

# 2022



# CORPORATE ASSET MANAGEMENT PLAN PERRY TOWNSHIP



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# Executive Summary

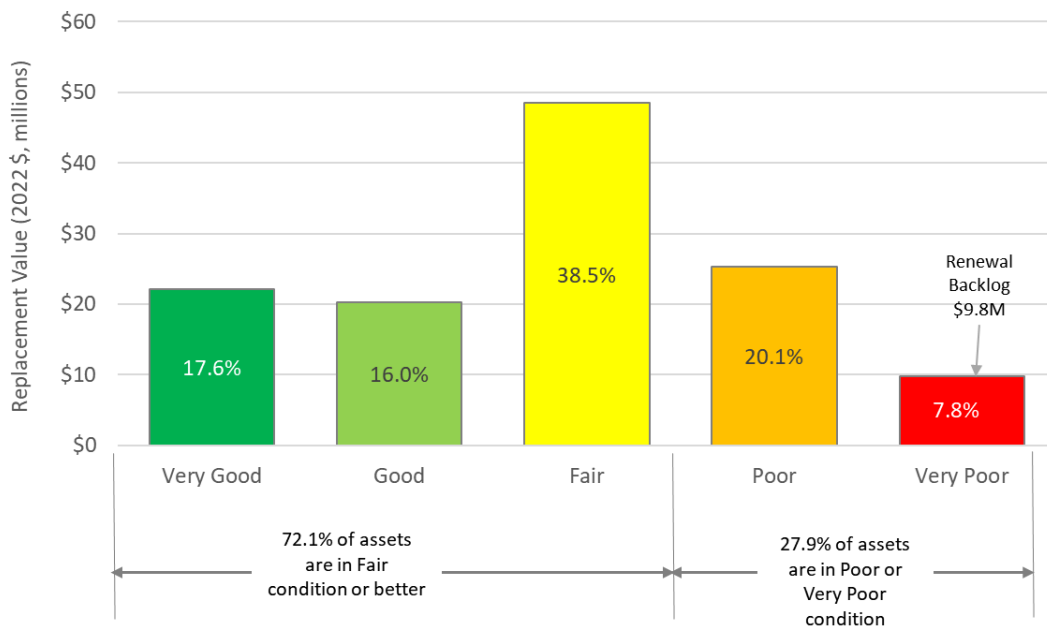
## Introduction

The Township of Perry provides a range of services to its residents, businesses, and visitors, including transportation services on local roads; parks and recreation; fire protection; solid waste management and municipal administration services, such as by-law enforcement and development planning. To deliver these services, the Township relies on \$126.0 million of infrastructure assets, including 144 km of roadways, 9 bridges and structural culverts, 17 buildings, 21 vehicles, as well as public parks, beaches, and boat launches. This Asset Management (AM) Plan describes the actions required to manage this portfolio of assets in a way that meets service level targets, while managing risks and costs. The 2022 AM Plan focuses on the 10-year period from 2022 to 2031. This document fulfils the AM Plan requirements defined by Ontario Regulation (O.Reg.) 588/17 Asset Management Planning for Municipal Infrastructure for years 2022, 2024 and 2025.

## State of the Infrastructure

As shown in Figure ES-1, 72.1% [\$90.9 million] of the Township's assets are in Fair condition or better, while 27.9% [\$35.1 million] of assets are in Poor or Very Poor condition. Ninety percent (90% or \$113.0 million) of the Township's inventory value consists of transportation assets, so the overall condition profile is driven by the condition profile of transportation assets.

**Figure ES-1: Condition Overview – All Services**



Assets in Very Poor condition are due or overdue for repair and represent the Township's Renewal Backlog. As shown in the figure, the Township has a renewal backlog of \$9.8 million. Seventy percent (69.5% or \$6.8 million) of the backlog consists of transportation assets, including \$5.8 million of road assets and \$1.0 million of bridges and culverts. Another 28.8% [\$2.8 million] consists of the existing Emsdale Community Centre and Library buildings, which are being replaced by a new building that will be constructed in 2022-23 (opening anticipated in 2023). The remaining 1.7% (\$0.17 million) of assets listed in Very Poor condition were identified based on their age and consist of Self-Contained Breathing Apparatus (SCBA) and associated fire equipment.

## Levels of Service

LOS indicators, current performance and targets are presented by service area. Indicators include those defined by O.Reg.588/17 for roads, bridges, and structural culverts, as well as indicators defined by the Township to reflect specific priorities and concerns related to its transportation, parks and recreation, fire protection, solid waste, and municipal administration services.

In general, targets were established in alignment with those seen in peer municipalities, and also considered the findings of an internet-based public survey that was conducted from October 7 to November 3, 2021.

Performance gaps were identified with respect to the following indicators:

- Average Pavement Condition Index (PCI) for paved (asphalt), surface treated and gravel roads
- % of roads in Fair condition or better for MMS Class 5 and 6 roads
- Average Bridge Condition Index (BCI) for bridges and structural culverts
- % of bridges & culverts in Fair condition or better
- % of outdoor recreation equipment assets in Fair condition or better
- % of fire emergency equipment (non-vehicle) in Fair condition or better
- % of solid waste diverted from landfill

A performance gap was also identified for the average Facility Condition Index (FCI) of indoor recreation buildings, due to the poor condition of the Emsdale Community Centre and existing Library; however, plans are already in place to construct a new facility to house the Community Centre and Library in 2022/2023.

## Risk Management Strategy

The Township's key asset management principle is to meet service levels and manage risk, while minimizing lifecycle costs. The Township's risk strategy develops the framework for quantifying the risk exposure of the Township's assets to enable prioritization of projects across asset classes and service areas. The relative importance of the assets to support service delivery, referred to as asset criticality, is a key driver in selection of the most appropriate asset management strategy for each asset. Criticality is evaluated on an asset's impact upon failure to service delivery, health and safety, the environment, financial position, and reputation. Risk exposure is the multiplication of the criticality or consequence of failure (CoF) by the probability of failure (PoF), which is the likelihood or chance that an asset failure may occur.

## Life Cycle Management Strategy

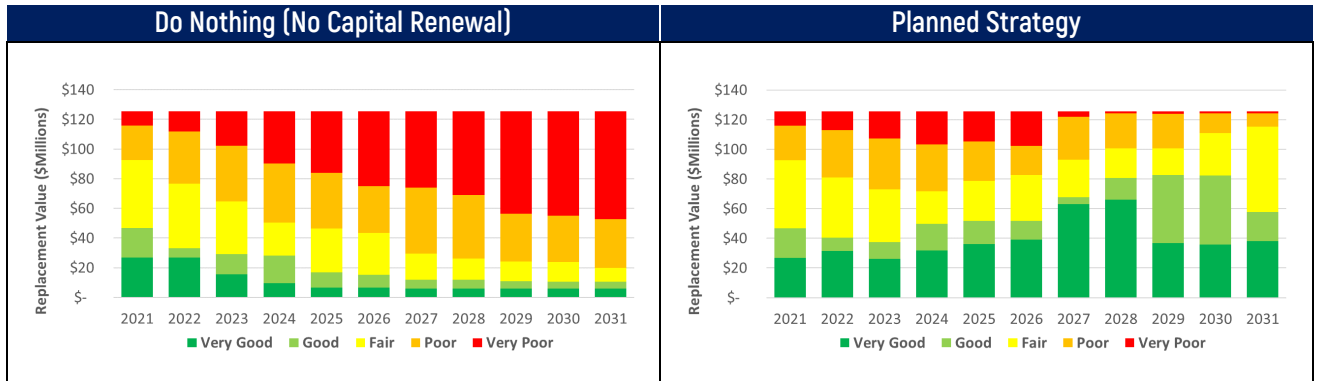
Lifecycle management strategies are the planned lifecycle-based actions that the Township uses to manage its service levels and the risk of asset failure by reducing the probability of failure to acceptable levels. The Township performs hundreds of inspections, maintenance actions, and repair responses to ensure that infrastructure performs reliably. Lifecycle activities also include rehabilitation and replacement activities funded through the Capital Budget. These interventions extend asset service lives and lower overall lifecycle costs.

In addition to meeting reliability service levels, the Township also plans for expansion and upgrade strategies to support capacity and functional service levels. The Township's growth and upgrade plan includes a new and expanded Emsdale Community Centre with new library scheduled to be constructed over 2022 and 2023 at a cost of \$4.5 million, as well as upgrade of 1.9 km of gravel road to surface treated in 2024 (1.4 km of Churchill Gardens from Bay Lake Road to Homeland Drive and 0.5 km of Beach Road from Bay Lake Road to Churchill Gardens). The cost of the road upgrade is estimated at \$90k (in 2022 \$).

The Township's total forecasted needs based on its planned strategy for managing its assets at proposed service levels is estimated at \$62.33 million for the period 2022-2031 for an average of \$6.233 million per year. The planned

strategy supports the Township's ability to achieve its service levels while balancing risk and minimizing lifecycle costs. If the Township does not invest in renewing its infrastructure, there is a significant deterioration in asset condition over time. The Planned Strategy therefore ensures that assets are maintained and renewed in a state of good repair, as shown in Figure ES-2. Year-by-year expansion, upgrade and renewal actions associated with the Planned Strategy are listed in Appendix C.

**Figure ES-2: Asset Condition Forecast Comparison – Do Nothing versus Planned Strategy**

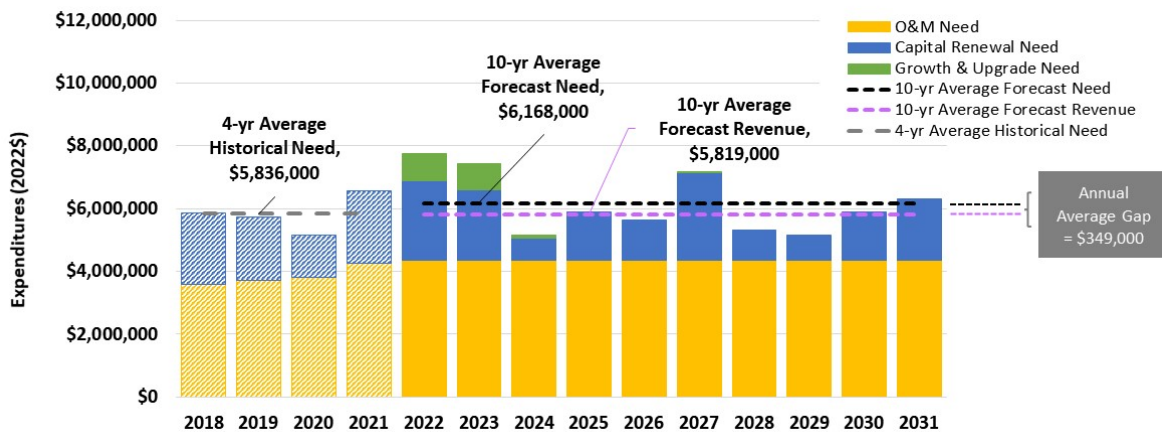


**Financial Strategy**

The financial strategy is informed by the preceding sections of the Asset Management Plan: the state or condition of the assets, the proposed levels of service, the risks to service delivery, and the lifecycle activities needed to reduce the risks to service delivery targets to acceptable levels. The Financing strategy considers how the Township will fund the planned asset management actions to meet the proposed service levels.

The Township's main sources of revenue include property tax, debt, federal gas tax, grants, and user fees and charges. Over the next ten years, the average annual revenue is estimated at \$5.819 million per year. As shown in Figure ES-3, when compared to the forecasted average annual need of \$6.233 million per year, the Township has an average annual funding gap of \$414,000 per year over the next ten years.

**Figure ES-3: Funding Gap**



Closing the \$414,000/year gap may require some use of additional funding. The gap may also be reduced if the number of households in the Township grows at a rate greater than the assumed 0.6% growth rate, resulting in higher than forecasted tax revenues. If funding is not increased, then the Township may consider deferring one or more capital projects on lower risk assets.

## Monitoring and Improvement

Development of AM Plans is an iterative process that includes improving data, processes, systems, staff skills, and organizational culture over time. This AM Plan is compliant with Ontario Regulation 588/17 for current and proposed levels of service, and the Township will continue to work on improvement initiatives to its asset management practices to best realize value from its infrastructure. Specific improvements recommended for the next AM Plan include:

- Record and categorize complaints (e.g. for solid waste: fees, operating hours, wait time complaints), and use the data to inform future level of service targets.
- Collect asset inventory and life cycle data on the landfill, so that it can be included in the next AM Plan.
- Develop forecasts of 100-year and 5-year flood impacts. These are LOS metrics required by O.Reg. 588/17 for stormwater and drainage infrastructure.
- For bridges, it is recommended that the next OSIM inspection (scheduled for 2022) specifically review the recommended timing for closing Wooden Bridge and replacement of Emsdale box culvert.
- Facility Condition Index in the later years of the forecast can be estimated more accurately if the renewal needs beyond 10 years are included in the building condition assessments (for example, the FCI in year 10 of the forecast depends on the renewal needs anticipated in years 11 to 13).
- A more granular building breakdown will assist in identifying longer term needs and also enable more accurate reporting of asset condition and shorter-term facility needs.

Per O.Reg. 588/17, the Township will conduct an annual review of its asset management progress in implementing this AM Plan, including the year-by-year actions of the Planned Strategy shown in Appendix C, as well as the recommended improvements to AM practices. The annual review will discuss strategies to address any factors impeding implementation of the Planned Strategy and AM improvements.

# Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Purpose of the Plan.....	1
1.2	Alignment with Regulatory Requirements .....	1
1.3	Growth at the Township .....	2
1.4	Relationship with Other Municipal Documents .....	2
1.5	Scope .....	3
1.6	Asset Management Service Groups.....	3
1.7	Assets Not Included .....	3
1.8	Organization of the Document.....	3
<b>2</b>	<b>Inventory &amp; Replacement Value.....</b>	<b>5</b>
2.1	Overview.....	5
2.2	Transportation Assets.....	7
2.3	Parks & Recreation Service .....	13
2.4	Fire Protection Service .....	15
2.5	Solid Waste Service.....	16
2.6	Municipal Administration .....	17
<b>3</b>	<b>State of the Infrastructure.....</b>	<b>18</b>
3.1	Overview.....	18
3.2	Transportation.....	20
3.3	Parks & Recreation .....	26
3.4	Fire Protection Service .....	27
3.5	Solid Waste Service.....	28
3.6	Municipal Administration .....	29
<b>4</b>	<b>Levels of Service.....</b>	<b>31</b>
4.1	Overview.....	31
4.2	Transportation Service .....	32
4.3	Parks & Recreation .....	34
4.4	Fire Protection Service .....	36
4.5	Solid Waste Service.....	37
4.6	Municipal Administration .....	37
<b>5</b>	<b>Risk Management Strategy.....</b>	<b>38</b>
5.1	Overview.....	38
5.2	Consequence of Failure Matrix.....	38
5.3	Risk to Levels of Service – Approach.....	39
<b>6</b>	<b>Life Cycle Management Strategy .....</b>	<b>44</b>
6.1	Overview.....	44
6.2	Life Cycle Management Needs .....	45
6.3	Summary of Planned Strategy (Asset Lifecycle Needs).....	50
6.4	Planned Strategy and Proposed LOS .....	51
<b>7</b>	<b>Financing Strategy.....</b>	<b>54</b>

7.1	Overview.....	54
7.2	Available Funding Amounts and Sources .....	54
7.3	Financial Sustainability .....	55
<b>8</b>	<b>AM Plan Monitoring &amp; Improvement .....</b>	<b>57</b>
8.1	Overview.....	57
8.2	Monitoring and Review Procedures.....	59
	<b>Appendix A – Regulatory Compliance .....</b>	<b>60</b>
	<b>Appendix B – Public Survey.....</b>	<b>62</b>
	<b>Appendix C – 2022-31 Planned Strategy Actions Year by Year.....</b>	<b>73</b>

## List of Tables

Table 2-1: Asset Inventory – All Services.....	5
Table 2-2: Sources of Replacement Value Estimates.....	7
Table 2-3: Inventory of Road Assets by Functional Class.....	7
Table 2-4: Inventory of Road Assets by Surface Type .....	8
Table 2-5: Bridges and Structural Culverts.....	10
Table 2-6: Inventory of Streetlights by Type .....	11
Table 2-7: Inventory of Traffic Signs by Type.....	11
Table 2-8: Inventory of Vehicles & Equipment Supporting Transportation Service.....	12
Table 2-9: Inventory of Buildings Supporting Transportation Service .....	12
Table 2-10: Inventory of Outdoor Recreation Assets.....	13
Table 2-11: Inventory of Vehicles and Equipment Supporting Parks & Recreation Service .....	14
Table 2-12: Inventory of Buildings Supporting Parks & Recreation Service .....	14
Table 2-13: Inventory of Emergency Equipment used by the Fire Service.....	15
Table 2-14: Inventory of Vehicles and Equipment Supporting Fire Service.....	15
Table 2-15: Inventory of Buildings Supporting Fire Service .....	15
Table 2-16: Inventory of Site Equipment used by the Solid Waste Service .....	16
Table 2-17: Inventory of Buildings Supporting the Solid Waste Service .....	16
Table 2-18: Inventory of Site Equipment used by the Solid Waste Service.....	17
Table 3-1: Condition Grading Criteria.....	19
Table 3-2: Conversion Table for Condition Grades.....	19
Table 3-3: Descriptions Road Condition Scores .....	22
Table 3-4: Average Age of Road Surface Assets.....	23

Table 3-5: Bridge Condition Index scores and Associated Descriptions.....	24
Table 4-1: Levels of Service – Transportation – Roads.....	33
Table 4-2: Levels of Service – Transportation – Bridges & Culverts .....	34
Table 4-3: Levels of Service – Parks & Recreation .....	35
Table 4-4: Levels of Service – Fire Protection Service.....	36
Table 4-5: Levels of Service – Solid Waste Service.....	37
Table 4-6: Levels of Service – Municipal Administration.....	37
Table 5-1: Asset Criticality (Consequence of Failure) Ratings.....	39
Table 5-2: Probability of Failure Ratings for Reliability .....	40
Table 5-3: Consequence of Failure Ratings for Reliability .....	41
Table 6-1: Asset Lifecycle Management Categories .....	44
Table 6-2: Upgrade and Renewal Needs Forecasts (in 2022 \$, thousands).....	47
Table 6-3: Operations and Maintenance Needs Activities .....	48
Table 6-4: Operations and Maintenance Needs History and Forecasts (\$ thousands).....	50
Table 6-5: Proposed LOS over Forecast Period .....	52
Table 7-1: Key Sources of Funding and Financing.....	54
Table 7-2: AM Plan Risk Mitigation Summary.....	56
Table 8-1: O.Reg. 588/17 Compliance Status and Other Opportunities .....	57
Table A-1: Regulatory Compliance.....	60
Table B-1: Willingness to Pay.....	72

## List of Figures

Figure ES-1: Condition Overview – All Services.....	i
Figure ES-2: Asset Condition Forecast Comparison – Do Nothing versus Planned Strategy.....	iii
Figure ES-3: Funding Gap.....	iii
Figure 1-1: Township Population History and Forecast to 2031.....	2
Figure 2-1: Map of Road Network by Functional Class.....	8
Figure 2-2: Map of Road Network by Surface Type.....	9
Figure 2-3: Map of Bridges and Structural Culverts .....	10
Figure 3-1: Condition Overview – All Services.....	18
Figure 3-2: Condition Overview – Transportation.....	20
Figure 3-3: Condition Distribution – Roads .....	21

Figure 3-4: Map of Road Condition.....	21
Figure 3-5: Condition Distribution – Bridges and Culverts.....	23
Figure 3-6: Average Age – Bridges and Culverts.....	24
Figure 3-7: Condition Distribution – Streetlights and Traffic Signs.....	25
Figure 3-8: Average Age – Streetlights and Traffic Signs.....	25
Figure 3-9: Condition Distribution – Vehicles, Equipment and Facilities for Transportation.....	25
Figure 3-10: Average age – Vehicles, Equipment & Facilities for Transportation .....	26
Figure 3-11: Condition Distribution – Parks & Recreation Assets.....	26
Figure 3-12: Average Age – Parks & Recreation Assets.....	27
Figure 3-13: Condition Distribution – Fire Protection Assets .....	27
Figure 3-14: Average Age – Fire Protection Assets.....	28
Figure 3-15: Condition Distribution – Solid Waste Assets.....	28
Figure 3-16: Average Age – Solid Waste Assets .....	29
Figure 3-17: Condition Distribution – Municipal Administration Assets .....	29
Figure 3-18: Average Age – Municipal Administration Assets .....	30
Figure 4-1: Levels of Service Framework.....	32
Figure 5-1: Current Risk – All Assets (by Asset Replacement Value in 2022 \$M).....	43
Figure 6-1: Conceptual Lifecycle Cost Model .....	45
Figure 6-2: Capital Renewal Needs Forecast.....	46
Figure 6-3: Total 10-Year Expenditures Forecast, 2022 to 2031.....	50
Figure 6-4: Asset Condition Forecast Comparison – Do Nothing versus Planned Strategy .....	51
Figure 6-5 Asset Risk Forecast Comparison – Do Nothing versus Planned Strategy .....	51
Figure 7-1: Total 10-Year Funding Forecast, 2022 to 2031.....	55
Figure 7-2: Funding Gap.....	56
Figure B-1: Roads Satisfaction Level .....	66
Figure B-2: Roads Satisfaction by Respondents' Road Surface Type .....	66
Figure B-3: Road Aspects to be Improved .....	67
Figure B-4: Parks & Outdoor Recreation Satisfaction Level.....	68
Figure B-5: Parks & Outdoor Recreation Aspects to be Improved .....	68
Figure B-6: Indoor Recreation Satisfaction Level .....	69
Figure B-7: Indoor Recreation Aspects to be Improved .....	69
Figure B-8: Solid Waste Satisfaction Level.....	70
Figure B-9: Solid Waste Service Aspects to be Improved .....	70

# 1 Introduction

The Township of Perry provides a range of services to its residents, businesses, and visitors, including transportation services on local roads; parks and recreation; fire protection; solid waste management and municipal administration services. To deliver these services, the Township relies on \$126.02 million of infrastructure assets, including 144 km of roadways, 9 bridges and structural culverts, 17 buildings, 21 vehicles, as well as public parks, beaches, and boat launches.

The Township proactively and responsibly manages its infrastructure portfolio. As infrastructure ages and demands increase, so will the challenge of ensuring the needs of the community are effectively met with the limited resources available. This Asset Management Plan (AM Plan) seeks to address that concern by providing a framework for prioritizing and optimizing Asset Management (AM) efforts and providing direction for effective management of the Township's infrastructure to best achieve established goals and objectives. As an integrated Plan, it considers the life cycles and needs of all infrastructure assets and classes within the Plan's scope, providing a sustainable, holistic view of the asset portfolios. The Plan is not only focused on managing individual assets but considers the condition and performance of complete asset systems through a systematic, risk-based decision-making process. The resulting Plan is intended to provide the optimal allocation of resources towards meeting prescribed goals, objectives, and levels of service.

## 1.1 Purpose of the Plan

The 2022 AM Plan is an update to the Township's 2013 AM Plan, and describes the actions required to manage this portfolio of assets in a way that supports established service levels, while managing risks and costs. The 2022 AM Plan focuses on the 10-year period from 2022 to 2031 and provides a framework for continuously improving the Township's AM practices.

## 1.2 Alignment with Regulatory Requirements

This AM Plan fulfils the requirements of the Ontario Regulation (O.Reg.) 588/17 Asset Management Planning for Municipal Infrastructure for AM Plans to 2025. Specifically, this AM Plan proposes Levels of Service (LOS) targets for all assets and recommends actions and financial strategies to achieve those targets within a manageable level of risk. For details on how this AM Plan complies with content requirements defined by O.Reg. 588/17, see Appendix A.

By meeting O.Reg. 588/17's AM Plan requirements for 2025, this AM Plan meets and surpasses the regulations requirements for 2022 and 2024, specifically to report current LOS performance of core assets (2022) and non-core assets (2024), and costs associated with sustaining that LOS. The regulation defines core assets as roads and bridges, as well as water, wastewater, and stormwater assets. Of these, the Township's inventory includes only roads and bridges. The Township's stormwater is managed by its network of ditches and driveway culverts that are considered as part of the road network in this AM Plan. Non-core assets include all other assets owned by a Township.

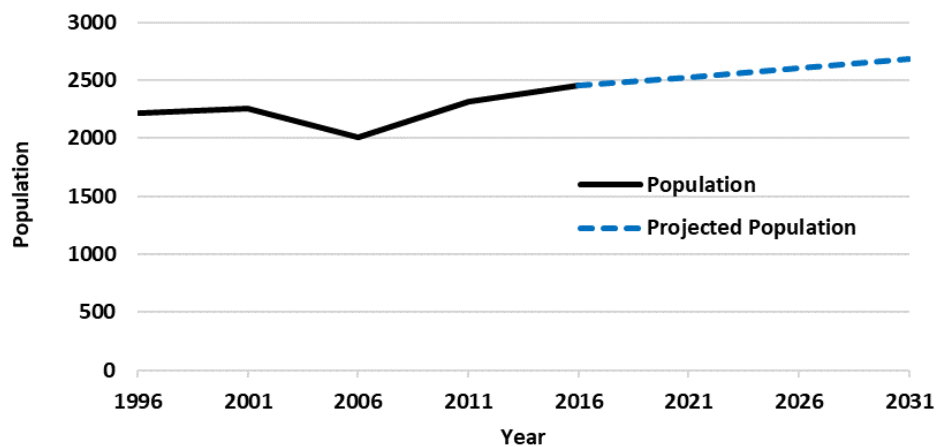
In accordance with the requirements of O.Reg. 588/17, this AM Plan is posted on the Township's website. Going forward, O.Reg. 588/17 requires that progress implementing the AM Plan be reported to Council by July 1 each year, and that the AM Plan be updated every 5 years or more frequently. Background information and reports for the State of Infrastructure section may be provided by the Township upon request.

### 1.3 Growth at the Township

One main factor many municipalities must consider in AM planning is the impact of future growth on meeting goals and objectives. The Township monitors trends in its population to ensure that its impacts on service levels are well understood and strategies are developed to address additional demands due to growth and demographics.

The Township's historical and forecast future population is summarized in Figure 1-1. Historical data is based on Census information up to 2016, at which time the population in the Township was 2,454. From 2017 to 2021, the Township experienced a 0.6% average annual increase in the number of households according to assessment data from the Municipal Property Assessment Corporation (MPAC). Assuming that this annual growth rate is maintained, the population is projected to increase to 2,684 in 2031.

**Figure 1-1: Township Population History and Forecast to 2031**



### 1.4 Relationship with Other Municipal Documents

AM Planning is a key tactical (medium term) planning activity that relies on input from strategic planning activities and informs shorter-term decision making. The AM Plan provides a framework to validate the Township's budgeting processes and assists in prioritizing work activities, including capital projects, based on risk. It also discusses levels of service that support goals in the Township's [Strategic Plan \[2012\]](#) and life cycle management strategies intended to reduce the overall cost of asset ownership.

