40mm Mill and Pave	$ 14,673	1	N
4768	Confederation Drive	Wainman Line	Kensington Place	Semi-Urban	HCB	50	5	140	6.7	444	4.2	67	PR - 70mm HMA on 100mm A	$ 31,525	2	N
4812	Confederation Drive	Kensington Place	Pine Avenue	Semi-Urban	HCB	50	5	266	6.7	278	4.7	65	PR - 70mm HMA on 100mm A	$ 59,774	2	N
4857	Confederation Drive	Pine Avenue	Ridley Boulevard	Semi-Urban	HCB	50	6	244	6.7	144	5.3	50	PR - 70mm HMA on 100mm A	$ 54,825	1	N
4866	Confederation Drive	Ridley Boulevard	Elana Drive	Semi-Urban	HCB	50	6	204	6.7	22	4.6	76	PR - 70mm HMA on 100mm A	$ 45,823	0	N
3465	Coronation Avenue	Cumberland Road	Lakeside Drive	Urban	HCB	50	5	372	6.4	389	4.7	54	PR - 40mm Mill and Pave	$ 63,317	4	N
3806	Couchiching Avenue	Menoke Beach Road	Wood Avenue	Urban	HCB	50	5	62	6.4	233	7.8	84	Crackseal	$ 215	39	N
21260	Couchiching Avenue	West Intersection with Wood Avenue	East Intersection with Wood Avenue	Urban	HCB	50	5	203	6.4	233	5.9	83	Crackseal	$ 711	41	N
2674	Cox Drive	Huffman Road	End	Semi-Urban	ICB	50	6	385	6.0	105	11.3	47	REC - 90mm HMA on 150mm A	$ 130,905	1	N
2785	Cox Drive	Huffman Road	End	Semi-Urban	ICB	50	6	418	6.0	117	11.3	39	REC - 90mm HMA on 150mm A	$ 142,251	2	N
3241	Craddock Street	Harriet Street	End	Urban	HCB	50	6	102	6.0	56	5.9	69	PR - 40mm Mill and Pave	$ 17,262	0	N
3257	Craddock Street	Gray Street	Harriet Street	Urban	HCB	50	5	130	6.0	222	7.8	67	PR - 40mm Mill and Pave	$ 22,066	2	N
2344	Crane Avenue	Heron Drive	County Road 16	Semi-Urban	GST	50	6	209	6.0	50			Maintenance Gravel	$ -		N
2882	Crescent Bay Road	Crescent Bay Road	Picadilly Lane	Rural	ICB	50	5	399	6.0	789	7.7	21	REC - 90mm HMA on 150mm A	$ 135,493	13	N
2998	Crescent Bay Road	Crescent Bay Road	End	Semi-Urban	ICB	50	5	745	6.0	222	7.1	14	REC - 90mm HMA on 150mm A	$ 253,266	4	N
2881B	Crescent Bay Road	Highway 11 North Off-Ramp to Crescent Bay Road North	Scarlet Drive	Rural	ICB	50	5	146	6.7	1052	7.1	54	PR - Dbl Surface Treatment	$ 13,114	20	N
3353	Cumberland Road	Lakeside Drive	The Lane	Urban	HCB	50	5	45	7.0	349	6.2	55	PR - 40mm Mill and Pave	$ 7,599	3	N
3354	Cumberland Road	The Lane	Simcoe Avenue	Urban	HCB	50	5	20	6.7	349	4.6	91	Crackseal	$ 71	33	N
3365	Cumberland Road	Simcoe Avenue	Azcona Avenue	Urban	HCB	50	5	106	6.7	349	5.1	49	REC - 90mm HMA on 150mm A	$ 84,795	2	N
3376	Cumberland Road	Highview Avenue	Azcona Avenue	Urban	HCB	50	5	107	6.7	349	4.6	64	PR - 40mm Mill and Pave	$ 18,227	3	N
3395	Cumberland Road	Lee Avenue	Highview Avenue	Urban	HCB	40	6	104	6.7	349	6.9	24	REC - 90mm HMA on 150mm A	$ 82,892	2	N
3405	Cumberland Road	Lee Avenue	Coronation Avenue	Urban	HCB	40	5	101	7.9	733	5.6	19	REC - 90mm HMA on 150mm A	$ 80,658	5	N
3419	Cumberland Road	Coronation Avenue	Beachview Avenue	Urban	HCB	40	5	100	7.9	1221	6.7	13	REC - 90mm HMA on 150mm A	$ 80,328	10	N
3427	Cumberland Road	Bayou Road	Beachview Avenue	Urban	HCB	40	5	102	7.9	1332	14.8	13	REC - 90mm HMA on 150mm A	$ 81,512	11	N
4357	Cunningham Crescent	Drinkwater Drive	Wilson Point Road South	Semi-Urban	HCB	50	5	886	5.0	333	4.4	91	Crackseal	$ 3,100	31	N
3249	Cyril Martin Place	Harriet Street	End	Urban	HCB	50	6	121	6.0	56	11.6	72	PR - 40mm Mill and Pave	$ 20,577	0	N
708	Dean Trail	Whippoorwill Lane	End	Semi-Urban	ICB	50	6	136	6.4	56	8.7	46	REC - 90mm HMA on 150mm A	$ 46,080	1	N
710	Dean Trail	Whippoorwill Lane	Moynes Road	Semi-Urban	ICB	50	6	93	6.4	94	8.8	58	PR - 70mm HMA on 100mm A	$ 20,933	1	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
4879B	Digby Drive	West Intersection with Highway 12	East Intersection with Highway 12	Semi-Urban	HCB	50	6	329	6.7	67	8.9	60	PR - 70mm HMA on 100mm A	$ 74,098	0	N
4011	Division Road East	Hampshire Mills Line	Soules Road / Telford Line Overpass	Rural	HCB	60	4	1350	9.0	842	2.0	91	Crackseal	$ 4,725	79	N
4108	Division Road East	Carlyon Line	Hampshire Mills Line	Rural	HCB	60	4	1340	9.0	1119	1.6	92	Crackseal	$ 4,691	93	N
4126	Division Road East	Carlyon Line	Division Road East	Rural	HCB	60	4	177	9.0	1465	1.7	92	Crackseal	$ 621	122	N
4268	Division Road East	Burnside Line	Carlyon Line	Rural	HCB	60	4	1430	9.0	1012	1.8	93	Crackseal	$ 5,004	74	N
4364	Division Road West	Burnside Line	Uhthoff Line	Rural	HCB	80	3	1348	7.3	2557	1.2	92	Crackseal	$ 4,719	213	N
4480	Division Road West	Uhthoff Line	Fairgrounds Road	Rural	HCB	60	4	1332	7.0	2397	1.2	90	Surface Treatment or Slurry	$ 66,618	17	N
4604	Division Road West	Fairgrounds Road	Wainman Line	Rural	HCB	60	4	1450	7.0	2136	1.7	91	Crackseal	$ 5,074	200	N
4663	Division Road West	Jilem Court	Carriage Court	Semi-Urban	HCB	40	5	443	7.0	2131	1.7	90	Crackseal	$ 1,550	222	N
4673	Division Road West	Carriage Court	Martindale Crescent	Semi-Urban	HCB	40	5	63	7.0	2291	1.7	93	Crackseal	$ 220	167	N
4733	Division Road West	Martindale Crescent	Dunford Drive	Semi-Urban	HCB	60	4	420	7.0	2397	2.1	90	Crackseal	$ 1,469	250	N
20758	Division Road West	Wainman Line	Jilem Court	Semi-Urban	HCB	40	5	248	7.0	2147	1.9	91	Crackseal	$ 867	202	N
4762B	Division Road West	Dunford Drive	Highway 12	Semi-Urban	HCB	60	4	217	7.0	2483	2.6	92	Crackseal	$ 760	207	N
18898	Donlands Court	Anderson Line	End	Urban	HCB	50	6	192	8.3	189	6.1	79	PR - 40mm Mill and Pave	$ 32,699	1	N
54	Doug Smith Drive	Upper Big Chute Road (County Road 17)	End	Rural	GST	50	6	90	5.8	20			Maintenance Gravel	$ -		N
4358	Drinkwater Drive	Cunningham Crescent	Wilson Point Road	Rural	HCB	50	6	174	5.1	178	7.6	66	PR - Dbl Surface Treatment	$ 15,634	2	Y
4376	Drinkwater Drive	Cunningham Crescent	End	Rural	HCB	50	6	69	4.5	11	3.4	72	PR - Dbl Surface Treatment	$ 6,179	0	Y
4766	Dunford Drive	Division Road West	Hawley Road	Semi-Urban	HCB	50	6	160	7.0	89	7.8	33	REC - 90mm HMA on 150mm A	$ 54,544	1	N
4786	Dunford Drive	Hawley Road	End	Semi-Urban	HCB	50	6	103	7.0	33	13.0	31	REC - 90mm HMA on 150mm A	$ 35,150	0	N
3250	Dunns Line	Upper Big Chute Road (County Road 17)	Southorn Road	Rural	ICB	80	4	2249	7.0	167	3.4	54	PR - Dbl Surface Treatment	$ 202,452	3	N
3255	Dunns Line	North Intersection of Dunns Line and Southern Road	South Intersection of Dunns Line and Southern Road	Rural	HCB	80	4	84	7.0	167	11.7	56	PR - Dbl Surface Treatment	$ 7,591	3	N
3696	Dunns Line	Southorn Road	Municipal Boundary	Rural	ICB	80	4	2569	7.0	167	3.1	56	PR - Dbl Surface Treatment	$ 231,238	3	N
53	Earl Haid Avenue	Upper Big Chute Road (County Road 17)	End	Rural	LCB	50	6	83	6.2	44	0.0	51	PR - Dbl Surface Treatment	$ 7,494	1	N
3192	Earls Court	Wyley Street	End	Urban	HCB	50	6	66	6.7	56	28.0	37	REC - 90mm HMA on 150mm A	$ 22,415	1	N
3852	Eastside Drive	Ardtrea Drive	Campbell Road	Semi-Urban	HCB	40	6	76	7.0	28	11.1	39	REC - 90mm HMA on 150mm A	$ 38,241	0	N
3871	Eastside Drive	Willow Crescent	Ardtrea Drive	Semi-Urban	ICB	40	6	197	6.7	83	10.7	66	PR - 70mm HMA on 100mm A	$ 44,423	0	N
3917	Eastside Drive	Soules Road	Eastside Drive	Semi-Urban	ICB	40	6	366	6.4	372	6.1	69	PR - 70mm HMA on 100mm A	$ 82,318	2	N
1354	Edgar Street	Albany Street	Muskoka Street	Semi-Urban	ICB	50	6	115	5.5	56	9.9	56	PR - 70mm HMA on 100mm A	$ 25,874	0	N
3507B	Ego Sideroad	Stockdale Road	Ego Sideroad On-Ramp to Highway 11 South	Rural	ICB	60	5	377	6.7	111	4.1	44	REC - Dbl ST on 150mm A	$ 54,660	3	N
20744	Elana Drive	Wainman Line	Confederation Drive	Semi-Urban	HCB	50	5	1069	6.7	250	2.9	84	Crackseal	$ 3,742	42	N
21511	Elana Drive	West Intersection with Birkeshire Woods Lane	East Intersection with Birkeshire Woods Lane	Semi-Urban	HCB	50	6	487	6.7	80	2.9	82	Crackseal	$ 1,703	15	N
21512	Elana Drive	0.16km North of Confederation Drive	Birkeshire Woods Lane	Semi-Urban	HCB	50	5	106	6.7	44	5.8	91	Crackseal	$ 372	4	N
21513	Elana Drive	Birkeshire Woods Lane	End	Semi-Urban	HCB	50	6	390	6.7	72	2.4	85	Crackseal	$ 1,364	11	N
21860	Elana Drive	Confederation Drive	0.16km North of Confederation Drive	Semi-Urban	HCB	50	5	161	6.7	44	3.1	83	Crackseal	$ 563	8	N
338	Ellis Road	Village Lane	Irish Line	Semi-Urban	ICB	40	6	1065	6.7	179	8.1	100	ADEQ	$ 3,728	3	N
4292	Elm Avenue	Clearview Drive	End	Semi-Urban	ICB	50	6	159	5.5	44	8.7	41	REC - 90mm HMA on 150mm A	$ 54,102	1	N
3322	Eplett Street	Sturgeon Bay Road	Mill Street	Urban	HCB	50	5	170	6.0	222	6.4	78	PR - 40mm Mill and Pave	$ 28,839	1	N
3374	Eplett Street	Mill Street	Shaw Street	Urban	HCB	50	6	217	6.0	139	5.0	86	Crackseal	$ 760	20	N
3186A	F R Nelson Road	0.2km North of South Intersection with County Road 16	North Intersection with County Road 16	Semi-Urban	HCB	80	4	89	6.7	111	9.2	22	REC - 90mm HMA on 150mm A	$ 30,291	2	N
3186B	F R Nelson Road	South Intersection with County Road 16	0.2km North of South Intersection with County Road 16	Semi-Urban	GST	80	4	1362	6.0	100			Maintenance Gravel	$ -		N
3787	Fairgrounds Road	Thorburn Road	End	Rural	GST	80	6	228	5.0	10			Maintenance Gravel	$ -		N
4061	Fairgrounds Road	Fairgrounds Road	Warminster Road	Rural	ICB	80	4	295	7.0	204	6.6	58	PR - Dbl Surface Treatment	$ 26,513	3	N
4481	Fairgrounds Road	Fairgrounds Road	Division Road West	Rural	HCB	80	4	3192	6.7	378	2.8	92	Crackseal	$ 11,170	32	N
4661	Fairgrounds Road	Osprey Lane	Fawn Lane	Rural	HCB	60	5	450	7.0	423	4.9	86	Surface Treatment or Slurry	$ 22,481	4	N
19168	Fairgrounds Road	Fawn Lane	Division Road West	Rural	HCB	60	5	765	7.0	423	4.5	88	Surface Treatment or Slurry	$ 38,261	4	N
21705	Fairgrounds Road	Richmount Lane	Osprey Lane	Rural	HCB	60	4	534	7.0	764	4.0	90	Surface Treatment or Slurry	$ 26,696	6	N
4059A	Fairgrounds Road	Fairgrounds Road	0.9km North of Fairgrounds Road	Rural	ICB	80	4	598	6.0	167	7.6	30	REC - Dbl ST on 150mm A	$ 86,651	6	N
4059B	Fairgrounds Road	0.9km North of Fairgrounds Road	Thornburn Road	Rural	GST	80	4	2376	6.7	150			NO	$ -		N
5010A	Fairgrounds Road	Highway 12	Richmount Lane	Rural	HCB	60	4	639	7.0	764	3.4	88	Surface Treatment or Slurry	$ 31,937	7	N
5010B	Fairgrounds Road	Highway 12	Richmount Lane	Rural	HCB	50	5	320	7.0	764	3.4	88	Surface Treatment or Slurry	$ 16,012	7	N
1974A	Fawcett Road	Shoreview Drive	0.7km North of Shoreview Drive	Rural	ICB	50	6	700	7.0	44	3.7	61	PR - Dbl Surface Treatment	$ 63,000	1	N
19172	Fawn Lane	Fairgrounds Road	Pine Valley Lane	Semi-Urban	HCB	50	6	145	7.0	122	6.8	71	PR - 70mm HMA on 100mm A	$ 32,656	1	N
19173	Fawn Lane	Pine Valley Lane	Osprey Lane	Semi-Urban	HCB	50	6	436	7.0	56	5.0	83	Crackseal	$ 1,525	10	N
4723	Fern Glen Court	Birkeshire Woods Lane	End	Semi-Urban	HCB	50	6	96	6.7	56	7.6	80	PR - 70mm HMA on 100mm A	$ 21,522	2	N
2640	Fesserton Sideroad	Viking Marina Road	County Road 16	Semi-Urban	GST	50	6	174	6.7	150			Maintenance Gravel	$ -		N
21169	Fesserton Sideroad	County Road 16	Georgian Heights Boulevard	Semi-Urban	ICB	60	5	517	7.6	488	6.9	57	PR - 70mm HMA on 100mm A	$ 116,295	3	N
20573A	Fesserton Sideroad	Georgian Heights Boulevard	Municipal Boundary	Semi-Urban	ICB	80	4	132	6.7	488	5.7	67	PR - 70mm HMA on 100mm A	$ 29,588	3	N
3277	Firehall Lane	Gray Street	George Street	Urban	HCB	50	6	137	5.2	83	4.5	88	Crackseal	$ 479	10	N
3159	First Street	Bramshott Avenue On-Ramp to Highway 11 North	Turnbull Drive	Urban	HCB	50	6	157	5.2	56	9.2	68	PR - 40mm Mill and Pave	$ 26,665	0	N