The AM Plan is intended to be read with other Township planning documents, including the following:

- [Strategic Asset Management Plan Policy](#)
- [Road Needs Study with Fleet Assessment \[2020\]](#)
- [Bridge Inspection Report \[2020\]](#)
- [Facility Study Report \[2020\]](#)
- [Energy Conservation and Demand Management Plan 2020-2024](#)
- [Asset Management Plan for Roads and Bridges \[2013\]](#)
- Operating and Capital Budgets

## 1.5 Scope

This AM Plan includes all assets owned by the Township and for which asset data was available, and provides recommendations for the period 2022-2031, inclusive. Where data gaps were encountered, recommendations for closing data gaps are provided. This will enable the Township to continually improve its AM Planning capabilities.

## 1.6 Asset Management Service Groups

This AM Plan includes five (5) service areas, as follows:

### A. Transportation Service

The Township's transportation network comprises roads, bridges, structural culverts, traffic signs and LED streetlights. A fleet of vehicles support operations and maintenance, including heavy vehicles and equipment for road maintenance, winter control vehicles and equipment, and light vehicles (primarily pick-up trucks) for crew transport to inspection and job sites. The service operates out of a Public Works Garage at 90 Old Government Rd., which has a salt/sand shed and a coverall building.

### B. Parks & Recreation Service

The Township provides indoor and outdoor leisure and recreation spaces to its residents. Indoor spaces include the Emsdale Community Centre, the Novar Community Centre, a Library, and a Museum. Outdoor Park spaces include amenities, such as playing fields, walking paths, a gazebo, two play structures, two outdoor rinks (one of which is covered), changerooms for the rinks, picnic areas and parking areas. The Township also offers an off-leash dog park, public beaches, and public boat launches. The parks service also maintains the cemetery grounds.

### C. Fire Protection Service

The Township provides fire protection throughout the Township out of a Fire Station at 64 Government Rd. The fire service relies on a fleet of five (5) emergency vehicles, along with fire protection equipment, such as air packs, defibrillators, thermal cameras, and extraction jaws.

### D. Solid Waste Services

The Township operates a Transfer Station to where residents and businesses can drop off waste and recyclables. Refuse is limited to a monthly allotment, beyond which user fees (tipping fees) are charged per additional bag or item.

### E. Municipal Administration

Under Municipal Administration, the AM Plan discusses assets that support the Township's remaining activities and services, such as Council activities, building inspection, by-law enforcement, human resources, finance, legal and IT services. These services rely primarily on the Municipal Head Office building. This section also includes all of the organization's IT assets, as well as one light vehicle to support building inspection and by-law enforcement.

## 1.7 Assets Not Included

Due to lack of inventory data, this AM Plan does not include landfill assets. The landfill, which is shared with the Town of Kearney, will be incorporated in a future update to the AM Plan.

## 1.8 Organization of the Document

The AM Plan is organized to meet the requirements of Ontario Regulation 588/17 (Current Levels of Service) and the Province's "Guide for Municipal Asset Management Plans". The contents of this AM Plan follow the recommended elements of a detailed AM Plan:

- **Executive Summary:**  
Summarizes key findings and recommendations of the AM Plan.
  - **1 – Introduction:**  
Outlines scope, background information, relationship to other Municipal documents and plans, and applicable legislation
  - **2 – Inventory and Replacement Value:**  
Summarizes the inventory and valuation of the Township’s assets by service and asset type
  - **3 – State of the Infrastructure:**  
Summarizes the condition and remaining life of the assets in the inventory by service and asset type
  - **4 – Levels of Service:**  
Defines levels of service through performance indicators and targets, and outlines current performance
  - **5 – Risk Management Strategy:**  
Defines the framework for identifying critical assets and quantifying risk to enable prioritization of lifecycle activities
  - **6 – Life Cycle Management Strategy:**  
Summarizes the asset management strategies (i.e., planned actions) that will enable the assets to provide the required levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost
  - **7 – Expenditure Forecasts and Financing Plan:**  
Summarizes the financial planning and budgeting associated with asset management planning
  - **8 – AM Plan Monitoring and Improvement:**  
Summarizes the next steps including monitoring of AM Plan implementation progress, and improving future iterations of the AM Plan.
- 
- Appendix A – Compliance Summary
  - Appendix B – Public Survey
  - Appendix C - 2022-31 Planned Strategy Actions Year by Year

## 2 Inventory & Replacement Value

### 2.1 Overview

The Township of Perry provides transportation, parks & recreation, fire protection, solid waste, and municipal administration services to the community. These services rely on a portfolio of assets with an estimated replacement value of **\$ 126.02 million** (2022 \$). Table 2-1 shows a breakdown of the inventory by service and asset type. The table shows that 90% (\$112.95 million) of the inventory value consists of assets supporting the transportation service.

**Table 2-1: Asset Inventory – All Services**

Service	Asset Class	Quantity	Replacement Value (2022 \$, millions)
<b>A – Transportation*</b>			<b>\$ 112.95</b>
	Roads**	144 km (centre-line)	\$ 97.96
	Bridges & Culverts	3 Bridges 6 Structural culverts	\$ 9.45
	Roadside Assets	75 Streetlights 535 Traffic signs	\$ 0.28
	Vehicles & Equipment	3 Light vehicles 3 Snow plow trucks 5 Road maintenance vehicles Other equipment	\$ 2.64
	Buildings & Facilities	Public Works Garage 1 salt/sand dome 1 coverall shed	\$ 2.62
<b>B – Parks &amp; Recreation</b>			<b>\$ 6.59</b>
	Outdoor Recreation Assets (including buildings for Outdoor Recreation)***	3 Play structures, Swings 3 sets of Bleachers Picnic shelter, Gazebo** 2 Rink changeroom buildings** 1 Covered Rink** 1 Outdoor Rink Bike racks Bear bins Community Garden 2 defibrillators 2 boat launches 2 docks 1 path with landscaping Fencing, Lighting and Security cameras	\$ 1.47
	Vehicles and Equipment	2 Light vehicles 2 Tractors Snow blowing attachments Lawn mowing attachments 1 Trailer, 1 snow blower	\$ 0.18
	Buildings	Parks & Rec Garage 2 Community Centres 1 Library, 1 Museum	\$ 4.94

Service	Asset Class	Quantity	Replacement Value (2022 \$, millions)
<b>C – Fire Protection Service</b>			<b>\$ 3.14</b>
	Emergency Equipment	3 Defibrillators 1 Hydraulic extraction tool 11 SCBA 1 SCBA (RIT bag) 59 Cylinders Communication systems Portable Radios Camera with heat seeker Various other equipment	\$ 0.34
	Emergency Vehicles	5 Emergency vehicles 1 UTV trailer	\$ 0.56
	Buildings	1 Fire Hall 1 Fire Hall Garage & Training Building	\$ 2.24
<b>D – Solid Waste Service</b>			<b>\$ 0.71</b>
	Site Equipment	4 Compactors 6 x 40-yd containers Fencing and security cameras Internet network	\$ 0.17
	Vehicles	1 Skid steer	\$ 0.02
	Buildings	1 Transfer Station and Recycling Centre 1 Reusable Item Shed	\$ 0.52
<b>E – Municipal Administration</b>			<b>\$ 2.63</b>
	IT & Admin assets	IP phone system Cameras and security system MuniSoft software Corporate server & network 1 Radio Tower 1 Defibrillator	\$ 0.17
	Vehicles	1 Light vehicle (SUV)	\$ 0.05
	Buildings	1 Municipal Office	\$ 2.41
<b>TOTAL</b>			<b>\$ 126.02</b>

\* The Township does not own any sidewalks or traffic signals.

\*\* Includes Sharon Lane and Langs Lane, which are private lanes built on the Township's easement. The Township is not responsible for maintenance or renewal of these gravel road assets (total 0.7km).

\*\*\* These outdoor recreation assets are among the Township's 17 buildings.

For the AM Plan, the Replacement Value (RV) represents the expected cost to replace an asset to the same functional standard, but with a new version (not aged), and based on current market conditions and construction standards. Moreover, RV estimates assume that replacements are conducted as part of planned and bundled capital projects where applicable, rather than as individual unplanned replacements, which would typically be more costly. Table 2-2 lists the sources used for estimation of replacement values presented in this AM Plan.

**Table 2-2: Sources of Replacement Value Estimates**

Asset Class	Source of Replacement Value
Roads	2020 Road Needs Study
Bridges & Culverts	2020 Bridge Condition Inspection
Roadside Assets	Unit costs aligned with peer municipalities
Buildings	2020 Building Condition Assessment
Vehicles	2020 Road Needs Study Appendix K – Fleet Assessment
Outdoor Recreation Assets (not including buildings)	Purchase costs recorded in Tangible Capital Asset register, inflated to 2022
Emergency Equipment for the Fire Service	Purchase costs recorded in Tangible Capital Asset register, inflated to 2022

Sections 2.2 to 2.6 provide more detail on the asset inventory by service.

## 2.2 Transportation Assets

The Township manages the local road network, which provides access to residential, commercial, agricultural, and lakefront properties throughout the Township. The road network includes three (3) bridges and six (6) structural culverts, as well as streetlights and traffic signs. The Township does not own any sidewalks or traffic signals.

To maintain the transportation network, the Township relies on a fleet of light vehicles (pickup trucks), road maintenance equipment and winter control vehicles. The Transportation Service operates out of the Public Works Garage facility, which includes a salt/sand shed and a coverall shed. This section provides more detail on the asset inventory used to deliver transportation services.

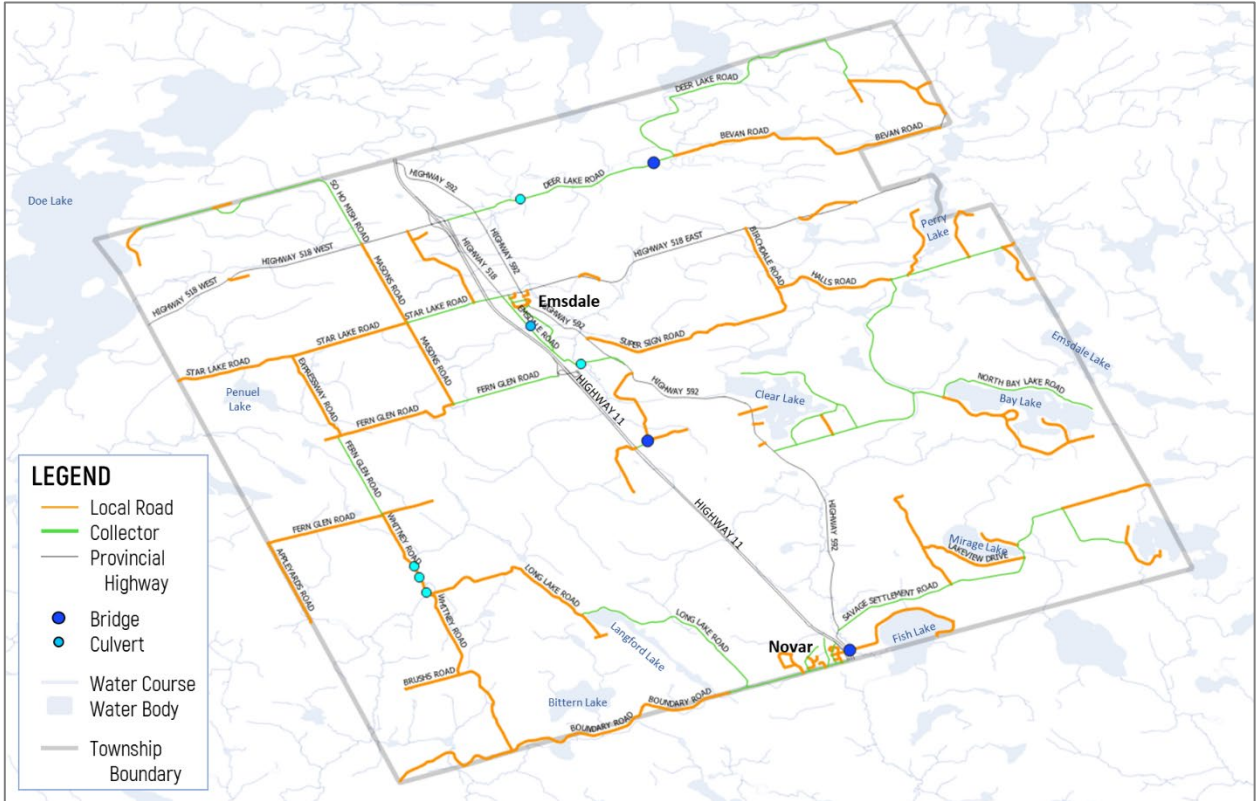
### 2.2.1 Road Network

The Township's road network includes segments classified as Local and Collector roads, as shown in Figure 2-1. The Township does not own any arterial roads and does not maintain the provincial highways. Table 2-3 lists the length and replacement value of the Township's roads by functional class (Local or Collector).

**Table 2-3: Inventory of Road Assets by Functional Class**

Functional Class	Length (centreline km)	Replacement Value (2022 \$, millions)
Local Roads	86.7	55.8
Collector Roads	57.6	42.2
<b>TOTAL</b>	<b>144.3</b>	<b>98.0</b>

**Figure 2-1: Map of Road Network by Functional Class**

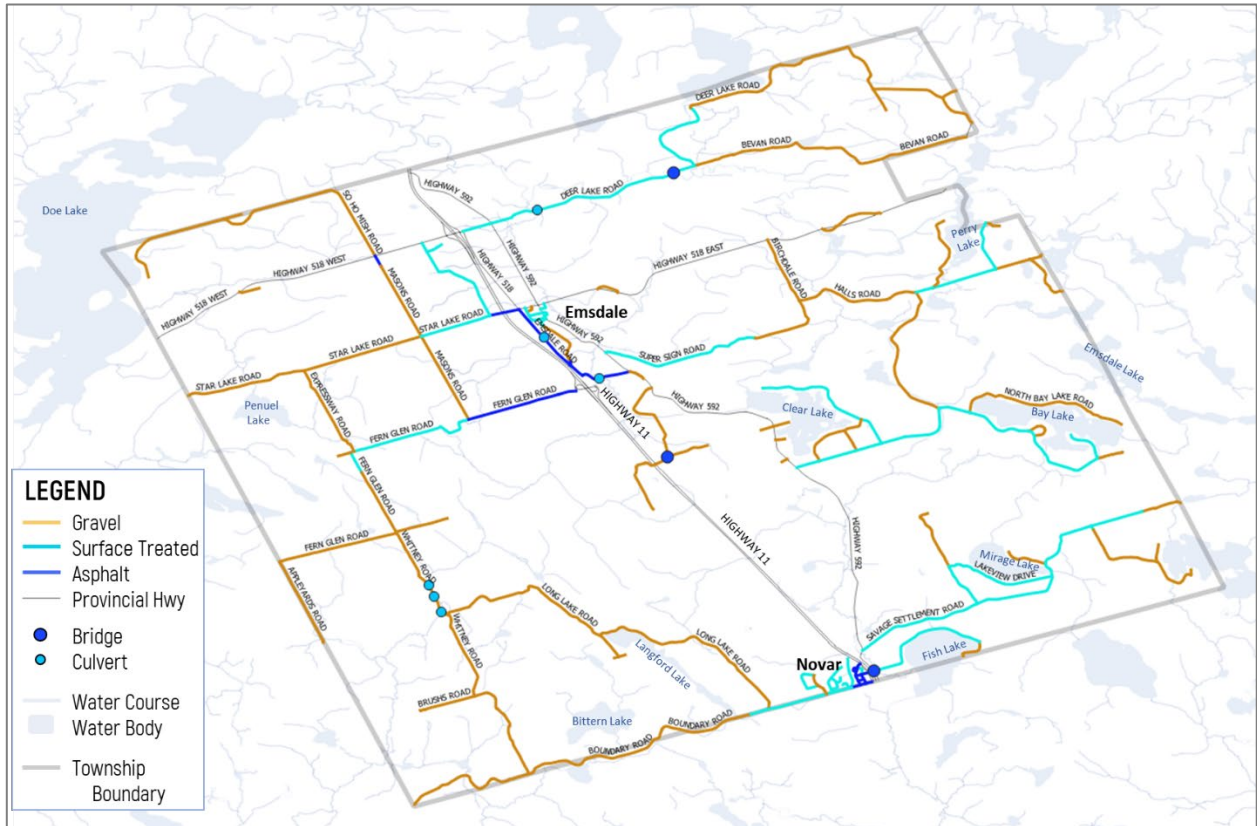


The Township’s roads are primarily gravel and surface treated, as shown in Figure 2-2. The figure shows asphalt segments along Emsdale Road, Scotia Road, Mason’s Road and Fern Glen Road, as well as in the Novar community. Table 2-4 lists the length and replacement value of the Township’s roads by surface type.

**Table 2-4: Inventory of Road Assets by Surface Type**

Functional Class	Length (centreline km)	Replacement Value (2022 \$, millions)
Gravel	91.9	57.1
Surface Treated	45.2	33.8
Asphalt	7.2	7.0
<b>TOTAL</b>	<b>144.3</b>	<b>98.0</b>

**Figure 2-2: Map of Road Network by Surface Type**

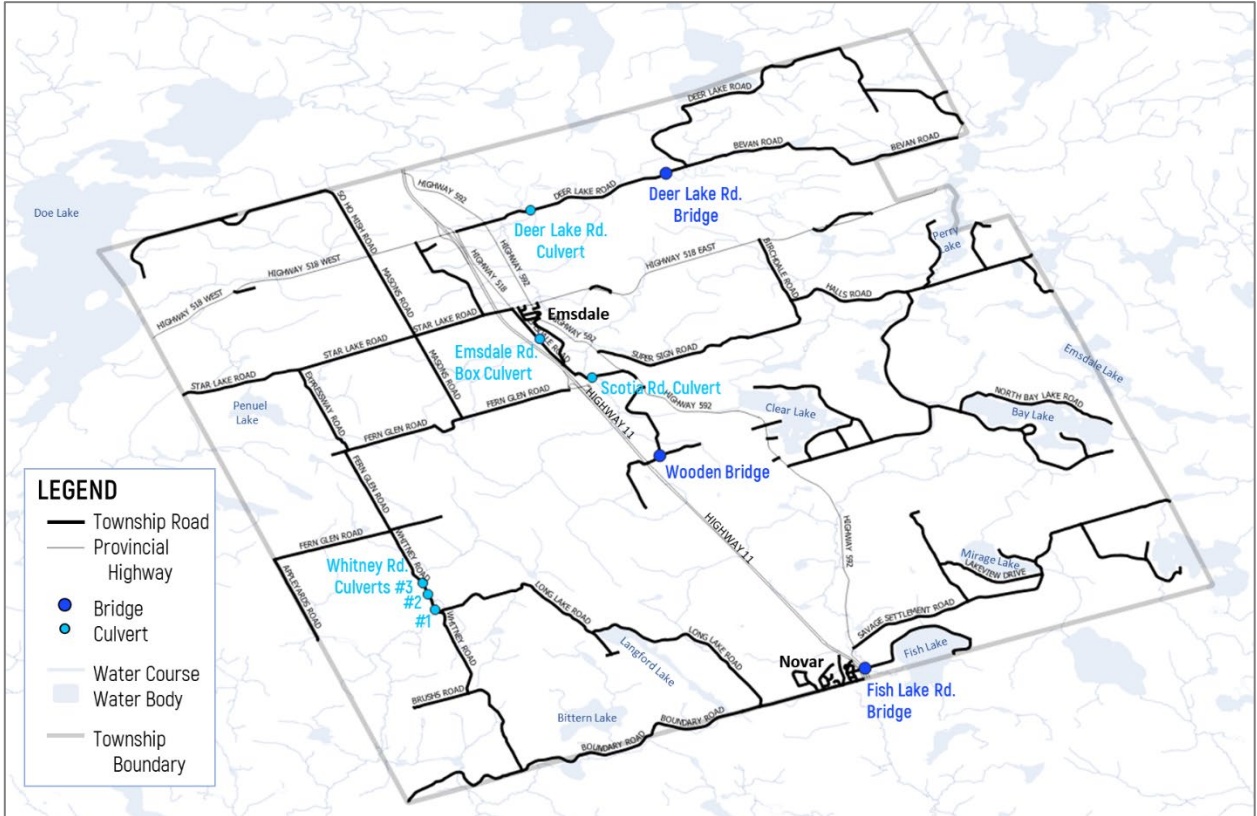


## 2.2.2 Bridges and Structural Culverts

Figure 2-3 shows the locations of the Township's 3 bridges and 6 structural culverts. These structures carry vehicular traffic, and do not have pedestrian or cycling facilities. Table 2-5 lists the span, roadway width and replacement value of each of the structures. The table shows that Wooden Bridge and Fish Lake Bridge have load limits, which are due to their condition. The load limit for Wooden Bridge is 9 tonnes, which prevents emergency fire response vehicles from crossing it; however alternate access routes exist to all properties in the area around Wooden Bridge.

The load limit for Fish Lake Rd. Bridge is 14 tonnes, which does not inhibit the movement of emergency fire response vehicles. On the other hand, with a roadway width of only 4.2 m, Fish Lake Rd. Bridge is considered to be a single-lane bridge. The bridge is shared with the Town of Huntsville, as it provides access to several properties on Huntsville's side of Fish Lake.

**Figure 2-3: Map of Bridges and Structural Culverts**



**Table 2-5: Bridges and Structural Culverts**

Structure Name	Span (m)	Roadway Width (m)	Load Limits (tonnes)*	Replacement Value (2022 \$, millions)
Fish Lake Rd. Bridge	6.3	4.2	14	2.82
Deer Lake Rd. Bridge	26.5	8.5		1.03
Wooden Bridge	4.2	6.0	9	1.16
Scotia Rd. Culvert	3.0	7.0		0.63
Deer Lake Rd. Culvert	3.6	6.9		0.79
Whitney Rd. Culvert #1	3.2	6.4		0.63
Whitney Rd. Culvert #2	3.1	6.1		0.69
Whitney Rd. Culvert #3	3.2	5.7		0.69
Emsdale Rd. Box Culvert	2.2	9.3		1.00
<b>TOTAL</b>	--	--	--	<b>9.45</b>

### 2.2.3 Streetlights and Traffic Signs

The Township owns 75 streetlights which were converted to energy-efficient LED in 2016. Table 2-6 lists the quantity of streetlights, differentiating between Cobra and decorative. The 19 decorative streetlights are located at the Municipal Office and include steel poles with concrete bases. The unit cost includes the fixture, pole, base, cabling and installation costs.

**Table 2-6: Inventory of Streetlights by Type**

Streetlight Type	Quantity	Unit Cost (2022 \$/unit)	Replacement Value (2022 \$, thousands)
Cobra	46 (no pole)	\$1,000 (no pole)	106.0
	10 (with pole)	\$6,000 (with pole)	
Decorative	19	\$6,000 (with pole)	114.0
<b>TOTAL</b>	<b>75</b>	<b>--</b>	<b>220.0</b>

Table 2-7 lists the quantity of traffic signs by sign type. All signs are assumed to have a unit cost of \$110/unit, including the panel, post, and installation costs.

**Table 2-7: Inventory of Traffic Signs by Type**

Sign Type	Quantity	Unit Cost (2022 \$/unit)	Replacement Value (2022 \$, thousands)
Regulatory	292	\$110	32.1
Warning	128	\$110	14.1
Informational	23	\$110	2.5
Street Name	92	\$110	10.1
<b>TOTAL</b>	<b>535</b>	<b>--</b>	<b>\$58.8</b>

## 2.2.4 Vehicles and Buildings

To maintain the transportation network, the Township relies on light vehicles (pickup trucks), heavy vehicles for road maintenance and vehicles for winter control. Table 2-8 lists the vehicles and equipment supporting the transportation service, along with their replacement values. Table 2-9 lists the buildings supporting the transportation service, and their replacement values.

**Table 2-8: Inventory of Vehicles & Equipment Supporting Transportation Service**

Vehicle / Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Light Vehicles (pick-up trucks)	3	156.4
Snow Plow Trucks (and attachments)	3	1,123.5
Road Maintenance Vehicles		
Loader	1	125.0
Excavator	2	504.1
Grader	1	438.7
Backhoe	1	247.7
Other Equipment		
Steamer	1	17.4
Tag Trailer	1	24.5
UTV Trailer	1	5.6
<b>TOTAL</b>	<b>14</b>	<b>2,642.9</b>

**Table 2-9: Inventory of Buildings Supporting Transportation Service**

Building	Replacement Value (2022 \$, thousands)
Public Works Garage	1,569.8
Sand/Salt Shed	784.9
Coverall Building	261.6
<b>TOTAL</b>	<b>2,616.3</b>

## 2.3 Parks & Recreation Service

The Township provides its residents and visitors with a variety of opportunities for outdoor and indoor recreation. For outdoor recreation the Township manages four parks, which offer walking paths, a butterfly garden, playgrounds, ball fields, picnic areas, a gazebo and washroom facilities. The Township also offers public beaches, public boat launches and a dog park. In the winter, the Township provides outdoor skating rinks in its two Community Parks.

For indoor recreation, the Township offers two Community Centres, a Library, and a Museum. A new building for the Community Centre and Library is being constructed in 2022/2023 to replace the existing Emsdale Community Centre and the existing Library.

Table 2-10 lists the inventory of outdoor recreation assets, Table 2-11 lists the inventory of vehicles supporting the Parks & Recreation service, and Table 2-12 lists the inventory of buildings supporting the Parks & Recreation service.

**Table 2-10: Inventory of Outdoor Recreation Assets**

Asset Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Covered Rink (Emsdale)	1	470.9
Outdoor Rink (Novar)	1	186.6
Rink changerooms	2 locations	340.1
Gazebo	1	193.6
Play Structures	2	92.6
Fencing	5 locations	32.9
Dock, path, landscaping at Clear Lake Park	1 set	21.5
Boat Launch Ramp	2	20.0
Boat Launch Dock	1	2.6
18'x18' picnic shelter	1	12.3
Bleachers	3 sets	12.8
Swing	1 set	11.7
Bike racks	2 locations	2.2
Bridge at Novar rink	1	3.8
Community garden and shed	1	8.8
Bear bins [2 x 3-bin along with several singles and doubles]	1	31.0
Lighting	1 site	2.8
Security cameras	2 sites	7.9
Emsdale Rink Shed	2	2.0
Defibrillators	2	13.0
<b>TOTAL</b>		<b>1,469.3</b>

**Table 2-11: Inventory of Vehicles and Equipment Supporting Parks & Recreation Service**

Vehicle / Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Light Vehicles	2	81.4
Tractors (including attachments for snow clearing and lawn mowing)	2	78.0
Other Equipment		
Snow blower	1	5.2
Trailer	1	10.4
<b>TOTAL</b>	<b>14</b>	<b>175.0</b>

**Table 2-12: Inventory of Buildings Supporting Parks & Recreation Service**

Building	Replacement Value (2022 \$, thousands)
Emsdale Community Centre*	1,308.2
Library*	1,517.5
Museum	497.1
Novar Community Centre	915.7
Parks & Recreation Operations Centre	706.4
<b>TOTAL</b>	<b>4,944.8</b>

*\* To be replaced with a new Community Centre and Library, being constructed in 2022/2023. Value in table reflects value of existing buildings.*

## 2.4 Fire Protection Service

The Fire Protection Service is a volunteer service, led by an on-staff Fire Chief. The Township provides emergency equipment and vehicles for use by the volunteer fire fighters. Equipment and vehicles are kept at the Township's Fire Hall. Table 2-13 lists the inventory of emergency equipment used by the Fire Service. Table 2-14 lists the inventory of vehicles supporting the Fire Service, and Table 2-15 lists the service's buildings.