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2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
4120	Forest Wood Drive	Holcroft Road	End	Semi-Urban	HCB	50	6	437	6.4	111	8.5	80	PR - 70mm HMA on 100mm A	$ 98,276	0	N
4239	Forest Wood Drive	Holcroft Road	Huronia Road	Semi-Urban	HCB	50	5	765	6.7	372	8.1	50	PR - 70mm HMA on 100mm A	$ 172,180	3	N
3211	Foxmead Road	Burnside Line	Uhthoff Line	Rural	ICB	80	4	1327	7.0	500	5.1	38	REC - 90mm HMA on 150mm A	$ 451,239	7	N
3325	Foxmead Road	Uhthoff Line	Balkwill Line	Rural	ICB	80	4	1448	7.0	444	6.2	38	REC - 90mm HMA on 150mm A	$ 492,376	6	N
3526	Foxmead Road	Balkwill Line	Wainman Line	Rural	ICB	60	5	1247	7.0	167	5.1	38	REC - Dbl ST on 150mm A	$ 180,744	5	N
3526	Foxmead Road	Balkwill Line	Wainman Line	Rural	ICB	80	4	214	7.0	167	5.1	38	REC - Dbl ST on 150mm A	$ 31,044	5	N
3660A	Foxmead Road	Wainman Line	Town Line	Rural	ICB	60	5	806	7.0	111	7.2	35	REC - Dbl ST on 150mm A	$ 116,825	4	N
3660B	Foxmead Road	Wainman Line	Town Line	Rural	ICB	50	6	591	7.0	111	7.2	35	REC - Dbl ST on 150mm A	$ 85,638	4	N
3275	George Street	Firehall Lane	John Street	Urban	HCB	50	6	213	5.2	83	4.3	88	Crackseal	$ 745	10	N
19176	Georgian Heights Boulevard	Glen Echo Ridge	End (Court)	Semi-Urban	HCB	50	6	76	7.0	160	8.0	82	Crackseal	$ 265	30	N
19180	Georgian Heights Boulevard	Fesserton Sideroad	Georgian Heights Boulevard	Semi-Urban	HCB	50	6	1189	7.0	160	3.8	76	PR - 70mm HMA on 100mm A	$ 267,420	1	N
3447	Gill Street	Coldwater Road	Sunset Crescent	Urban	HCB	50	5	333	6.0	222	4.9	86	Crackseal	$ 1,165	32	N
4560	Gillett Drive	Marchmont Road	Avery Lane	Semi-Urban	HCB	50	6	110	6.0	111	15.5	100	REC - 90mm HMA on 150mm A	$ 37,306	2	N
19178	Glen Echo Ridge	County Road 16	Georgian Heights Boulevard	Semi-Urban	HCB	50	6	465	7.0	160	3.8	70	PR - 70mm HMA on 100mm A	$ 104,565	1	N
4872	Glen Oak Lane	Ridley Boulevard	Pine Avenue	Semi-Urban	HCB	50	6	263	6.7	105	8.3	68	PR - 70mm HMA on 100mm A	$ 59,107	1	N
3425	Gloucester Road	Vasey Road (County Road 23)	Beechwood Drive	Semi-Urban	HCB	50	5	460	6.7	278	12.0	100	Crackseal	$ 1,611	1	N
3013	Goldstein Road	Scarlet Drive	Sparrow Lake Road / Goldstein Road Overpass	Semi-Urban	HCB	50	5	111	7.0	2629	2.2	47	REC - 90mm HMA on 150mm A	$ 55,526	20	N
3022	Goldstein Road	Sparrow Lake Road / / / Goldstein Road Overpass	Grand Forest Trail	Semi-Urban	HCB	50	5	40	7.0	2629	2.6	54	PR - 70mm HMA on 100mm A	$ 19,940	20	N
3114	Goldstein Road	Grand Forest Trail	Turnbull Drive	Semi-Urban	HCB	50	5	809	7.0	1052	6.3	45	REC - 90mm HMA on 150mm A	$ 404,501	8	N
3143	Goldstein Road	Turnbull Drive	Aldershott Place	Semi-Urban	ICB	50	5	343	6.4	329	9.5	29	REC - 90mm HMA on 150mm A	$ 116,552	5	N
2996B	Goldstein Road	Highway 11 North Off-Ramp to Goldstein Road North	Scarlet Drive	Semi-Urban	HCB	50	5	126	7.0	2629	5.0	61	PR - 70mm HMA on 100mm A	$ 28,314	17	N
3490	Grand Tamarack Crescent	Timberline Avenue	Bayou Road	Urban	HCB	50	5	142	6.7	1740	7.5	100	Crackseal	$ 497	0	N
3501B	Grand Tamarack Crescent	Highway 11 North Off-Ramp to Grand Tamarack Cres North	Timberline Avenue	Urban	HCB	50	5	293	6.7	2677	11.2	100	Crackseal	$ 1,024	0	N
47	Granny Stock Garden	Chapel Hill Lane	End	Rural	HCB	50	6	45	6.5	33	17.7	94	Crackseal	$ 158	2	N
48	Granny Stock Garden	Upper Big Chute Road (County Road 17)	Chapel Hill Lane	Rural	HCB	50	6	42	6.3	44	9.9	95	Crackseal	$ 148	2	N
1841	Grass Lake Line	Cambrian Road	End	Rural	ICB	80	6	1996	7.0	17	4.6	60	PR - Dbl Surface Treatment	$ 179,644	0	N
2489	Grass Lake Line	Cambrian Road	Agnew Road	Rural	ICB	80	4	1036	6.7	56	8.5	58	PR - Dbl Surface Treatment	$ 93,253	1	N
2675A	Grass Lake Line	Agnew Road	Highway Grass Lake Line On-Ramp to Highway 11 South	Rural	HCB	50	5	283	6.7	444	3.5	74	PR - Dbl Surface Treatment	$ 25,431	5	N
3246	Gray Street	John Street	Wyley Street	Urban	HCB	40	5	139	6.7	906	3.8	73	PR - 40mm Mill and Pave	$ 23,679	5	N
3256	Gray Street	Craddock Street	John Street	Urban	HCB	40	5	129	6.7	1225	4.6	75	PR - 40mm Mill and Pave	$ 21,925	7	N
3269	Gray Street	Firehall Lane	Craddock Street	Urban	HCB	50	5	159	6.7	1385	6.8	52	PR - 40mm Mill and Pave	$ 26,970	14	N
3273	Gray Street	Joseph Street	Firehall Lane	Urban	HCB	50	5	45	6.0	1385	10.7	70	PR - 40mm Mill and Pave	$ 7,626	9	N
3285	Gray Street	River Street	Michael Anne Drive	Urban	HCB	50	5	76	9.0	1577	4.5	62	PR - 40mm Mill and Pave	$ 13,002	13	N
17878	Gray Street	Wyley Street	Anderson Line	Urban	HCB	50	5	200	6.7	639	8.9	84	Crackseal	$ 698	107	N
17878	Gray Street	Wyley Street	Anderson Line	Urban	HCB	40	5	135	6.7	639	8.9	84	Crackseal	$ 474	107	N
3175	Grayshott Drive	Highway 11 North Off-Ramp to Grayshott Drive North	Turnbull Drive	Urban	HCB	50	5	424	5.2	555	5.1	75	PR - 40mm Mill and Pave	$ 72,084	3	N
3198	Grayshott Drive	Turnbull Drive	Brooks Lane	Urban	HCB	50	5	156	5.2	322	8.8	65	PR - 40mm Mill and Pave	$ 26,510	2	N
3207	Grayshott Drive	Lunge Point Lane	End	Semi-Urban	ICB	50	6	239	6.4	67	8.5	45	REC - 90mm HMA on 150mm A	$ 81,396	1	N
3216A	Grayshott Drive	Brooks Lane	0.1km East of Brooks Lane	Semi-Urban	HCB	50	5	71	5.2	228	7.1	68	PR - 70mm HMA on 100mm A	$ 15,883	1	N
3216B	Grayshott Drive	0.1km East of Brooks Lane	Lunge Point Lane	Semi-Urban	ICB	50	5	623	6.4	228	7.4	46	REC - 90mm HMA on 150mm A	$ 211,670	3	N
1272	Green River Drive	Coopers Falls Road (County Road 52)	End	Semi-Urban	ICB	50	5	1335	7.0	278	7.6	49	REC - 90mm HMA on 150mm A	$ 453,859	3	N
4539	Hale Street	Marchmont Road	Avery Lane	Semi-Urban	LCB	50	6	109	7.0	111	7.8	30	REC - 90mm HMA on 150mm A	$ 37,160	2	N
4566	Hale Street	Avery Lane	Millwood Road	Semi-Urban	HCB	50	6	205	6.7	56	7.1	76	PR - 70mm HMA on 100mm A	$ 46,039	0	N
1431	Hamilton Street	Muskoka Street	Hepinstall Landing	Semi-Urban	HCB	50	6	61	6.7	70	6.3	89	Crackseal	$ 215	8	N
1453	Hamilton Street	County Road 169	Muskoka Street	Semi-Urban	HCB	50	6	225	7.0	70	7.5	76	PR - 70mm HMA on 100mm A	$ 50,562	0	N
1453	Hamilton Street	County Road 169	Muskoka Street	Semi-Urban	HCB	50	6	123	7.0	70	7.5	76	PR - 70mm HMA on 100mm A	$ 27,751	0	N
772	Hamlet Trail	South Sparrow Lake Road	End	Rural	GST	50	6	345	5.0	10			NO	$ -		N
3291	Hampshire Mills Line	Maple Valley Road	Cambrian Road	Rural	GST	80	4	3091	5.7	80			NO	$ -		N
3773	Hampshire Mills Line	Cambrian Road	Stockdale Road	Rural	ICB	80	4	3101	6.4	167	7.0	21	REC - Dbl ST on 150mm A	$ 449,594	7	N
4044	Hampshire Mills Line	Division Road East	Penley Road	Rural	HCB	50	5	292	7.3	333	5.0	26	REC - Dbl ST on 150mm A	$ 42,309	12	N
4012A	Hampshire Mills Line	Division Road East	1km North of Division Road East	Rural	HCB	80	4	1172	7.0	167	4.8	46	REC - Dbl ST on 150mm A	$ 169,911	5	N
4012B	Hampshire Mills Line	1km North of Division Road East	Stockdale Road	Rural	ICB	80	4	1701	7.0	167	6.8	37	REC - Dbl ST on 150mm A	$ 246,578	5	N
4086B	Hampshire Mills Line	Hampshire Mills Line	Hampshire Mills Line On-Ramp to Highway 11 South	Rural	LCB	50	5	461	7.0	333	6.4	24	REC - Dbl ST on 150mm A	$ 66,882	13	N
3248	Harriet Street	Cyril Martin Place	Craddock Street	Urban	HCB	50	6	103	6.0	67	7.1	92	Crackseal	$ 359	6	N
3259	Harriet Street	River Street	Cyril Martin Place	Urban	HCB	50	6	147	6.0	167	4.6	90	Crackseal	$ 514	17	N
942	Harrison Road	Canal Road	End	Semi-Urban	LCB	50	6	251	6.0	39	7.7	63	PR - 70mm HMA on 100mm A	$ 56,390	0	N
4581	Hawk Ridge Crescent	West Intersection with Hurlwood Lane	East Intersection with Hurlwood Lane	Semi-Urban	HCB	50	5	1351	6.7	300	5.3	63	PR - 70mm HMA on 100mm A	$ 303,997	2	N
2884	Hawkins Drive	Brae Mere Common	End	Semi-Urban	HCB	50	6	281	4.0	39	6.5	88	Crackseal	$ 983	5	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
2901	Hawkins Drive	South Sparrow Lake Road	Brae Mere Common	Semi-Urban	HCB	50	6	162	6.0	67	3.0	91	Crackseal	$ 568	6	N
4785	Hawley Road	Dunford Drive	End	Semi-Urban	HCB	50	6	126	7.0	33	9.6	35	REC - 90mm HMA on 150mm A	$ 42,876	0	N
3533	Hedgemere Landing	Bayou Road	End	Semi-Urban	HCB	50	6	148	5.5	28	10.9	67	PR - 70mm HMA on 100mm A	$ 33,293	0	N
389	Henrys Landing	East Intersection with Irish Line	West Intersection with Irish Line	Rural	GST	50	6	170	6.7	10			Maintenance Gravel	$ -		N
1383	Hepinstall Landing	Hendi Lane	Albany Street	Semi-Urban	HCB	50	6	233	5.0	128	10.2	89	Crackseal	$ 814	15	N
1427	Hepinstall Landing	Hamilton Street	Albany Street	Semi-Urban	HCB	50	6	144	5.0	100	6.0	88	Crackseal	$ 502	13	N
2315	Heron Drive	Crane Avenue	0.25 km north of Crane Drive	Semi-Urban	GST	50	6	246	7.0	50			NO	$ -		N
2455	Heron Drive	County Road 16	Crane Avenue	Semi-Urban	GST	50	6	258	6.0	100			NO	$ -		N
3377	Highview Avenue	Buena Vista Drive	Cumberland Road	Urban	HCB	40	6	199	6.4	422	5.5	59	PR - 40mm Mill and Pave	$ 33,880	4	N
3418	Highview Avenue	Cumberland Road	The Lane	Urban	HCB	50	5	190	6.4	289	4.2	81	Crackseal	$ 666	57	N
3424	Highview Avenue	The Lane	Lakeside Drive	Urban	HCB	50	5	63	6.0	289	8.1	64	PR - 40mm Mill and Pave	$ 10,720	2	N
628A	Hodgins Road	Narrows Road	Port Severn Road	Rural	HCB	80	4	1252	7.0	444	4.2	52	PR - Dbl Surface Treatment	$ 112,695	9	N
918A	Hodgins Road	Narrows Road	Quarry Road	Rural	HCB	80	4	2530	6.7	222	4.5	56	PR - Dbl Surface Treatment	$ 227,705	4	N
4192	Holcroft Road	Forest Wood Drive	End	Semi-Urban	HCB	50	6	429	5.5	139	6.1	74	PR - 70mm HMA on 100mm A	$ 96,477	1	N
2692	Huffman Road	Cox Drive	Agnew Road	Rural	ICB	50	5	392	6.0	222	12.2	33	REC - Dbl ST on 150mm A	$ 56,902	7	N
4502	Hume Street	Lewis Lane	Marchmont Road	Semi-Urban	LCB	50	6	239	5.0	28	8.6	50	PR - 70mm HMA on 100mm A	$ 53,786	0	N
19058	Hume Street	Providence Lane	End	Semi-Urban	LCB	50	6	155	6.7	28	11.3	67	PR - 70mm HMA on 100mm A	$ 34,852	0	N
4551	Hurlwood Lane	Burnside Line	Hawk Ridge Crescent	Semi-Urban	HCB	50	5	391	8.6	373	4.4	68	PR - 70mm HMA on 100mm A	$ 88,069	2	N
4580	Hurlwood Lane	East Intersection with Hawk Ridge Crescent	West Intersection with Hawk Ridge Crescent	Semi-Urban	HCB	50	5	276	6.7	208	4.2	61	PR - 70mm HMA on 100mm A	$ 62,060	1	N
20716	Huronia Road	Forest Wood Drive	End	Semi-Urban	HCB	50	5	809	6.4	999	2.9	89	Crackseal	$ 2,830	115	N
4197A	Huronia Road	Forest Wood Drive	Huronia Road On-Ramp to Highway 11 North	Semi-Urban	HCB	50	4	20	7.0			80.8	Crackseal	$ 71		N
358	Irish Line	South Riverside Drive	Tower Line Road	Semi-Urban	HCB	40	6	241	7.0	332	4.8	92	Crackseal	$ 844	28	N
373	Irish Line	Henrys Landing	South Riverside Drive	Semi-Urban	HCB	40	6	272	6.7	361	3.0	95	Crackseal	$ 953	19	N
390	Irish Line	East Intersection with Henrys Landing	West Intersection with Henrys Landing	Semi-Urban	HCB	40	6	116	7.0	361	4.3	93	Crackseal	$ 406	26	N
401	Irish Line	0.91km North of Nature Wilde Road	Log Cabin Lane	Semi-Urban	HCB	40	6	244	7.0	389	2.9	95	Crackseal	$ 853	20	N
474	Irish Line	Nature Wilde Road	0.91km North of Nature Wilde Road	Rural	HCB	80	4	915	6.7	357	3.8	94	Crackseal	$ 3,201	22	N
729	Irish Line	Oakley Sideroad	Nature Wilde Road	Rural	HCB	80	4	3114	6.7	541	3.8	94	Crackseal	$ 10,899	34	N
986	Irish Line	Upper Big Chute Road (County Road 17)	Oakley Sideroad	Rural	HCB	60	4	1827	6.7	546	4.4	94	Crackseal	$ 6,396	34	N
21611	Irish Line	Log Cabin Lane	Henrys Landing	Semi-Urban	ICB	40	6	39	7.0	389	2.0	95	Crackseal	$ 136	20	N
4615	Jenn Lynn Court	Millwood Road	End	Semi-Urban	HCB	50	6	68	6.7	39	13.9	71	PR - 70mm HMA on 100mm A	$ 15,321	0	N
1658	Jermey Road	Carlyon Line	End	Rural	GST	60	6	717	5.0	10			Maintenance Gravel	$ -		N
2152	Jermey Road	Burnside Line	Carlyon Line	Rural	GST	60	5	1472	6.4	60			Maintenance Gravel	$ -		N
20760	Jilem Court	Abbey Road	End	Semi-Urban	HCB	50	6	98	6.7	56	4.4	91	Crackseal	$ 343	5	N
20805	Jilem Court	Division Road West	Abbey Road	Semi-Urban	HCB	50	5	392	6.7	389	3.4	82	Crackseal	$ 1,372	73	N
3218	John Street	Sheppard Street	Brick Pond Road	Urban	HCB	50	5	489	6.7	278	9.2	52	PR - 40mm Mill and Pave	$ 83,186	3	N
3247	John Street	Gray Street	Sheppard Street	Urban	HCB	50	5	127	6.7	222	8.2	64	PR - 40mm Mill and Pave	$ 21,621	2	N
3258	John Street	George Street	Gray Street	Urban	HCB	50	6	110	6.7	83	9.0	89	Crackseal	$ 385	10	N
3295	Joseph Street	Gray Street	End	Urban	HCB	50	6	122	3.5	56	14.0	92	Crackseal	$ 426	5	N
496	Kellys Road	Blake Avenue	Port Severn Road	Semi-Urban	HCB	50	6	444	6.0	56	10.7	43	REC - 90mm HMA on 150mm A	$ 151,009	1	N
4850	Kensington Place	Confederation Drive	Pine Avenue	Semi-Urban	HCB	50	6	370	6.7	167	4.0	65	PR - 70mm HMA on 100mm A	$ 83,211	1	N
1609	Kinnear Sideroad	Upper Big Chute Road (County Road 17)	Lawson Line	Rural	ICB	80	4	1414	7.0	444	4.5	51	PR - Dbl Surface Treatment	$ 127,218	9	N
2211	Kinnear Sideroad	Lawson Line	Trader Cowan Road	Rural	ICB	80	4	1495	6.7	222	6.6	36	REC - Dbl ST on 150mm A	$ 216,748	7	N
661	Kitchen Sideroad	Church Line North	End	Rural	GST	80	6	1571	6.0	10			Maintenance Gravel	$ -		N
733	Kitchen Sideroad	Silk Line	Church Line North	Rural	ICB	60	5	1410	6.7	222	6.5	72	PR - Dbl Surface Treatment	$ 126,912	3	N
3230	Knight Avenue	Highway 11 North Off-Ramp to Knight Avenue North	Lakeside Drive	Urban	HCB	50	5	290	5.2	278	5.3	76	PR - 40mm Mill and Pave	$ 49,314	1	N
2651	Lake Saint George Boulevard	South Sparrow Lake Road	End	Semi-Urban	ICB	50	5	773	5.6	411	16.6	38	REC - 90mm HMA on 150mm A	$ 262,843	5	N
3215	Lakeside Drive	Bramshott Avenue	End	Urban	HCB	50	6	125	6.0	83	6.4	88	Crackseal	$ 439	10	N
3229	Lakeside Drive	Knight Avenue	Bramshott Avenue	Urban	HCB	50	6	112	6.0	122	5.4	87	Crackseal	$ 391	17	N
3243	Lakeside Drive	Pleasant Road	Knight Avenue	Urban	HCB	50	6	114	6.0	122	3.7	88	Crackseal	$ 399	15	N
3252	Lakeside Drive	Cleveland Avenue	Pleasant Road	Urban	HCB	50	6	115	6.0	122	5.4	50	PR - 40mm Mill and Pave	$ 19,540	1	N
3271	Lakeside Drive	Park Road	Cleveland Avenue	Urban	HCB	50	6	122	6.0	133	6.5	68	PR - 40mm Mill and Pave	$ 20,798	1	N
3305	Lakeside Drive	Beckett Place	Park Road	Urban	HCB	50	6	153	6.0	167	6.5	50	PR - 40mm Mill and Pave	$ 26,061	2	N
3337	Lakeside Drive	Armand Avenue	Beckett Place	Urban	HCB	50	6	160	6.0	167	9.9	23	REC - 90mm HMA on 150mm A	$ 80,206	2	N
3346	Lakeside Drive	Lakeside Drive	Cumberland Road	Urban	HCB	50	6	32	6.7	167	8.0	57	PR - 40mm Mill and Pave	$ 5,497	2	N
3423	Lakeside Drive	Highview Avenue	Cumberland Road	Urban	HCB	50	5	356	6.4	289	9.5	43	REC - 90mm HMA on 150mm A	$ 121,097	4	N
3445	Lakeside Drive	Lee Avenue	Highview Avenue	Urban	HCB	40	6	119	6.0	111	8.3	70	PR - 40mm Mill and Pave	$ 20,164	1	N
3464	Lakeside Drive	Coronation Avenue	Lee Avenue	Urban	HCB	40	6	111	6.0	111	6.6	63	PR - 40mm Mill and Pave	$ 18,858	1	N
3488	Lakeside Drive	Beachview Avenue	Coronation Avenue	Urban	HCB	40	6	142	6.7	111	8.7	76	PR - 40mm Mill and Pave	$ 24,208	1	N
549	Lauderdale Point Crescent	Peninsula Point Road	End	Semi-Urban	ICB	50	6	172	6.7	44	15.1	55	PR - 70mm HMA on 100mm A	$ 38,601	0	N
550	Lauderdale Point Crescent	Peninsula Point Road	End	Semi-Urban	ICB	50	6	247	6.0	44	9.6	51	PR - 70mm HMA on 100mm A	$ 55,538	0	N

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2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
1199	Laughlin Falls Road	Silk Line	Taylor Line	Rural	ICB	50	6	1383	6.7	144	5.3	64	PR - Dbl Surface Treatment	$ 124,481	2	N
1517	Laughlin Falls Road	Taylor Line	Lovering Line	Rural	GST	80	4	1863	6.0	200			Maintenance Gravel	$ -		N
1795	Laughlin Falls Road	Lovering Line	Upper Big Chute Road (County Road 17)	Rural	GST	80	4	905	6.7	200			Maintenance Gravel	$ -		N
1017A	Laughlin Falls Road	Silk Line	0.8km East of Silk Road	Rural	GST	80	6	568	5.5	20			Maintenance Gravel	$ -		N
2959	Lawson Line	Upper Big Chute Road (County Road 17)	Kinnear Sideroad	Rural	GST	80	4	3104	7.3	180			Maintenance Gravel	$ -		N
3446	Lee Avenue	Cumberland Road	Lakeside Drive	Urban	HCB	50	5	318	6.4	322	7.1	58	PR - 40mm Mill and Pave	$ 53,997	3	N
3557	Leisure Court	Leisure Court	Southorn Road	Semi-Urban	ICB	50	6	375	6.7	167	5.8	51	PR - 70mm HMA on 100mm A	$ 84,395	1	N
3558	Leisure Court	Southorn Road	Woodland Place	Semi-Urban	ICB	50	6	237	6.7	128	5.3	50	PR - 70mm HMA on 100mm A	$ 53,365	1	N
17838	Lewis Lane	Hume Street	End	Semi-Urban	LCB	50	6	108	6.7	44	11.1	79	PR - 70mm HMA on 100mm A	$ 24,303	0	N
3416	Linger Long Place	New Brailey Line	End	Rural	HCB	50	6	130	7.0	22	16.8	20	REC - Dbl ST on 150mm A	$ 18,791	1	N
4565	Lloyd Circle	Hale Street	End	Semi-Urban	HCB	50	6	160	6.7	56	5.7	78	PR - 70mm HMA on 100mm A	$ 36,050	0	N
4953	Loretta Avenue	Wainman Line	End	Semi-Urban	HCB	50	6	650	6.7	139	8.6	76	PR - 70mm HMA on 100mm A	$ 146,326	1	N
1518	Lovering Line	Laughlin Falls Road	Upper Big Chute Road (County Road 17)	Rural	GST	80	4	1993	6.0	50			Maintenance Gravel	$ -		N
3208	Lynch Street	Rose Street	End	Urban	HCB	50	6	126	6.0	44	7.4	71	PR - 40mm Mill and Pave	$ 21,495	0	N
3220	Lynch Street	River Street	Rose Street	Urban	HCB	50	6	93	6.0	56	5.1	91	Crackseal	$ 324	5	N
2121	Maple Valley Road	Brennan Line	End	Rural	GST	80	6	883	5.5	10			Maintenance Gravel	$ -		N
2630	Maple Valley Road	Brennan Line	Telford Line	Rural	GST	80	4	1417	6.0	60			Maintenance Gravel	$ -		N
2839	Maple Valley Road	Telford Line	Hampshire Mills Line	Rural	GST	80	4	1402	6.0	70			Maintenance Gravel	$ -		N
3016	Maple Valley Road	Carlyon Line	Hampshire Mills Line	Rural	GST	80	4	1419	6.0	100			Maintenance Gravel	$ -		N
3091	Maple Valley Road	Burnside Line	Carlyon Line	Rural	ICB	80	4	1562	7.6	167	7.2	46	REC - Dbl ST on 150mm A	$ 226,434	5	N
4473	Marchmont Road	Wainman Line	Riverwood Lane	Semi-Urban	HCB	50	5	219	6.4	488	4.9	89	Crackseal	$ 766	56	N
4513	Marchmont Road	Hume Street	Cedar Rapids Drive	Semi-Urban	HCB	40	5	84	6.0	558	6.0	93	Crackseal	$ 294	41	N
4524	Marchmont Road	Cedar Rapids Drive	Hale Street	Semi-Urban	HCB	40	5	79	5.5	558	6.3	93	Crackseal	$ 276	41	N
4524	Marchmont Road	Cedar Rapids Drive	Hale Street	Semi-Urban	HCB	50	5	37	5.5	558	6.3	93	Crackseal	$ 129	41	N
4544	Marchmont Road	Hale Street	Gillett Drive	Semi-Urban	HCB	50	5	246	6.7	488	2.9	92	Crackseal	$ 861	41	N
4575	Marchmont Road	Gillett Drive	Town Line	Semi-Urban	HCB	50	5	339	6.7	488	3.7	93	Crackseal	$ 1,185	36	N
4501A	Marchmont Road	Hume Street	0.1km East of Hume Street	Semi-Urban	HCB	40	6	71	6.0	488	4.8	95	Crackseal	$ 249	25	
4501B	Marchmont Road	0.1km East of Hume Street	Riverwood Lane	Semi-Urban	HCB	50	5	255	6.7	488	5.3	93	Crackseal	$ 891	36	N
4501B	Marchmont Road	0.1km East of Hume Street	Riverwood Lane	Semi-Urban	HCB	40	6	70	6.7	488	5.3	93	Crackseal	$ 246	36	N
551	Marine Drive	Port Severn Road	End	Semi-Urban	HCB	50	6	399	6.0	56	7.2	61	PR - 70mm HMA on 100mm A	$ 89,756	0	N
4746	Martindale Crescent	Division Road West	End	Semi-Urban	HCB	50	6	303	7.0	89	9.9	41	REC - 90mm HMA on 150mm A	$ 102,977	1	N
2762A	Matchedash Street	County Road 16	End	Rural	GST	50	5	107	6.0	250			Maintenance Gravel	$ -		N
1302	Mayhew Road	Quarry Road	Quiet Waters Lane	Semi-Urban	HCB	60	5	1156	7.0	111	6.2	38	REC - 90mm HMA on 150mm A	$ 392,989	1	N
1802	McClelland Road	Highway 11 North Off-Ramp to Mcclelland Road North	McClelland Road On-Ramp to Highway 11 North	Semi-Urban	HCB	50	6	295	6.4	105	4.4	88	Crackseal	$ 1,034	13	N
1963	McClelland Road	Highway 11 North Off-Ramp to Mcclelland Road North	North Crescent	Semi-Urban	HCB	50	6	229	7.0	140	7.2	57	PR - 70mm HMA on 100mm A	$ 51,592	1	N
2075	McClelland Road	Shoreview Drive	North Crescent	Semi-Urban	HCB	50	6	205	7.0	84	10.5	63	PR - 70mm HMA on 100mm A	$ 46,216	1	N
717	McLeod Drive	Peninsula Point Road	Haertel Lane	Semi-Urban	ICB	50	6	103	5.5	39	8.2	51	PR - 70mm HMA on 100mm A	$ 23,098	0	N
747	McLeod Drive	Haertel Lane	End	Semi-Urban	ICB	50	6	393	7.0	39	6.0	53	PR - 70mm HMA on 100mm A	$ 88,504	0	N
21403	Meadowview Court	Wainman Line	End	Semi-Urban	HCB	50	6	386	6.7	104	3.7	92	Crackseal	$ 1,350	9	N
3782	Menoke Beach Road	Ardtrea Drive	Amigo Drive	Semi-Urban	ICB	60	4	290	6.7	666	4.7	54	PR - 70mm HMA on 100mm A	$ 65,247	5	N
3807	Menoke Beach Road	Amigo Drive	Couchiching Avenue	Semi-Urban	ICB	60	5	630	6.7	344	4.3	54	PR - 70mm HMA on 100mm A	$ 141,824	3	N
3875	Menoke Beach Road	Couchiching Avenue	End	Semi-Urban	ICB	60	5	531	6.4	111	5.3	40	REC - 90mm HMA on 150mm A	$ 180,695	1	N
3753B	Menoke Beach Road	Highway 11 North Off-Ramp to Menoke Beach Road North	Ardtrea Drive	Semi-Urban	ICB	60	4	219	6.7	999	5.4	41	REC - 90mm HMA on 150mm A	$ 109,589	9	N
3318	Michael Anne Drive	Gray Street	Coldwater Road	Urban	HCB	50	6	279	6.0	167	6.6	78	PR - 40mm Mill and Pave	$ 47,395	1	N
3321	Mill Street	Coldwater Road	Eplett Street	Urban	HCB	50	5	131	6.0	222	8.0	69	PR - 40mm Mill and Pave	$ 22,272	1	N
3328	Mill Street	Eplett Street	Bush Street	Urban	HCB	50	6	110	6.7	111	7.2	66	PR - 40mm Mill and Pave	$ 18,735	1	N
4614	Millwood Road	Lloyd Circle	Jenn Lynn Court	Semi-Urban	HCB	50	6	404	6.7	139	7.6	73	PR - 70mm HMA on 100mm A	$ 91,005	1	N
4631	Millwood Road	Jenn Lynn Court	Town Line	Semi-Urban	HCB	50	5	179	6.7	222	5.3	73	PR - 70mm HMA on 100mm A	$ 40,372	1	N
1429	Mount Stephen Road	Beard Farm Trail	End	Rural	GST	80	6	1272	5.0	10			Maintenance Gravel	$ -		N
1833	Mount Stephen Road	Beard Farm Trail	Taylor Line	Rural	GST	80	4	1399	7.0	50			Maintenance Gravel	$ -		N
2409	Mount Stephen Road	Balkwill Line	Wainman Line	Rural	ICB	60	5	1407	6.7	265	1.6	84	Surface Treatment or Slurry	$ 70,360	3	N
2756	Mount Stephen Road	Wainman Line	Upper Big Chute Road (County Road 17)	Rural	ICB	60	5	1358	6.7	301	2.1	79	PR - Dbl Surface Treatment	$ 122,182	3	N
709	Moynes Road	Moynes Road	Dean Trail	Semi-Urban	ICB	50	6	335	6.4	139	13.9	53	PR - 70mm HMA on 100mm A	$ 75,363	1	N
778	Moynes Road	Dean Trail	Coopers Falls Road (County Road 52)	Rural	ICB	50	5	831	6.7	233	7.3	56	PR - Dbl Surface Treatment	$ 74,801	4	N
1078	Muskoka Street	Muskoka Street	Bowles Lane	Semi-Urban	HCB	50	5	256	7.0	1252	5.0	100	Crackseal	$ 897	10	N
1314	Muskoka Street	Bowles Lane	Ramsay Street	Semi-Urban	HCB	50	5	909	7.0	1279	4.5	100	Crackseal	$ 3,182	6	N
1353	Muskoka Street	Ramsay Street	Edgar Street	Urban	HCB	50	5	119	7.0	1279	5.1	100	Crackseal	$ 418	7	N
1381	Muskoka Street	Edgar Street	Albany Street	Urban	HCB	50	5	123	6.7	1279	6.6	100	Crackseal	$ 431	8	N
1424	Muskoka Street	Albany Street	Hamilton Street	Urban	HCB	50	5	144	13.0	1279	1.8	94	Crackseal	$ 505	80	N
1507	Muskoka Street	Hamilton Street	County Road 169	Urban	HCB	50	5	190	13.0	1224	3.7	94	Crackseal	$ 663	77	N
1615	Muskoka Street	County Road 169	End	Semi-Urban	HCB	50	6	204	6.0	89	24.8	100	ADEQ	$ 713	1	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
399	Narrows Road	Russell Drive	Rockcliffe Court	Rural	HCB	50	6	524	6.7	39	9.0	25	REC - Dbl ST on 150mm A	$ 75,943	1	N
580	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	1849	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 268,160	5	N
580	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	35	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 5,078	5	N
580	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	243	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 35,296	5	N
367A	Narrows Road	Rockcliff Court	117m East of Pilkington Lane	Rural	HCB	50	6	40	6.7	39	5.8	25	REC - Dbl ST on 150mm A	$ 5,800	1	N
580A	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	637	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 92,437	5	N
580B	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	243	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 35,296	5	N
580C	Narrows Road	Saint Amant Road	Russell Drive	Rural	ICB	60	5	330	6.7	167	5.0	46	REC - Dbl ST on 150mm A	$ 47,823	5	N
627A	Narrows Road	Hodgins Road	Saint Amant Road	Rural	ICB	60	5	651	6.7	111	5.8	53	PR - Dbl Surface Treatment	$ 58,568	2	N
3363	New Brailey Line	Cambrian Road	Stockdale Road	Rural	ICB	80	4	2928	6.7	152	8.3	19	REC - Dbl ST on 150mm A	$ 424,581	6	N
3373	New Brailey Line	Stockdale Road	Bayou Road / New Brailey Line Overpass	Rural	HCB	50	5	64	6.7	305	5.0	44	REC - Dbl ST on 150mm A	$ 9,227	9	N
3389	New Brailey Line	Bayou Road / / New Brailey Line Overpass	Linger Long Place	Rural	HCB	50	5	56	6.7	610	4.1	47	REC - 90mm HMA on 150mm A	$ 28,217	5	N
3412A	New Brailey Line	Linger Long Place	New Brailey Line On-Ramp to Highway 11 South	Rural	HCB	50	5	13	6.7	457	8.2	64	PR - Dbl Surface Treatment	$ 1,212	7	N
2776	Nichols Line	Cambrian Road	End	Rural	HCB	60	5	374	7.3	107	7.1	58	PR - Dbl Surface Treatment	$ 33,697	2	N
3168	Nichols Line	Cambrian Road	Nichols Line On-Ramp to Highway 11 South	Rural	HCB	60	5	2494	7.3	122	4.1	69	PR - Dbl Surface Treatment	$ 224,446	2	N
1182	North River Drive	Upper Big Chute Road (County Road 17)	Quarry Road	Rural	HCB	80	4	280	6.0	153	3.3	87	Surface Treatment or Slurry	$ 13,980	1	N
803	Norton Road	Norton Road (T-Division East Part)	End	Semi-Urban	LCB	50	6	25	7.0	111	9.2	64	PR - 70mm HMA on 100mm A	$ 5,707	1	N
808	Norton Road	(T-Division West Part)	End	Semi-Urban	LCB	50	6	15	7.0	56	5.6	66	PR - 70mm HMA on 100mm A	$ 3,283	0	N
833	Norton Road	Norton Road (T-Division)	Rosalyn Drive	Semi-Urban	LCB	50	6	92	6.0	167	7.3	67	PR - 70mm HMA on 100mm A	$ 20,656	1	N
884	Norton Road	Rosalyn Drive	Canal Road	Semi-Urban	LCB	50	6	216	6.0	194	7.0	66	PR - 70mm HMA on 100mm A	$ 48,615	1	N
18990	Oakley Sideroad	Irish Line	Oakley Sideroad (Pvt. Sect.)	Rural	GST	80	6	989	6.0	20			Maintenance Gravel	$ -		N
813	Old Boyd Road	Canal Road	End	Semi-Urban	HCB	50	6	160	6.8	56	9.4	76	PR - 70mm HMA on 100mm A	$ 35,931	0	N
3288A	Old Creamery Road	County Road 16	End	Semi-Urban	ICB	80	4	614	7.3	56	6.7	59	PR - 70mm HMA on 100mm A	$ 138,247	0	N
3834	Orr Farm Road	Municipal Boundary	End	Rural	LCB	80	4	244	5.3	56	12.3	52	PR - Dbl Surface Treatment	$ 22,001	1	N
19169	Osprey Lane	Fairgrounds Road	Pine Valley Lane	Semi-Urban	HCB	50	6	231	7.0	167	3.2	87	Crackseal	$ 808	23	N
19170	Osprey Lane	Pine Valley Lane	Fawn Lane	Semi-Urban	HCB	50	6	259	7.0	144	3.2	88	Crackseal	$ 907	18	N
19171	Osprey Lane	Fawn Lane	End	Semi-Urban	HCB	50	6	182	7.0	67	4.4	90	Crackseal	$ 636	7	N
3272	Park Road	Highway 11 North Off-Ramp to Park Road North	Lakeside Drive	Urban	HCB	50	5	169	5.2	278	6.1	88	Crackseal	$ 592	35	N
595	Peninsula Point Road	Lauderdale Point Crescent	Bennett Avenue	Semi-Urban	ICB	40	6	532	6.7	194	4.0	52	PR - 70mm HMA on 100mm A	$ 119,797	2	N
602	Peninsula Point Road	Bennett Avenue	Peninsula Point Road	Semi-Urban	ICB	40	6	142	6.0	194	6.0	61	PR - 70mm HMA on 100mm A	$ 32,018	1	N
693	Peninsula Point Road	Bennett Avenue	Muskoka District Road 49	Semi-Urban	ICB	50	5	889	7.0	444	5.5	47	REC - 90mm HMA on 150mm A	$ 302,429	5	N
704	Peninsula Point Road	Muskoka District Road 49	Peninsula Point Road	Semi-Urban	ICB	50	5	177	7.0	444	4.7	53	PR - 70mm HMA on 100mm A	$ 39,718	3	N
707	Peninsula Point Road	South Sparrow Lake Road	Peninsula Point Road	Semi-Urban	ICB	50	5	71	6.7	555	0.0	69	PR - 70mm HMA on 100mm A	$ 15,917	3	N
4043B	Penley Road	Hampshire Mills Line	Penley Road On-Ramp to Highway 11 South	Rural	HCB	50	5	357	7.6	419	4.1	92	Crackseal	$ 1,251	35	N
4851	Pine Avenue	Kensington Place	Confederation Drive	Semi-Urban	HCB	50	6	114	6.7	83	8.7	42	REC - 90mm HMA on 150mm A	$ 38,591	1	N
4873	Pine Avenue	Glen Oak Lane	Kensington Place	Semi-Urban	HCB	50	6	90	6.7	83	8.9	67	PR - 70mm HMA on 100mm A	$ 20,152	0	N
4885	Pine Avenue	Ridley Boulevard	Glen Oak Lane	Semi-Urban	HCB	50	6	53	6.7	83	8.1	70	PR - 70mm HMA on 100mm A	$ 11,866	0	N
19181	Pine Valley Lane	Fawn Lane	Osprey Lane	Semi-Urban	HCB	50	6	400	4.5	89	5.0	73	PR - 70mm HMA on 100mm A	$ 90,044	0	N
19446	Pinecone Trail	Harrison Road	Canal Road	Semi-Urban	HCB	50	5	1061	6.7	211	3.6	77	PR - 70mm HMA on 100mm A	$ 238,752	1	N
3244	Pleasant Road	Highway 11 North Off-Ramp to Pleasant Road North	Lakeside Drive	Urban	HCB	50	5	223	5.2	278	7.1	82	Crackseal	$ 781	52	N
421	Point Bush Court	Baguley Road	End	Semi-Urban	HCB	50	6	295	6.7	83	6.7	46	REC - 90mm HMA on 150mm A	$ 100,344	1	N
512	Port Severn Road	Kellys Road	Stonewall Lane	Semi-Urban	HCB	50	6	185	6.7	59	3.2	86	Crackseal	$ 646	9	N
513	Port Severn Road	Stonewall Lane	End	Semi-Urban	HCB	50	6	133	6.7	12	0.0	91	Crackseal	$ 465	1	N
534	Port Severn Road	Marine Drive	Port Severn Road	Semi-Urban	ICB	50	6	534	7.0	177	2.7	89	Crackseal	$ 1,868	20	N
17526	Port Severn Road	Port Severn Road On-Ramp to Highway 400 North	Highway 400 North Off-Ramp to Port Severn Road Exit 153 North	Semi-Urban	HCB	50	6	16	7.0	59	4.1	29	REC - 90mm HMA on 150mm A	$ 5,392	1	N
17527	Port Severn Road	Highway 400 North Off-Ramp to Port Severn Road Exit 153 North	Port Severn Road	Semi-Urban	HCB	50	6	86	7.0	59	7.0	55	PR - 70mm HMA on 100mm A	$ 19,291	0	N
17528	Port Severn Road	Highway 400 North Off-Ramp to Port Severn Road Exit 153 North	Marine Drive	Semi-Urban	HCB	50	6	192	7.0	59	6.1	56	PR - 70mm HMA on 100mm A	$ 43,162	0	N
17525A	Port Severn Road (Overpass Highway 400)	Highway 400 North	Port Severn Road On-Ramp to Highway 400 North	Semi-Urban	HCB	50	6	49	7.0	59	5.4	43	REC - 90mm HMA on 150mm A	$ 16,683	1	N
530	Port Stanton Parkway	Torpitt Road	Wild Echo Lodge Lane	Rural	LCB	50	6	286	6.4	28	7.7	48	REC - Dbl ST on 150mm A	$ 41,509	1	N
544	Port Stanton Parkway	Wild Echo Lodge Lane	Stanton House Lane	Semi-Urban	LCB	20	6	781	6.0	28	16.6	35	REC - 90mm HMA on 150mm A	$ 265,581	0	N
564	Port Stanton Parkway	Port Stanton Parkway	Stanton House Lane	Semi-Urban	LCB	50	6	395	4.5	28	7.5	51	PR - 70mm HMA on 100mm A	$ 88,829	0	N
572	Port Stanton Parkway	Welsh Bay Lane	South Sparrow Lake Road	Semi-Urban	HCB	50	6	69	7.0	28	22.1	64	PR - 70mm HMA on 100mm A	$ 15,448	0	N
19251	Port Stanton Parkway	Stanton House Lane	Welsh Bay Lane	Semi-Urban	LCB	50	6	42	4.5	28	4.8	61	PR - 70mm HMA on 100mm A	$ 9,428	0	N
19426	Providence Lane	Wainman Line	Hume Street	Semi-Urban	HCB	50	5	618	6.7	222	6.2	84	Crackseal	$ 2,162	37	N
874	Quarry Road	Quarry Road	0.69km West of Fell Line	Rural	HCB	80	4	692	7.0	373	3.3	93	Crackseal	$ 2,421	27	N
875	Quarry Road	0.69km West of Fell Line	Saint Amant Road	Rural	HCB	80	4	1339	7.0	533	3.6	94	Crackseal	$ 4,686	33	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
1183	Quarry Road	North River Drive	Fell Line	Rural	HCB	60	5	1878	6.8	426	4.0	92	Crackseal	$ 6,575	36	N
1238	Quarry Road	Upper Big Chute Road (County Road 17)	Quarry Road	Rural	HCB	50	5	268	6.8	654	3.6	93	Crackseal	$ 939	48	N
917A	Quarry Road	Hodgins Road	Saint Amant Road	Rural	HCB	80	4	1515	7.0	378	2.6	93	Crackseal	$ 5,303	28	N
1534	Quetton Street	County Road 169	0.11km South of County Road 169	Semi-Urban	HCB	50	6	111	6.7	111	6.8	85	Crackseal	$ 7,761	17	N
1735	Quetton Street	0.11km South of County Road 169	End	Semi-Urban	HCB	50	6	360	6.4	111	5.8	81	Crackseal	$ 25,178	22	N
1315	Ramsay Street	Albany Street	Muskoka Street	Semi-Urban	ICB	50	6	116	7.0	83	18.1	62	PR - 70mm HMA on 100mm A	$ 26,172	1	N
3224	Reinbird Street	Reinbird Street	River Street	Urban	HCB	50	6	31	3.1	111	27.3	95	Crackseal	$ 107	6	N
3225	Reinbird Street	Reinbird Street	End	Urban	HCB	50	6	55	6.0	56	16.0	88	Crackseal	$ 191	7	N
3235	Reinbird Street	Reinbird Street	End	Urban	HCB	50	6	45	6.0	56	0.0	69	PR - 40mm Mill and Pave	$ 7,671	0	N
17460B	Reservoir Road	Reservoir Road	Woodrow Road	Rural	ICB	50	6	9	6.7	111	3.6	69	PR - Dbl Surface Treatment	$ 775	1	N
17467B	Reservoir Road	0.2km North of Reservoir Road On-Ramp to Highway 400 South	End	Rural	HCB	50	6	135	6.7	56	6.0	57	PR - Dbl Surface Treatment	$ 12,165	1	N
17467C	Reservoir Road	Reservoir Road On-Ramp to Highway 400 South	0.2km North of Reservoir Road On-Ramp to Highway 400 South	Rural	HCB	50	6	757	6.7	56	7.9	44	REC - Dbl ST on 150mm A	$ 109,823	2	N
3780A	Reservoir Road (Overpass Highway 400)	Woodrow Road	Reservoir Road On-Ramp to Highway 400 South	Rural	ICB	50	5	13	6.7	222	4.2	70	PR - Dbl Surface Treatment	$ 1,140	3	N
4849	Ridley Boulevard	Wainman Line	Glen Oak Lane	Semi-Urban	HCB	50	5	179	6.7	444	10.3	57	PR - 70mm HMA on 100mm A	$ 40,313	3	N
4883	Ridley Boulevard	Voyageur Circle	Confederation Drive	Semi-Urban	HCB	50	6	114	6.7	22	7.4	63	PR - 70mm HMA on 100mm A	$ 25,613	0	N
4884	Ridley Boulevard	Glen Oak Lane	Pine Avenue	Semi-Urban	HCB	50	5	284	6.7	278	10.7	65	PR - 70mm HMA on 100mm A	$ 63,866	2	N
4908	Ridley Boulevard	Pine Avenue	Voyageur Circle	Semi-Urban	HCB	50	6	307	6.7	139	8.9	62	PR - 70mm HMA on 100mm A	$ 69,099	1	N
21654	Rimkey Crescent	Telford Line	Rimkey Crescent (Loop)	Semi-Urban	HCB	50	5	350	7.3	172	3.0	93	Crackseal	$ 1,224	13	N
21655	Rimkey Crescent	Rimkey Crescent (Loop)	Rimkey Crescent	Semi-Urban	HCB	50	6	1321	7.3	172	1.1	88	Crackseal	$ 4,625	22	N
3162	River Street	Brick Pond Road	Upper Big Chute Road (County Road 17)	Urban	HCB	50	5	243	6.0	1332	4.4	58	PR - 40mm Mill and Pave	$ 41,305	12	N
3221	River Street	Lynch Street	Brick Pond Road	Urban	HCB	50	5	379	6.0	1598	3.6	58	PR - 40mm Mill and Pave	$ 64,416	14	N
3260	River Street	Harriet Street	Lynch Street	Urban	HCB	50	5	223	6.4	1865	3.2	60	PR - 40mm Mill and Pave	$ 37,837	16	N
3286	River Street	Gray Street	Harriet Street	Urban	HCB	40	5	98	10.0	2131	4.2	65	PR - 40mm Mill and Pave	$ 16,593	16	N
3286	River Street	Gray Street	Harriet Street	Urban	HCB	50	5	42	10.0	2131	4.2	65	PR - 40mm Mill and Pave	$ 7,196	16	N
966	Riverdale Drive	Coopers Falls Road (County Road 52)	Black River Road	Semi-Urban	ICB	50	5	658	7.0	594	2.4	93	Crackseal	$ 2,303	43	N
1023	Riverdale Drive	Black River Road	Shady Lane	Semi-Urban	ICB	50	5	197	7.0	500	4.1	88	Crackseal	$ 690	63	N
1245	Riverdale Drive	Shady Lane	Jean Street	Semi-Urban	ICB	50	5	940	7.0	722	2.8	87	Crackseal	$ 3,289	98	N
1274	Riverdale Drive	Jean Street	Mary Crescent	Semi-Urban	ICB	50	5	179	7.0	294	11.8	35	REC - 90mm HMA on 150mm A	$ 60,919	4	N
1275	Riverdale Drive	Mary Crescent	End	Semi-Urban	ICB	50	6	965	7.0	183	11.1	54	PR - 70mm HMA on 100mm A	$ 217,104	1	N
4492	Riverwood Lane	Marchmont Road	Warren Court	Semi-Urban	HCB	50	6	161	6.4	56	6.9	86	Crackseal	$ 563	8	N
4499	Riverwood Lane	Warren Court	Wainman Line	Semi-Urban	HCB	50	6	274	6.4	56	5.9	87	Crackseal	$ 959	8	N