**Table 2-13: Inventory of Emergency Equipment used by the Fire Service**

Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Hydraulic Extrication Tool	1	21.3
Defibrillators	3	19.5
SCBA	11	95.4
SCBA in RIT bag	1	4.2
Cylinders	59	59.6
Radios	31	47.9
Camera with heat seeker	1	2.0
Security Camera System	1	6.8
Computer Network	1	8.9
Dispatch Communication System	1	15.8
Other equipment	-	55.3
<b>TOTAL</b>	<b>-</b>	<b>336.6</b>

**Table 2-14: Inventory of Vehicles and Equipment Supporting Fire Service**

Vehicle / Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Pumper	2	366.8
Tanker	1	90.9
Rescue	1	69.6
UTV Ranger and attachment	1	24.3
UTV Trailer	1	4.5
<b>TOTAL</b>	<b>6</b>	<b>556.2</b>

**Table 2-15: Inventory of Buildings Supporting Fire Service**

Vehicle / Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Fire Hall	1	2,145.4
Fire Hall Garage & Training Building	1	98.3
<b>TOTAL</b>	<b>2</b>	<b>2,243.7</b>

## 2.5 Solid Waste Service

The Solid Waste Service manages refuse and recyclables received at the Transfer Station from residents and businesses. Table 2-16 lists the inventory of site equipment used by the Solid Waste Service.

**Table 2-16: Inventory of Site Equipment used by the Solid Waste Service**

Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Monitoring Well	1	10.7
Fencing	1 site	7.4
Concrete pads for compactors	2	17.0
Compactors	2	95.7
Recycling compactors	2	21.9
Camera system	1	3.3
Internet network	1	3.6
40-yd containers	6	12.5
<b>TOTAL</b>	<b>14</b>	<b>172.1</b>

As was listed in Table 2-1, the Solid Waste Service has one vehicle (a skid steer).

Table 2-17 list the properties and buildings that support the solid waste service. In total, these assets are valued at \$523.3 thousand.

**Table 2-17: Inventory of Buildings Supporting the Solid Waste Service**

Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
Transfer Station, including the Recycling Centre	1	444.8
Reusable Item Shed	1	78.5
<b>TOTAL</b>	<b>2</b>	<b>523.3</b>

This AM Plan does not include the landfill, which is a shared facility with the Town of Kearney. Landfill assets will be added in a future update of the AM Plan.

## 2.6 Municipal Administration

Municipal Administration includes Council activities, building inspection, by-law enforcement, human resources, finance, legal and IT services. These services rely primarily on the Municipal Head Office building. This service also includes all of the organization's IT assets, as well as one light vehicle to support building inspection and by-law enforcement. Table 2-18 lists the inventory of assets used to support municipal administration.

**Table 2-18: Inventory of Site Equipment used by the Solid Waste Service**

Equipment Type	Quantity (units)	Replacement Value (2022 \$, thousands)
MuniSoft software	1	64.4
Corporate server and network	1 system	58.1
IP phone system	1 system	5.1
Office cameras and security system	1 system	28.0
Radio Tower	1	8.0
Defibrillator (Municipal Office)	1	6.5
<b>TOTAL</b>	<b>4</b>	<b>170.0</b>

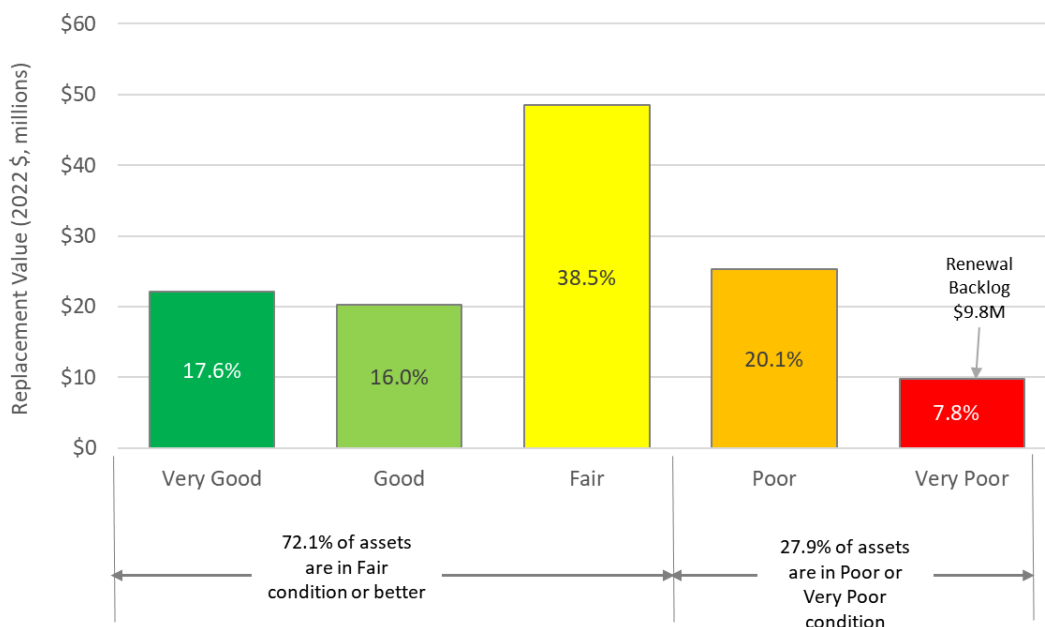
As was listed in Table 2-1, the Township has one light vehicle, valued at \$53,686 to support municipal administration, specific for building inspections and by-law enforcement. The Township also has one building for municipal administration, the Township Office, which is valued at \$2.41 million.

### 3 State of the Infrastructure

#### 3.1 Overview

The condition distribution of the Township's assets is shown in Figure 3-1. The figure shows that 72.1% (\$90.9 million) of the Township's assets are in Fair condition or better, while 27.9% (\$35.1 million) of assets are in Poor or Very Poor condition. Assets in Very Poor condition are overdue for repair and represent the Township's Renewal Backlog. As shown in the figure, the Township has a renewal backlog of \$9.8 million.

**Figure 3-1: Condition Overview – All Services**



Seventy percent (69.5% or \$6.8 million) of assets in Very Poor condition consist of roads and bridges. Another 28.8% (\$2.8 million) consists of the Emsdale Community Centre and Library buildings, which are being replaced by a new Community Centre and Library that will be constructed in 2022-23. The remaining 1.7% (\$0.17 million) of assets listed in Very Poor condition were identified based on their age and consist of SCBA and associated equipment for the Fire Service.

The condition ratings used in Figure 3-1 are defined in Table 3-1 and are aligned with the International Infrastructure Management Manual's (IIMM) five-point condition scale. For this AM plan, condition assessment data was incorporated where available, specifically for:

- Roads (2020 Road Needs Study)
- Bridges and structural culverts (2020 Bridge Condition Inspection)
- Vehicles (2020 Road Needs Study Appendix K – Fleet Assessment)
- Buildings (2020 Building Condition Assessment).

For the remaining assets, condition was estimated based on age and staff input.

Table 3-2 shows how the five-point scores from VG to VP were determined from the asset data available, including remaining useful life and other condition scoring systems, such as Pavement Condition Index (PCI) and Bridge

Condition Index (BCI). For buildings, the Building Condition Assessment (BCA) scored condition using the five-point VG-VP scale, so the BCA data did not require conversion.

Condition scores were adjusted based on staff input, as required. Adjustments were made primarily to reflect renewals and repairs completed more recently than the condition assessments.

**Table 3-1: Condition Grading Criteria**

Grade	Description	Condition Criteria
VG	Very Good	Asset is physically sound and is performing its function as originally intended. Required maintenance costs are well within standards & norms. Typically, asset is new or recently rehabilitated.
G	Good	Asset is physically sound and is performing its function as originally intended. Required maintenance costs are within acceptable standards and norms but are increasing. Typically, asset has been used for some time but is within mid-stage of its expected life.
F	Fair	Asset is showing signs of deterioration and is performing at a lower level than originally intended. Some components of the asset are becoming physically deficient. Required maintenance costs exceed acceptable standards and norms and are increasing. Typically, asset has been used for a long time and is within the later stage of its expected life.
P	Poor	Asset is showing significant signs of deterioration and is performing to a much lower level than originally intended. A major portion of the asset is physically deficient. Required maintenance costs significantly exceed acceptable standards and norms. Typically, asset is approaching the end of its expected life.
VP	Very Poor	Asset is physically unsound and/or not performing as originally intended. Asset has higher probability of failure or failure is imminent. Maintenance costs are unacceptable, and rehabilitation is not cost effective. Replacement / major refurbishment is required.

**Table 3-2: Conversion Table for Condition Grades**

Condition Grade	% Remaining Useful Life (all asset types)	Pavement Condition Index (roads only, if available)	Bridge Condition Index (bridges & culverts only)
Very Good	>75 – 100%	90.0 – 100.0	85 – 100
Good	>50 – 75%	80.0 – 89.9	70 – 84
Fair	>25 – 50%	70.0 – 79.9	50 – 69
Poor	>0 – 25%	50.0 – 69.9	40 – 59
Very Poor	<= 0%	< 50	< 40

Sections 3.2 to 3.6 provide more detail on the asset condition by service.

## 3.2 Transportation

The condition distribution of the Township's Transportation assets is shown in Figure 3-2. The figure shows that 72.2% (\$81.6 million) of the Township's assets are in Fair condition or better, while 27.8% (\$31.4 million) of assets are in Poor or Very Poor condition. The figure shows that the renewal backlog is \$6.8 million. Eighty-five (85% or \$5.8 million) of the backlog consists of road assets, and the remaining 15% (\$1.0 million) consists of bridges and culverts.

**Figure 3-2: Condition Overview – Transportation**

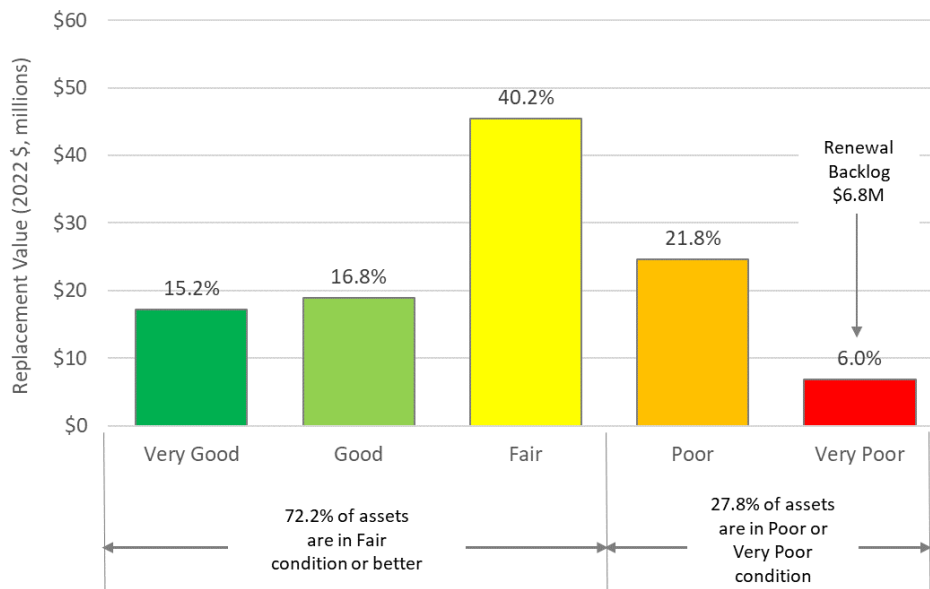


Figure 3-3 shows the condition distribution of roads by surface type. The figure shows that 8% (\$4.6 million) of gravel roads and 3% (\$1.2 million) of surface treated roads are in Very Poor condition, and thus in need of renewal. None of the asphalt roads are in Very Poor condition.

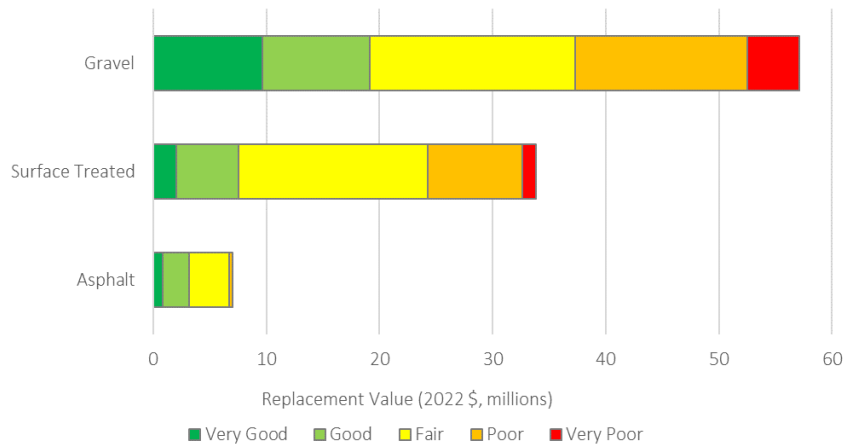
Figure 3-4 shows a map of the road condition by surface type. The map shows that portions of the following roads are in Very Poor condition:

- Appleyards Rd. (gravel, 2,019 m)
- Long Lake Rd. (gravel, 3,411 m)
- Shannon Rd. (gravel, 836 m)
- Stewarts Rd. (gravel, 220 m)
- Cherry Hill Rd. (gravel, 2,505 m)
- Savage Settlement Rd. (surface treated, 1,634 m)

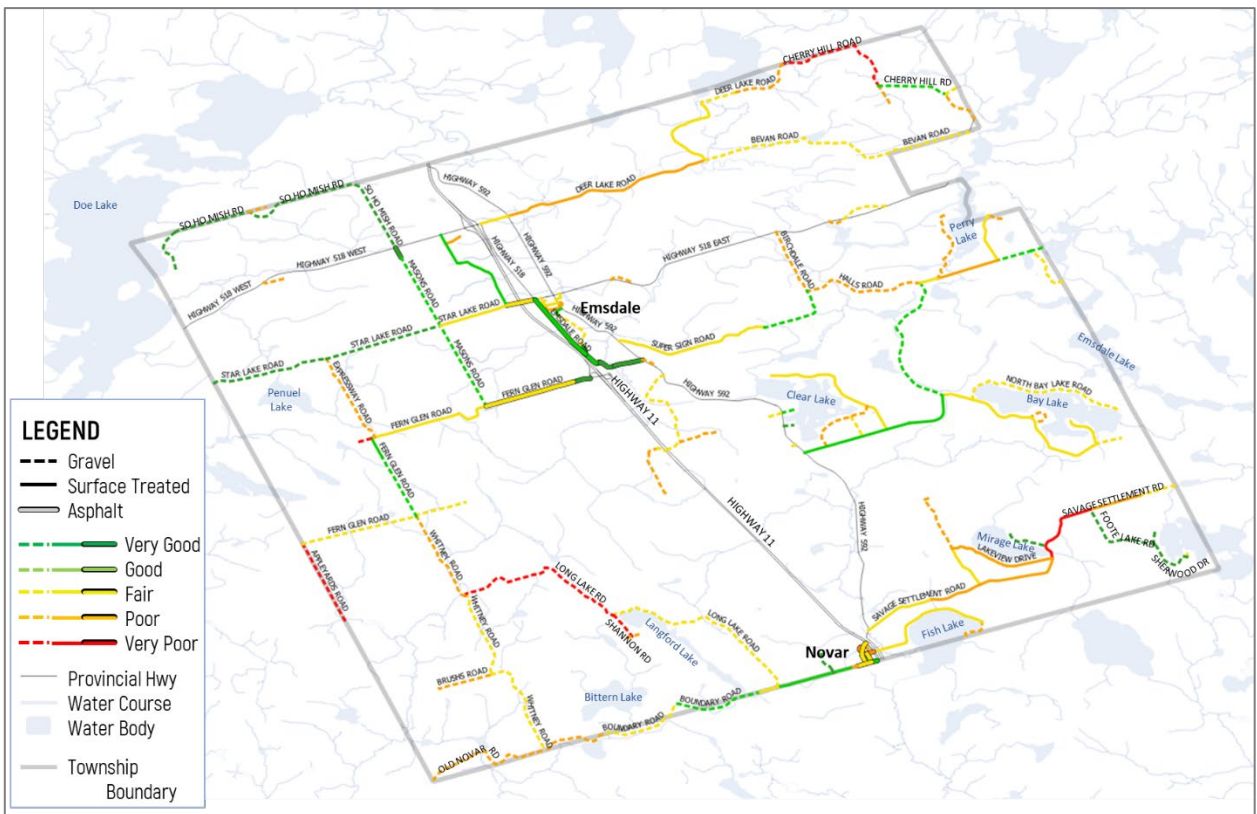
Prioritization of renewal work will be discussed in the section on Life Cycle Management.

Descriptions of asphalt, surface treated and gravel roads for each condition score are provided in Table 3-3.

**Figure 3-3: Condition Distribution - Roads**



**Figure 3-4: Map of Road Condition**



**Table 3-3: Descriptions Road Condition Scores**

Scale		Pavement Condition Index	Asphalt or Surface Treated Roads	Gravel Roads
Very Good	1	90 - 100	The road segment is relatively new, or recently reconstructed. There are no visible cracks and no structural issues. The ride is smooth.	Excellent surface condition and ride. Excellent drainage. Dust controlled. No Distress.
Good	2	80 - 89	The road segment is starting to exhibit few, if any, signs of surface deterioration, random cracks, and rutting. The ride is relatively smooth.	Good crown and drainage throughout. Dust under dry conditions. Moderate loose aggregate. Slight washboarding.
Fair	3	70 - 79	The road segment is exhibiting signs of surface deterioration, random cracks, rutting, and some patching of surface defects. The ride is becoming rough.	Good crown [3" - 6"]. Ditches present on more than 50% of roadway. Some culvert cleaning needed. Some loose aggregate [2" deep]. Moderate washboarding [1" - 2"], over 10% - 25% of the area. Moderate dust, partial obstruction of vision. No or slight rutting (<1" deep). An occasional pothole [<2" deep].
Poor	4	50 - 69	The road segment shows signs of deterioration, cracks, rutting, and patching of surface defects that occurs over 50 percent of the surface. Some structural issues are starting to show. The ride is uncomfortable.	Little or no roadway crown [<3"]. Adequate ditches on less than 50% of roadway, with portions of the ditches filled, overgrown and/or show erosion. Culverts partially full of debris. Severe loose aggregate [> 4"]. Some areas [25%] with little or no aggregate. Moderate to severe washboarding [>3" deep] over 25% of area. Moderate rutting [1" - 3"] and/or moderate potholes [2" - 4"], over 10% - 25% of area.
Very Poor	5	0 - 49	The road segment is reaching the end of its useful life. There are significant structural issues with large visible cracks, rutting and patching surface defects that occurs over 75 percent of the surface. The road is difficult to drive at the posted speed limit.	No roadway crown or road is bowl shaped with extensive ponding. Little if any ditching. Filled or damaged culverts. Many areas [over 25%] with little or no aggregate. Severe rutting [>3" deep] and/or severe potholes [>4" deep], over 25% of areas

The average age of road assets was estimated based on data from the Tangible Capital Asset (TCA) register. The TCA register includes road surface and base, recognizing that the surface may be renewed separately from the base, and that the two components have different expected service life values; however, the installation year for many of the road base records is 1900, which suggests that the actual installation year of the base was unknown when the TCA registry was compiled.

All road surface installation years were available in the TCA registry, and the average age of these assets is summarized in Table 3-4 by surface type.

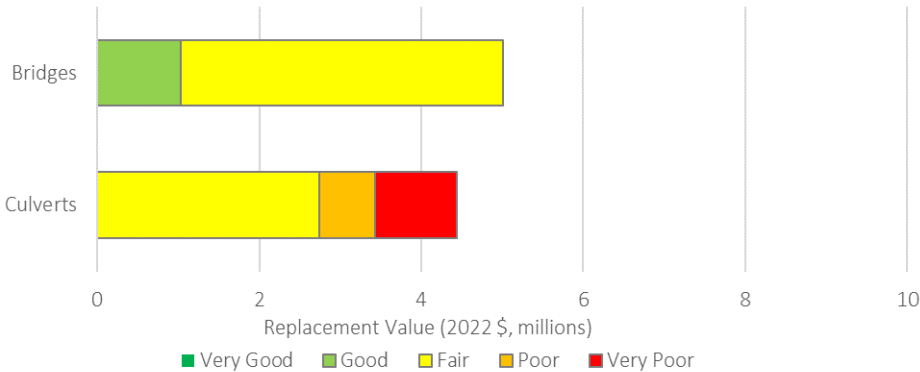
**Table 3-4: Average Age of Road Surface Assets**

Road Surface Type	Length [centreline-km]	Average Age of Road Surface [years]
Gravel	91.9	16.9
Surface Treated	45.2	10.8
Asphalt	7.2	10.0

Figure 3-5 shows the condition distribution of bridges and structural culverts. The figure shows that three bridges are in Good (Deer Lake Rd. bridge) and Fair condition (Fish Lake Rd. bridge and Wooden bridge), although the two bridges in Fair condition have load limits. The figure also shows that most of the six culverts are in Fair condition, except for Whitney Rd. culvert #3, which is in Poor condition, and Emsdale Rd. box culvert, which is in Very Poor condition.

Descriptions of bridge condition scores are provided in Table 3-5.

**Figure 3-5: Condition Distribution – Bridges and Culverts**



**Table 3-5: Bridge Condition Index scores and Associated Descriptions**

Scale	Bridge Condition Index	Description
Very Good	85 – 100	Structure condition is as constructed, with no visible deterioration
Good	70 – 84	Minor defects are visible, but these do not affect overall performance and would not normally trigger remedial action. E.g. Light corrosion, light scaling, narrow cracks in concrete.
Fair	50 – 69	Medium defects are visible and may trigger preventive maintenance and remedial action. E.g. Medium corrosion with up to 5% section loss, medium cracks in concrete.
Poor	40 – 49	Medium defects are visible, requiring. E.g. Medium corrosion with up to 10% section loss, medium cracks in concrete.
Very Poor	0 – 39	Severe defects are visible, affecting the overall performance of the structure. E.g. severe corrosion with over 10% section loss, spalling, delamination.

Figure 3-6 shows that the average age of bridges exceeds the expected service life of 75 years, as defined in the 2020 Bridge Condition Inspection report. Specifically, Fish Lake Rd. bridge was constructed in 1930, and Wooden Bridge in 1931, making them 92 and 91 years old, respectively, in year 2022. Deer Lake Rd. bridge was installed in 1975, making it 47 years old in 2022.

The average age of the structural culverts is 37 years, or about half of the expected service life; however, this excludes Emsdale Rd. box culvert, for which the installation year is unknown, because the culvert was installed by the Ministry of Transportation (MTO) before Emsdale Rd. was transferred to the Township. Emsdale Rd. box culvert is in Very Poor condition and may be beyond its service life.

**Figure 3-6: Average Age – Bridges and Culverts**

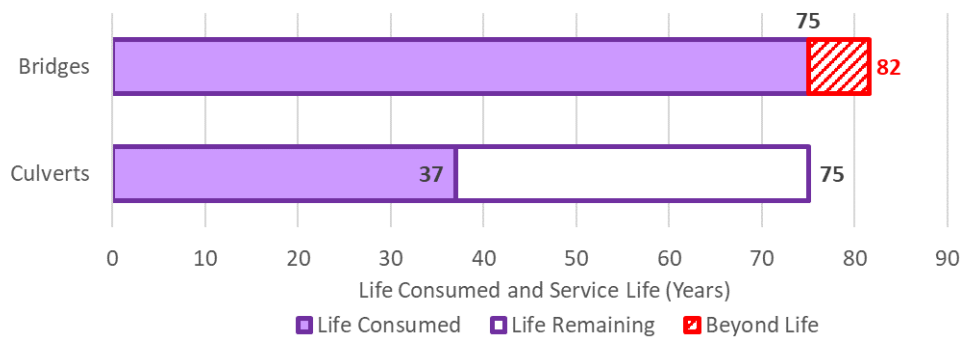


Figure 3-7 shows the condition distribution of streetlights and traffic signs. The figure shows that almost all of these assets are in Good or Very Good condition. The Township adheres to the inspection and repair timelines set out in the Minimum Maintenance Standards (O.Reg. 239/02) to ensure these assets remain in a state of good repair.

**Figure 3-7: Condition Distribution – Streetlights and Traffic Signs**

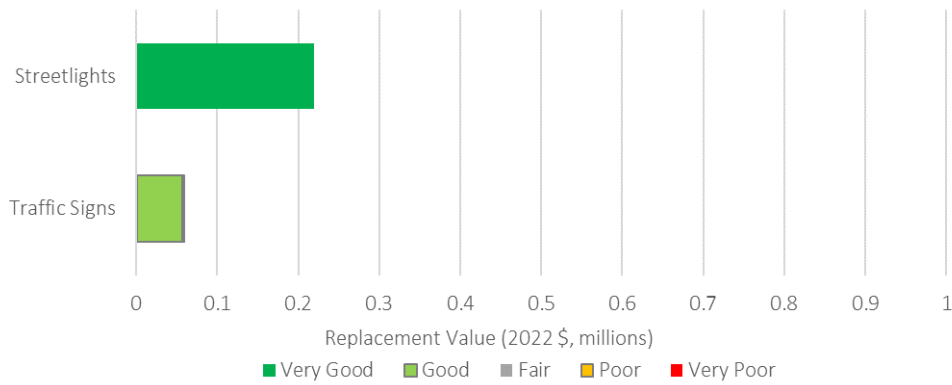


Figure 3-8 shows that the average age of streetlights is 6 years. In fact, all of the Township’s streetlights are 6 years old as they were converted to LED in 2016. Installation year and age data were not available for traffic signs.