3330	Robinson Street	Coldwater Road	End	Urban	HCB	50	6	67	6.0	167	0.0	54	PR - 40mm Mill and Pave	$ 11,419	1	N
372	Rockcliffe Court	Narrows Road	End	Semi-Urban	HCB	50	6	245	6.7	28	12.4	38	REC - 90mm HMA on 150mm A	$ 83,319	0	N
832	Rosalyn Drive	Norton Road	End	Semi-Urban	LCB	50	6	241	6.0	111	7.0	68	PR - 70mm HMA on 100mm A	$ 54,161	1	N
400	Russell Drive	Narrows Road	End	Semi-Urban	ICB	40	6	983	6.7	139	5.0	55	PR - 70mm HMA on 100mm A	$ 221,117	1	N
4281	Ryerson Boulevard	Carlyon Line	End	Semi-Urban	LCB	50	6	643	6.0	56	9.4	46	REC - 90mm HMA on 150mm A	$ 218,622	1	N
511	Saint Amant Road	Baguley Road	Kellys Road	Semi-Urban	HCB	60	5	261	6.7	111	3.0	89	Crackseal	$ 915	13	N
749	Saint Amant Road	Quarry Road	Narrows Road	Rural	ICB	80	4	2714	6.7	167	3.9	61	PR - Dbl Surface Treatment	$ 244,251	3	N
581A	Saint Amant Road	Narrows Road	Baguley Road	Rural	ICB	80	4	1142	6.7	167	2.6	78	PR - Dbl Surface Treatment	$ 102,738	1	N
581B	Saint Amant Road	Narrows Road	Baguley Road	Rural	ICB	60	5	490	6.7	167	2.6	78	PR - Dbl Surface Treatment	$ 44,136	1	N
2329	Sandcastle Court	West Intersection with Shoreview Drive	East Intersection with Shoreview Drive	Semi-Urban	HCB	40	6	173	6.4	67	3.4	62	PR - 70mm HMA on 100mm A	$ 38,878	0	N
3313	Sandhill Road	0.12km North of Vasey Road (County Road 23)	End	Semi-Urban	HCB	80	4	289	6.7	56	5.8	45	REC - 90mm HMA on 150mm A	$ 98,155	1	Y
3348	Sandhill Road	Vasey Road (County Road 23)	0.12km North of Vasey Road (County Road 23)	Semi-Urban	HCB	80	4	121	6.7	56	6.9	57	PR - 70mm HMA on 100mm A	$ 27,316	0	N
2995	Scarlet Drive	Goldstein Road	Crescent Bay Road	Rural	ICB	50	5	720	6.0	473	4.1	43	REC - 90mm HMA on 150mm A	$ 244,747	6	N
3177	Second Street	Bramshott Avenue	Turnbull Drive	Urban	HCB	50	6	168	5.2	56	7.5	75	PR - 40mm Mill and Pave	$ 28,635	0	N
801	Severn Pines Crescent	Coopers Falls Road (County Road 52)	Moynes Road	Semi-Urban	ICB	50	5	817	6.4	250	6.2	57	PR - 70mm HMA on 100mm A	$ 183,909	2	N
760	Severn Street	Highway 11 North	Brady Drive	Semi-Urban	ICB	50	5	245	5.5	444	4.0	74	PR - 70mm HMA on 100mm A	$ 55,198	2	N
18991	Severn Street	Brady Drive	Severn Street	Semi-Urban	HCB	50	5	1173	6.0	333	3.8	91	Crackseal	$ 4,106	31	N
3537	Shadow Creek Road	Bayou Road	Timberline Avenue	Semi-Urban	HCB	50	5	190	6.7	530	11.2	43	REC - 90mm HMA on 150mm A	$ 64,443	6	N
3587	Shadow Creek Road	North Intersection with Timberline Avenue	South Intersection with Timberline Avenue	Semi-Urban	HCB	50	5	408	6.7	279	6.1	45	REC - 90mm HMA on 150mm A	$ 138,601	3	N
3597	Shadow Creek Road	Timberline Avenue	Bayou Road	Semi-Urban	HCB	50	6	577	6.7	93	7.9	46	REC - 90mm HMA on 150mm A	$ 196,176	1	N
3384	Shaw Street	Eplett Street	Sheridan Drive	Urban	HCB	50	6	116	6.7	56	5.4	78	PR - 40mm Mill and Pave	$ 19,740	0	N
3204	Sheppard Street	Wyley Street	End	Urban	HCB	50	6	120	5.2	56	45.3	34	REC - 90mm HMA on 150mm A	$ 40,800	1	N
3217	Sheppard Street	John Street	Wyley Street	Urban	HCB	50	6	141	6.0	56	8.3	49	REC - 90mm HMA on 150mm A	$ 47,897	1	N
3385	Sheridan Drive	Sturgeon Bay Road	Shaw Street	Urban	HCB	50	5	413	5.8	209	6.9	58	PR - 40mm Mill and Pave	$ 70,197	2	N
3431	Sheridan Drive	Shaw Street	Riverwalk Drive	Urban	HCB	50	6	175	6.7	70	5.7	81	Crackseal	$ 613	14	N
20929	Sheridan Drive	Riverwalk Drive	End	Urban	HCB	50	6	62	6.7	5	9.6	87	Crackseal	$ 216	1	N
2102	Shoreview Drive	Highway 11 South Off-Ramp to Agnew / / / Shoreview South	Fawcett Road	Rural	HCB	50	5	425	7.0	278	9.3	47	REC - Dbl ST on 150mm A	$ 61,661	7	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
2222	Shoreview Drive	McClelland Road	Anchor Drive	Rural	HCB	50	5	185	7.1	278	7.6	71	PR - Dbl Surface Treatment	$ 16,680	3	N
2276	Shoreview Drive	Anchor Drive	Sandcastle Court	Semi-Urban	HCB	40	6	156	7.1	167	3.4	87	Crackseal	$ 545	23	N
2277	Shoreview Drive	East Intersection with Sandcastle Court	West Intersection with Sandcastle Court	Semi-Urban	HCB	40	6	44	8.8	167	4.3	69	PR - 70mm HMA on 100mm A	$ 9,829	1	N
2392	Shoreview Drive	Sandcastle Court	Treeline Drive	Semi-Urban	HCB	40	6	336	7.1	200	5.5	85	Crackseal	$ 1,176	31	N
2405A	Shoreview Drive	Treeline Drive	Shoreview Drive On-Ramp to Highway 11 North	Semi-Urban	HCB	40	6	63	7.3	405	5.8	37	REC - 90mm HMA on 150mm A	$ 21,316	5	N
2405B	Shoreview Drive	Treeline Drive	Shoreview Drive On-Ramp to Highway 11 North	Semi-Urban	HCB	40	6	42	7.3	405	5.8	37	REC - 90mm HMA on 150mm A	$ 14,379	5	N
2023A	Shoreview Drive (Overpass over Highway 11)	Fawcett Road	McClelland Road	Rural	HCB	50	5	43	7.0	444	6.8	78	PR - Dbl Surface Treatment	$ 3,887	4	N
2023C	Shoreview Drive (Overpass over Highway 11)	Fawcett Road	McClelland Road	Rural	HCB	50	5	49	7.0	444	6.8	78	PR - Dbl Surface Treatment	$ 4,417	4	N
1018A	Silk Line	Laughlin Falls Road	Kitchen Sideroad	Rural	ICB	50	6	715	6.7	56	5.9	49	REC - Dbl ST on 150mm A	$ 103,604	1	N
1018B	Silk Line	Laughlin Falls Road	Kitchen Sideroad	Rural	ICB	50	6	634	6.7	56	5.9	49	REC - Dbl ST on 150mm A	$ 91,896	1	N
1018C	Silk Line	Laughlin Falls Road	Kitchen Sideroad	Rural	ICB	25	6	564	6.7	56	5.9	49	REC - Dbl ST on 150mm A	$ 81,737	1	N
3918	Soules Road	Campbell Road	Eastside Drive	Semi-Urban	HCB	40	5	58	7.3	814	5.9	54	PR - 70mm HMA on 100mm A	$ 13,105	6	N
3959	Soules Road	Eastside Drive	Soules Road / Telford Line Overpass	Rural	HCB	50	5	258	11.3	814	4.0	47	REC - 90mm HMA on 150mm A	$ 129,160	6	N
3983	Soules Road	Soules Road / / Telford Line Overpass	Big Chief Road	Rural	HCB	50	5	436	6.7	814	8.8	41	REC - 90mm HMA on 150mm A	$ 218,208	7	N
391	South Riverside Drive	Irish Line	End	Semi-Urban	ICB	50	6	284	6.0	11	6.5	47	REC - 90mm HMA on 150mm A	$ 96,570	0	N
706	South Sparrow Lake Road	Torpitt Road	Peninsula Point Road	Rural	HCB	60	4	1366	6.7	888	2.4	91	Crackseal	$ 4,781	83	N
744	South Sparrow Lake Road	Peninsula Point Road	Hamlet Trail	Rural	HCB	60	4	443	6.7	999	2.5	91	Crackseal	$ 1,552	94	N
847	South Sparrow Lake Road	Hamlet Trail	Buck Lake Bend	Rural	HCB	60	4	656	6.7	1396	2.5	91	Crackseal	$ 2,295	131	N
2434	South Sparrow Lake Road	Noth Intersection with Buck Lake Bend	South Intersection with Buck Lake Bend	Rural	HCB	60	4	143	6.7	1298	2.0	95	Crackseal	$ 500	68	N
2652	South Sparrow Lake Road	Cambrian Road	Lake Saint George Boulevard	Semi-Urban	HCB	50	5	432	6.7	858	4.4	45	REC - 90mm HMA on 150mm A	$ 147,043	10	N
2902	South Sparrow Lake Road	Lake Saint George Boulevard	Hawkins Drive	Semi-Urban	HCB	50	5	1097	6.7	1161	6.4	61	PR - 70mm HMA on 100mm A	$ 246,908	7	N
2919	South Sparrow Lake Road	Hawkins Drive	Sparrow Lake Road / Goldstein Road Overpass	Semi-Urban	HCB	50	5	100	6.4	1385	4.8	55	PR - 70mm HMA on 100mm A	$ 22,459	10	N
2944	South Sparrow Lake Road	Sparrow Lake Road / / Goldstein Road Overpass	Agnew Road	Semi-Urban	HCB	50	5	78	7.0	426	4.0	68	PR - 70mm HMA on 100mm A	$ 17,535	2	N
2957	South Sparrow Lake Road	Agnew Road	Sparrow Lake Road On-Ramp to Highway 11 South	Semi-Urban	HCB	50	5	28	7.0	426	23.5	67	PR - 70mm HMA on 100mm A	$ 6,297	2	N
21613	South Sparrow Lake Road	Buck Lake Bend	Cambrian Road	Rural	HCB	60	4	4081	6.7	1298	2.7	91	Crackseal	$ 14,283	122	N
3254	Southorn Road	Town Line	Dunns Line	Rural	GST	80	4	1403	6.4	100			Maintenance Gravel	$ -		N
3459	Southorn Road	Dunns Line	Anderson Line	Rural	GST	80	4	1665	7.0	100			Maintenance Gravel	$ -		N
3521	Southorn Road	East Intersection of Leisure Court	West Intersection of Leisure Court	Semi-Urban	HCB	50	5	443	7.0	419	3.0	70	PR - 70mm HMA on 100mm A	$ 99,682	2	N
3529	Southorn Road	Anderson Line	Leisure Court	Semi-Urban	HCB	50	5	793	6.7	209	4.3	66	PR - 70mm HMA on 100mm A	$ 178,333	1	N
3551A	Southorn Road	Leisure Court	Coldwater Road	Semi-Urban	HCB	50	5	291	7.0	419	3.4	73	PR - 70mm HMA on 100mm A	$ 65,375	2	N
3958A	Steeles Line	Lower Big Chute Road	End	Rural	HCB	80	4	1038	7.0	562	2.7	89	Surface Treatment or Slurry	$ 51,913	5	N
3492	Stockdale Road	Ego Sideroad	New Brailey Line	Rural	ICB	60	5	865	6.4	56	6.8	18	REC - Dbl ST on 150mm A	$ 125,422	2	N
3555	Stockdale Road	Brennan Line	Ego Sideroad	Rural	ICB	60	5	635	6.4	167	7.9	15	REC - Dbl ST on 150mm A	$ 92,117	7	N
3680	Stockdale Road	Telford Line	Brennan Line	Rural	ICB	60	5	1426	6.7	167	5.9	19	REC - Dbl ST on 150mm A	$ 206,764	7	N
3772	Stockdale Road	Hampshire Mills Line	Telford Line	Rural	HCB	80	4	1339	6.7	167	0.0	100	Crackseal	$ 4,688	0	N
3827	Stockdale Road	Carlyon Line	Hampshire Mills Line	Rural	ICB	80	4	1438	6.7	167	5.1	42	REC - Dbl ST on 150mm A	$ 208,525	5	N
3292	Sturgeon Bay Road	River Street	Eplett Street	Urban	HCB	50	5	108	10.0	2445	0.0	72	PR - 40mm Mill and Pave	$ 18,439	15	N
3293	Sturgeon Bay Road	Eplett Street	Charles Street	Urban	HCB	50	5	16	10.0	2611	4.7	85	Crackseal	$ 55	408	N
3296	Sturgeon Bay Road	Charles Street	Bush Street	Urban	HCB	50	5	88	10.0	2770	3.6	73	PR - 40mm Mill and Pave	$ 14,981	16	N
3297	Sturgeon Bay Road	Bush Street	West Street	Urban	HCB	50	5	22	10.0	2930	2.8	78	PR - 40mm Mill and Pave	$ 3,695	14	N
3307	Sturgeon Bay Road	West Street	Sheridan Drive	Urban	HCB	50	4	177	10.0	3090	6.7	67	PR - 40mm Mill and Pave	$ 30,169	22	N
3335A	Sturgeon Bay Road	Sheridan Drive	60m West of Sheridan Drive	Urban	HCB	50	4	60	8.0	3111	2.6	72	PR - 40mm Mill and Pave	$ 10,200	19	N
3335B	Sturgeon Bay Road	60m West of Sheridan Drive	270m East of County Road 16	Rural	HCB	50	4	343	8.0	3111	1.4	95	Crackseal	$ 1,199	162	N
3335C	Sturgeon Bay Road	270m East of County Road 16	County Road 16	Rural	HCB	50	4	233	8.0	3111	4.2	64	PR - Dbl Surface Treatment	$ 20,999	45	N
3410	Sunset Crescent	Community Centre Drive	Gill Street	Urban	HCB	50	6	255	6.0	111	4.7	87	Crackseal	$ 893	15	N
4603	Surrey Crescent	Wainman Line	Carriage Court	Semi-Urban	HCB	50	6	479	7.0	111	9.1	38	REC - 90mm HMA on 150mm A	$ 163,019	1	N
811	Taylor Line	Upper Big Chute Road (County Road 17)	End	Rural	HCB	50	6	643	5.5	56	3.7	83	Surface Treatment or Slurry	$ 32,173	1	N
1200	Taylor Line	Laughlin Falls Road	Upper Big Chute Road (County Road 17)	Rural	HCB	60	5	1852	6.7	56	3.5	89	Surface Treatment or Slurry	$ 92,616	0	N
1835	Taylor Line	Mount Stephen Road	Laughlin Falls Road	Rural	ICB	60	5	1831	7.0	167	3.9	60	PR - Dbl Surface Treatment	$ 164,805	3	N
2631	Telford Line	Maple Valley Road	End	Rural	GST	80	6	1612	5.5	25	8.1	47	REC - Dbl ST on 150mm A	-$ 1,612	-97	N
2631	Telford Line	Maple Valley Road	End	Rural	ICB	80	6	36	5.5	28	8.1	47	REC - Dbl ST on 150mm A	$ 5,244	1	N
3173	Telford Line	Maple Valley Road	Cambrian Road	Rural	ICB	80	4	3092	7.0	89	3.4	48	REC - Dbl ST on 150mm A	$ 448,293	2	N
3681	Telford Line	Cambrian Road	Stockdale Road	Rural	ICB	80	4	3103	7.0	167	3.5	53	PR - Dbl Surface Treatment	$ 279,280	3	N
3860	Telford Line	Stockdale Road	Rimkey Crescent	Rural	ICB	80	4	1343	6.7	410	4.5	39	REC - 90mm HMA on 150mm A	$ 456,636	5	N
3860	Telford Line	Stockdale Road	Rimkey Crescent	Rural	ICB	50	5	186	6.7	410	4.5	39	REC - 90mm HMA on 150mm A	$ 63,261	5	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
21656	Telford Line	Rimkey Crescent	Soules Road / Telford Line Overpass	Rural	ICB	50	5	529	6.7	410	7.8	30	REC - 90mm HMA on 150mm A	$ 264,391	4	N
3887A	Telford Line	Centre Avenue	Telford Line On-Ramp to Highway 11 South	Rural	ICB	50	5	38	7.3	1365	3.9	50	PR - Dbl Surface Treatment	$ 3,446	28	N
895	The Birches	Canal Road	End	Semi-Urban	HCB	50	6	201	6.7	83	5.7	86	Crackseal	$ 705	12	N
3386	The Lane	Azcona Avenue	Cumberland Road	Urban	HCB	50	6	165	4.2	111	7.5	64	PR - 40mm Mill and Pave	$ 28,113	1	N
3417	The Lane	Highview Avenue	Azcona Avenue	Urban	HCB	50	6	137	4.2	111	10.2	60	PR - 40mm Mill and Pave	$ 23,233	1	N
3195	Third Street	Bramshott Avenue	Summerhill Way	Urban	HCB	50	6	92	7.0	56	9.8	51	PR - 40mm Mill and Pave	$ 15,612	1	N
21751	Third Street	Summerhill Way	Turnbull Drive	Urban	HCB	50	6	88	7.0	56	4.4	80	PR - 40mm Mill and Pave	$ 14,968	0	N
3726	Thorburn Road	Burnside Line	Uhthoff Line	Rural	ICB	80	4	1379	6.7	199	5.1	29	REC - Dbl ST on 150mm A	$ 199,951	7	N
3786	Thorburn Road	Uhthoff Line	Fairgrounds Road	Rural	ICB	80	4	1388	6.7	204	5.0	30	REC - Dbl ST on 150mm A	$ 201,198	7	N
3855	Thorburn Road	Fairgrounds Road	Wainman Line	Rural	ICB	80	4	1444	6.7	204	3.8	43	REC - Dbl ST on 150mm A	$ 209,396	6	N
3491	Timberline Avenue	Grand Tamarack Crescent	End	Semi-Urban	HCB	50	6	134	6.7	33	8.5	50	PR - 70mm HMA on 100mm A	$ 30,121	0	N
3538	Timberline Avenue	Grand Tamarack Crescent	Shadow Creek Road	Semi-Urban	HCB	50	5	318	7.0	333	9.7	21	REC - 90mm HMA on 150mm A	$ 108,019	6	N
3586	Timberline Avenue	North Intersection with Shadow Creek Road	South Intersection with Shadow Creek Road	Semi-Urban	HCB	50	6	549	6.7	167	6.5	53	PR - 70mm HMA on 100mm A	$ 123,580	1	N
308	Torpitt Road	Torys Landing Road	Grandview Lodge Road	Rural	ICB	60	5	544	6.7	83	7.5	52	PR - Dbl Surface Treatment	$ 48,972	2	N
312	Torpitt Road	Grandview Lodge Road	Otto Roehl Lane	Rural	ICB	60	5	301	6.7	111	6.1	61	PR - Dbl Surface Treatment	$ 27,113	2	N
324	Torpitt Road	Otto Roehl Lane	Apter Lane	Rural	ICB	60	5	234	6.7	111	4.6	66	PR - Dbl Surface Treatment	$ 21,067	2	N
353	Torpitt Road	Apter Lane	Orimat Road	Rural	ICB	60	5	311	6.7	111	5.2	66	PR - Dbl Surface Treatment	$ 27,961	2	N
433	Torpitt Road	Orimat Road	United Church Camp Lane	Rural	ICB	60	5	952	6.7	222	7.4	42	REC - Dbl ST on 150mm A	$ 138,009	6	N
484	Torpitt Road	United Church Camp Lane	Walters Lane	Rural	ICB	60	5	511	6.7	250	9.3	49	REC - Dbl ST on 150mm A	$ 74,059	6	N
522	Torpitt Road	Walters Lane	Port Stanton Parkway	Rural	ICB	60	5	534	6.7	250	7.7	49	REC - Dbl ST on 150mm A	$ 77,422	6	N
573	Torpitt Road	Port Stanton Parkway	South Sparrow Lake Road	Rural	ICB	60	5	1741	4.2	278	3.2	82	Surface Treatment or Slurry	$ 87,046	4	N
19257	Torpitt Road	Torys Landing Road	End	Rural	GST	60	5	502	6.0	75			Maintenance Gravel	$ -		N
3149	Town Line	Upper Big Chute Road (County Road 17)	0.72km south of Upper Big Chute Road (County Road 17)	Rural	HCB	80	4	723	6.7	178	2.0	91	Crackseal	$ 2,530	17	N
3568	Town Line	Southorn Road	2.47km South of Southorn Road	Rural	HCB	80	4	2466	6.7	228	1.9	87	Surface Treatment or Slurry	$ 123,321	2	N
3659	Town Line	2.47km South of Southorn Road	Foxmead Road	Rural	HCB	60	5	623	5.1	228	2.6	91	Crackseal	$ 2,181	21	Y
4576	Town Line	0.2km South of Warminster Road	Marchmont Road	Rural	HCB	50	5	1833	6.7	400	5.0	60	PR - Dbl Surface Treatment	$ 165,008	6	Y
4598	Town Line	Marchmont Road	Avery Lane	Semi-Urban	HCB	50	5	113	6.7	357	4.1	65	PR - 70mm HMA on 100mm A	$ 25,525	2	Y
4632	Town Line	Avery Lane	Millwood Road	Semi-Urban	HCB	50	5	240	6.7	426	4.7	60	PR - 70mm HMA on 100mm A	$ 54,109	3	Y
21139	Town Line	Warminster Road	0.2km South of Warminster Road	Rural	HCB	50	5	198	6.7	400	3.7	65	PR - Dbl Surface Treatment	$ 17,842	6	Y
21175	Town Line	0.72km south of Upper Big Chute Road (County Road 17)	Southorn Road	Rural	HCB	80	4	1805	6.7	178	2.6	88	Surface Treatment or Slurry	$ 90,262	2	N
4309A	Town Line	Foxmead Road	Warminster Road	Rural	HCB	60	5	601	6.7	400	3.3	57	PR - Dbl Surface Treatment	$ 54,101	7	Y
4309B	Town Line	Foxmead Road	Warminster Road	Rural	HCB	80	4	5566	6.7	400	3.3	57	PR - Dbl Surface Treatment	$ 500,905	7	Y
4657B	Town Line	Millwood Road	Highway 12	Semi-Urban	HCB	50	5	247	6.7	698	4.7	66	PR - 70mm HMA on 100mm A	$ 55,489	4	Y
2133	Trader Cowan Road	Twin Oaks Crescent	Tay Bay Road	Semi-Urban	ICB	80	4	416	6.0	305	4.4	51	PR - 70mm HMA on 100mm A	$ 93,693	2	N
2212	Trader Cowan Road	Kinnear Sideroad	Twin Oaks Crescent	Semi-Urban	ICB	80	4	123	5.6	500	5.4	45	REC - 90mm HMA on 150mm A	$ 41,715	6	N
2448	Treeline Drive	Shoreview Drive	End	Semi-Urban	HCB	40	6	301	6.4	139	2.1	74	PR - 70mm HMA on 100mm A	$ 67,696	1	N
794	Trent Trail	Trent Trail	End	Semi-Urban	ICB	50	5	395	6.7	211	13.3	57	PR - 70mm HMA on 100mm A	$ 88,873	1	N
864	Trent Trail	Canal Road	Trent Trail	Semi-Urban	ICB	50	5	284	6.7	333	9.2	54	PR - 70mm HMA on 100mm A	$ 63,991	2	N
3145	Turnbull Drive	Highway 11 North Off-Ramp to Turnbull Drive North	First Street	Urban	HCB	50	5	83	6.0	389	6.6	56	PR - 40mm Mill and Pave	$ 14,152	4	N
3161	Turnbull Drive	First Street	Second Street	Urban	HCB	50	5	109	6.0	333	5.3	93	Crackseal	$ 382	24	N
3174	Turnbull Drive	Grayshott Drive	Goldstein Road	Rural	ICB	50	5	1038	6.0	789	4.4	48	REC - 90mm HMA on 150mm A	$ 518,768	6	N
3179	Turnbull Drive	Second Street	Third Street	Urban	HCB	50	5	113	6.0	278	5.6	65	PR - 40mm Mill and Pave	$ 19,143	2	N
3189	Turnbull Drive	Third Street	Grayshott Drive	Urban	HCB	50	5	165	6.4	222	7.3	49	REC - 90mm HMA on 150mm A	$ 82,391	2	N
3212	Uhthoff Line	Foxmead Road	End	Rural	ICB	80	6	1775	5.0	22	4.1	52	PR - Dbl Surface Treatment	$ 159,710	0	N
4000	Uhthoff Line	Thorburn Road	Warminster Road	Rural	GST	80	4	3109	7.0	130			Maintenance Gravel	$ -		N
4365	Uhthoff Line	Warminster Road	Division Road West	Rural	HCB	80	4	3107	7.0	199	2.6	61	PR - Dbl Surface Treatment	$ 279,645	3	N
4897	Uhthoff Line	Division Road West	2.46km South of Division Road West	Rural	HCB	60	5	2111	7.0	186	2.8	56	PR - Dbl Surface Treatment	$ 190,035	3	N
4897	Uhthoff Line	Division Road West	2.46km South of Division Road West	Rural	HCB	60	5	353	7.0	186	2.8	56	PR - Dbl Surface Treatment	$ 31,757	3	N
20721	Uhthoff Line	2.46km South of Division Road West	Municipal Boundary	Rural	HCB	60	5	557	7.3	279	4.6	35	REC - Dbl ST on 150mm A	$ 80,733	9	Y
3727A	Uhthoff Line	Foxmead Road	0.8km South of Foxmead Road	Rural	GST	80	4	890	6.7	100			Maintenance Gravel	$ -		N
3727B	Uhthoff Line	0.8km South of Foxmead Road	Thorburn Road	Rural	GST	80	4	2215	6.0	100			Maintenance Gravel	$ -		N
4882	Voyageur Circle	Ridley Boulevard	End	Semi-Urban	HCB	50	6	128	6.7	67	18.9	54	PR - 70mm HMA on 100mm A	$ 28,814	0	N
3527	Wainman Line	Mount Stephen Road	Foxmead Road	Rural	ICB	80	4	5572	6.7	138	4.4	39	REC - Dbl ST on 150mm A	$ 807,869	4	N
4186	Wainman Line	Thorburn Road	Warminster Road	Rural	HCB	80	4	3106	6.7	357	5.6	21	REC - Dbl ST on 150mm A	$ 450,404	14	N
4456	Wainman Line	Warminster Road	Meadowview Court	Rural	HCB	60	5	1592	7.0	444	2.1	88	Surface Treatment or Slurry	$ 79,578	4	N
4490	Wainman Line	Marchmont Road	Riverwood Lane	Semi-Urban	HCB	60	4	243	6.7	799	6.3	51	PR - 70mm HMA on 100mm A	$ 54,636	6	N
4538	Wainman Line	Riverwood Lane	Carriage Court	Semi-Urban	HCB	60	4	365	6.7	852	10.3	46	REC - 90mm HMA on 150mm A	$ 182,457	7	N
4557	Wainman Line	Carriage Court	Surrey Crescent	Semi-Urban	HCB	60	4	168	6.7	959	3.1	58	PR - 70mm HMA on 100mm A	$ 37,887	7	N
4605	Wainman Line	Surrey Crescent	Division Road West	Semi-Urban	HCB	60	4	299	6.7	1326	6.7	44	REC - 90mm HMA on 150mm A	$ 149,261	11	N
4684	Wainman Line	Division Road West	Birkeshire Woods Lane	Semi-Urban	HCB	60	4	510	7.0	1050	2.3	80	PR - 70mm HMA on 100mm A	$ 114,860	3	N
4753	Wainman Line	Birkeshire Woods Lane	Confederation Drive	Semi-Urban	HCB	60	4	308	7.0	1050	2.6	83	Crackseal	$ 1,080	186	N
4803	Wainman Line	Confederation Drive	Ridley Boulevard	Semi-Urban	HCB	60	4	218	7.0	1449	2.5	82	Crackseal	$ 763	272	N
4954	Wainman Line	Elana Drive	Loretta Avenue	Semi-Urban	HCB	60	4	386	7.0	2414	2.9	68	PR - 70mm HMA on 100mm A	$ 86,805	13	N