**Figure 3-8: Average Age – Streetlights and Traffic Signs**

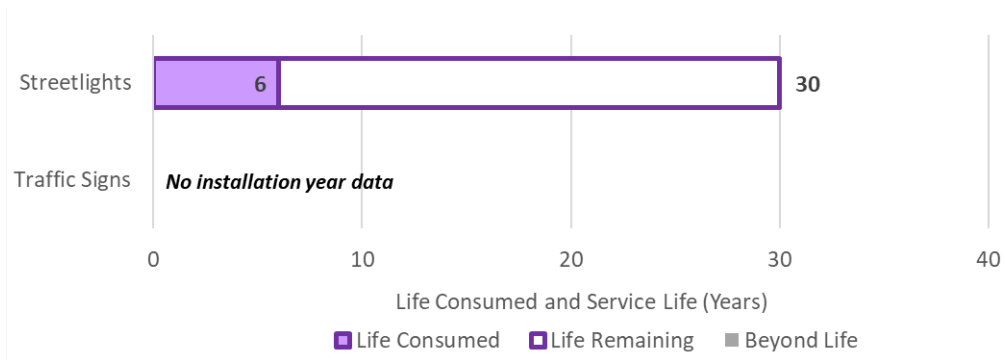


Figure 3-9 shows the condition distribution of vehicle, equipment and facilities that support the Transportation Service. The figure shows that most vehicles and equipment are in Very Good condition.

The Figure also shows that all three facilities supporting the Transportation Service are in Very Good condition based on their facility condition index. Rehabilitation work on the Public Works Garage was recently completed.

**Figure 3-9: Condition Distribution – Vehicles, Equipment and Facilities for Transportation**

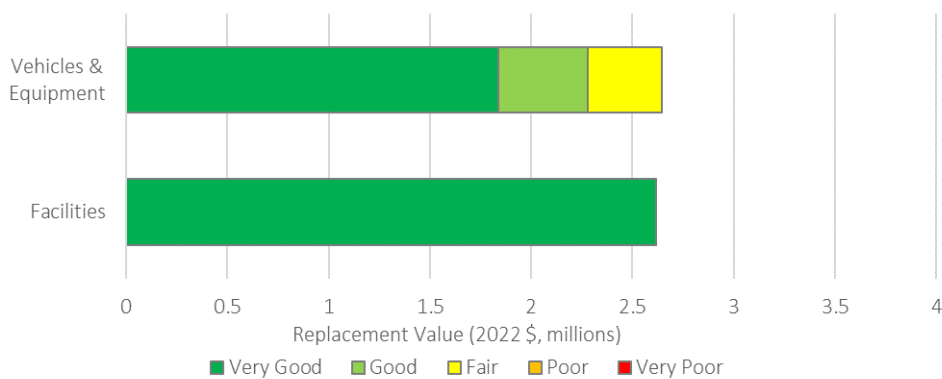
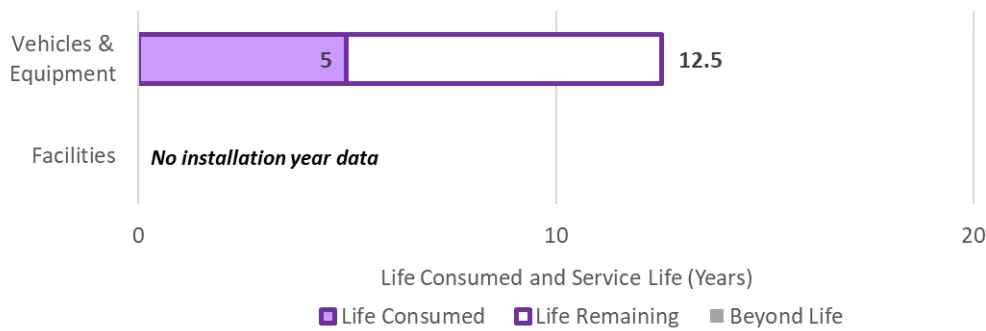


Figure 3-10 shows that the average age of vehicles and equipment is 5 years, which is 40% of the average expected service life for this asset class. Installation year data was not available for facilities assets.

**Figure 3-10: Average age – Vehicles, Equipment & Facilities for Transportation**



### 3.3 Parks & Recreation

Figure 3-11 shows the condition distribution of assets supporting the Parks and Recreations Service. The figure shows that outdoor recreation assets, along with most vehicles and equipment, are in Fair condition or better. The outdoor recreation assets identified in Poor condition are the outdoor rink in Novar, the Community Garden wood-framed beds and the Bay Lake Boat Launch ramp, which are nearing the end of their service lives.

The Figure shows that \$2.8 million of facilities supporting the Parks and Recreation Service are in Very Poor condition. This amount consists of the Emsdale Community Centre and Library buildings, which are being replaced with a combined new building that is being constructed in 2022/2023. The Museum, valued at \$0.5 million, is in Poor condition.

**Figure 3-11: Condition Distribution – Parks & Recreation Assets**

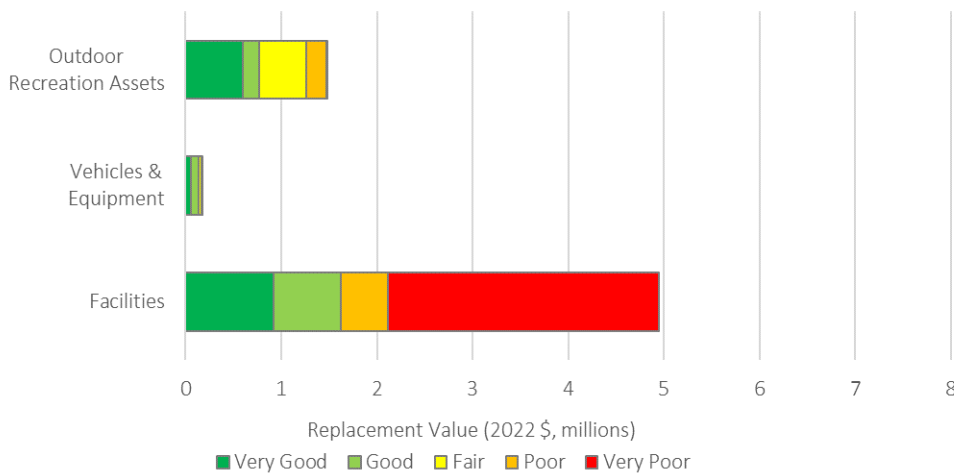
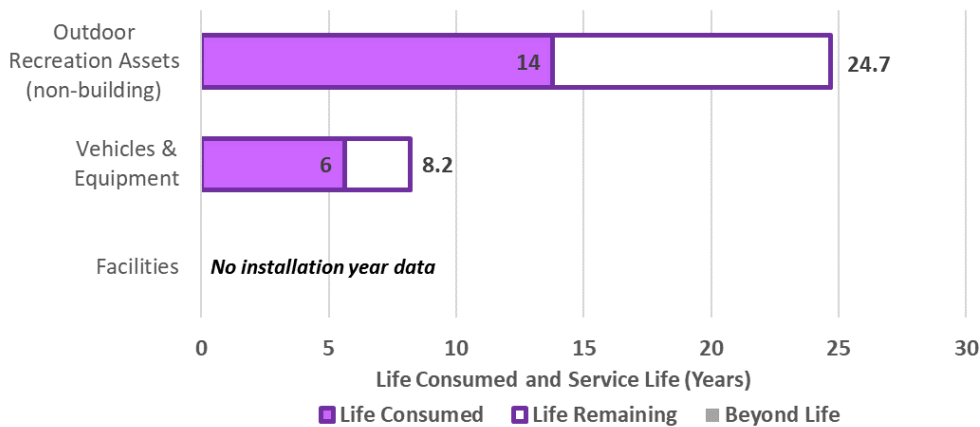


Figure 3-12 shows the average age of Parks and Recreation assets. As shown in the figure, installation year data was not available for building assets. Outdoor recreation assets (excluding buildings, such as rink changerooms, the covered rink and the gazebo) have an average age of 14 years, which is approximately 56% of the average expected service life for this asset class. The average age of vehicles and equipment is 6 years out of an average expected service life of 8.2 years. The condition assessment for these vehicles shows that some vehicles are generally in better condition than expected based on age and will likely be able to remain in service beyond their estimated service life.

**Figure 3-12: Average Age – Parks & Recreation Assets**



### 3.4 Fire Protection Service

Figure 3-13 shows the condition distribution of assets supporting the Fire Protection Service. The figure shows that the Fire Hall (\$2.1 million) and Fire Hall Garage & Training Centre (\$0.1 million) are in Very Good condition. The Figure also shows that all vehicles and equipment are in Fair condition or better; however, \$0.2 million of fire protection equipment have been identified as being in Poor or Very Poor condition, based on age. Assets in Very Poor condition consist of the SCBA and associated equipment and a defibrillator. Assets in Poor condition consist of a hydraulic extrication tool, a second defibrillator, and six portable radios.

**Figure 3-13: Condition Distribution – Fire Protection Assets**

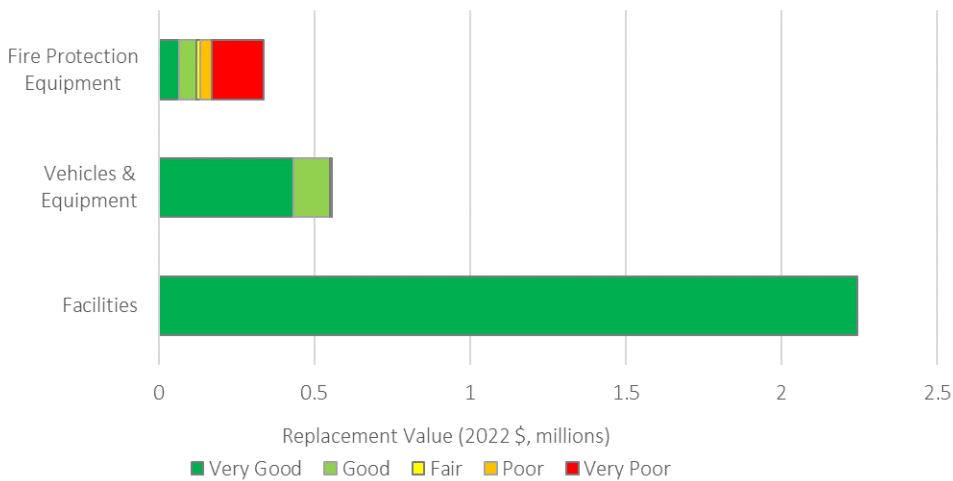
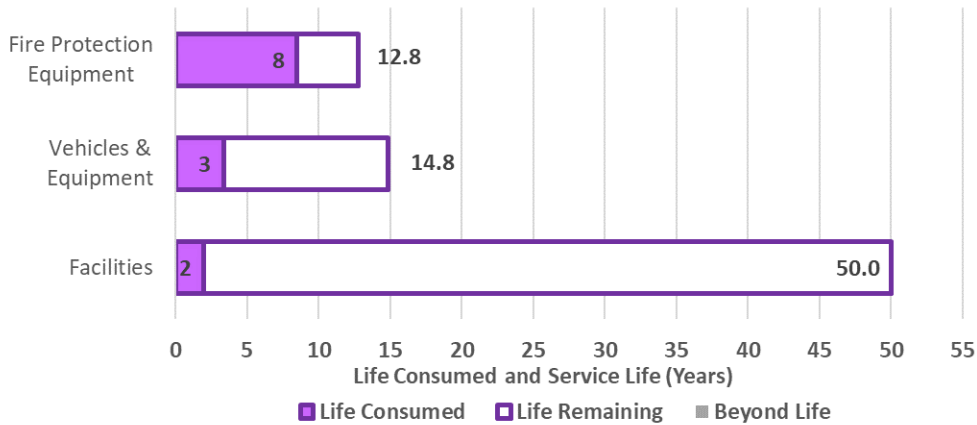


Figure 3-14 shows the average age of Fire Protection assets. As shown in the figure, the average age of fire protection equipment is 8 years out of the average 12.8 year expected service life for this asset class. The average age of vehicles and equipment is 4 years, or approximately 30% of the average expected service life. The Fire Hall was constructed in 2019, and the Fire Hall Garage & Training Centre were constructed in 2021. The average age of these facilities is 2.0 years (4%) of its expected 50-year service life.

**Figure 3-14: Average Age – Fire Protection Assets**



### 3.5 Solid Waste Service

Figure 3-15 shows the condition distribution of assets supporting the Solid Waste Service. As shown in the figure, these assets are all in Fair condition or better. In fact, the Site Equipment and the Transfer Station facility (including Recycling Centre) are mostly in Very Good condition. The skid steer and Reusable Items Shed are in Fair condition.

**Figure 3-15: Condition Distribution – Solid Waste Assets**

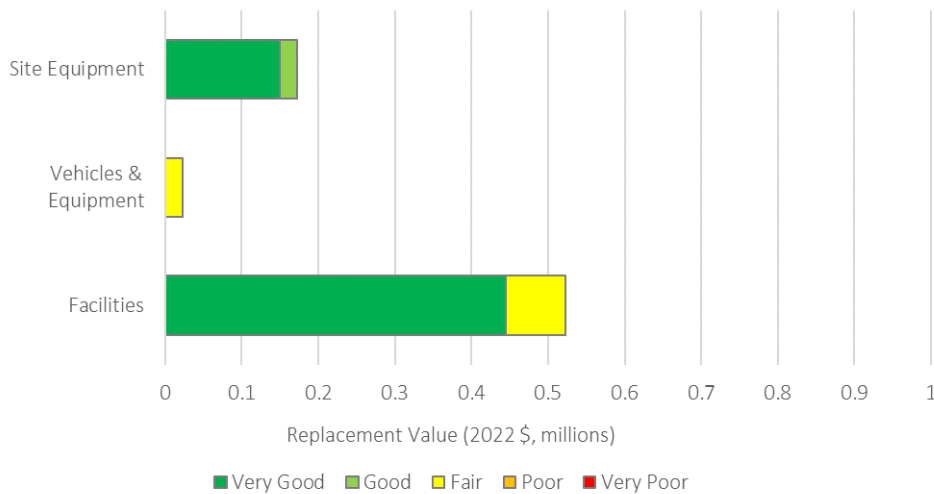
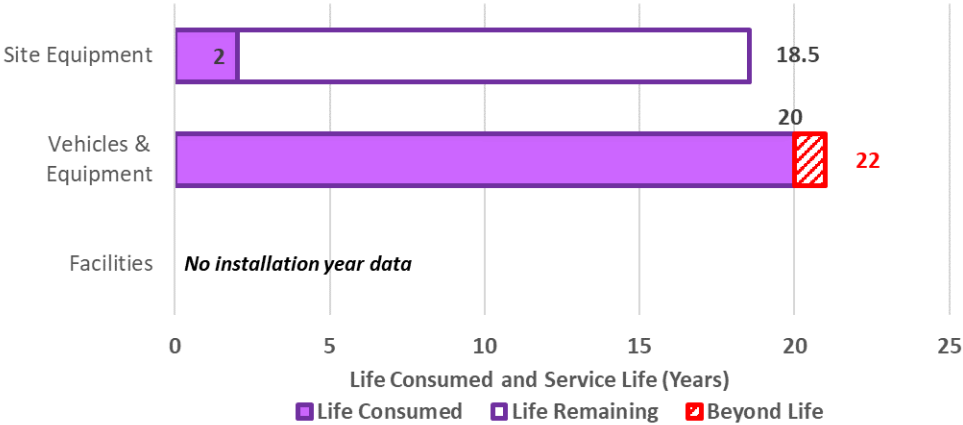


Figure 3-16 shows the average age of Solid Waste Service assets. As shown in the figure, the average age of site equipment is 2 years, or 11% of the average expected service life for this asset class. The Solid Waste Service has one vehicle, which is a skid steer that was purchased in year 2000. This asset has exceeded its expected service life but remains in Fair condition. Installation year data was not available for building assets (the Transfer Station).

**Figure 3-16: Average Age – Solid Waste Assets**



**3.6 Municipal Administration**

Figure 3-17 shows the condition distribution of assets supporting the municipal administration services. As shown in the figure, the light vehicle (\$54 thousand) is in Very Good condition, and the Township Office building (\$2.4 million) is in Fair condition. All technology assets are in fair or better condition.

**Figure 3-17: Condition Distribution – Municipal Administration Assets**

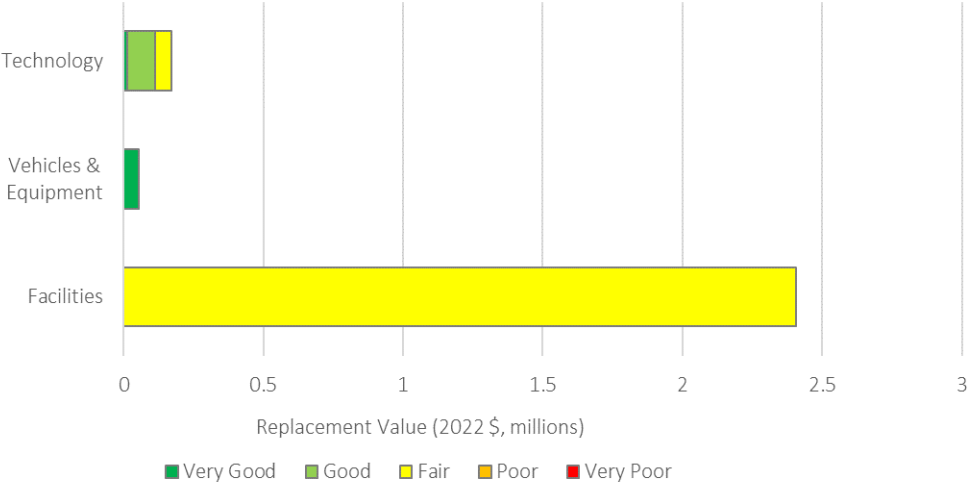
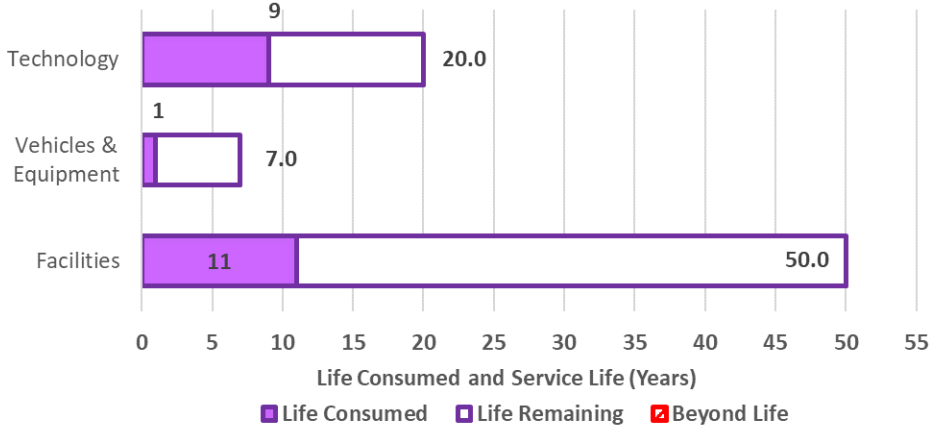


Figure 3-18 shows the average age of municipal administration assets. As shown in the figure, the average age of technology assets is 10 years, approximately 50% of the average expected service life. This service area has one vehicle, which is a light vehicle that was purchased in year 2020. The Township Office was constructed in 2010 and is estimated at 22% of its expected 50-year service life.

**Figure 3-18: Average Age - Municipal Administration Assets**



## 4 Levels of Service

### 4.1 Overview

Levels of Service (LOS) are statements that describe the outputs and objectives the Township intends to deliver to its citizens, businesses, and other stakeholders. Developing, monitoring, and reporting on LOS are all integral parts of an overall performance management program which is aimed at improving service delivery and demonstrating accountability to the Township's stakeholders.

In general, LOS are guided by a combination of customer expectations, legislative requirements, and internal guidelines, policies, and procedures. In many cases, LOS are also implied based on past service delivery, community expectations, and infrastructure system design. Effective asset management requires that LOS be formalized and supported through a framework of performance measures, targets, and timeframes to achieve targets, and that the costs to deliver the documented LOS be understood.

Figure 4-1 shows that Corporate LOS commitments, along with the legislated LOS referenced by them, drive the definition of more specific Community LOS. Community LOS can be categorized as relating to one of the following service attributes:

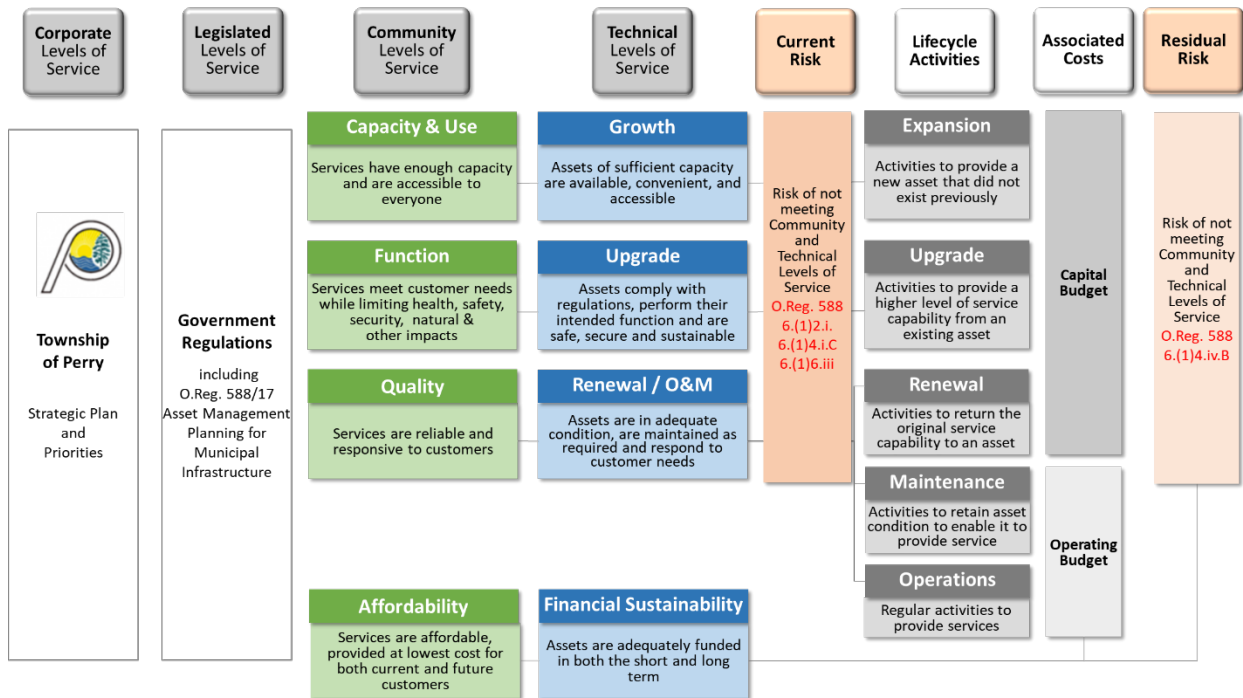
- **Capacity & Use:** Assessing whether services have enough capacity and are accessible to the customers
- **Function:** Assessing whether services meet customer needs while limiting health, safety, security, natural and heritage impacts
- **Quality:** Assessing whether services are reliable and responsive to customers
- **Affordability:** Assessing whether services are affordable and provided at the lowest cost for both current and future customers

Community LOS are in turn translated into Technical LOS, where Capacity & Use LOS drive assessment of the Growth needs; Function LOS drive assessment of Upgrade needs; Quality LOS drive assessment of renewal, operations and maintenance needs; and Affordability LOS drive assessment of Financial Sustainability needs. The risks of failing to achieve the defined Community and Technical LOS are assessed, and life cycle activities are prioritized to address those risks. Life cycle activities may include expansion, upgrade, renewal, maintenance or operational activities, depending on the category of LOS to be addressed. The nature of the life cycle activity determines whether it should be funded as capital or operating, as well as eligible funding sources. As shown in the figure, even after the life cycle intervention, some residual risk may remain.

Sections 4.2 to 4.6 report the LOS indicators, current performance and target performance by service. In general, targets were aligned with those seen in peer municipalities, and also considered the findings of an internet-based public survey that was conducted from October 7 to November 3, 2021. The findings of the survey are included in Appendix B.

Performance gaps identified in this section will drive the Risk and Life Cycle Management Strategies of this AM Plan. Proposed performance over the next 10 years based on the planned strategies is discussed in Section 6.4.

**Figure 4-1: Levels of Service Framework**



## 4.2 Transportation Service

Table 4-1 lists LOS indicators related to roads, and Table 4-2 lists LOS indicators related to bridges and structural culverts. LOS indicators required by O.Reg. 588/17 are marked with an asterisk (\*). The tables report the Township's current performance and targets and indicate whether the target has been met. As shown in the table, the Township has a performance gap with respect to the following indicators:

- Average Pavement Condition Index (PCI) for paved (asphalt), surface treated and gravel roads
- % of roads in Fair condition or better for MMS Class 5 and 6 roads
- Average Bridge Condition Index (BCI) for bridges and structural culverts
- % of bridges & culverts in Fair condition or better

Road condition targets were set to aim for average PCI of Good across all surface types. A separate indicator has been defined to monitor the percentage of roads in Fair condition or better (State of Good Repair). Higher targets are set for roads with higher traffic volumes and speeds, which are captured by the Minimum Maintenance Standard (MMS) road class assigned to each road segment. The Township's target is for 90% of Class 4 roads, 80% of Class 5 roads and 70% of Class 6 roads to be in Fair condition or better. These targets are aligned with targets seen in peer municipalities.

The public survey of residents and businesses found that 70% of respondents were Very Satisfied or Satisfied with the condition of their road, 6% were Neutral and 24% were Very Dissatisfied or Dissatisfied. These findings indicate the public's desire for improved road condition. The survey did not include questions about bridges and culverts, because renewal and repair of these structures is driven by safety requirements, rather than public opinion.

**Table 4-1: Levels of Service – Transportation – Roads**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met												
Capacity and Connectivity	Description, which may include maps, of the road network in the municipality and its level of connectivity.*	See Section 2.2.1 for description and maps of the Township's road network.	Not applicable.	n/a												
	Number of lane-km of each of arterial roads, collector roads and local roads as a proportion of km <sup>2</sup> of land area of the Township.*	<table border="1"> <thead> <tr> <th>Roads Type</th> <th>Lane-km</th> <th>As proportion of land area* (lane-km/km<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td>Local</td> <td>173.3</td> <td>0.93</td> </tr> <tr> <td>Collector</td> <td>115.2</td> <td>0.62</td> </tr> <tr> <td>Arterial</td> <td>--</td> <td>--</td> </tr> </tbody> </table>	Roads Type	Lane-km	As proportion of land area* (lane-km/km <sup>2</sup> )	Local	173.3	0.93	Collector	115.2	0.62	Arterial	--	--	No target.	n/a
		Roads Type	Lane-km	As proportion of land area* (lane-km/km <sup>2</sup> )												
		Local	173.3	0.93												
Collector	115.2	0.62														
Arterial	--	--														
* Township land area = 187.22 km <sup>2</sup>																
Function	No LOS indicators defined															
Quality	Description or images that illustrate the different levels of road class pavement condition.*	See Table 3-3.	Not applicable.	n/a												
	For paved roads in the Township, the average pavement condition index value.*	Paved: 79.0 (Fair) Surface Treated: 74.1 (Fair)	80 (Good) or higher 80 (Good) or higher	No No												
	For unpaved roads in the Township, the average surface condition (e.g. excellent, good, fair, or poor).*	Gravel: 74.1(Fair)	80 (Good) or higher	No												
	% of roads in Fair condition or better	MMS Class 4:	92%	90% or more	Yes											
		MMS Class 5:	69%	80% or more	No											
MMS Class 6:		61%	70% or more	No												
% of Transportation service vehicles in Fair condition or better	100%		90% or more	Yes												
Average Facility Condition Index of Transportation service buildings	0.0%		5% or less	Yes												

\* O.Reg. 588/17 LOS reporting requirement.