Appendix A - Road Improvement Needs
2022 Road Needs Study - Township of Severn

Segment ID	Road Name	From	To	Roadside Environment	Surface Type	Speed Limit (km/h)	Maintenance Class	Road Length (m)	Road Surface Width (m)	AADT (2022)	International Ride Index	PCI	Rehabilitation (Proposed)	Rehabilitation Cost (Proposed)	PGN	Is Boundary Road (?)
19425	Wainman Line	Providence Lane	Marchmont Road	Semi-Urban	HCB	60	5	255	6.0	408	3.8	93	Crackseal	$ 894	30	N
20743	Wainman Line	Ridley Boulevard	Elana Drive	Semi-Urban	HCB	60	4	192	7.0	2414	3.2	67	PR - 70mm HMA on 100mm A	$ 43,284	13	N
21404	Wainman Line	Meadowview Court	Providence Lane	Semi-Urban	HCB	60	5	186	6.0	444	1.7	91	Crackseal	$ 652	42	N
3856A	Wainman Line	Foxmead Road	Thorburn Road	Rural	ICB	80	4	2845	7.0	255	4.0	28	REC - Dbl ST on 150mm A	$ 412,503	9	N
3856B	Wainman Line	Foxmead Road	Thorburn Road	Rural	ICB	80	5	270	7.0	255	4.0	28	REC - Dbl ST on 150mm A	$ 39,149	9	N
4976B	Wainman Line	Loretta Avenue	Highway 12	Semi-Urban	HCB	60	4	97	7.0	2243	3.4	80	PR - 70mm HMA on 100mm A	$ 21,756	7	N
3999	Warminster Road	Uhthoff Line	Burnside Line	Rural	ICB	80	4	1350	6.0	222	2.3	42	REC - Dbl ST on 150mm A	$ 195,727	6	N
4060	Warminster Road	Fairgrounds Road	Uhthoff Line	Rural	ICB	80	4	1115	6.7	222	7.8	30	REC - Dbl ST on 150mm A	$ 161,699	8	N
4185	Warminster Road	Wainman Line	Fairgrounds Road	Rural	ICB	80	4	1506	7.0	204	4.3	45	REC - Dbl ST on 150mm A	$ 218,352	6	N
4310	Warminster Road	Town Line	Wainman Line	Rural	ICB	80	4	1405	7.0	214	4.4	46	REC - Dbl ST on 150mm A	$ 203,762	6	N
4498	Warren Court	Riverwood Lane	End	Semi-Urban	HCB	50	6	112	6.4	33	10.8	60	PR - 70mm HMA on 100mm A	$ 25,199	0	N
752	Wasdell Falls Road	Claresbridge Lane	Coopers Falls Road (County Road 52)	Semi-Urban	ICB	50	5	938	6.4	222	11.0	47	REC - 90mm HMA on 150mm A	$ 318,947	3	N
2067	Waubview Road	County Road 16	End	Rural	GST	50	6	286	6.0	10			NO	$ -		N
2143	Waubview Road	East Intersection with County Road 16	West Intersection with County Road 16	Rural	GST	50	6	305	6.0	20			Maintenance Gravel	$ -		N
816A	West Canal Road	Cambrian Road	0.45km West of Cambrian Road	Semi-Urban	GST	50	6	495	5.0	190			Maintenance Gravel	$ -		X
3298	West Street	Sturgeon Bay Road	End	Urban	HCB	50	6	221	6.0	83	12.9	69	PR - 40mm Mill and Pave	$ 37,650	1	N
3629	Westshore Crescent	Bayou Road	Westshore Crescent (Loop)	Semi-Urban	HCB	50	5	32	6.7	305	11.0	46	REC - 90mm HMA on 150mm A	$ 10,903	4	N
3646	Westshore Crescent	Westshore Crescent (Loop)	Westshore Crescent	Semi-Urban	HCB	50	5	571	6.7	305	3.4	58	PR - 70mm HMA on 100mm A	$ 128,378	2	N
705	Whippoorwill Lane	Dean Trail	End	Semi-Urban	ICB	50	6	140	6.4	39	13.0	55	PR - 70mm HMA on 100mm A	$ 31,591	0	N
3870	Willow Crescent	Eastside Drive	End	Semi-Urban	ICB	50	6	65	6.4	47	4.0	53	PR - 70mm HMA on 100mm A	$ 14,616	0	N
4333	Wilson Point Road	Drinkwater Drive	Wilson Point Road South	Rural	ICB	60	4	731	4.4	500	4.6	43	REC - 90mm HMA on 150mm A	$ 248,668	6	N
4283	Wilson Point Road North	Wilson Point Road	End	Semi-Urban	ICB	50	5	694	5.5	278	5.4	80	PR - 70mm HMA on 100mm A	$ 156,241	1	N
4295	Wilson Point Road South	Old Wilson Point Lane	Cunningham Crescent	Semi-Urban	ICB	50	5	112	4.1	205	4.2	84	Crackseal	$ 390	34	N
4315	Wilson Point Road South	Old Wilson Point Lane	End	Semi-Urban	ICB	50	6	126	3.9	61	5.2	88	Crackseal	$ 440	8	N
21612	Wilson Point Road South	Cunningham Crescent	Old Wilson Point Lane	Semi-Urban	ICB	50	6	29	4.1	61	4.9	84	Crackseal	$ 101	10	N
3767	Wood Avenue	Point Corazza Vista	End	Semi-Urban	LCB	50	6	57	6.0	11	13.1	36	REC - 90mm HMA on 150mm A	$ 19,217	0	N
3821	Wood Avenue	East Intersection with Couchiching Avenue	West Intersection with Couchiching Avenue	Urban	HCB	50	6	390	6.7	56	4.9	91	Crackseal	$ 1,366	5	N
3799A	Wood Avenue	Couchiching Avenue	0.1km North of Couchiching Avenue	Urban	HCB	50	6	72	6.7	178	6.4	72	PR - 40mm Mill and Pave	$ 12,288	1	N
3799B	Wood Avenue	0.1km North of Couchiching Avenue	Point Corazza Vista	Semi-Urban	ICB	50	6	543	6.0	178	8.0	39	REC - 90mm HMA on 150mm A	$ 184,714	2	N
3574	Woodland Place	Leisure Court	End	Semi-Urban	ICB	50	6	164	6.7	50	6.2	51	PR - 70mm HMA on 100mm A	$ 36,887	0	N
3779	Woodrow Road	Dunlop Drive	Reservoir Road	Rural	ICB	50	5	1118	6.0	1123	6.1	43	REC - 90mm HMA on 150mm A	$ 380,048	14	N
3779	Woodrow Road	Dunlop Drive	Reservoir Road	Rural	HCB	50	5	429	6.0	1123	6.1	43	REC - 90mm HMA on 150mm A	$ 145,701	14	N
3572A	Woodrow Road	Highway 12	Dunlop Drive	Rural	HCB	50	5	131	6.0	1213	5.9	86	Surface Treatment or Slurry	$ 6,563	12	N
3809B	Woodrow Road	Reservoir Road	Steeles Line	Rural	ICB	50	5	544	6.0	562	15.0	44	REC - 90mm HMA on 150mm A	$ 185,127	7	N
3205	Wyley Street	Sheppard Street	Earls Court	Urban	HCB	50	5	133	6.7	222	12.7	35	REC - 90mm HMA on 150mm A	$ 45,098	3	N
3234	Wyley Street	Gray Street	Sheppard Street	Urban	HCB	50	5	127	6.7	278	6.4	76	PR - 40mm Mill and Pave	$ 21,669	1	N

Appendix E - Template for Life Cycle Road Improvements (Hard Top)

2022 Road Needs Study - Township of Severn

Improvement	Time Period to Reconstruction	Urban or Semi-Urban Road - Hard Top				Rural - Hard Top			
		PCI	Urban	Semi-Urban	Typical Trigger Year	PCI	AADT >400 and/or high truck traffic	AADT 0 to 400	Typical Trigger Year
Routine Maintenance (M)	N/A	>80	Crack Sealing (HCB roads only) (Holds PCI for 2 years)	Crack Sealing (HCB roads only) (Holds PCI for 2 years)	3 to 7 range	>90	Crack Sealing (HCB roads only) (Holds PCI for 2 years)	Crack Sealing (HCB roads only) (Holds PCI for 2 years)	3 to 7 range
Resurface (PM)	N/A	N/A	N/A	N/A	15	80 to 90	Surface Treatment + Slurry Seal (Effect PCI 95)	Surface Treatment + Slurry Seal (Effect PCI 95)	15
Pulverize & Resurface (PR)	1 to 10 Years	50 to 80	Mill + 1 HMA (Effect PCI 90)	Pulverize + 100 mm Granular A + 1 HMA (Effect PCI 90)	20 to 25	50 to 80	Pulverize + 100 mm Granular A + 1 HMA (Effect PCI 90)	Pulverize + 100 mm Granular A + Double Surface Treatment (Effect PCI 90)	20 to 25
Reconstruction (REC)	NOW	<50*	Full reconstruction (2 HMA) + nominal storm sewer adjustment (Effect PCI 100)	Full reconstruction (2 HMA) + partial culvert replacement (Effect PCI 100)	40	<50*	Pulverize + 150 mm Granular A + 2 HMA (Effect PCI 100)	Pulverize + 150 mm Granular A + Double Surface Treatment (Effect PCI 100)	40
Reconstruction Including Storm Sewers (REC-SS)	N/A	Variable**	Full reconstruction including storm sewers (Effect PCI 100)	Full reconstruction including storm sewers (Effect PCI 100)	Variable**	Variable**	Full reconstruction including storm sewers (Effect PCI 100)	Full reconstruction including storm sewers (Effect PCI 100)	Variable**

* Minimum PCI = 35 (i.e., increased patching required to maintain safe travel surface at minimum PCR).

** Reconstruction works that include storm sewers will vary depending on the following needs to upgrade the level of service: drainage issues, resident requests for upgrading under Local Improvement.

Appendix E - Template for Life Cycle Road Improvements (Gravel Roads)
2022 Road Needs Study - Township of Severn

Improvement	Time Period To Reconstruction	Semi-Urban or Rural - Gravel				
		Structural Adequacy (SA)	AADT >400	AADT 200-400	AADT <200	Typical Trigger Year
Routine Maintenance (M)	N/A	>10	Maintenance Gravel	Maintenance Gravel	Maintenance Gravel	Variable*; Maintenance gravel every 3 years
Resurface (PM)	N/A	4 to 10	150 mm Granular A + Double Surface Treatment	100 mm Granular A	Maintenance Gravel	Variable*
Reconstruction (REC)	NOW	<4	150 mm Granular A + 2 HMA + 30% base replacement	150 mm Granular A + Double Surface Treatment + 30% base replacement	150 mm Granular A + 30% base replacement	Variable*

* Timeframe will vary depending on the following needs: Insufficient base strength due to environmental degradation; poor drainage; design unable to accommodate traffic volumes or truck volumes; coordination with replacement of underground services.

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	1037	Boyd Road	Cambrian Road	Canal Road	2023	REC - 90mm HMA on 150mm A	$ 337,109	
	4556	Burnside Line	Hurlwood Lane	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	2023	REC - 90mm HMA on 150mm A	$ -	MTO Project
	4558	Burnside Line	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	Burnside Line On-Ramp to Highway 11 South	2023	REC - 90mm HMA on 150mm A	$ -	MTO Project
	4584A	Burnside Line	Burnside Line On-Ramp to Highway 11 South	Highway 11 South	2023	REC - 90mm HMA on 150mm A	$ -	MTO Project
	4583A	Burnside Line On-Ramp to Highway 11 South	Overpass	Overpass	2023	REC - 90mm HMA on 150mm A	$ -	MTO Project
	4554A	Highway 11 South Off-Ramp to Burnside Line Exit 135 South	Overpass	Overpass	2023	REC - 90mm HMA on 150mm A	$ -	MTO Project
	3204	Sheppard Street	Wyley Street	End	2023	PR - 40mm Mill and Pave	$ 20,400	
	4186	Wainman Line	Thorburn Road	Warminster Road	2023	REC - Dbl ST on 150mm A	$ 652,309	
	3856A	Wainman Line	Foxmead Road	Thorburn Road	2023	REC - Dbl ST on 150mm A	$ 597,419	
	3856B	Wainman Line	Foxmead Road	Thorburn Road	2023	REC - Dbl ST on 150mm A	$ 56,698	
	4500	Brodie Drive	Burnside Line	Antonio Court	2024	REC - 90mm HMA on 150mm A	$ 78,825	
	4488A	Brodie Drive	Antonio Court	Carlyon Line	2024	REC - 90mm HMA on 150mm A	$ 382,141	
	4191	Carlyon Line	Division Road East	J V Parkway	2024	REC - 90mm HMA on 150mm A	$ 130,951	
	4282	Carlyon Line	J V Parkway	Ryerson Boulevard	2024	REC - 90mm HMA on 150mm A	$ 207,853	
	4289	Carlyon Line	Ryerson Boulevard	Clearview Drive	2024	REC - 90mm HMA on 150mm A	$ 29,738	
	4107A	Carlyon Line	Division Road East	0.6km North of Division Road East	2024	REC - 90mm HMA on 150mm A	$ 145,126	
	4341A	Carlyon Line	Clearview Drive	Brodie Drive	2024	REC - 90mm HMA on 150mm A	$ 147,122	
	3211	Foxmead Road	Burnside Line	Uhthoff Line	2024	REC - 70mm HMA on 100mm A	$ 298,614	
	3325	Foxmead Road	Uhthoff Line	Balkwill Line	2024	REC - 70mm HMA on 100mm A	$ 325,837	
	3526	Foxmead Road	Balkwill Line	Wainman Line	2024	REC - Dbl ST on 150mm A	$ 31,044	
	3526	Foxmead Road	Balkwill Line	Wainman Line	2024	REC - Dbl ST on 150mm A	$ 180,744	
	3660A	Foxmead Road	Wainman Line	Town Line	2024	REC - Dbl ST on 150mm A	$ 116,825	
	3660B	Foxmead Road	Wainman Line	Town Line	2024	REC - Dbl ST on 150mm A	$ 85,638	
	3217	Sheppard Street	John Street	Wyley Street	2024	PR - 40mm Mill and Pave	$ 23,948	
	3893	Soules Road / Telford Line Overpass	Overpass	Overpass	2024	PR - 40mm Mill and Pave	$ 43,722	
	3941	Soules Road / Telford Line Overpass	Overpass	Overpass	2024	PR - 40mm Mill and Pave	$ 43,157	
	3960	Soules Road / Telford Line Overpass	Overpass	Overpass	2024	PR - 40mm Mill and Pave	$ 41,372	
	3860	Telford Line	Stockdale Road	Rimkey Crescent	2024	REC - Dbl ST on 150mm A	$ 26,979	
	3860	Telford Line	Stockdale Road	Rimkey Crescent	2024	REC - Dbl ST on 150mm A	$ 194,742	
	21656	Telford Line	Rimkey Crescent	Soules Road / Telford Line Overpass	2024	REC - 90mm HMA on 150mm A	$ 179,786	
	3887A	Telford Line	Centre Avenue	Telford Line On-Ramp to Highway 11 South	2024	REC - 90mm HMA on 150mm A	$ 13,017	
	4490	Wainman Line	Marchmont Road	Riverwood Lane	2024	REC - 90mm HMA on 150mm A	$ 82,561	
	4538	Wainman Line	Riverwood Lane	Carriage Court	2024	REC - 90mm HMA on 150mm A	$ 124,071	
	4557	Wainman Line	Carriage Court	Surrey Crescent	2024	REC - 90mm HMA on 150mm A	$ 57,251	
	4605	Wainman Line	Surrey Crescent	Division Road West	2024	REC - 90mm HMA on 150mm A	$ 101,498	
	4684	Wainman Line	Division Road West	Birkeshire Woods Lane	2024	PR - 40mm Mill and Pave	$ 86,783	
	4753	Wainman Line	Birkeshire Woods Lane	Confederation Drive	2024	PR - 40mm Mill and Pave	$ 52,440	
	4803	Wainman Line	Confederation Drive	Ridley Boulevard	2024	PR - 40mm Mill and Pave	$ 37,079	
	4954	Wainman Line	Elana Drive	Loretta Avenue	2024	PR - 40mm Mill and Pave	$ 65,586	
	20743	Wainman Line	Ridley Boulevard	Elana Drive	2024	PR - 40mm Mill and Pave	$ 32,703	
	4976B	Wainman Line	Loretta Avenue	Highway 12	2024	PR - 40mm Mill and Pave	$ 16,438	
	2488	Agnew Road	Grass Lake Line	Shoreview Drive	2025	REC - 90mm HMA on 150mm A	$ 444,575	
	2691	Agnew Road	Huffman Road	Grass Lake Line	2025	REC - 90mm HMA on 150mm A	$ 170,776	
	2840	Agnew Road	Agnew Road	Huffman Road	2025	REC - 90mm HMA on 150mm A	$ 186,088	
	2945	Agnew Road	South Sparrow Lake Road	Agnew Road	2025	REC - 90mm HMA on 150mm A	$ 198,200	
	2852B	Agnew Road	Highway 11 South Off-Ramp to Agnew Road South	Agnew Road	2025	REC - 90mm HMA on 150mm A	$ 9,403	
	4559	Avery Lane	Hale Street	Gillett Drive	2025	REC - Dbl ST on 150mm A	$ 35,677	
	4597	Avery Lane	Gillett Drive	Town Line	2025	REC - Dbl ST on 150mm A	$ 48,862	
	3455	Bayou Road	Cumberland Road	Bayou Road / New Brailey Line Overpass	2025	REC - 90mm HMA on 150mm A	$ 104,980	
	3471	Bayou Road	Bayou Road / / New Brailey Line Overpass	Grand Tamarack Crescent	2025	REC - 90mm HMA on 150mm A	$ 114,369	
	3496	Bayou Road	Grand Tamarack Crescent	Bell Avenue	2025	REC - 90mm HMA on 150mm A	$ 84,327	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	3510	Bayou Road	Bell Avenue	Bayou Road	2025	REC - 90mm HMA on 150mm A	$ 63,889	
	3428B	Bayou Road	Highway 11 North Off-Ramp to Bayou Road North	Cumberland Road	2025	REC - 90mm HMA on 150mm A	$ 33,375	
	3434	Bayou Road / New Brailey Line Overpass	Overpass	Overpass	2025	PR - 40mm Mill and Pave	$ 44,932	
	3461	Bayou Road / New Brailey Line Overpass	Overpass	Overpass	2025	PR - 40mm Mill and Pave	$ 44,402	
	1458	Bond Road	Bond Road On-Ramp to Highway 11 North	End	2025	REC - Dbl ST on 150mm A	$ 11,257	
	1576	Bond Road	Highway 11 North Off-Ramp to Bond Road North	End	2025	REC - Dbl ST on 150mm A	$ 37,474	
	1501	Bond Road On-Ramp to Highway 11 North	Overpass	Overpass	2025	REC - Dbl ST on 150mm A	$ 18,056	
	21169	Fesserton Sideroad	County Road 16	Georgian Heights Boulevard	2025	REC - 90mm HMA on 150mm A	$ 175,735	
	20573A	Fesserton Sideroad	Georgian Heights Boulevard	Municipal Boundary	2025	REC - 90mm HMA on 150mm A	$ 44,710	
	4539	Hale Street	Marchmont Road	Avery Lane	2025	REC - Dbl ST on 150mm A	$ 15,848	
	3533	Hedgemere Landing	Bayou Road	End	2025	REC - Dbl ST on 150mm A	$ 21,456	
	3229	Lakeside Drive	Knight Avenue	Bramshott Avenue	2025	REC - 90mm HMA on 150mm A	$ 37,989	
	3243	Lakeside Drive	Pleasant Road	Knight Avenue	2025	REC - 90mm HMA on 150mm A	$ 38,806	
	3252	Lakeside Drive	Cleveland Avenue	Pleasant Road	2025	REC - 90mm HMA on 150mm A	$ 39,081	
	3271	Lakeside Drive	Park Road	Cleveland Avenue	2025	REC - 90mm HMA on 150mm A	$ 41,597	
	3305	Lakeside Drive	Beckett Place	Park Road	2025	REC - 90mm HMA on 150mm A	$ 52,122	
	3337	Lakeside Drive	Armand Avenue	Beckett Place	2025	REC - 90mm HMA on 150mm A	$ 54,540	
	4746	Martindale Crescent	Division Road West	End	2025	REC - 90mm HMA on 150mm A	$ 102,977	
	3363	New Brailey Line	Cambrian Road	Stockdale Road	2025	REC - Dbl ST on 150mm A +	$ 468,503	
	3373	New Brailey Line	Stockdale Road	Bayou Road / New Brailey Line Overpass	2025	REC - 90mm HMA on 150mm A	$ 21,635	
	3389	New Brailey Line	Bayou Road / / New Brailey Line Overpass	Linger Long Place	2025	REC - 90mm HMA on 150mm A	$ 19,188	
	3412A	New Brailey Line	Linger Long Place	New Brailey Line On-Ramp to Highway 11 South	2025	REC - 90mm HMA on 150mm A	$ 4,579	
	3298	West Street	Sturgeon Bay Road	End	2025	PR - 40mm Mill and Pave	$ 37,650	
	3475	Beachview Avenue	Cumberland Road	Lakeside Drive	2026	REC - 90mm HMA on 150mm A	$ 126,405	
	3163	Bramshott Avenue	First Street	Highway 11 North Off-Ramp to Bramshott Avenue North	2026	REC - 90mm HMA on 150mm A	$ 6,668	
	3178	Bramshott Avenue	Highway 11 North Off-Ramp to Bramshott Avenue North	Second Street	2026	REC - 90mm HMA on 150mm A	$ 31,588	
	3196	Bramshott Avenue	Second Street	Third Street	2026	REC - 90mm HMA on 150mm A	$ 37,372	
	3214	Bramshott Avenue	Third Street	Lakeside Drive	2026	REC - 90mm HMA on 150mm A	$ 60,693	
	3160B	Bramshott Avenue On-Ramp to Highway 11 North	Overpass	Overpass	2026	REC - 90mm HMA on 150mm A	$ 4,305	
	3167	Brick Pond Road	River Street	John Street	2026	REC - 90mm HMA on 150mm A	$ 92,671	
	3193	Brick Pond Road	John Street	Earls Court	2026	REC - 90mm HMA on 150mm A	$ 127,093	
	4587	Carriage Court	Wainman Line	Surrey Crescent	2026	REC - 90mm HMA on 150mm A	$ 129,720	
	4664	Carriage Court	Surrey Crescent	Division Road West	2026	REC - 90mm HMA on 150mm A	$ 184,315	
	3390	Community Centre Drive	Coldwater Road	Community Centre Drive	2026	REC - 90mm Full Depth and Pave	$ 28,140	
	3407	Community Centre Drive	Community Centre Drive	End	2026	REC - 90mm Full Depth and Pave	$ 14,673	
	3465	Coronation Avenue	Cumberland Road	Lakeside Drive	2026	REC - 90mm HMA on 150mm A	$ 126,634	
	3192	Earls Court	Wyley Street	End	2026	REC - Dbl ST on 150mm A	$ 9,559	
	3159	First Street	Bramshott Avenue On-Ramp to Highway 11 North	Turnbull Drive	2026	REC - 90mm Full Depth and Pave	$ 35,292	
	4120	Forest Wood Drive	Holcroft Road	End	2026	REC - 70mm HMA on 100mm A	$ 98,276	
	4239	Forest Wood Drive	Holcroft Road	Huronia Road	2026	REC - 70mm HMA on 100mm A	$ 172,180	
	1272	Green River Drive	Coopers Falls Road (County Road 52)	End	2026	REC - 70mm HMA on 100mm A	$ 300,348	
	1431	Hamilton Street	Muskoka Street	Hepinstall Landing	2026	REC - 90mm HMA on 150mm A	$ 61,306	
	1453	Hamilton Street	County Road 169	Muskoka Street	2026	REC - 90mm HMA on 150mm A	$ 123,338	
	3164B	Highway 11 North Off-Ramp to Bramshott Avenue North	Overpass	Overpass	2026	REC - 90mm HMA on 150mm A	$ 6,875	
	3140B	Highway 11 North Off-Ramp to Turnbull Drive North	Overpass	Overpass	2026	REC - 90mm Full Depth and Pave	$ 1,954	
	4192	Holcroft Road	Forest Wood Drive	End	2026	REC - 70mm HMA on 100mm A	$ 96,477	
	3318	Michael Anne Drive	Gray Street	Coldwater Road	2026	REC - 90mm Full Depth and Pave	$ 47,395	
	399	Narrows Road	Russell Drive	Rockcliffe Court	2026	REC - Dbl ST on 150mm A	$ 75,943	
	580	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 5,078	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	580	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 35,296	
	580	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 268,160	
	367A	Narrows Road	Rockcliff Court	117m East of Pilkington Lane	2026	REC - Dbl ST on 150mm A	$ 5,800	
	580A	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 92,437	
	580B	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 35,296	
	580C	Narrows Road	Saint Amant Road	Russell Drive	2026	REC - Dbl ST on 150mm A	$ 47,823	
	627A	Narrows Road	Hodgins Road	Saint Amant Road	2026	REC - Dbl ST on 150mm A	$ 94,359	
	1274	Riverdale Drive	Jean Street	Mary Crescent	2026	REC - 70mm HMA on 100mm A	$ 40,314	
	1275	Riverdale Drive	Mary Crescent	End	2026	REC - 70mm HMA on 100mm A	$ 217,104	
	3330	Robinson Street	Coldwater Road	End	2026	REC - 90mm Full Depth and Pave	$ 11,419	
	372	Rockcliffe Court	Narrows Road	End	2026	REC - Dbl ST on 150mm A	$ 35,533	
	400	Russell Drive	Narrows Road	End	2026	REC - Dbl ST on 150mm A	$ 142,497	
	2995	Scarlet Drive	Goldstein Road	Crescent Bay Road	2026	REC - 70mm HMA on 100mm A	$ 161,965	
	3177	Second Street	Bramshott Avenue	Turnbull Drive	2026	REC - 90mm Full Depth and Pave	$ 37,899	
	3385	Sheridan Drive	Sturgeon Bay Road	Shaw Street	2026	PR - 40mm Mill and Pave	$ 70,197	
	3431	Sheridan Drive	Shaw Street	Riverwalk Drive	2026	PR - 40mm Mill and Pave	$ 29,768	
	20929	Sheridan Drive	Riverwalk Drive	End	2026	PR - 40mm Mill and Pave	$ 10,488	
	4603	Surrey Crescent	Wainman Line	Carriage Court	2026	REC - 90mm HMA on 150mm A	$ 163,019	
	3195	Third Street	Bramshott Avenue	Summerhill Way	2026	REC - 90mm Full Depth and Pave	$ 20,663	
	21751	Third Street	Summerhill Way	Turnbull Drive	2026	REC - 90mm Full Depth and Pave	$ 19,811	
	3145	Turnbull Drive	Highway 11 North Off-Ramp to Turnbull Drive North	First Street	2026	REC - 90mm Full Depth and Pave	$ 18,730	
	3161	Turnbull Drive	First Street	Second Street	2026	REC - 90mm Full Depth and Pave	$ 24,541	
	3179	Turnbull Drive	Second Street	Third Street	2026	REC - 90mm Full Depth and Pave	$ 25,336	
	3189	Turnbull Drive	Third Street	Grayshott Drive	2026	REC - 90mm Full Depth and Pave	$ 37,076	
	3138B	Turnbull Drive On-Ramp to Highway 11 North Drive North	Overpass	Overpass	2026	REC - 90mm Full Depth and Pave	$ 2,260	
	3205	Wyley Street	Sheppard Street	Earls Court	2026	REC - 90mm HMA on 150mm A	$ 45,098	
	3234	Wyley Street	Gray Street	Sheppard Street	2026	REC - 90mm HMA on 150mm A	$ 43,338	
	3353	Cumberland Road	Lakeside Drive	The Lane	2027	REC - 90mm HMA on 150mm A	$ 26,821	
	3354	Cumberland Road	The Lane	Simcoe Avenue	2027	REC - 90mm HMA on 150mm A	$ 12,153	
	3365	Cumberland Road	Simcoe Avenue	Azcona Avenue	2027	REC - 90mm HMA on 150mm A	$ 63,596	
	3376	Cumberland Road	Highview Avenue	Azcona Avenue	2027	REC - 90mm HMA on 150mm A	$ 64,329	
	3395	Cumberland Road	Lee Avenue	Highview Avenue	2027	REC - 90mm HMA on 150mm A	$ 62,169	
	3405	Cumberland Road	Lee Avenue	Coronation Avenue	2027	REC - 90mm HMA on 150mm A	$ 60,493	
	3419	Cumberland Road	Coronation Avenue	Beachview Avenue	2027	REC - 90mm HMA on 150mm A	$ 60,246	
	3427	Cumberland Road	Bayou Road	Beachview Avenue	2027	REC - 90mm HMA on 150mm A	$ 61,134	
	3246	Gray Street	John Street	Wyley Street	2027	REC - 90mm Full Depth and Pave	$ 41,786	
	3256	Gray Street	Craddock Street	John Street	2027	REC - 90mm Full Depth and Pave	$ 38,691	
	3269	Gray Street	Firehall Lane	Craddock Street	2027	REC - 90mm Full Depth and Pave	$ 47,593	
	3273	Gray Street	Joseph Street	Firehall Lane	2027	REC - 90mm Full Depth and Pave	$ 13,457	
	3285	Gray Street	River Street	Michael Anne Drive	2027	REC - 90mm Full Depth and Pave	$ 22,944	
	17878	Gray Street	Wyley Street	Anderson Line	2027	REC - 90mm Full Depth and Pave	$ 40,609	
	17878	Gray Street	Wyley Street	Anderson Line	2027	REC - 90mm Full Depth and Pave	$ 59,852	
	3377	Highview Avenue	Buena Vista Drive	Cumberland Road	2027	REC - 90mm HMA on 150mm A	$ 67,760	
	3218	John Street	Sheppard Street	Brick Pond Road	2027	REC - 90mm HMA on 150mm A	$ 146,800	
	3247	John Street	Gray Street	Sheppard Street	2027	PR - 40mm Mill and Pave	$ 21,621	
	1609	Kinnear Sideroad	Upper Big Chute Road (County Road 17)	Lawson Line	2027	REC - Dbl ST on 150mm A	$ 204,963	
	2211	Kinnear Sideroad	Lawson Line	Trader Cowan Road	2027	REC - Dbl ST on 150mm A	$ 216,748	
	3782	Menoke Beach Road	Ardtrea Drive	Amigo Drive	2027	REC - 90mm HMA on 150mm A	$ 173,992	
	3807	Menoke Beach Road	Amigo Drive	Couchiching Avenue	2027	REC - 90mm HMA on 150mm A	$ 378,197	
	3875	Menoke Beach Road	Couchiching Avenue	End	2027	REC - 90mm HMA on 150mm A	$ 180,695	
	3753B	Menoke Beach Road	Highway 11 North Off-Ramp to Menoke Beach Road North	Ardtrea Drive	2027	REC - 90mm HMA on 150mm A	$ 131,507	
	801	Severn Pines Crescent	Coopers Falls Road (County Road 52)	Moynes Road	2027	REC - 70mm HMA on 100mm A	$ 183,909	
	2652	South Sparrow Lake Road	Cambrian Road	Lake Saint George Boulevard	2027	REC - 90mm HMA on 150mm A	$ 147,043	
	2902	South Sparrow Lake Road	Lake Saint George Boulevard	Hawkins Drive	2027	REC - 90mm HMA on 150mm A	$ 373,105	
	2919	South Sparrow Lake Road	Hawkins Drive	Sparrow Lake Road / Goldstein Road Overpass	2027	REC - 90mm HMA on 150mm A	$ 33,937	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	2944	South Sparrow Lake Road	Sparrow Lake Road / / Goldstein Road Overpass	Agnew Road	2027	REC - 90mm HMA on 150mm A	$ 26,498	
	4576	Town Line	0.2km South of Warminster Road	Marchmont Road	2027	REC - 90mm HMA on 150mm A	$ 623,364	
	4598	Town Line	Marchmont Road	Avery Lane	2027	REC - 90mm HMA on 150mm A	$ 38,572	