**Table 4-2: Levels of Service – Transportation – Bridges & Culverts**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met
Capacity and Connectivity	Description of the traffic that is supported by municipal bridges [e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists].*	See Section 2.2.2 for descriptions and maps of the Township's 3 bridges and 6 structural culverts.	Not applicable.	n/a
	Percentage of bridges in the Township with loading or dimensional restrictions.*	Loading restrictions: 67% (2 of the 3 bridges) – restrictions are due to condition  Dimensional restrictions: 33% (1 of the 3 bridges) – single lane	No target  No target	n/a  n/a
Function	No LOS indicators defined			
Quality	Description or images of the condition of bridges and how this would affect use of the bridges.*	See Table 3-6.	Not applicable.	n/a
	For bridges in the Township, the average bridge condition index value.*	66.8 (Fair)	70 (Good) or higher	No
	For structural culverts in the Township, the average bridge condition index value.*	54.3 (Fair)	70 (Good) or higher	No
	% of bridges and culverts in Fair condition or better	82.1%	90% or more	No

\* O.Reg. 588/17 LOS reporting requirement.

### 4.3 Parks & Recreation

Table 4-3 lists LOS indicators, current performance and targets related to the Parks and Recreation Service. The table also shows whether the targets have been met. As shown in the table, the Township has a performance gap with respect to the following indicators:

- % of outdoor recreation equipment assets in Fair condition or better
- Average Facility Condition Index (FCI) for indoor recreation buildings

The Township is constructing a new Community Centre and Library in 2022/2023 to replace the existing Emsdale Community Centre and existing Library. Excluding the existing Community Centre and Library from the calculation, this target would be met.

Condition targets were aligned with targets seen in peer municipalities. The public survey of residents and businesses found that 65% and 48% of respondents were Very Satisfied or Satisfied with the outdoor and indoor recreation services, respectively, while 17% and 17% were Very Dissatisfied or Dissatisfied. The remainder were neutral. These findings indicate that the public's desire for improved condition of recreation assets.

**Table 4-3: Levels of Service – Parks & Recreation**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met	
Capacity	Description of Parks and Recreation Service and the assets used to support it	See Section 2.3	Not applicable.	n/a	
	Number of play structures	2 play structures: <ul style="list-style-type: none"> <li>Emsdale Community Park</li> <li>Novar Community Park</li> </ul>	No target.	n/a	
	Number of public beaches	2 public beaches: <ul style="list-style-type: none"> <li>Clear Lake Beach</li> <li>Long Lake Beach (limited parking)</li> </ul>	No target.	n/a	
	Number of public boat launches	5 public boat launches: <ul style="list-style-type: none"> <li>Clear Lake</li> <li>Bay Lake (limited parking)</li> <li>Long Lake (no parking)</li> <li>Foote Lake (no parking)</li> <li>Fish Lake (no parking)</li> </ul>	No target.	n/a	
Function	No LOS indicators defined				
Quality	Description of operations and maintenance practices to ensure safety, cleanliness and comfort at parks and outdoor recreation spaces	Grass Cutting	Bi-weekly	Bi-weekly	Yes
		Litter Pickup	Bi-weekly	Bi-weekly	Yes
		Waste Collection	2x per week	Bi-weekly	Yes
		Cleaning of Washrooms	Daily	Daily	Yes
		Cleaning of Rental Washrooms	1-3x/week	1-3x/week	Yes
		Cleaning of Rink Changerooms:			
		- Novar	volunteer	Daily	No
- Emsdale	weekdays	Daily	No		
- Inspection of play structures	Monthly	Monthly	Yes		
Maintenance, inspection, cleaning and garbage pick-up at boat launches:					
Bay Lake	2x/week	2x/week	Yes		
Clear Lake	2x/week	None	Yes		
Others	none	None	Yes		
% of outdoor recreation equipment assets in Fair condition or better	53.4%		90% or more	No	
Average Facility Condition Index for Recreation buildings	56.9%		5% or less	No	
% of Parks and Recreation service vehicles in Fair condition or better	97.5%		90% or more	Yes	

## 4.4 Fire Protection Service

Table 4-4 lists LOS indicators, current performance and targets related to the Fire Protection Service. The table also shows whether the targets have been met. As shown in the table, the Township has a performance gap with respect to the following indicators:

- % of emergency equipment (non-vehicle) in Fair condition or better

A target of 90% was set for this indicator, in alignment with other classes.

**Table 4-4: Levels of Service – Fire Protection Service**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met
Capacity	Description of the Fire Protection Service and the assets used to support it.	See Section 2.4.	Not applicable.	n/a
	Average Dispatch Time to Time on Scene	2018: 18.1 minutes 2019: 15.6 minutes 2020: data not available	No target.	n/a
Function	Percentage of Equipment meeting NFPA standards	100%	100%	Yes
Quality	% of Fire Protection emergency equipment (non-vehicle) in Fair condition or better	39.9%	90%	No
	% of Fire Protection service vehicles in Fair condition or better	100%	90% or more	Yes
	Average Facility Condition Index of Fire Protection facilities	0%	5% or less	Yes

## 4.5 Solid Waste Service

Table 4-5 lists LOS indicators, current performance and targets related to the Solid Waste Service and shows whether the targets have been met. As shown in the table, the Township has a performance gap with respect to the following indicators:

- % of solid waste diverted from landfill

A target of 40% was set for this indicator, in alignment with peer municipalities.

**Table 4-5: Levels of Service – Solid Waste Service**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met
Capacity	Description of Solid Waste Service and the assets used to support it.	See Section 2.5.	Not applicable.	n/a
	Number of vehicle visits served	2019: 26,445 2020: 28,113 2021: data not available	No target	n/a
Function	% of solid waste diverted from landfill	2019: 30.5% 2020: 32.0% 2021: data not available	40%	No
Quality	% of Solid Waste Service vehicles in Fair condition or better	100%	90% or more	Yes
	Average Facility Condition Index (FCI) of Solid Waste Service facilities	0.3%	5% or less	Yes

## 4.6 Municipal Administration

Table 4-6 lists LOS indicators, current performance and targets related to Municipal Administration and shows whether the targets have been met. As shown in the table, the Township is meeting the performance targets set for this service. Targets were set in alignment with peer municipalities, and with condition targets for other asset classes.

**Table 4-6: Levels of Service – Municipal Administration**

Service Attribute	Levels of Service Indicator	Current Performance	Target	Target Met
Capacity	Description of Municipal Administration Service and the assets used to support it.	See Section 2.6.	Not applicable.	n/a
Function	No LOS indicators defined			
Quality	% of Municipal Administration Service vehicles in Fair condition or better	100%	90% or more	Yes
	Average Facility Condition Index (FCI) of Municipal Administration Service facilities	1.7%	5% or less	Yes

# 5 Risk Management Strategy

## 5.1 Overview

The Township's key asset management principle is to meet service levels and manage risk, while minimizing lifecycle costs. The relative importance of the assets to support service delivery, referred to as asset criticality, is a key driver in selection of the most appropriate asset management strategy for each asset. Critical assets include assets that are key contributors to performance, expensive in terms of lifecycle costs, and most prone to deterioration or need ongoing maintenance investment.

Risk events, such as an asset's failure to have sufficient capacity, function, or reliability, are events that may compromise the delivery of the Township's strategic objectives. Lifecycle activities are used to manage the risk of failure by reducing the chance of asset failure to acceptable levels. The impact of asset failure on the Township's ability to meet its strategic objectives dictates the type and timing of lifecycle activities.

The Township's risk strategy develops the framework for quantifying the risk exposure of its assets to enable prioritization of projects across asset classes and service areas. Risk exposure is the multiplication of the criticality or consequence of failure (CoF), which is the direct and indirect impact on the Township if an asset failure were to occur, by the probability of failure (PoF), which is the likelihood or chance that an asset failure may occur:

$$\text{Risk Exposure} = \text{Consequence of Failure} \times \text{Probability of Failure}$$

## 5.2 Consequence of Failure Matrix

The focus in this section is on asset criticality or consequence of failure which reflects the importance of an asset to the Township's delivery of services. The following impacts of a potential asset failure are considered:

**Service Delivery** considerations ranging from a disruption of non-essential service to widespread and long-term disruption of essential service

**Health and Safety** considerations including the ability to meet health and safety related regulatory requirements, and degree and extent of injury, ranging from negligible injuries to loss of life

**Environmental** considerations such as length and extent of damages to the natural environment

**Financial** impact considerations such as asset replacement cost, damages to Township or private property and infrastructure, loss of revenue, and fines.

**Reputational** considerations such as residents' reduced trust and confidence in the Township.

Table 5-1 summarizes the above listed impacts against an asset criticality rating scale from 1 to 5, with a higher score indicating a higher consequence of failure.

**Table 5-1: Asset Criticality (Consequence of Failure) Ratings**

Consequence Categories	CoF = 1 Insignificant	CoF = 2 Minor	CoF = 3 Moderate	CoF = 4 Major	CoF = 5 Catastrophic
Financial	Damages, losses (including 3rd party) or fines of < \$1k	Damages, losses (including 3rd party) or fines from \$1k to \$5k	Damages, losses (including 3rd party) or fines from \$5k to \$25k	Damages, losses (including 3rd party) or fines from \$25k to 100k	Damages, losses (including 3rd party) or fines > \$100k
Health & Safety	No obvious potential for injury or affects to health.	Potential for minor injury or affects to health of an individual. Full recovery is expected; or minor medical attention may be required	Potential for serious injury or affects to health. May affect many individuals and / or result in short-term disability; or hospitalization may be required for a short period of time.	Potential for serious injury or affects to health of one or more individuals with a possibility of loss of a life and the certainty of long-term disability; or emergency hospitalization required for one or more individuals.	Potential for death or multiple deaths with probable permanent damage; or emergency and long-term hospitalization required for several individuals.
Availability/ Reliability	Small number of customers experiencing disruption / impact (less than 10 people or up to a few hours)	Localized service disruption / impact (10 to 100 people or up to 1 day)	Significant localized disruption / impact (100 to 250) people or less than 1 week)	Major service disruption / impact (250 to 500) people or for more than a week)	Area wide service disruption / impact (greater than 500 people or permanent loss of services)
Environment	Very negligible impact or can be restored within 1 day	Minor (within 1 week) very isolated damage / impact to the environment, local importance	Significant short-term impact (up to 2 weeks), local importance	Significant long-term impact (up to 1 month), Provincial importance.	Major long-term impact (greater than 1 month), Federal importance.
Reputational	No media exposure	Minor or no media exposure	Moderate local media exposure lasting for several days	Intense local media exposure lasting several days and/or Municipality wide exposure	Significant provincial exposure lasting several days or weeks

The above criticality profiles enable risk to be incorporated into the development of asset management strategies. More critical assets are prioritized for expansion, inspection, cleaning, maintenance, and renewal, depending on their current and forecasted performance.

### 5.3 Risk to Levels of Service - Approach

Asset criticality is determined based on the degree to which the failure of the asset would impact the following three community levels of service attributes:

**Capacity and Use:** Assets of sufficient capacity are available, convenient, and accessible

**Function:** Assets comply with regulations, perform their intended function and are safe, secure, and sustainable

**Quality/Reliability:** Assets are in adequate condition and are maintained as required.

#### 5.3.1 Risk to Capacity LOS

As indicated in Section 1.3, the Township has experienced some growth in the past few years and will continue to grow at a modest rate through to 2031. To accommodate this growth, the Township plans for a new and expanded Emsdale Community Centre, coincident with renewal plans as the existing community centre is in very poor condition. The existing library is also in very poor condition and will be removed and included on a single floor in the same facility as the new community centre.

As indicated in Chapter 4, other capacity LOS for the Township relate to continuing to provide convenient access to beaches, boat ramps, and play structures, as well as access to properties through the road network. For Solid Waste, the number of vehicle visits to the transfer station is reported. As the probability of capacity failure remains low for these assets, the Township does not anticipate that additional infrastructure will be required over the next 10 years to maintain capacity service levels.

**5.3.2 Risk to Function LOS**

The new Library, as part of the new Emsdale Community Centre, will retain the same area as the existing library, but will feature improvements that will increase its service levels to meet the current and future functional needs of residents.

As indicated in Chapter 4, other functional LOS for the Township relate to maintaining Fire equipment to NFPA standards and maintaining two bridges under load restrictions. These service levels are proposed to be maintained at current levels and additional expenditures to improve function are not anticipated. The Township also plans to increase solid waste diversion from the landfill from 32% in 2020 to 40% in 2031. This increase in service level may require additional operating and maintenance activities but will not require additional capital expenditures related to the physical infrastructure.

The Township’s 2020 Road Needs Study recommended that the Township consider upgrading gravel roads to a hard surface only for those with a good or moderate condition base, as well as prioritization on higher volume roads. Gravel roads with a poor base are recommended to first consider improvements to the base, as a poor base condition results in higher lifecycle costs for hard surface roads. Public consultation is also recommended to ensure residents understand both the benefits (smoother ride, reduced dust) as well as the possibly perceived disadvantages (perception of increased travel speeds and higher traffic volumes).

**5.3.3 Risk to Service Reliability**

The Reliability Level of Service refers to the Township’s aim to ensure that its assets are kept in a state of good repair to reduce the incidence of unplanned service interruptions due to poor asset condition. Depending on the asset, unplanned failures can have wide-ranging consequences including service disruption, damage to surrounding infrastructure and property, risks to public safety, and environmental impacts. Probability of Failure is estimated based on the condition of the asset, as shown in Table 5-2.

**Table 5-2: Probability of Failure Ratings for Reliability**

PoF Rating	Corresponding Asset Condition
1	Very Good
2	Good
3	Fair
4	Poor
5	Very Poor

Consequence of Failure is estimated based on the expected impact of an asset failure. Each asset’s criticality is assessed based on the rating scale provided in Table 5-1. Table 5-3 provides a summary of the assessment by Asset Type.

**Table 5-3: Consequence of Failure Ratings for Reliability**

Asset Type	Assumptions	Consequence Category of Highest Concern	Attributes	Consequence of Failure Score	Description of Assets
Roads	Road surface defects may cause vehicle damage, loss of vehicle control, injury, or loss of life.	Health & Safety	MS Classes 1-3	n/a	None
			MS Class 4	4	10.7 km
			MS Class 5	3	102.7 km
			MS Class 6	2	30.9 km
Bridges & Culverts	Serious injury or loss of life likely if a structure fails	Health & Safety	Span >8m and/or Class 4 and/or no detour	5	1 (Deer Lake Rd. bridge – 26m span) 1 (Fish Lake Rd. bridge – no detour) 1 (Emsdale Rd. culvert – Class 4 road)
			Span >6m, ≤8m	4	None
			Span >3m, ≤6m	3	6 (Wooden Bridge, Scotia Rd. culvert, Deer Lake Rd. culvert, all 3 Whitney Rd. culverts)
			Span ≤3 m	2	None
Traffic Signs	Increased likelihood of traffic collision and/or and thus serious injury or loss of life. Defective signs are replaced in accordance with Minimum Maintenance Standard timelines.	Health & Safety	ALL	5	535 units
Streetlights	Vehicle headlights and streetlights nearby will still be in use. Defective streetlights are replaced in accordance with Minimum Maintenance Standard timelines.	Health & Safety	ALL	2	75 units
Buildings - Administration and Operations	Failure or closure of these buildings will disrupt operation and delivery of critical municipal services	Availability/Reliability	ALL	5	Municipal Office (Emergency Operations) Fire Hall – Secondary (Emergency Operations) PW Garage & Storage sheds Transfer Station
				1	Transfer Station Shed

Asset Type	Assumptions	Consequence Category of Highest Concern	Attributes	Consequence of Failure Score	Description of Assets
				3	Parks & Rec Ops Building
				5	Community Centres (these are contingency for municipal office)
<b>Buildings - Recreation &amp; Culture</b>	Failure or closure of these buildings will disrupt operation and delivery of recreation and culture services	Availability/ Reliability	ALL	3	Library
				2	Covered Rink Rink Changeroom
				1	Museum
<b>Vehicles - Pickup trucks and SUVs</b>	Pickup trucks and SUVs can be quickly replaced with rental vehicle options. Failure will affect operational costs.	Financial	ALL	2	Pickups and SUVs used by Public Works, Recreation, Bylaw/Buildings, Fire
<b>Vehicles - Emergency Vehicles</b>	Failure of an emergency vehicle will reduce the Fire Service's capacity and capabilities, and result in slower response times.	Availability/ Reliability Health & Safety	ALL	5	Emergency vehicles used by Fire Service
<b>Vehicles - UTV &amp; Trailer (Fire)</b>	UTV not used on a daily basis and can be replaced with rental options if necessary.	Availability/ Reliability Health & Safety	ALL	2	UTV & trailer used by Fire Service
<b>Vehicles - Road Maintenance &amp; Winter Control</b>	Failure of these units may result in inability to meet timelines of Road Maintenance Standards. Rental equipment may not be available during peak seasons. Multiple vehicles - available redundancy	Availability/ Reliability Health & Safety	ALL	4	Loader, excavator, grader, snow plow trucks
<b>Vehicles - Park Maintenance Equipment</b>	Failure of these units may result in delays with park maintenance.	Availability/ Reliability	ALL	2	

### 5.3.4 Reliability Risk Results

After assessing the criticality and probability of each asset's risk, the results are plotted on a risk map, a graphic representation of probability and consequence of failure. Colours on the map denote different levels of risk and help to prioritize the Township's resources, time, and effort.

- Risks that appear in the light red (extreme) zone are significant to the Township and therefore need to be actively managed and monitored in a more comprehensive manner than other risks (i.e., prioritized)
- Risks that appear in the orange (high) or green (moderate) zones will also be actively managed depending on their nature
- Risks that appear in the light blue (low) or grey (very low) zones are generally acceptable without significant mitigation strategies being implemented, although monitoring may still occur in some form.

The risk of not meeting the stated reliability levels of service is influenced by both the asset criticality and asset performance, as represented by asset condition.

**Current Risk:** As shown in Figure 5-1, \$2.48 million (2.0%) of Township assets are currently in the Very High risk category, consisting of the Emsdale Community Centre (\$1.31M), Emsdale Road Box Culvert (\$0.95M), SCBA Fire equipment and one defibrillator (\$0.166M), and various traffic signs (\$1650).

**Figure 5-1: Current Risk – All Assets (by Asset Replacement Value in 2022 \$M)**

**Current Risk Profile (by Asset Replacement Value in 2022 \$M)**

PoF						Risk	Replacement	%
						Category	Value	
5	--	\$1.53	\$5.80	\$0.17	\$2.31	Very High	\$2.48	2.0%
4	\$0.50	\$5.98	\$18.06	\$0.76	\$0.00	High	\$11.79	9.4%
3	\$0.08	\$9.48	\$31.99	\$1.77	\$5.23	Moderate	\$22.56	17.9%
2	\$0.03	\$0.54	\$11.14	\$7.30	\$1.20	Low	\$72.52	57.5%
1	\$0.05	\$3.79	\$9.86	\$1.81	\$6.63	Very Low	\$16.66	13.2%
	1	2	3	4	5	<b>Total</b>	<b>\$126.02</b>	<b>100.0%</b>

<-- Criticality -->

The Township mitigates its exposure to this risk through the planned lifecycle strategies discussed in the next Chapter.

# 6 Life Cycle Management Strategy

## 6.1 Overview

The Township's ability to deliver the levels of service outlined in the Asset Management Plan is impacted in large part by:

- aging infrastructure and the associated need for operations, maintenance, and renewal investments to sustain it
- forecast future population growth and the associated need for additional infrastructure to serve it
- changing functional, legislative and sustainability requirements and the associated need for existing assets to be upgraded to continue to be fit for purpose
- available funds and the associated need for assets to be provided at lowest cost for both current and future customers.

To achieve its objectives, the Township builds new infrastructure assets to meet capacity needs, upgrades assets to meet new functional needs and manages existing assets to meet reliability needs – all with limited funds. Asset lifecycle management strategies are planned activities that enable assets to provide the defined levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost. Asset lifecycle management strategies are typically organized into the categories listed in Table 6-1, and are driven by the levels of services defined in Section 4.

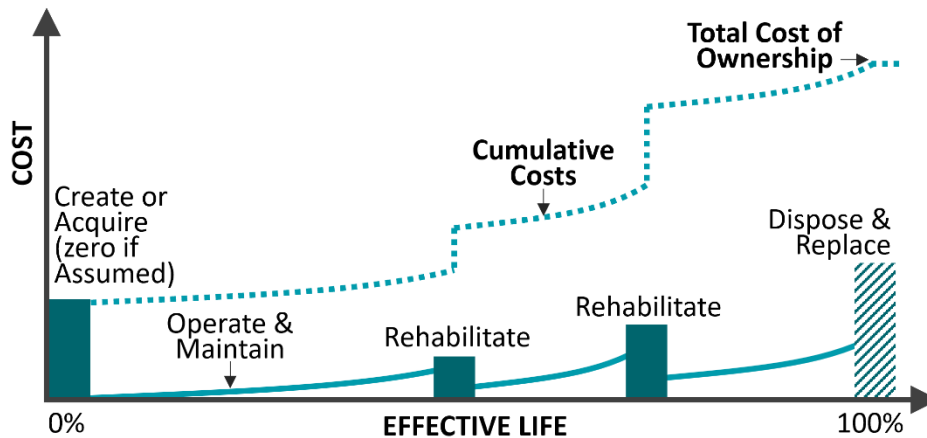
**Table 6-1: Asset Lifecycle Management Categories**

Lifecycle Management Category	Description	Examples of Associated Activities
Operate	Regular activities to provide services	inspect, clean, energy usage
Maintain	Activities to retain asset condition to enable it to provide service for its planned life	repair, replace component
Renew	Activities that return the original service capability of an asset	rehabilitate (minor), rehabilitate (major), replace
Upgrade	Activities to provide a higher level of service capability from an existing asset to achieve better fit for purpose or meet regulatory requirements	update system to be more energy efficient, improve environmental sustainability
Grow	Activities to provide a new asset that did not exist previously or an expansion to an existing asset	acquire new asset, expand existing asset

In addition to the above asset strategies, non-asset solutions are also considered which are actions or policies that can lower costs, lower demands, or also extend asset life (e.g. better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, and education of the public).

The Township assesses the costs of potential lifecycle activities to determine the lowest lifecycle cost strategy to manage each asset type while still meeting levels of service. The total cost of ownership is the sum of lifecycle activity costs to sustain each asset type over the asset lifecycle. (See Figure 6-1 for a conceptual lifecycle cost model.) Sufficient investment of the right type and at the right time minimizes the total cost of ownership for each asset and also mitigates other potential risks such as interruption to service delivery or damage to other nearby infrastructure. Operations, maintenance, and renewal activities are timed to reduce the risk of service failure from deterioration in asset condition and are part of the total cost of ownership.

**Figure 6-1: Conceptual Lifecycle Cost Model**



## 6.2 Life Cycle Management Needs

The Township uses its understanding of risks of not meeting service levels to inform the timing and level of investments needed in infrastructure assets. The Township aims to provide sufficient service capacity to meet demand and manages the upgrade, operations, maintenance, and renewal of assets to meet defined service levels, including legislated and other corporate requirements. This section of the AM Plan outlines the Township’s expansion and upgrade strategies to support capacity and functional service levels, and the Township’s operations, maintenance, and renewal activities to support reliability service levels. Year-by-year expansion, upgrade and renewal actions associated with the Planned Strategy are listed in Appendix C.

### 6.2.1 Growth and Upgrade Needs

As indicated in Section 5.3.1, the Township’s growth plan over the next ten years includes a new and expanded Emsdale Community Centre with the new library. This new facility will be constructed over 2022 and 2023 at a cost of \$4.5 million. With the replacement of the existing facilities estimated at \$2.83 million, it is estimated that the growth and upgrade portion of the project is the remaining \$1.67 million, split between 2022 and 2023.

For road maintenance, the Township requires a packer for the rear of the grader. This purchase is planned for 2022 at a cost of \$30k.

In addition, the need for a fence around the Novar outdoor rink has been identified for 2027 at an expected cost of \$30k (in year 2022 \$). This will be done in conjunction with the renewal of the rink, but is considered an upgrade, because there is currently no fence around the rink.

Moreover, 1.9 km of roads have been identified for upgrade from gravel to surface treated in 2024. These segments consist of:

- Segment 520: Churchill Gardens from Bay Lake Road to Homeland Drive (1.4 km)
- Segment 530: Beach Road from Bay Lake Road to Churchill Gardens (0.5 km)

In 2023, granite will be added to these segments at a cost of \$56k, then in 2024 surface treatment will be applied at a cost of \$90k (all values in 2022 \$). The \$56k is treated as a renewal cost, while the \$90k is considered an upgrade cost.

## 6.2.2 Renewal Needs

Renewal efforts focus on rehabilitation and replacement activities to enable the Township to meet its reliability objectives. The renewal activities included in this AM Plan are forecast to be needed to achieve the proposed levels of service at acceptable levels of risk. Over time, as the Township refines the asset management strategies through tracking of actual condition and actual costs and benefits of the strategies, the Township will improve its understanding of the deterioration rates and the lowest lifecycle cost for each asset type. For renewal projects, the Township considers coordinating multiple activities through project bundling where possible to reduce total costs.

Rehabilitation activities extend the life of an asset and reduce its risk of failure. These activities and associated benefits are deemed more cost effective than allowing the asset to reach its end of life. An example of a rehabilitation activity is concrete repair work on a bridge or culvert, which will improve the condition of the structure and extend its life such that the overall lifecycle cost is minimized.

At a certain point in an asset's lifecycle, it is no longer cost-effective to rehabilitate the asset, and replacement is required. The Township has identified estimated service lives for each of its assets. These replacement intervals are developed to minimize lifecycle costs while considering service levels and the associated risk. Note that due to recent provincial regulation in the recycling industry, the Township is not planning to renew its two recycling compactors.

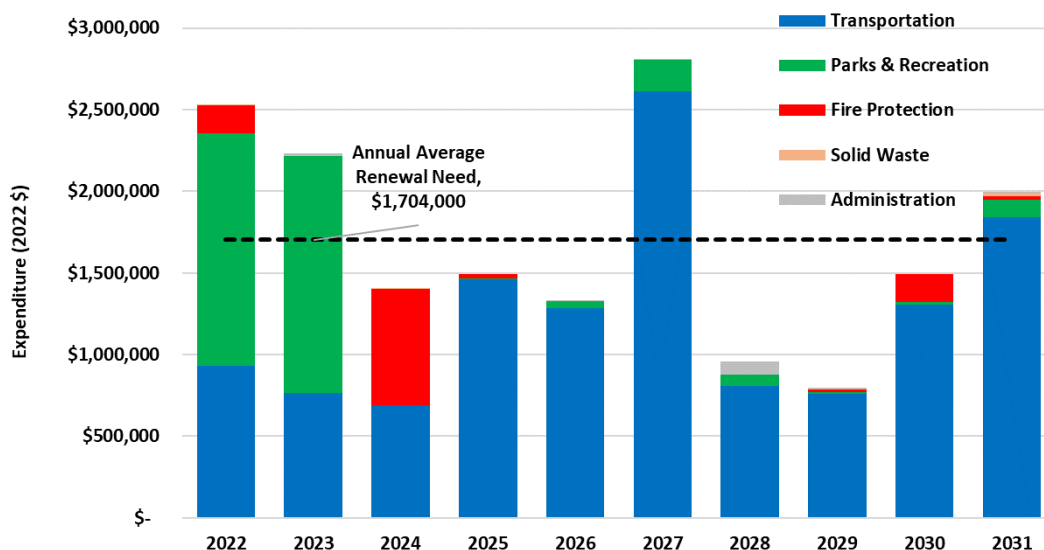
The renewal forecasts consider the asset's current condition or age, the Township's planned rehabilitation and replacement activities, as well as the recommended strategies from the following specific studies:

**Road & Bridge Needs Study (2020)** – This study identified the need and recommended timing for road and bridge improvements, appropriate rehabilitation, reconstruction and/or improvement strategies and costs. For bridges, it is recommended that the next OSIM inspection (scheduled for 2022) specifically review the recommended timing for closing Wooden Bridge and replacement of Emsdale box culvert.

**Public Facilities Structural Review and Assessment (2020)** – This study provided a structural condition assessment of the buildings to determine their condition and provide recommendations for repair and regular maintenance.

Figure 6-2 shows the renewal needs over the next 10 years by Service Area. The average renewal need is estimated at \$1.70 million per year for the period 2022-2031. (This plot does not include costs allocated to expansion and upgrade, such as \$1.67 million of the cost of the new Community Centre and Library in Emsdale.)

**Figure 6-2: Capital Renewal Needs Forecast**



The average annual cost of expansion, upgrade and renewal needs combined is \$1.886 million per year for the period 2022-2031. Table 6-2 summarizes the renewal activities by asset category for each of the next 10 years. Year-by-year upgrade and renewal actions associated with the Planned Strategy are listed in Appendix C.

**Table 6-2: Upgrade and Renewal Needs Forecasts (in 2022 \$, thousands)**

Service	Category	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Annual Average (2022 to 2031)
Transportation	Roads	\$ 536.9	\$ 622.7	\$ 723.9	\$ 1,320.4	\$ 872.4	\$ 1,669.8	\$ 769.9	\$ 703.7	\$ 1,289.7	\$ 515.9	\$ 902.5
	Bridges & Culverts	\$ 355.0					\$ 900.0					\$ 125.5
	Streetlights											\$ 0.0
	Traffic Signs											\$ 0.0
Parks & Recreation	Vehicles	\$ 68.3	\$ 141.7	\$ 55.0	\$ 142.9	\$ 410.5		\$ 36.5	\$ 53.4	\$ 17.9	\$ 1,324.0	\$ 225.0
	Facilities						\$ 41.9					\$ 4.2
	Equipment		\$ 6.8				\$ 216.6	\$ 7.9	\$ 13.0	\$ 10.0	\$ 11.7	\$ 26.6
	Vehicles	\$ 4.4	\$ 30.6		\$ 5.2	\$ 42.9	\$ 4.4	\$ 60.3		\$ 5.2	\$ 94.7	\$ 24.8
Fire Protection	Facilities	\$ 2,258.6	\$ 2,253.7	\$ 2.0			\$ 3.1	\$ 2.0				\$ 451.9
	Equipment	\$ 172.2		\$ 8.9	\$ 21.3				\$ 14.4	\$ 169.7	\$ 4.1	\$ 39.1
	Vehicles			\$ 700.0	\$ 5.7						\$ 18.6	\$ 72.4
	Facilities											\$ 0.0
Solid Waste	Equipment			\$ 3.6					\$ 6.9			\$ 1.0
	Vehicles										\$ 23.4	\$ 2.3
	Facilities	\$ 1.6										\$ 0.2
Administration	Equipment		\$ 2.1			\$ 2.1		\$ 28.0	\$ 2.1		\$ 5.1	\$ 3.9
	Vehicles							\$ 53.7				\$ 5.4
	Facilities		\$ 10.0				\$ 4.2					\$ 1.4
<b>Total</b>		<b>\$ 3,397.0</b>	<b>\$ 3,067.7</b>	<b>\$ 1,493.4</b>	<b>\$ 1,495.5</b>	<b>\$ 1,328.0</b>	<b>\$ 2,840.0</b>	<b>\$ 958.3</b>	<b>\$ 793.6</b>	<b>\$ 1,492.5</b>	<b>\$ 1,997.5</b>	<b>\$ 1,886.3</b>

### 6.2.3 Operations and Maintenance Needs

Along with timely renewal of assets, operations, and maintenance (O&M) work directly enables the Township to meet state of good repair service levels (percentage of assets in fair or better condition) to support the reliable service delivery objective. The distinction between renewals (capital programs) and operations and maintenance (operating expenses) is defined by the Township's accounting policies and standard operating procedures.

Operations and maintenance activities ensure the asset continues to deliver defined levels of services, while renewal activities discussed in Section 6.2.2 extend the useful life of the asset.

Renewals, operations, and maintenance are strongly linked; operations and maintenance strategies can accelerate or delay the need for renewals, and if renewals are deferred, operations and maintenance needs will often increase to ensure that assets are kept in a state of good repair.

Table 6-3 summarizes the Township's operations and maintenance activities, by service area.

**Table 6-3: Operations and Maintenance Needs Activities**

Asset Type	Operations	Maintenance
<b>Transportation</b>		
<b>Roads - Paved + Surface Treated</b>	<ul style="list-style-type: none"> <li>· Winter control- per MMS</li> <li>· Road Patrol – per MMS</li> <li>· Sweeping</li> <li>· Roadside mowing – frequency</li> <li>· Brushing – remove trees &amp; branches</li> </ul>	<ul style="list-style-type: none"> <li>· Pot-hole filling as-needed/complaint</li> <li>· Ditching (not associated with a re-surface)</li> </ul>
<b>Roads – Gravel</b>	<ul style="list-style-type: none"> <li>· Winter control</li> <li>· Dust control - calcium</li> <li>· Roadside mowing – frequency</li> <li>· Brushing – remove trees &amp; branches</li> </ul>	<ul style="list-style-type: none"> <li>· Grading - Add maintenance gravel</li> <li>· Ditching (not associated with a re-gravel)</li> </ul>
<b>Bridges</b>	<ul style="list-style-type: none"> <li>· Brushing</li> <li>· Sweep</li> </ul>	<ul style="list-style-type: none"> <li>· Inspection every 2 years</li> <li>· Maintenance/repair as needed</li> </ul>
<b>Culverts</b>	<ul style="list-style-type: none"> <li>· Brushing</li> <li>· Sweep</li> <li>· Clear inlet &amp; outlet</li> </ul>	<ul style="list-style-type: none"> <li>· Inspection every 2 years</li> <li>· Maintenance/repair as needed</li> </ul>
<b>Traffic Signs</b>		<ul style="list-style-type: none"> <li>· Retro reflectivity inspection annual (Road Patrol catches other issues)</li> <li>· Repair and replacement as needed</li> </ul>
<b>Streetlights</b>	<ul style="list-style-type: none"> <li>· (Road Patrol catches other issues)</li> </ul>	<ul style="list-style-type: none"> <li>· Repair as needed</li> </ul>
<b>Vehicles &amp; Maintenance Vehicles</b>	<ul style="list-style-type: none"> <li>· Fuel</li> </ul>	<ul style="list-style-type: none"> <li>· PM activities</li> </ul>
<b>PW Building</b>	<ul style="list-style-type: none"> <li>· Propane, Electricity, Water, Internet</li> </ul>	<ul style="list-style-type: none"> <li>· Annual inspection, Repair as needed</li> </ul>
<b>Coverall, Sand Shed</b>		<ul style="list-style-type: none"> <li>· Inspection, Repair as needed</li> </ul>
<b>Parks &amp; Recreation</b>		
<b>Play Structures</b>	<ul style="list-style-type: none"> <li>· Inspect monthly</li> </ul>	<ul style="list-style-type: none"> <li>· Repair as needed</li> </ul>
<b>Open spaces</b>	<ul style="list-style-type: none"> <li>· Grass cutting</li> <li>· Litter pickup</li> <li>· Garbage bin emptying</li> </ul>	
<b>Sports fields</b>	<ul style="list-style-type: none"> <li>· Same as open spaces</li> </ul>	

Asset Type	Operations	Maintenance
	· Groomed in spring	
<b>Gazebo</b>		· Condition assessment
<b>Picnic Tables</b>	Put wooden ones into storage in the fall	· Inspection, repair
<b>Picnic Shelter</b>		· Condition assessment
<b>Vehicles</b>	· Fuel	· PM activities
<b>Community Centres</b>	· Natural Gas/Propane, Electricity, Water, Internet	· Building condition assessment every 5 years · Repair as needed
<b>Fire Services</b>		
<b>Fire Equipment</b>	· Test hoses, extricator annually	· Inspect · Repair as needed · Replacements of radios, camera with heat seeker
<b>Fire Vehicles</b>	· Fuel · Test SCBA and pumps, ladders (annual)	· PM activities
<b>Fire Station &amp; Garage</b>	· Propane, Electricity, Water, Internet	· Repair as needed · Building condition assessment every 5 years
<b>Solid Waste</b>		
<b>Compactors</b>		· Maintenance as required
<b>Skid Steer</b>	· Fuel	· PM activities
<b>Transfer Station</b>	· Propane, Electricity, Water, Internet	· Repair as needed · Building condition assessment
<b>Monitoring Well</b>	· Tested quarterly	· Maintenance as required
<b>Administration</b>		
<b>Software</b>	· Annual support	· Annual upgrade
<b>Defibrillators</b>	· Monthly testing	· Maintenance as required
<b>Vehicle</b>	· Fuel	· PM activities
<b>Municipal Building</b>	· Propane, Electricity, Water, Internet	· Repair as needed · Building condition assessment

Table 6-4 summarizes the Township's historical operations and maintenance expenditures as well as the forecasted average expenditures for the period 2022-2031. Future operations and maintenance costs are estimated at \$3.568 million per year and \$0.779 million per year, respectively. These expenditures include all wages, including the proportion of wages that would be allocated for staff time on capital construction projects. The forecasts are based on the historical costs of operations and maintenance activities, with the addition of an FTE and additional maintenance costs anticipated at the new and expanded Emsdale Community Centre.

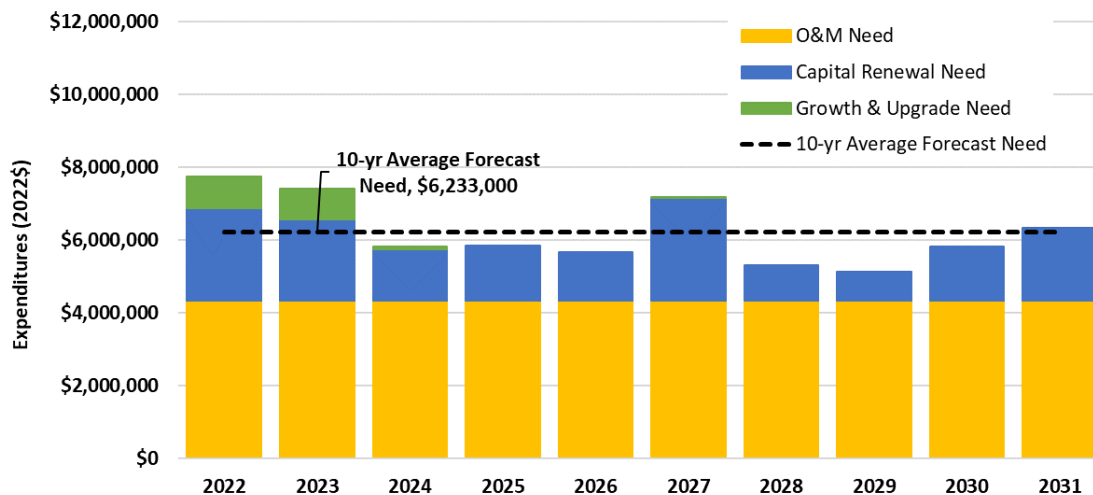
**Table 6-4: Operations and Maintenance Needs History and Forecasts (\$ thousands)**

Service	Operations					Maintenance				
	2018	2019	2020	2021	2022 to 2031	2018	2019	2020	2021	2022 to 2031
	Actuals			Budget	Forecast (per yr)	Actuals			Budget	Forecast (per yr)
Transportation	\$ 381.9	\$ 357.2	\$ 315.3	\$ 378.4	\$ 381.9	\$ 518.2	\$ 501.2	\$ 552.3	\$ 624.1	\$ 624.1
Parks & Recreation	\$ 226.2	\$ 268.5	\$ 252.1	\$ 307.7	\$ 360.0	\$ 37.1	\$ 37.9	\$ 27.7	\$ 26.7	\$ 45.0
Fire	\$ 157.1	\$ 164.6	\$ 186.1	\$ 244.0	\$ 244.0	\$ 16.7	\$ 23.4	\$ 23.3	\$ 24.0	\$ 24.0
Solid Waste	\$ 349.2	\$ 364.8	\$ 335.0	\$ 365.3	\$ 365.3	\$ 3.4	\$ 4.7	\$ 1.1	\$ 8.5	\$ 8.5
Administration	\$ 1,863.7	\$ 1,958.3	\$ 2,068.2	\$ 2,217.2	\$ 2,217.2	\$ 34.1	\$ 43.9	\$ 58.2	\$ 77.0	\$ 77.0
<b>Total</b>	<b>\$ 2,978.1</b>	<b>\$ 3,113.3</b>	<b>\$ 3,156.6</b>	<b>\$ 3,512.6</b>	<b>\$ 3,568.4</b>	<b>\$ 609.5</b>	<b>\$ 611.1</b>	<b>\$ 662.6</b>	<b>\$ 760.3</b>	<b>\$ 778.6</b>

### 6.3 Summary of Planned Strategy (Asset Lifecycle Needs)

The Township's total forecasted needs based on its planned strategy for managing its assets is estimated at \$62.33 million for the period 2022-2031 for an average of \$6.23 million per year. Figure 6-3 provides the total renewal, operations and maintenance, and growth and upgrade forecasted expenditures for the Township over the next 10 years. Year-by-year expansion, upgrade and renewal actions associated with the Planned Strategy are listed in Appendix C.

**Figure 6-3: Total 10-Year Expenditures Forecast, 2022 to 2031**



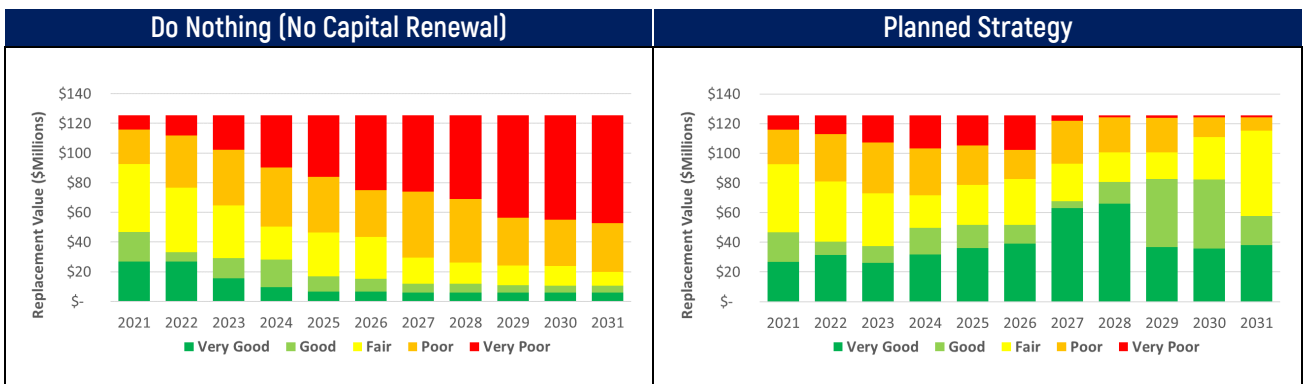
The large capital expenditures in the first two years are mainly due to the new Emsdale Community Centre and Library and the 'now' needs identified in the Roads Needs Study.

## 6.4 Planned Strategy and Proposed LOS

### 6.4.1 Overall Impact of Planned Strategy

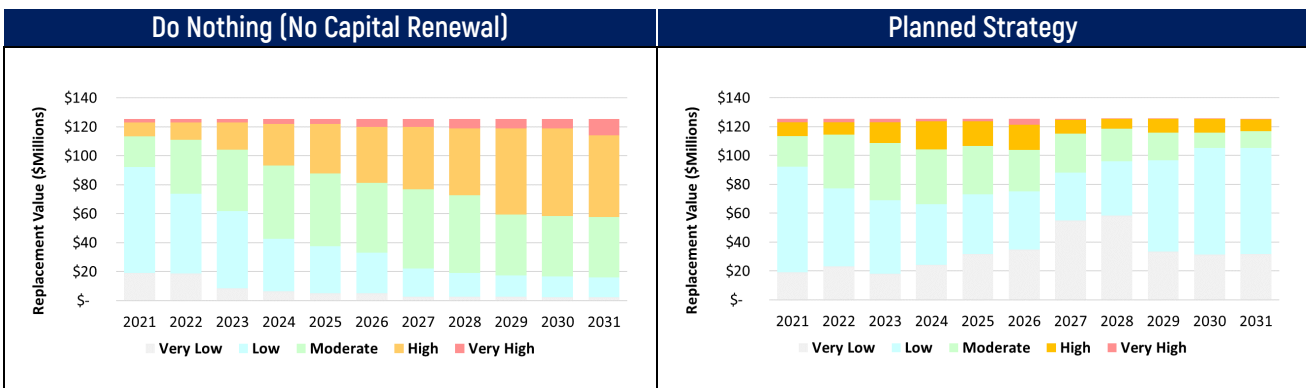
The planned strategy associated with the average \$6.233 million per year in expenditures supports the Township's ability to achieve its service levels while balancing risk and minimizing lifecycle costs. If the Township does not invest in renewing its infrastructure, there is a significant deterioration in asset condition over time. The Planned Strategy ensures that assets are maintained and renewed in a state of good repair, as shown in Figure 6-4.

**Figure 6-4: Asset Condition Forecast Comparison – Do Nothing versus Planned Strategy**



The planned strategy also has a significant impact on managing risk. If the Township does not invest in renewal of its assets, there is a significant risk exposure to asset failure on factors such as health and safety and service delivery. The Planned Strategy mitigates very high risks and results in lower risk exposure compared to an increasing risk profile if the Township did not perform any capital renewal activities, as shown in Figure 6-5.

**Figure 6-5 Asset Risk Forecast Comparison – Do Nothing versus Planned Strategy**



### 6.4.2 Impact of Planned Strategy on LOS

The Township's expansion and upgrade strategies support capacity and functional service levels, and its operations, maintenance, and renewal activities support reliability service levels over the next ten years. Table 6-5 details the impact of the Planned Strategy (\$6.233 million on average per year) on the **reliability** service levels from Section 4 and demonstrates how the proposed LOS compare to the target LOS based on the expenditures from 2022 to 2031 under the Township's Planned Strategy. Green cells indicate that the target LOS is met in that given year of the 10-year forecast. A natural increase and decrease in performance year over year is expected as assets deteriorate in condition until the planned rehabilitation or replacement occurs. For some measures, a limited number of assets results in significant changes in reported performance each year. For example, there is only one Administration vehicle so the percentage of assets in fair or better condition is either 100% or 0% each year. If the performance is

0%, this simply represents that the asset is in poor condition and will soon be replaced once it reaches very poor condition at the end of its service life.

In Table 6-5, only the pavement condition index for asphalt roads does not reach the target LOS of 80 in any of the ten years. However, the proposed pavement condition index remains above 70 throughout the forecast.

The affordability of the proposed service levels in Table 6-5 is discussed in Section 7.

**Table 6-5: Proposed LOS over Forecast Period**

Reliability Technical Levels of Service (TLOS) Measure	Asset Type	Performance											
		Target	Current	Proposed									
				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Transportation</b>													
Average bridge condition index [0.Reg. 588]	Bridges	70	66.8	70.2	68.9	67.7	66.4	65.1	63.8	62.5	61.1	59.8	58.5
	Structural Culverts	70	54.3	60.7	59.5	58.4	57.3	56.2	70.8	69.8	68.8	67.8	66.9
The average pavement condition index [0.Reg. 588]	Asphalt roads	80	79.0	77.0	75.8	74.7	73.6	74.4	75.3	74.2	73.1	72.7	71.7
	Surface treated roads	80	73.8	70.8	68.7	75.4	78.0	77.7	75.2	74.7	71.6	80.4	82.1
	Unpaved roads	80	75.3	68.7	65.8	63.3	66.1	65.9	85.4	87.5	85.0	81.8	78.2
% in fair or better condition	Bridges & Culverts	90%	82.1%	89.4%	89.4%	81.0%	81.0%	81.0%	91.6%	91.6%	91.6%	91.6%	84.9%
	MMS Class 4 roads	90%	91.8%	91.8%	91.8%	50.9%	59.2%	59.2%	57.7%	73.1%	73.1%	73.1%	73.1%
	MMS Class 5 roads	80%	70.7%	59.7%	51.0%	51.5%	60.2%	63.0%	70.0%	77.0%	76.8%	88.3%	92.6%
	MMS Class 6 roads	70%	63.3%	38.3%	28.2%	31.6%	33.5%	45.5%	69.1%	73.5%	80.9%	92.7%	98.2%
	Vehicles	90%	100.0%	98.6%	99.3%	99.3%	99.6%	93.3%	88.5%	86.1%	43.0%	43.3%	82.4%
Average facility condition index	Facilities	<5%	0.0%	0.0%	0.0%	1.6%	1.6%	1.6%	1.6%	0.0%	0.0%	0.0%	0.0%
<b>Parks &amp; Recreation</b>													
% in fair or better condition	Equipment	90%	53.4%	53.4%	55.0%	55.0%	52.0%	47.5%	90.3%	77.3%	66.8%	60.7%	60.9%
	Vehicles	90%	97.5%	82.5%	100.0%	72.5%	75.5%	80.5%	65.5%	100.0%	67.5%	45.9%	91.5%

Reliability Technical Levels of Service (TLOS) Measure	Asset Type	Performance											
		Target	Current	Proposed									
				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Average facility condition index	Facilities	<5%	57.4%	57.4%	28.6%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
<b>Fire Protection</b>													
% in fair or better condition	Equipment	90%	39.9%	91.5%	90.2%	91.2%	94.9%	94.0%	89.8%	82.1%	83.7%	86.1%	88.6%
	Vehicles	90%	100.0%	100.0%	99.0%	99.0%	100.0%	100.0%	100.0%	83.7%	80.3%	80.3%	83.7%
Average facility condition index	Facilities	<5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Solid Waste</b>													
% in fair or better condition	Vehicles	90%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Average facility condition index	Facilities	<5%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Administration</b>													
% in fair or better condition	Vehicles	90%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
Average facility condition index	Facilities	<5%	0.4%	0.4%	0.4%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%

# 7 Financing Strategy

## 7.1 Overview

The financial strategy is informed by the preceding sections of the Asset Management Plan: the state or condition of the assets, the proposed levels of service, the risks to service delivery, and the lifecycle activities needed to reduce the risks to service delivery to acceptable levels. The Financing strategy considers how the Township will fund the planned asset management actions to meet the proposed service levels.

A global leader in asset management, the Local Government Association of Australia defines financial sustainability within the municipal government context as "... a government's ability to manage its finances so it can meet its spending commitments, both now and in the future. It ensures future generations of taxpayers do not face an unmanageable bill for government services provided to the current generation".

A municipality is in a financially sustainable position if it:

- Provides a level of service commensurate with willingness and ability to pay
- Can adjust service levels in response to changes in economic conditions or grants
- Can adjust its implementation plans in response to changes in the rate of growth
- Has sufficient reserves and/or debt capacity to replace infrastructure when it needs to be replaced to keep its infrastructure in a state of good repair.

The key challenges to financial sustainability are:

- A discrepancy between level of service decisions and fiscal capacity
- The future cost of infrastructure investments
- Unforeseen impacts to revenue

Per O.Reg. 588/17, this section of the AM Plan identifies the annual funding projected to be available to undertake the planned lifecycle activities and discusses strategies to address potential funding shortfalls.

## 7.2 Available Funding Amounts and Sources

Through the Township's annual budget process, capital project and operating activity expenditure information is gathered from service areas, including investment needs, trends, and priorities to enable preparation of the capital and annual operating plans. Once the expenditure plans are finalized, a financing plan is developed which includes several key sources of funding as outlined in the table below.

**Table 7-1: Key Sources of Funding and Financing**

Funding Source	Description
Property Tax	• Residential and commercial property owners pay an annual tax to the Township
Debt	• Long term borrowing, to be paid for by future taxpayers
Canada Community Building Fund (formerly Federal Gas Tax)	• A long-term grant agreement with the Association of Municipalities of Ontario (AMO), that provides a portion of the Federal gas tax revenues to municipalities for revitalization of infrastructure that achieves positive environmental results
Grants	• Project specific grants / subsidies

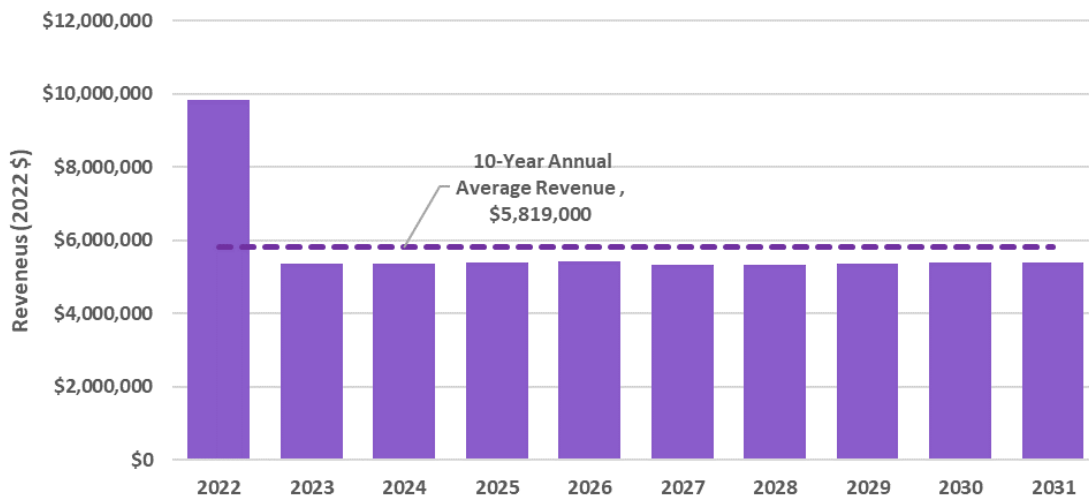
Funding Source	Description
User Fees and Charges	<ul style="list-style-type: none"> <li>Funds collected for the use of Township services or infrastructure. For example, tipping fees charged to residents at the transfer station.</li> </ul>

In addition to the above sources, capital reserves are established as a source of pay-as-you-go funding for the Township's capital program. Funding for these reserves is obtained through annual contributions. These annual reserve contributions sustain reserve balances at appropriate levels to address infrastructure replacement costs in the future and inherent uncertainties in capital funding needs. Reserve contributions are evaluated annually to ensure adequate funds are raised to meet future capital requirements and to smooth out the impact on the annual operating budget.