	4632	Town Line	Avery Lane	Millwood Road	2027	REC - 90mm HMA on 150mm A	$ 81,765	
	21139	Town Line	Warminster Road	0.2km South of Warminster Road	2027	REC - 90mm HMA on 150mm A	$ 67,403	
	4657B	Town Line	Millwood Road	Highway 12	2027	REC - 90mm HMA on 150mm A	$ 83,850	
	2133	Trader Cowan Road	Twin Oaks Crescent	Tay Bay Road	2027	REC - Dbl ST on 150mm A	$ 60,380	
	2212	Trader Cowan Road	Kinnear Sideroad	Twin Oaks Crescent	2027	REC - Dbl ST on 150mm A	$ 17,790	
	752	Wasdell Falls Road	Claresbridge Lane	Coopers Falls Road (County Road 52)	2027	REC - 70mm HMA on 100mm A	$ 211,068	
	3806	Couchiching Avenue	Menoke Beach Road	Wood Avenue	2028	PR - 40mm Mill and Pave	$ 10,462	
	21260	Couchiching Avenue	West Intersection with Wood Avenue	East Intersection with Wood Avenue	2028	PR - 40mm Mill and Pave	$ 34,541	
	3292	Sturgeon Bay Road	River Street	Eplett Street	2028	PR - 40mm Mill and Pave	$ 18,439	
	3293	Sturgeon Bay Road	Eplett Street	Charles Street	2028	PR - 40mm Mill and Pave	$ 2,676	
	3296	Sturgeon Bay Road	Charles Street	Bush Street	2028	PR - 40mm Mill and Pave	$ 14,981	
	3297	Sturgeon Bay Road	Bush Street	West Street	2028	PR - 40mm Mill and Pave	$ 3,695	
	3307	Sturgeon Bay Road	West Street	Sheridan Drive	2028	PR - 40mm Mill and Pave	$ 30,169	
	3335A	Sturgeon Bay Road	Sheridan Drive	60m West of Sheridan Drive	2028	PR - 40mm Mill and Pave	$ 10,200	
	3335C	Sturgeon Bay Road	270m East of County Road 16	County Road 16	2028	PR - 40mm Mill and Pave	$ 39,664	
	4309A	Town Line	Foxmead Road	Warminster Road	2028	REC - 90mm HMA on 150mm A	$ 204,380	
	4309B	Town Line	Foxmead Road	Warminster Road	2028	REC - 90mm HMA on 150mm A	$ 1,892,309	
	3174	Turnbull Drive	Grayshott Drive	Goldstein Road	2028	REC - 90mm HMA on 150mm A	$ 352,763	
	3767	Wood Avenue	Point Corazza Vista	End	2028	REC - 90mm HMA on 150mm A	$ 19,217	
	3799A	Wood Avenue	Couchiching Avenue	0.1km North of Couchiching Avenue	2028	REC - 90mm HMA on 150mm A	$ 24,577	
	3799B	Wood Avenue	0.1km North of Couchiching Avenue	Point Corazza Vista	2028	REC - 90mm HMA on 150mm A	$ 184,714	
	3556	Brennan Line	Cambrian Road	Stockdale Road	2029	REC - Dbl ST on 150mm A	$ 43,528	
	3556	Brennan Line	Cambrian Road	Stockdale Road	2029	REC - Dbl ST on 150mm A	$ 407,688	
	3067B	Brennan Line	Maple Valley Road	Cambrian Road	2029	REC - Dbl ST on 150mm A	$ 341,493	
	3721B	Brennan Line	Stockdale Road	Brennan Line On-Ramp to Highway 11 South	2029	REC - Dbl ST on 150mm A	$ 140,580	
	4768	Confederation Drive	Wainman Line	Kensington Place	2029	REC - 90mm HMA on 150mm A	$ 47,638	
	4812	Confederation Drive	Kensington Place	Pine Avenue	2029	REC - 90mm HMA on 150mm A	$ 90,326	
	4857	Confederation Drive	Pine Avenue	Ridley Boulevard	2029	REC - 90mm HMA on 150mm A	$ 82,846	
	4866	Confederation Drive	Ridley Boulevard	Elana Drive	2029	PR - 40mm Mill and Pave	$ 23,421	
	4766	Dunford Drive	Division Road West	Hawley Road	2029	REC - 70mm HMA on 100mm A	$ 38,501	
	4786	Dunford Drive	Hawley Road	End	2029	REC - 70mm HMA on 100mm A	$ 24,812	
	4785	Hawley Road	Dunford Drive	End	2029	REC - 70mm HMA on 100mm A	$ 30,266	
	4502	Hume Street	Lewis Lane	Marchmont Road	2029	REC - 70mm HMA on 100mm A	$ 53,786	
	19058	Hume Street	Providence Lane	End	2029	REC - 70mm HMA on 100mm A	$ 34,852	
	17838	Lewis Lane	Hume Street	End	2029	REC - 70mm HMA on 100mm A	$ 24,303	
	17467B	Reservoir Road	0.2km North of Reservoir Road On-Ramp to Highway 400 South	End	2029	REC - Dbl ST on 150mm A	$ 19,600	
	17467C	Reservoir Road	Reservoir Road On-Ramp to Highway 400 South	0.2km North of Reservoir Road On-Ramp to Highway 400 South	2029	REC - Dbl ST on 150mm A	$ 109,823	
	4897	Uhthoff Line	Division Road West	2.46km South of Division Road West	2029	REC - 90mm HMA on 150mm A	$ 119,970	
	4897	Uhthoff Line	Division Road West	2.46km South of Division Road West	2029	REC - 90mm HMA on 150mm A	$ 717,909	
	20721	Uhthoff Line	2.46km South of Division Road West	Municipal Boundary	2029	REC - 90mm HMA on 150mm A	$ 189,305	
	3629	Westshore Crescent	Bayou Road	Westshore Crescent (Loop)	2029	REC - 90mm HMA on 150mm A	$ 16,033	
	3646	Westshore Crescent	Westshore Crescent (Loop)	Westshore Crescent	2029	REC - 90mm HMA on 150mm A	$ 285,285	
	3779	Woodrow Road	Dunlop Drive	Reservoir Road	2029	REC - Dbl ST on 150mm A	$ 162,079	
	3809B	Woodrow Road	Reservoir Road	Steeles Line	2029	REC - Dbl ST on 150mm A	$ 78,951	
	3157	Aldershott Place	Goldstein Road	End	2030	REC - Dbl ST on 150mm A	$ 26,475	
	4098	Birchcliffe Crescent	North Intersection with Burnside Line	South Intersection with Burnside Line	2030	REC - Dbl ST on 150mm A	$ 187,050	
	4216	Bonnybrook Drive	Burnside Line	End	2030	REC - Dbl ST on 150mm A	$ 47,464	
	911	Brady Drive	Severn Street	Coopers Falls Road (County Road 52)	2030	REC - 90mm HMA on 150mm A	$ 357,006	
	920	Brady Drive	Coopers Falls Road (County Road 52)	Highway 11 North	2030	REC - 90mm HMA on 150mm A	$ 59,014	
	928	Brady Drive	Highway 11 South	Canal Road	2030	REC - 90mm HMA on 150mm A	$ 191,505	
	3201	Brooks Lane (Pvt.)	Non-Applicable	Non-Applicable	2030	REC - 90mm HMA on 150mm A	$ 26,164	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	3013	Goldstein Road	Scarlet Drive	Sparrow Lake Road / Goldstein Road Overpass	2030	REC - 90mm HMA on 150mm A	$ 37,758	
	3022	Goldstein Road	Sparrow Lake Road / / / Goldstein Road Overpass	Grand Forest Trail	2030	REC - 90mm HMA on 150mm A	$ 19,940	
	3114	Goldstein Road	Grand Forest Trail	Turnbull Drive	2030	REC - 90mm HMA on 150mm A	$ 275,060	
	3143	Goldstein Road	Turnbull Drive	Aldershott Place	2030	REC - Dbl ST on 150mm A	$ 58,276	
	2996B	Goldstein Road	Highway 11 North Off-Ramp to Goldstein Road North	Scarlet Drive	2030	REC - 90mm HMA on 150mm A	$ 42,785	
	3207	Grayshott Drive	Lunge Point Lane	End	2030	REC - 90mm HMA on 150mm A	$ 81,396	
	3216A	Grayshott Drive	Brooks Lane	0.1km East of Brooks Lane	2030	REC - 90mm HMA on 150mm A	$ 24,002	
	3216B	Grayshott Drive	0.1km East of Brooks Lane	Lunge Point Lane	2030	REC - 90mm HMA on 150mm A	$ 211,670	
	2651	Lake Saint George Boulevard	South Sparrow Lake Road	End	2030	REC - 90mm HMA on 150mm A	$ 262,843	
	3029	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	PR - 40mm Mill and Pave	$ 48,182	
	2936A	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	PR - 40mm Mill and Pave	$ 1,593	
	2936B	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	PR - 40mm Mill and Pave	$ 56,153	
	3020A	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	REC - 90mm HMA on 150mm A	$ 8,692	
	3020B	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	REC - 90mm HMA on 150mm A	$ 6,412	
	3023A	Sparrow Lake Road / Goldstein Road	Overpass	Overpass	2030	REC - 90mm HMA on 150mm A	$ 9,125	
	2631	Telford Line	Maple Valley Road	End	2030	REC - Dbl ST on 150mm A	$ 233,779	
	3173	Telford Line	Maple Valley Road	Cambrian Road	2030	REC - Dbl ST on 150mm A	$ 448,293	
	3681	Telford Line	Cambrian Road	Stockdale Road	2030	REC - Dbl ST on 150mm A	$ 449,951	
	3726	Thorburn Road	Burnside Line	Uhthoff Line	2030	REC - Dbl ST on 150mm A	$ 199,951	
	3786	Thorburn Road	Uhthoff Line	Fairgrounds Road	2030	REC - Dbl ST on 150mm A	$ 201,198	
	3855	Thorburn Road	Fairgrounds Road	Wainman Line	2030	REC - Dbl ST on 150mm A	$ 209,396	
	794	Trent Trail	Trent Trail	End	2030	REC - 90mm HMA on 150mm A	$ 134,297	
	864	Trent Trail	Canal Road	Trent Trail	2030	REC - 90mm HMA on 150mm A	$ 96,698	
	3017	Carlyon Line	Jermey Road	Maple Valley Road	2031	PR - Dbl Surface Treatment	$ 299,428	
	3467	Carlyon Line	Maple Valley Road	Cambrian Road	2031	PR - Dbl Surface Treatment	$ 280,080	
	3828	Carlyon Line	Cambrian Road	Stockdale Road	2031	PR - Dbl Surface Treatment	$ 279,770	
	1659A	Carlyon Line	Swift Rapids Road	Jermey Road	2031	PR - Dbl Surface Treatment	$ 73,776	
	4107B	Carlyon Line	0.6km North of Division Road East	Stockdale Road	2031	PR - Dbl Surface Treatment	$ 242,895	
	3773	Hampshire Mills Line	Cambrian Road	Stockdale Road	2031	REC - Dbl ST on 150mm A	$ 449,594	
	4044	Hampshire Mills Line	Division Road East	Penley Road	2031	REC - Dbl ST on 150mm A	$ 42,309	
	4012A	Hampshire Mills Line	Division Road East	1km North of Division Road East	2031	REC - Dbl ST on 150mm A	$ 169,911	
	4012B	Hampshire Mills Line	1km North of Division Road East	Stockdale Road	2031	REC - Dbl ST on 150mm A	$ 246,578	
	4086B	Hampshire Mills Line	Hampshire Mills Line	Hampshire Mills Line On-Ramp to Highway 11 South	2031	REC - Dbl ST on 150mm A	$ 66,882	
	3492	Stockdale Road	Ego Sideroad	New Brailey Line	2031	REC - 90mm HMA on 150mm A	$ 294,093	
	3555	Stockdale Road	Brennan Line	Ego Sideroad	2031	REC - 90mm HMA on 150mm A	$ 215,999	
	3680	Stockdale Road	Telford Line	Brennan Line	2031	REC - 90mm HMA on 150mm A	$ 484,826	
	3827	Stockdale Road	Carlyon Line	Hampshire Mills Line	2031	REC - Dbl ST on 150mm A	$ 208,525	
	3527	Wainman Line	Mount Stephen Road	Foxmead Road	2031	REC - Dbl ST on 150mm A	$ 807,869	
	3366	Azcona Avenue	Buena Vista Drive	Cumberland Road	2032	REC - 90mm HMA on 150mm A	$ 69,704	
	3387	Azcona Avenue	Cumberland Road	The Lane	2032	REC - 90mm HMA on 150mm A	$ 35,850	
	3489	Beachview Avenue	Bell Avenue	Lakeside Drive	2032	REC - 90mm HMA on 150mm A	$ 18,010	
	3495	Bell Avenue	Bayou Road	Beachview Avenue	2032	REC - 90mm HMA on 150mm A	$ 33,412	
	3119	Burnside Line	Maple Valley Road	Foxmead Road	2032	REC - Dbl ST on 150mm A	$ 46,629	
	3580	Burnside Line	Foxmead Road	Thorburn Road	2032	REC - 70mm HMA on 100mm A	$ 645,762	
	3092A	Burnside Line	Maple Valley Road	0.43km North of Maple Valley Road	2032	REC - Dbl ST on 150mm A	$ 44,075	
	3312	Coldwater Road	Gray Street	Mill Street	2032	REC - 90mm HMA on 150mm A	$ 54,154	
	3319	Coldwater Road	Mill Street	Michael Anne Drive	2032	REC - 90mm HMA on 150mm A	$ 10,671	
	3331	Coldwater Road	Michael Anne Drive	Robinson Street	2032	REC - 90mm HMA on 150mm A	$ 18,499	
	3378	Coldwater Road	Robinson Street	Community Centre Drive	2032	REC - 90mm HMA on 150mm A	$ 31,857	
	3378	Coldwater Road	Robinson Street	Community Centre Drive	2032	REC - 90mm HMA on 150mm A	$ 33,172	
	3448	Coldwater Road	Community Centre Drive	Gill Street	2032	REC - 90mm HMA on 150mm A	$ 100,390	
	3550A	Coldwater Road	Gill Street	Southorn Road	2032	REC - 90mm HMA on 150mm A	$ 187,898	
	3418	Highview Avenue	Cumberland Road	The Lane	2032	REC - 90mm HMA on 150mm A	$ 64,678	
	3424	Highview Avenue	The Lane	Lakeside Drive	2032	REC - 90mm HMA on 150mm A	$ 21,439	
	3346	Lakeside Drive	Lakeside Drive	Cumberland Road	2032	REC - 90mm HMA on 150mm A	$ 10,994	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	3423	Lakeside Drive	Highview Avenue	Cumberland Road	2032	REC - 90mm HMA on 150mm A	$ 121,097	
	3445	Lakeside Drive	Lee Avenue	Highview Avenue	2032	REC - 90mm HMA on 150mm A	$ 40,329	
	3464	Lakeside Drive	Coronation Avenue	Lee Avenue	2032	REC - 90mm HMA on 150mm A	$ 37,716	
	3488	Lakeside Drive	Beachview Avenue	Coronation Avenue	2032	REC - 90mm HMA on 150mm A	$ 48,416	
	3446	Lee Avenue	Cumberland Road	Lakeside Drive	2032	REC - 90mm HMA on 150mm A	$ 107,994	
	3091	Maple Valley Road	Burnside Line	Carlyon Line	2032	REC - Dbl ST on 150mm A	$ 226,434	
	3162	River Street	Brick Pond Road	Upper Big Chute Road (County Road 17)	2032	REC - 90mm HMA on 150mm A	$ 82,610	
	3221	River Street	Lynch Street	Brick Pond Road	2032	REC - 90mm HMA on 150mm A	$ 128,832	
	3260	River Street	Harriet Street	Lynch Street	2032	REC - 90mm HMA on 150mm A	$ 75,674	
	3286	River Street	Gray Street	Harriet Street	2032	REC - 90mm HMA on 150mm A	$ 14,392	
	3286	River Street	Gray Street	Harriet Street	2032	REC - 90mm HMA on 150mm A	$ 33,187	
	511	Saint Amant Road	Baguley Road	Kellys Road	2032	REC - Dbl ST on 150mm A	$ 36,582	
	749	Saint Amant Road	Quarry Road	Narrows Road	2032	REC - Dbl ST on 150mm A	$ 379,946	
	581A	Saint Amant Road	Narrows Road	Baguley Road	2032	REC - Dbl ST on 150mm A	$ 159,815	
	581B	Saint Amant Road	Narrows Road	Baguley Road	2032	REC - Dbl ST on 150mm A	$ 68,656	
	2102	Shoreview Drive	Highway 11 South Off-Ramp to Agnew / / / Shoreview South	Fawcett Road	2032	REC - 90mm HMA on 150mm A	$ 144,585	
	2222	Shoreview Drive	McClelland Road	Anchor Drive	2032	REC - 90mm HMA on 150mm A	$ 63,013	
	2276	Shoreview Drive	Anchor Drive	Sandcastle Court	2032	REC - 90mm HMA on 150mm A	$ 52,977	
	2277	Shoreview Drive	East Intersection with Sandcastle Court	West Intersection with Sandcastle Court	2032	REC - 90mm HMA on 150mm A	$ 14,852	
	2392	Shoreview Drive	Sandcastle Court	Treeline Drive	2032	REC - 90mm HMA on 150mm A	$ 114,198	
	2405A	Shoreview Drive	Treeline Drive	Shoreview Drive On-Ramp to Highway 11 North	2032	REC - 90mm HMA on 150mm A	$ 21,316	
	2405B	Shoreview Drive	Treeline Drive	Shoreview Drive On-Ramp to Highway 11 North	2032	REC - 90mm HMA on 150mm A	$ 14,379	
	2023A	Shoreview Drive (Overpass over Highway 11)	Fawcett Road	McClelland Road	2032	REC - 90mm HMA on 150mm A	$ 14,684	
	2023C	Shoreview Drive (Overpass over Highway 11)	Fawcett Road	McClelland Road	2032	REC - 90mm HMA on 150mm A	$ 16,686	
	3386	The Lane	Azcona Avenue	Cumberland Road	2032	REC - 90mm HMA on 150mm A	$ 56,226	
	3417	The Lane	Highview Avenue	Azcona Avenue	2032	REC - 90mm HMA on 150mm A	$ 46,465	
	3781	Amigo Drive	Menoke Beach Road	End	2033	REC - 90mm HMA on 150mm A	$ 583,414	
	3530	Bayou Road	Bayou Road	Shadow Creek Road	2033	REC - 90mm HMA on 150mm A	$ 66,205	
	3594	Bayou Road	North Intersection with Shadow Creek Road	South Intersection with Shadow Creek Road	2033	REC - 90mm HMA on 150mm A	$ 237,356	
	3628	Bayou Road	Shadow Creek Road	Westshore Crescent	2033	REC - 90mm HMA on 150mm A	$ 104,895	
	3645	Bayou Road	Westshore Crescent	End	2033	REC - 90mm HMA on 150mm A	$ 33,246	
	3067A	Brennan Line	Maple Valley Road	Cambrian Road	2033	PR - 40mm Mill and Pave	$ 127,591	
	2939	Cambrian Road	New Brailey Line	Nichols Line	2033	PR - 40mm Mill and Pave	$ 218,220	
	3066	Cambrian Road	Brennan Line	New Brailey Line	2033	PR - 40mm Mill and Pave	$ 247,594	
	2674	Cox Drive	Huffman Road	End	2033	REC - 90mm HMA on 150mm A	$ 130,905	
	2785	Cox Drive	Huffman Road	End	2033	REC - 90mm HMA on 150mm A	$ 142,251	
	2882	Crescent Bay Road	Crescent Bay Road	Picadilly Lane	2033	REC - Dbl ST on 150mm A	$ 57,784	
	2998	Crescent Bay Road	Crescent Bay Road	End	2033	REC - Dbl ST on 150mm A	$ 108,010	
	4358	Drinkwater Drive	Cunningham Crescent	Wilson Point Road	2033	REC - 90mm HMA on 150mm A	$ 138,966	
	4376	Drinkwater Drive	Cunningham Crescent	End	2033	REC - 90mm HMA on 150mm A	$ 54,925	
	4061	Fairgrounds Road	Fairgrounds Road	Warminster Road	2033	REC - Dbl ST on 150mm A	$ 42,716	
	4059A	Fairgrounds Road	Fairgrounds Road	0.9km North of Fairgrounds Road	2033	REC - Dbl ST on 150mm A	$ 86,651	
	19172	Fawn Lane	Fairgrounds Road	Pine Valley Lane	2033	PR - 40mm Mill and Pave	$ 24,674	
	19173	Fawn Lane	Pine Valley Lane	Osprey Lane	2033	PR - 40mm Mill and Pave	$ 74,075	
	2692	Huffman Road	Cox Drive	Agnew Road	2033	REC - 90mm HMA on 150mm A	$ 133,424	
	3557	Leisure Court	Leisure Court	Southorn Road	**2033**	REC - Dbl ST on 150mm A	$ 54,388	
	3558	Leisure Court	Southorn Road	Woodland Place	2033	REC - Dbl ST on 150mm A	$ 34,391	
	19169	Osprey Lane	Fairgrounds Road	Pine Valley Lane	2033	PR - 40mm Mill and Pave	$ 39,231	
	19170	Osprey Lane	Pine Valley Lane	Fawn Lane	2033	PR - 40mm Mill and Pave	$ 44,071	
	19171	Osprey Lane	Fawn Lane	End	2033	PR - 40mm Mill and Pave	$ 30,887	
	19181	Pine Valley Lane	Fawn Lane	Osprey Lane	2033	PR - 40mm Mill and Pave	$ 68,033	
	530	Port Stanton Parkway	Torpitt Road	Wild Echo Lodge Lane	2033	REC - Dbl ST on 150mm A	$ 68,705	
	544	Port Stanton Parkway	Wild Echo Lodge Lane	Stanton House Lane	2033	REC - Dbl ST on 150mm A	$ 187,469	