The Township minimizes impacts on residents through maximizing other revenue sources such as grants. The \$4.5 million new Emsdale Community Centre and Library includes \$2.5 million in federal and provincial grants. The remaining amount is funded through reserves and debt. In addition, the Township will receive \$112,257 in provincial funding for road renewal for each of the next 5 years (2022-2026).

The projected 10-year revenue for the Township is shown in Figure 7-1, including the additional revenue in 2022 for the Emsdale Community Centre and Library and for road renewal. A 0.6% annual growth rate, based on the increase in the number of households in the Township from 2017 to 2021, is assumed in the tax portion of the revenue forecast. The average annual revenue from 2022 to 2031 is estimated to be \$5.819 million.

**Figure 7-1: Total 10-Year Funding Forecast, 2022 to 2031**

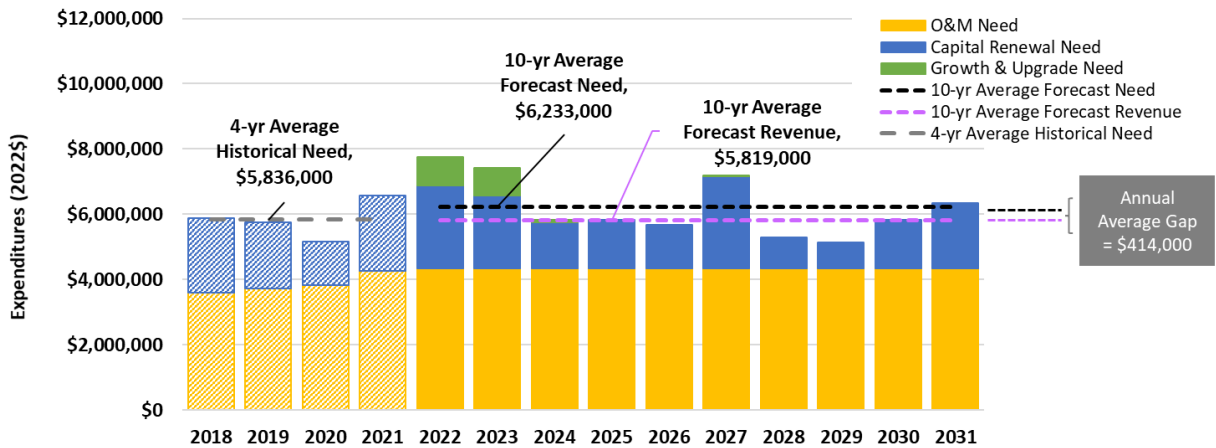


### 7.3 Financial Sustainability

This section compares the planned funding (Section 7.2) against the forecast needs for the planned lifecycle activities (Section 6.3 summary of growth and upgrade, renewal, and operations and maintenance) to determine if there is a funding shortfall to meet the proposed service levels.

Figure 7-2 shows the forecasted average annual need over the next ten years of **\$6.233 million per year** (dashed black line) and the average annual funding of **\$5.819 million per year** (dashed purple line). This results in an estimated average annual funding gap of **\$414,000 per year** over the next ten years.

**Figure 7-2: Funding Gap**



The \$414,000 annual funding gap is 7.1% of the annual average revenue and indicates that the Township may require some use of reserves or other grants. The gap may also be reduced if the number of households in the Township grows at a rate greater than the assumed 0.6% growth rate, which would result in higher than forecasted tax revenues. If funding is not increased, then the Township may consider deferring one or more capital projects on lower risk assets. Table 7-2 summarizes the risks associated with implementation of this AM Plan and the strategies in response to those risks.

**Table 7-2: AM Plan Risk Mitigation Summary**

Service Attributes	Lifecycle Activity	Identified AM Lifecycle Risks	Strategies to Manage Risk
Capacity, Use and Function	Expansion and upgrade	The costs for upgrading gravel roads to hard surface roads is not funded based on the forecasted revenue available. Further upgrade of gravel roads first requires consideration of traffic levels and their impact on maintenance costs of gravel roads.	Re-assess the need for gravel road conversion after additional studies and public consultation.
	Renewal	With a \$414,000 per year funding gap (\$4.14 million total gap over 10 years), a project, or several smaller renewal projects may need to be deferred.	Continue to use risk-based prioritization to address the most critical needs in years with limited funds. Reserves and other grants may also be considered to resolve the funding gap.
Reliability	Operations and maintenance	An additional FTE for the new Community Centre is included in the needs forecast. It is assumed that this additional FTE will be required to provide the proposed service levels expected at the new facility. Without additional staffing, the Township may not be able to fully utilize the potential services made possible by the new and upgraded facility.	Refer to strategies above to mitigate funding gap.

As indicated in Section 1.5, the landfill is not included in this AM Plan and future needs will further increase when considering the lifecycle costs of the landfill. For some road and bridge assets, maintenance and renewal costs are shared with neighbouring municipalities and may also impact the expected forecast.

# 8 AM Plan Monitoring & Improvement

## 8.1 Overview

Development of AM Plans is an iterative process that includes improving data, processes, systems, staff skills, and organizational culture over time. This section provides an overview of the compliance of this AM Plan with Ontario Regulation 588/17 for proposed levels of service (year 2025 requirements) and recommends improvements to the Township’s asset management practices.

**Table 8-1: O.Reg. 588/17 Compliance Status and Other Opportunities**

Plan Section	O.Reg. 588/17 Compliance (Proposed LOS)	Other Opportunities
<b>State of Local Infrastructure</b>	<p>(Yes) For each asset category, the AM Plan provides a summary of the assets, the replacement cost of the assets, the average age of the assets, the condition of the assets, and the approach to assessing condition of assets.</p>	<p>Continue to improve knowledge of asset replacement costs and current condition of the assets. Target efforts on highest risk assets and assets with unknown condition.</p> <p>Specific improvements:</p> <ul style="list-style-type: none"> <li>• Include landfill in next AM Plan.</li> <li>• Record installation year for signs as they are replaced</li> </ul>
<b>Levels of Service</b>	<p>(Yes) For each asset category, the AM Plan reports the current LOS performance. For core assets, the 2022 AM provides the qualitative community descriptions and technical metrics as required by O.Reg. 588/17, and the current performance. For non-core assets, qualitative descriptions and technical metrics established by the Township are discussed.</p> <p>For each asset category, the AM Plan provides the LOS that the Township proposes to provide for the next 10 years. The proposed LOS are appropriate based on an assessment of: the options for the proposed LOS and the risks associated with those options to the long-term sustainability of the Township, how the proposed LOS differ from the current LOS, whether the proposed LOS are achievable, and the Township’s ability to afford the proposed LOS.</p>	<p>Continue to review levels of service metrics that support lifecycle asset planning activities for specific asset types. Adjust or develop new measures as required.</p> <p>Specific improvements:</p> <ul style="list-style-type: none"> <li>• Improve description of gravel road rating scale with images at different condition grades.</li> <li>• Record and categorize complaints (e.g. for solid waste: fees, operating hours, wait time complaints)</li> <li>• Develop forecasts of 100-year and 5-year flood impacts. These are LOS metrics required by O.Reg. 588/17 for stormwater and drainage infrastructure.</li> </ul>

Plan Section	O.Reg. 588/17 Compliance (Proposed LOS)	Other Opportunities
<b>Asset Management Strategy</b>	<p>(Yes) For each asset category, the AM Plan provides the lowest cost lifecycle activities, separated into capital and significant operating expenditures, which would need to be undertaken to provide the proposed LOS for each of the next 10 years. The strategy is based on an assessment of:</p> <ul style="list-style-type: none"> <li>• currently available data,</li> <li>• the full lifecycle of the assets,</li> <li>• and the associated risks mitigated by the planned lifecycle strategies.</li> </ul> <p>(Yes) The AM Plan provides the population forecasts based on historical growth and describes how this growth has been considered in growth projects (the new Emsdale Community Centre).</p>	<p>Continue to optimize the lifecycle activities by searching out and testing various operations, maintenance and renewal activity and timing options, and then evaluating the benefits against the costs of each option over time to determine the lowest cost option for the required benefits.</p> <ul style="list-style-type: none"> <li>• For bridges, it is recommended that the next OSIM inspection (scheduled for 2022) specifically review the recommended timing for closing Wooden Bridge and replacement of Emsdale box culvert.</li> <li>• Facility Condition Index in the later years of the forecast can be estimated more accurately if the renewal needs beyond 10 years are included in the building condition assessments (for example, the FCI in year 10 of the forecast depends on the renewal needs anticipated in years 11 to 13).</li> <li>• A more granular building breakdown will assist in identifying longer term needs and also enable more accurate reporting of asset condition and shorter-term facility needs.</li> </ul>
<b>Financing Plan</b>	<p>(Yes) For each asset category, the AM Plan provides the financial strategy that sets out the following for the 10-year period:</p> <ul style="list-style-type: none"> <li>• The annual funding projected to be available to undertake lifecycle activities and the options examined to maximize the funding projected to be available.</li> <li>• For any funding shortfalls, which lifecycle activities will be funded and, for those not funded, the associated risks.</li> </ul>	<p>Improve forecasting of expected revenues to increase accuracy of funding gap analysis.</p> <p>Continue to maximize funding sources such as grants to mitigate funding shortfalls.</p>

## **8.2 Monitoring and Review Procedures**

The AM Plan will be updated every five years to ensure it reports an updated snapshot of the Township's asset portfolio and its associated value, age, and condition. It will ensure that the Township has an updated 10-year outlook including the proposed service levels, costs of the associated lifecycle strategies and an assessment of any funding shortfalls.

Per O.Reg. 588/17, the Township will conduct an annual review of its asset management progress in implementing this AM Plan, including the year-by-year actions of the Planned Strategy, shown in Appendix C. The annual review will discuss strategies to address any factors impeding implementation of the Planned Strategy.

# Appendix A – Regulatory Compliance

The following chart represents the Township’s position with respect to the asset management requirements identified in O.Reg. 588/17 for Core and Non-Core Assets for July 1, 2025 (proposed Levels of Service).

**Table A-1: Regulatory Compliance**

Plan Section	O.Reg. 588/17 Compliance Practices (Proposed LOS)	Transportation Service assets, including Roads & Bridges	Parks & Recreation Service assets	Fire Protection Service assets	Solid Waste Service assets	Municipal Administration Service assets
<b>State of Local Infrastructure</b>	For each asset category, the AM Plan provides					
	<ul style="list-style-type: none"> <li>a summary of the assets,</li> </ul>	Section 2.2	Section 2.3	Section 2.4	Section 2.5	Section 2.6
	<ul style="list-style-type: none"> <li>the replacement cost of the assets,</li> </ul>	Section 2.2	Section 2.3	Section 2.4	Section 2.5	Section 2.6
	<ul style="list-style-type: none"> <li>the average age of the assets,</li> </ul>	Section 3.2	Section 3.3	Section 3.4	Section 3.5	Section 3.6
	<ul style="list-style-type: none"> <li>the condition of the assets,</li> </ul>	Section 3.2	Section 3.3	Section 3.4	Section 3.5	Section 3.6
	<ul style="list-style-type: none"> <li>the approach to assessing condition of assets.</li> </ul>	Section 3.2	Section 3.3	Section 3.4	Section 3.5	Section 3.6
<b>Levels of Service</b>	For each asset category, the AM Plan reports the current LOS performance and outlines the proposed service levels.	Section 4.2 & Section 6.4	Section 4.3 & Section 6.4	Section 4.4 & Section 6.4	Section 4.5 & Section 6.4	Section 4.6 & Section 6.4
<b>Asset Management Strategy</b>	For each asset category, the AM Plan provides the lifecycle activities that would need to be undertaken to provide the proposed LOS for each of the next 10 years. A discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.	Section 6.2 & Section 6.4	Section 6.2 & Section 6.4	Section 6.2 & Section 6.4	Section 6.2 & Section 6.4	Section 6.2 & Section 6.4
<b>Financial Strategy</b>	The annual funding projected to be available to undertake lifecycle activities and the options examined to maximize the funding projected to be available. For any funding shortfalls, which lifecycle activities	Section 7.2 & Section 7.3	Section 7.2 & Section 7.3	Section 7.2 & Section 7.3	Section 7.2 & Section 7.3	Section 7.2 & Section 7.3

Plan Section	O.Reg. 588/17 Compliance Practices (Proposed LOS)	Transportation Service assets, including Roads & Bridges	Parks & Recreation Service assets	Fire Protection Service assets	Solid Waste Service assets	Municipal Administration Service assets
	will be funded and, for those not funded, the risks of not undertaking them.					
Background Information	The AM Plan indicates how the background information and reports upon which the state of infrastructure section is based will be made available to the public.	Section 1.2	Section 1.2	Section 1.2	Section 1.2	Section 1.2

# Appendix B – Public Survey

## B.1 Introduction

A survey was conducted to determine the public's satisfaction with current service levels, and to help establish service level targets. The survey focused on services and asset types where the Township has discretion over service levels, specifically:

- Roads
- Parks & Outdoor Facilities
- Indoor Recreation Facilities
- Solid Waste Service

In contrast, the survey avoided topics where service levels are primarily defined by safety requirements or regulation, such as bridges, streetlights, traffic signs, fire services. The survey also avoided questions related to internal service assets with which the public does not interact, such as technology assets and maintenance vehicles.

## B.2 Methodology

The survey was developed and conducted as follows:

### 1. Survey Topics Defined

Survey topics were defined with input from staff on the Township's current concerns, based on public complaints and comments, discussions at Council meetings and general discourse in the local media and on social media.

### 2. Questions Developed

Questions were developed to:

- obtain basic information on the respondent's relationship with the Township
- determine which types of assets they use within each of the service area topics
- determine the respondent's satisfaction level with each service
- determine what the respondent would like improved about each service
- determine whether the respondent is supportive of increased taxes or user fees to support the recommended improvements

All questions were multiple choice, but a free form text box allowed respondents to add their own ideas for improvement needs.

### 3. Survey Posted and Advertised

The survey was posted on Google forms for three weeks from October 7 to November 3, 2021, and was advertised on the Township's social media (Facebook) account.

### 4. Survey Closed and Analysed

The survey was closed and results were analysed and reported for the AM Plan.

## B.3 Survey Questions

The survey content is shown below. Square bullets indicate that multiple selections are allowed for the question, while round bullets (radio buttons) indicate that only one selection is allowed for the question.

The Township of Perry is updating its Asset Management (AM) Plan, and would like your input to ensure that services meet your expectations for performance and value. The AM Plan will define the Township's plan for managing its roads, buildings and vehicles to meet established service levels, at the lowest life cycle cost, within an acceptable threshold of risk. Your input will help the Township direct its effort and resources to what matters most.

### About the respondent

1. First, please tell us a little about yourself. Please select all options that apply to you:

- I am a year-round resident of Perry.
- I am a seasonal resident of Perry.
- I rent my property in Perry.
- I own my property in Perry.
- I own a business in Perry.

### Roads

2. Is your property located on a gravel road or a hard-surface road (paved or surface treated)? [Select one option]

- Gravel road
- Hard-surface road (paved or surface treated)

3. How satisfied are you with the quality of your road? [Select one option]

- Very Satisfied
- Satisfied
- No opinion
- Dissatisfied
- Very Dissatisfied

4. What aspects of your road would you improve? [Select up to 3]

- Cracks
- Rutting
- Uncomfortable ride surface
- Too much dust
- Flooding / washouts
- Other \_\_\_\_\_

### Outdoor Recreation

5. Which of the Township's outdoor recreation facilities have you and your family used in the past 12 months? [Select all that apply]

- Parks / greenspace
- Ball fields

- Outdoor skating rinks
- Play structure
- Emsdale Gazebo
- Beaches
- Boat Launches
- Other \_\_\_\_\_

6. How satisfied are you with the Township's outdoor recreation facilities? [Select one option]

- Very Satisfied
- Satisfied
- No opinion
- Dissatisfied
- Very Dissatisfied

7. What aspects of outdoor recreation would you improve? [Select up to 3]

- Capacity – too crowded
- Cleanliness - garbage and litter
- Condition – facilities are in poor condition, require maintenance
- Variety of facilities (e.g. need more different types of sports fields and courts)
- Wait time for boat launch too long
- Not enough parking
- Other \_\_\_\_\_

### **Indoor Recreation and Culture**

8. Which of the Township's indoor recreation and culture facilities have you and your family used in the past 12 months? [Select all that apply]

- Emsdale Community Centre
- Novar Community Centre
- Township of Perry Public Library
- Other \_\_\_\_\_

9. How satisfied are you with the Township's indoor recreation and culture facilities? [Select one option]

- Very Satisfied
- Satisfied
- No opinion
- Dissatisfied
- Very Dissatisfied

10. What aspects of indoor recreation and culture would you improve? [Select up to 3]

- Capacity – too crowded, not available for booking
- Cleanliness - garbage and litter
- Condition – facility is in poor condition, requires maintenance
- Variety of types of spaces
- Not enough parking
- Other \_\_\_\_\_

### **Solid Waste Management**

12. How satisfied are you with the Township's Solid Waste Transfer Station and Recycling Centre? [Select one option]

- Very Satisfied
- Satisfied
- No opinion
- Dissatisfied
- Very Dissatisfied

13. What aspects of outdoor recreation would you improve? [Select up to 3]

- Wait time for tipping is too long
- Hours of operation are inconvenient
- Household bag limit is too low
- Tipping fees are too high
- Other \_\_\_\_\_

### **General**

14. Would you be open to increasing property taxes or user fees to support these improvements? [Select all that apply]

- I would support higher property taxes to support service improvements.
- I would support higher user fees to support service improvements (e.g. tipping fees, boat launch fees, beach entry fees)
- I don't support higher taxes or fees. I am not willing to pay for these improvements.

Thank you for your input!

It will be incorporated into the Asset Management Plan, which is scheduled to be released in February 2022. For more information on the AM Plan project, please contact Kim Seguin, Treasurer, Township of Perry, at 705-636-5941.

## B.4 Results

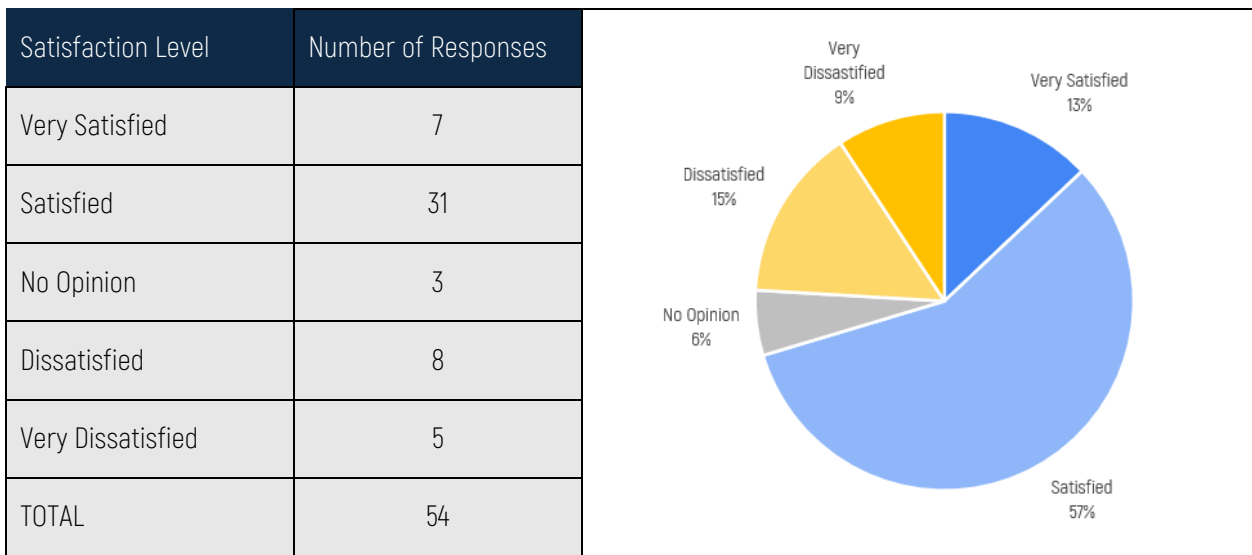
### B.4.1 ABOUT THE RESPONDENTS

Fifty-four (54) responses were received. Of those,

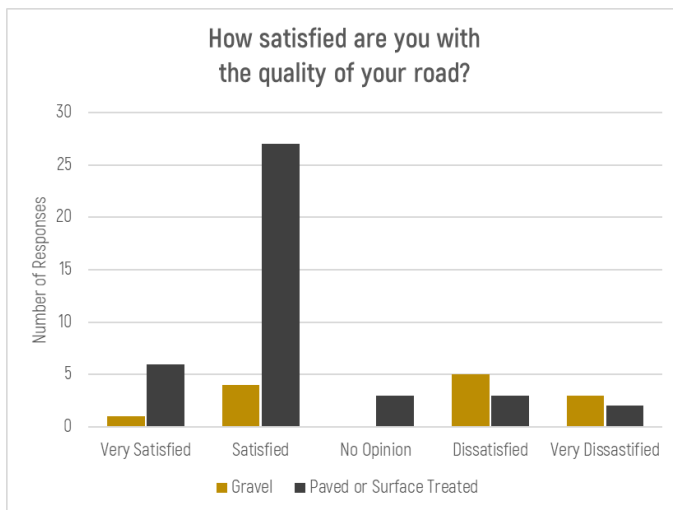
- 48 identified themselves as year-round residents and 4 as seasonal.
- 28 identified themselves as owners, 2 as renters, 1 as both and 23 as neither
- 1 identified themselves as a business owner

### B.4.2 ROADS RESULTS

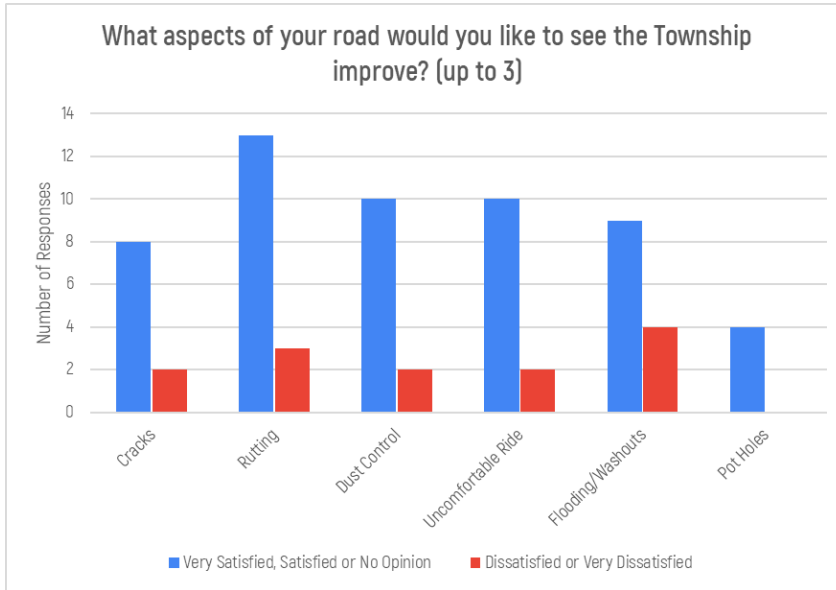
**Figure B-1: Roads Satisfaction Level**



**Figure B-2: Roads Satisfaction by Respondents' Road Surface Type**



**Figure B-3: Road Aspects to be Improved**



Other improvements suggested by respondents:

Winter-related

- Plowing
- Plowing the railway tracks

Grading

- Grading leaves a lip or drop down to the road
- Grading too infrequent (2)

Mud

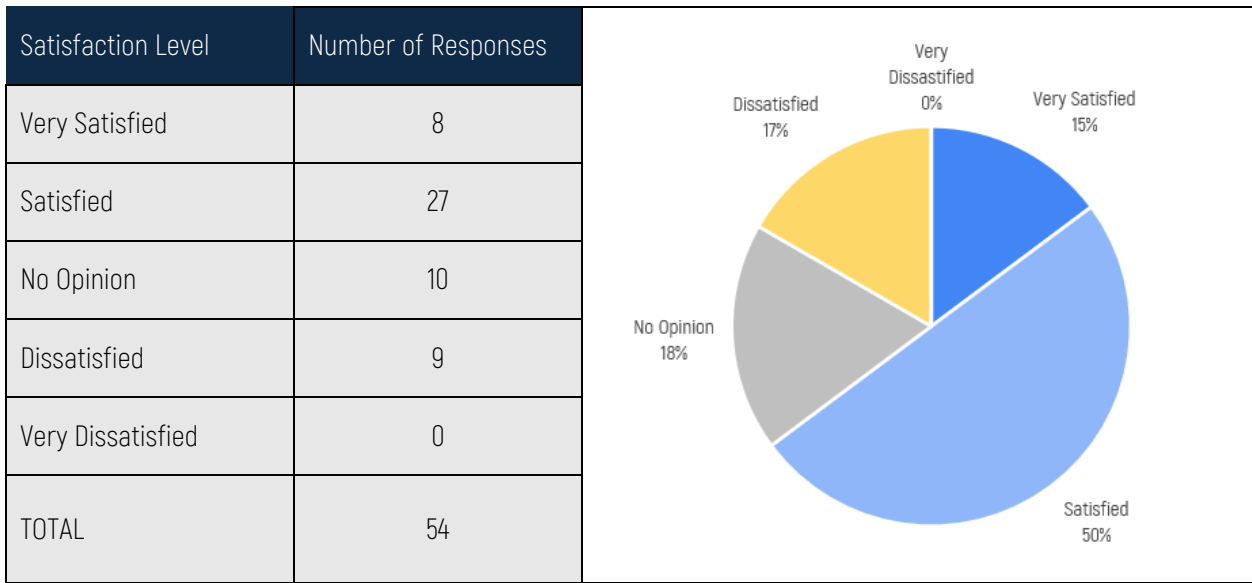
- Deep mud in spring is difficult to steer through