Appendix H - Ten Year Improvement Plan (Hard Top Roads)
2022 Road Needs Study - Township of Severn

Source	Segment ID	Road Name	From	To	Treatment Year	Treatment Applied	Estimated Cost	Comments
	564	Port Stanton Parkway	Port Stanton Parkway	Stanton House Lane	2033	REC - Dbl ST on 150mm A	$ 94,751	
	572	Port Stanton Parkway	Welsh Bay Lane	South Sparrow Lake Road	2033	REC - Dbl ST on 150mm A	$ 16,478	
	19251	Port Stanton Parkway	Stanton House Lane	Welsh Bay Lane	2033	REC - Dbl ST on 150mm A	$ 10,056	
	4365	Uhthoff Line	Warminster Road	Division Road West	2033	REC - Dbl ST on 150mm A	$ 450,539	
	3999	Warminster Road	Uhthoff Line	Burnside Line	2033	REC - Dbl ST on 150mm A	$ 195,727	
	4060	Warminster Road	Fairgrounds Road	Uhthoff Line	2033	REC - Dbl ST on 150mm A	$ 161,699	
	4185	Warminster Road	Wainman Line	Fairgrounds Road	2033	REC - Dbl ST on 150mm A	$ 218,352	
	4310	Warminster Road	Town Line	Wainman Line	2033	REC - Dbl ST on 150mm A	$ 203,762	
	4333	Wilson Point Road	Drinkwater Drive	Wilson Point Road South	2033	REC - 90mm HMA on 150mm A	$ 585,102	
	3574	Woodland Place	Leisure Court	End	2033	REC - Dbl ST on 150mm A	$ 23,771	
Total							**$ 38,510,959**	**5**