Other

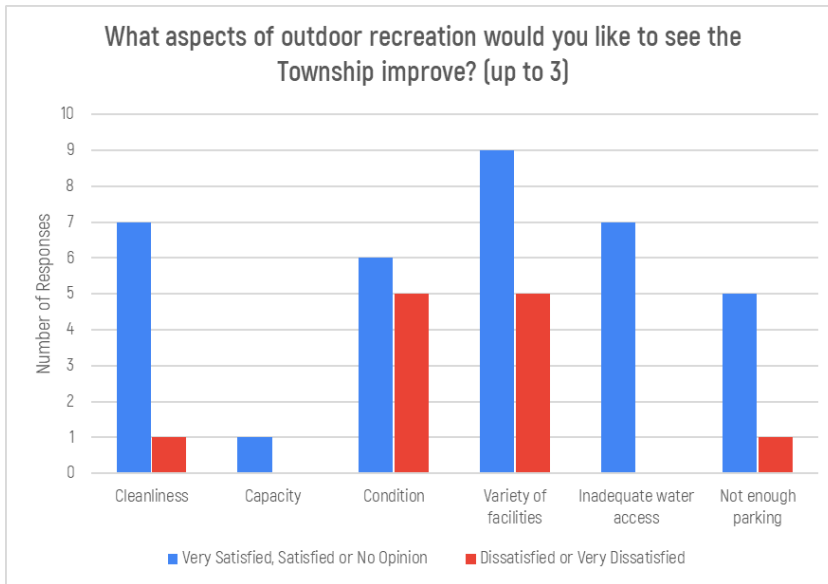
- Culvert issues
- Lost shoulder
- Frost heaves
- Pave it
- Open Cherry Hill Rd year round

### B.4.3 PARKS & OUTDOOR RECREATION RESULTS

**Figure B-4: Parks & Outdoor Recreation Satisfaction Level**



**Figure B-5: Parks & Outdoor Recreation Aspects to be Improved**

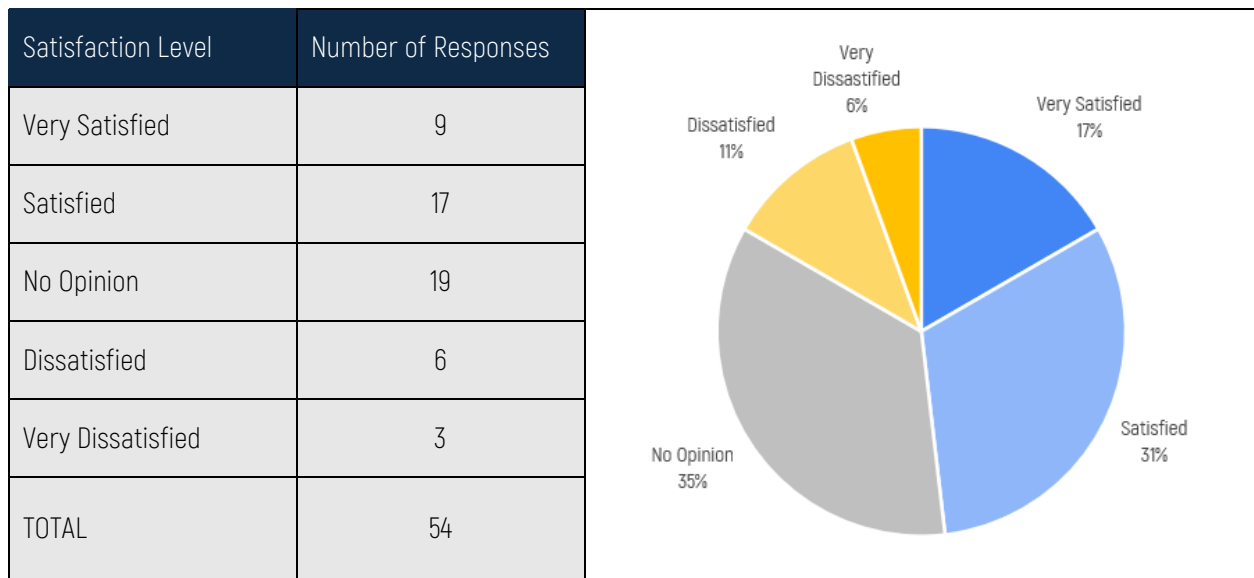


Other improvements suggested by respondents:

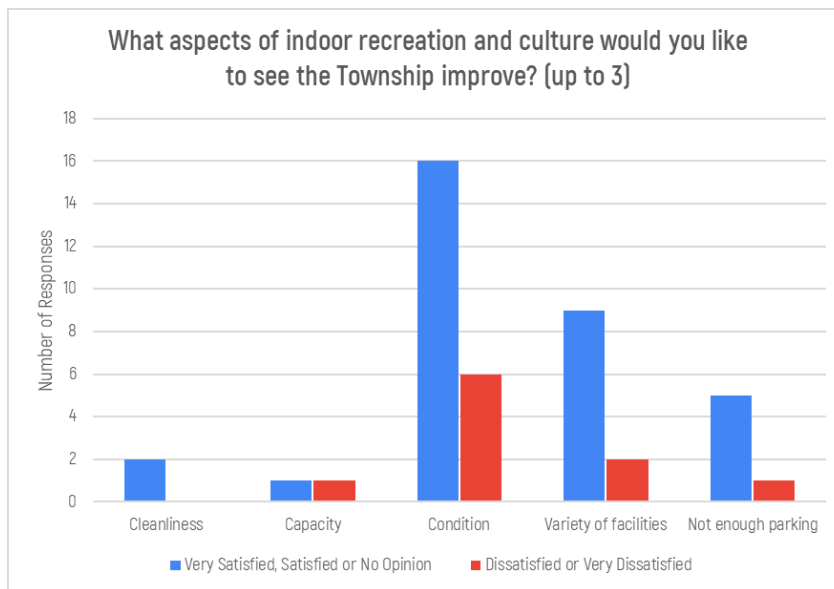
- Info on how to rent
- Bay Lake boat launch needs a dock
- Wait time for boat launch too long
- More hiking trails. Develop the north side of Brook's Falls with a foot bridge over the river and hiking trails
- No access to washrooms
- Play structure geared toward under 4

## B.4.4 INDOOR RECREATION RESULTS

**Figure B-6: Indoor Recreation Satisfaction Level**



**Figure B-7: Indoor Recreation Aspects to be Improved**

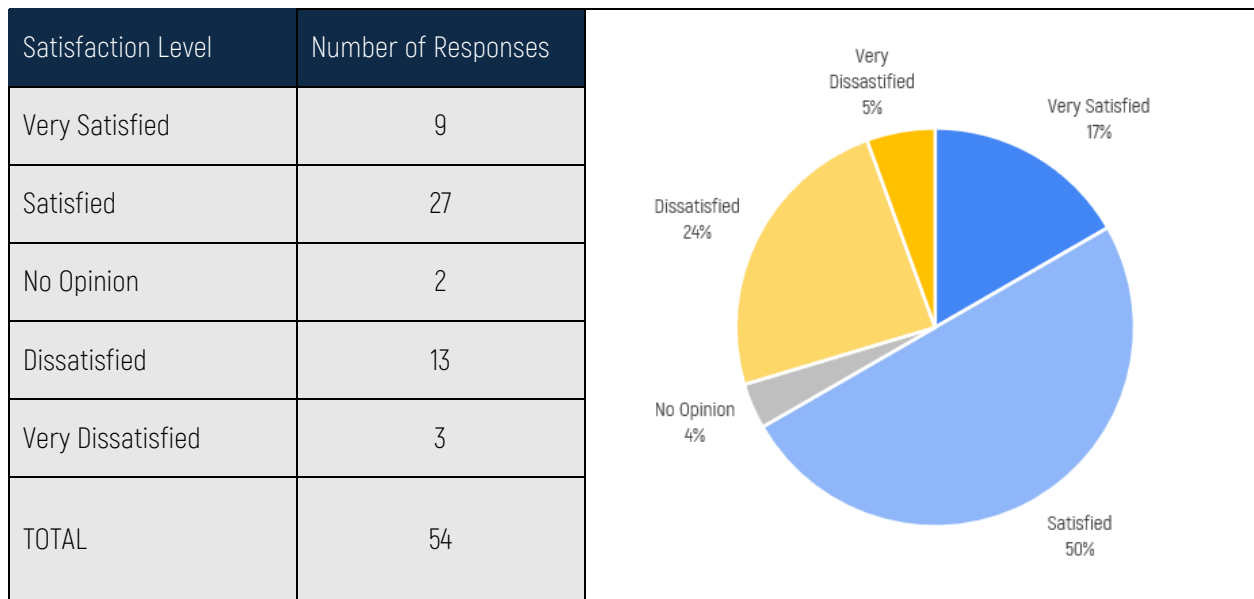


Other improvements suggested by respondents:

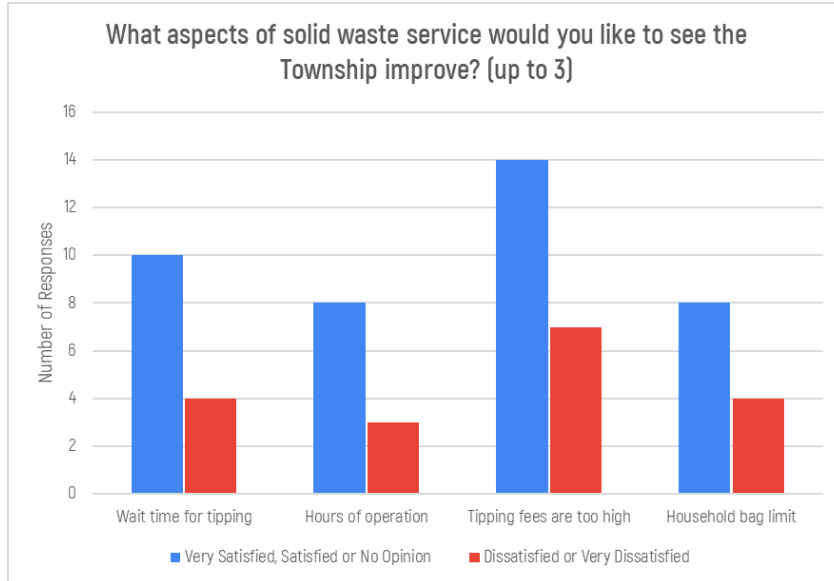
- Need new community centre & library
- Needs full update (library)
- Can't wait for the new Emsdale community centre.

## B.4.5 SOLID WASTE SERVICE RESULTS

**Figure B-8: Solid Waste Satisfaction Level**



**Figure B-9: Solid Waste Service Aspects to be Improved**



Other improvements suggested by respondents:

### Operations

- Commercial drop off time separately
- The Diabetic Containers should come back.
- Garbage pick up should be considered

- The line up makes it a safer experience when at the Transfer Station. Before, you had to be careful when getting out because cars would come up both sides of your vehicle

#### Wait times

- Covid has increased wait times but we can only hope to put that virus behind us.

#### Reuse / Exchange Shed

- The reuse building should be opened asap!!!! Smiling staff would also be a perk.
- Reinstate the free exchange shed (now that we know that fomite [sic] transmission of coronavirus is not a significant risk). It keeps useable items out of landfill.

#### Recycling

- Promote successful recycling. Good luck
- More really recycled
- better options/system for recycling or diverting waste

#### Driveway Condition

- Road in is potholes & bumpy
- Driveway has potholes all the time where it joins the road #592 & the yard itself is really bumpy, we have hundreds of thousands of dollars worth of heavy equipment & the landfill yard is always a bumpy pothole mess !!

#### Op Hours and Bag Limits

- It's well run and the employees are very nice, but I can only come out to my property on weekends so I can't take advantage of regular garbage bag limits. I think it sucks that I can't use or bank my weekly allotment to dispose of a trailer load of garbage when I need to, since I can't take advantage of the dump weekly.

#### User Fee

- If the transfer station and land fill require additional funds to operate raise taxes and answer for it at the ballot box. Charging user fees for every day household waste at a facility that virtually everyone in the township uses is nothing more than a TAX.

## B.4.6 WILLINGNESS TO PAY

**Table B-1: Willingness to Pay**

Willingness to Pay	Number of Responses
Supports higher <u>user fees</u> to pay for improvements	8
Supports higher <u>property taxes</u> to pay for improvements	16
Supports both higher <u>property taxes</u> and <u>user fees</u> to pay for improvements	3
<u>Does not support</u> higher property taxes or user fees to pay for improvements	26
Selected all 3 options: <ul style="list-style-type: none"><li>• Supports higher <u>user fees</u></li><li>• Supports higher <u>property taxes</u></li><li>• <u>Does not support</u> higher property taxes or user fees</li></ul>	1
<b>TOTAL</b>	<b>54</b>

## **Appendix C – 2022-31 Planned Strategy Actions Year by Year**

This appendix presents the capital expansion, upgrade and renewal actions associated with the AM Plan's 2022-31 Planned Strategy.

**Township of Perry 2022 AM Plan - Appendix C**  
**Planned Strategy Actions Year-by-Year**  
**Renewals, Expansions and Upgrades of all Asset Classes**  
 See page C-3 for detailed listing of road improvements.

#	Service	Asset Class	Asset Type	Asset ID	Description	Action	Implementation Schedule - Treatment Costs in 2022 \$										TOTAL
							2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
1	Transportation	Roads	All - see Roads tab				536,925	622,737	723,913	1,320,395	872,420	1,669,778	769,900	703,710	1,289,711	515,897	9,025,386
2	Transportation	Bridges and Culverts	Bridge	Structure #7	Fish Lake Road Bridge	Replace damaged guiderail, repair concrete on railing, repair concrete girders, repair concrete exterior soffit	150,000										150,000
3	Transportation	Bridges and Culverts	Bridge	Structure #44-143	Deer Lake Road Bridge	Replace guiderail	35,000										35,000
4	Transportation	Bridges and Culverts	Bridge	Structure #TP 2	Wooden Bridge	During next OSIM inspection (2022), obtain advice on potentially removing this structure.											-
5	Transportation	Bridges and Culverts	Culvert	Structure #TP 10	Whitney Road 3 <sup>rd</sup> Culvert	Replace structure	120,000										120,000
6	Transportation	Bridges and Culverts	Culvert	Structure #TP 11	Emsdale Road Box Culvert	Design (2026) and replace structure (2027)	50,000				900,000						950,000
7	Transportation	Buildings & Facilities	Salt/Sand Shed		Salt/Sand Shed	Replace					41,861						41,861
8	Transportation	Vehicles and Equipment	Attachment		Packer for grader	Addition (Upgrade)	30,000										30,000
9	Transportation	Vehicles and Equipment	Light		Dodge Ram 1500	Replace	38,336										38,336
10	Transportation	Vehicles and Equipment	Light		Dodge Ram 5500	Replace		80,710									80,710
11	Transportation	Vehicles and Equipment	Attachment		Brush Head	Replace		36,504				36,504					73,007
12	Transportation	Vehicles and Equipment	Trailer		20 ton tag trailer	Replace		24,526									24,526
13	Transportation	Vehicles and Equipment	Attachment		Boss V Plow	Replace			17,616				17,616				35,232
14	Transportation	Vehicles and Equipment	Light		Dodge Ram 1500	Replace			37,390								37,390
15	Transportation	Vehicles and Equipment	Heavy		Daewoo Loader Mego 200	Replace			125,005								125,005
16	Transportation	Vehicles and Equipment	Attachment		AMI Sweeper	Replace			17,865					17,865			35,730
17	Transportation	Vehicles and Equipment	Attachment		Sander	Replace				10,513					10,513		21,027
		Vehicles and Equipment	Heavy		Freightliner Tandem Plow	Replace				400,000							400,000
18	Transportation	Vehicles and Equipment	Attachment		Slip in Water Tank	Replace							35,834				35,834
19	Transportation	Vehicles and Equipment	Heavy		Western Star u1569 Tandem Plow	Replace										349,204	349,204
20	Transportation	Vehicles and Equipment	Heavy		Western Star u1568 Tandem Plow	Replace										349,204	349,204
21	Transportation	Vehicles and Equipment	Heavy		Daewoo Track excavator	Replace										176,431	176,431
22	Transportation	Vehicles and Equipment	Heavy		John Deere 870GP grader	Replace										438,676	438,676
<b>23</b>	<b>Transportation</b>	<b>ALL</b>					<b>960,261</b>	<b>764,477</b>	<b>778,919</b>	<b>1,463,265</b>	<b>1,282,933</b>	<b>2,611,638</b>	<b>806,404</b>	<b>757,160</b>	<b>1,307,576</b>	<b>1,839,925</b>	<b>12,572,558</b>
24	Parks & Recreation	Outdoor Recreation Assets	Other		Community Garden - 12 wood-framed beds & fencing	Replace		6,825									6,825
25	Parks & Recreation	Outdoor Recreation Assets	Play Equipment		Swings-Novar Park	Replace									11,735		11,735
26	Parks & Recreation	Outdoor Recreation Assets	Security		Security cameras - ECC park	Replace						3,930					3,930
27	Parks & Recreation	Outdoor Recreation Assets	Security		Security cameras - Fire Hall public park	Replace						3,930					3,930
28	Parks & Recreation	Outdoor Recreation Assets	Boat Launch Ramp		Bay Lake Boat Launch - Ramp	Replace								10,000			10,000
29	Parks & Recreation	Outdoor Recreation Assets	Defibrillator - Emsdale CC		Defibrillator - Emsdale CC	Replace							6,500				6,500
30	Parks & Recreation	Outdoor Recreation Assets	Defibrillator - Novar CC		Defibrillator - Novar CC	Replace							6,500				6,500
31	Parks & Recreation	Outdoor Recreation Assets	Rink - Novar outdoor		Cement slab 75' X 150' - \$123,200	Replace						125,000					125,000
32	Parks & Recreation	Outdoor Recreation Assets	Rink - Novar outdoor		Ice rink boards - 50' X 100" rink - \$59,500	Replace						60,000					60,000
33	Parks & Recreation	Outdoor Recreation Assets	Rink - Novar outdoor		Ice rink liner - \$1,620	Replace						1,620					1,620
34	Parks & Recreation	Outdoor Recreation Assets	Rink - Novar outdoor		Fence - \$30,000	Add (Upgrade to rink facility)						30,000					30,000
35	Parks & Recreation	Buildings	Gazebo			Clean and recoat baseplates							2,000				2,000
36	Parks & Recreation	Buildings	Covered Rink			Clean and recoat baseplates			2,000								2,000
37	Parks & Recreation	Buildings	Museum			Repair concrete slab at entrance, remove and repair deteriorated logs/re-grade	6,500										6,500
38	Parks & Recreation	Buildings	Community Centre & Library			Scheduled for Replacement & Expansion	2,250,000	2,250,000									4,500,000
39	Parks & Recreation	Buildings	Parks & Rec			Seal hole at base of exterior wall (2022) and re-grade to promote drainage (2024)	2,000										2,000
40	Parks & Recreation	Buildings	Community Centre			Re-grade to promote drainage (2023) and clean and recoat beam saddles at porch (2027)		3,663				3,140					6,802
41	Parks & Recreation	Vehicles and Equipment	Light		Chev 3500	Replace									51,750		51,750
42	Parks & Recreation	Vehicles and Equipment	Light		Jeep Patriot	Replace							29,688				29,688
43	Parks & Recreation	Vehicles and Equipment	Tractor		John Deere Tractor	Replace					42,929					42,929	85,859
44	Parks & Recreation	Vehicles and Equipment	Attachment		(Addition to above item) mower	Replace		8,235					8,235				16,470
45	Parks & Recreation	Vehicles and Equipment	Attachment		(Addition to above item) snowblower	Replace		6,484					6,484				12,968
46	Parks & Recreation	Vehicles and Equipment	Tractor		John Deere Lawn tractor	Replace		15,929					15,929				31,858
47	Parks & Recreation	Vehicles and Equipment	Attachment		(Addition to above item) Snow blower	Replace	4,432					4,432					8,864

Township of Perry 2022 AM Plan - Appendix C  
 Planned Strategy Actions Year-by-Year  
 Renewals, Expansions and Upgrades of all Asset Classes  
 See page C-3 for detailed listing of road improvements.

#	Service	Asset Class	Asset Type	Asset ID	Description	Action	Implementation Schedule - Treatment Costs in 2022 \$										TOTAL
							2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
48	Parks & Recreation	Vehicles and Equipment	Small		Honda Snow blower	Replace				5,218					5,218		10,436
49	<b>Parks &amp; Recreation</b>	<b>ALL</b>					<b>2,262,932</b>	<b>2,291,136</b>	<b>2,000</b>	<b>5,218</b>	<b>42,929</b>	<b>224,192</b>	<b>70,196</b>	<b>13,000</b>	<b>15,218</b>	<b>106,414</b>	<b>5,033,235</b>
50	Fire Protection Service	Emergency Equipment	Equipment		Amkus Heavy Hydraulic Extrication tool	Replace				21,286							21,286
51	Fire Protection Service	Emergency Equipment	Equipment		FR2 heart Start Defibrillator	Replace	6,500										6,500
52	Fire Protection Service	Emergency Equipment	Equipment		FR2 heart Start Defibrillator	Replace	6,500										6,500
53	Fire Protection Service	Emergency Equipment	Equipment		11 SCBA (4 out of service)	Replace	95,369								95,369		190,737
54	Fire Protection Service	Emergency Equipment	Equipment		1- SCBA pack in RIT bag (Rapid Intervention Team)	Replace	4,233								4,233		8,465
55	Fire Protection Service	Emergency Equipment	Equipment		58 Cylinders (45min) + 1 Cylinder (1 hr)	Replace	59,605								59,605		119,210
56	Fire Protection Service	Emergency Equipment	Equipment		West Bay Lake repeater station radio equipment	Replace										4,080	4,080
57	Fire Protection Service	Emergency Equipment	Equipment		Emsdale hall ION washer	Replace							5,520				5,520
58	Fire Protection Service	Emergency Equipment	Equipment		16" electric fan	Replace								3,665			3,665
59	Fire Protection Service	Emergency Equipment	Equipment		Security camera system	Replace									6,820		6,820
60	Fire Protection Service	Emergency Equipment	Equipment		Emsdale hall computer network	Replace			8,900					8,900			17,800
61	Fire Protection Service	Emergency Vehicles	Emergency		Polaris 800EFI UTV Ranger 4x4	Replace										18,597	18,597
62	Fire Protection Service	Emergency Vehicles	Emergency		GMC C7500 Pumper	Replace			700,000								700,000
63	Fire Protection Service	Emergency Vehicles	Attachment		(Addition to above item) tracks	Replace				5,750							5,750
64	<b>Fire Protection Service</b>	<b>ALL</b>					<b>172,206</b>	<b>-</b>	<b>708,900</b>	<b>27,036</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>14,420</b>	<b>169,691</b>	<b>22,677</b>	<b>1,114,929</b>
65	Solid Waste Service	Site Equipment	Site		Security camera system	Replace							3,310				3,310
66	Solid Waste Service	Site Equipment	Site		Internet network - security router	Replace			3,580					3,580			7,160
67	Solid Waste Service	Buildings	Reusable Item Shed			Reinforce broken truss chord	1,570										1,570
68	Solid Waste Service	Vehicles	Small		Bobcat 753 skidsteer	Replace										23,442	23,442
69	<b>Solid Waste Service</b>	<b>ALL</b>					<b>1,570</b>	<b>-</b>	<b>3,580</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6,890</b>	<b>-</b>	<b>23,442</b>	<b>35,482</b>
70	Municipal Administration	IT & Admin Assets	Technology		IP Phone system	Replace										5,050	5,050
71	Municipal Administration	IT & Admin Assets	Technology		Office cameras/security system (total 7 cameras at \$4k each)	Replace							28,000				28,000
72	Municipal Administration	IT & Admin Assets	Technology		Server upgrade	Replace		2,090			2,090				2,090		6,270
73	Municipal Administration	Buildings	Municipal Office			Seal gaps in exterior stucco (2023) and replace damaged stucco panel near entry (2027)		10,000				4,186					14,186
74	Municipal Administration	Vehicles	Light		Jeep Cherokee	Replace							53,686				53,686
75	<b>Municipal Administration</b>	<b>ALL</b>					<b>-</b>	<b>12,090</b>	<b>-</b>	<b>-</b>	<b>2,090</b>	<b>4,186</b>	<b>81,686</b>	<b>2,090</b>	<b>-</b>	<b>5,050</b>	<b>107,193</b>
76	<b>TOTAL</b>						<b>3,396,969</b>	<b>3,067,703</b>	<b>1,493,399</b>	<b>1,495,518</b>	<b>1,327,953</b>	<b>2,840,016</b>	<b>958,286</b>	<b>793,560</b>	<b>1,492,485</b>	<b>1,997,508</b>	<b>18,863,397</b>

Township of Perry 2022 AM Plan - Appendix C  
 Planned Strategy Actions Year-by-Year  
 Road Improvements

Cost in 2022 \$	Re-graveling - 4" with ditching
Cost in 2022 \$	Double layer surface treatment
Cost in 2022 \$	Rehab (remove surface treatment and apply granite)
Cost in 2022 \$	Asphalt re-surface
Cost in 2022 \$	Micro-sealing

Section	Road Name	From	To	Length (km)	2021 PCI	Surface Type	Implementation Schedule - Treatment Costs in 2022 \$										TOTAL
							2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
10	Star Lake Road	Old Government Road	0.4km W of Old Government Road	0.4	73.4	Surface Treated		14,400					20,160				34,560
20	Star Lake Road	0.4km W of Old Government Road	Masons Road	0.8	76.7	Surface Treated				29,880						41,832	71,712
30	Star Lake Road	Masons Road	Expressway Road	2.1	100.0	Gravel							56,160				56,160
40	Star Lake Road	Expressway Road	West Municipal Boundary	2.0	100.0	Gravel							54,810				54,810
50	Expressway Road	Star Lake Road	Fern Glen Road	2.1	68.5	Gravel						56,700		56,700			113,400
60	Stewarts Road	Fern Glen Road	West End	0.2	49.0	Gravel											-
70	Fern Glen Road	Fern Glen Road	0.5km S of Fern Glen Road	0.5	80.8	Surface Treated				18,250						18,250	36,500
80	Fern Glen Road	0.5km S of Fern Glen Road	Whitney Road	1.5	81.2	Gravel				51,430		41,040					92,470
90	Fern Glen Road	Whitney Road	Appleyards Road	2.0	78.9	Gravel				68,570		55,080					123,650
100	Appleyards Road	Fern Glen Road	South Limit	2.0	47.8	Gravel (summer road)								54,540			54,540
110	Old Track Road	Fern Glen Road	East End	0.5	76.1	Gravel		12,150								12,150	24,300
120	Whitney Road	Fern Glen Road	Long Lake Road	2.1	69.3	Gravel	80,000							80,000			160,000
130	Long Lake Road	Whitney Road	Shannon Road	3.4	22.2	Gravel						92,070					92,070
140	Whitney Road	Long Lake Road	Brushs Road	2.0	71.7	Gravel		80,000								55,080	135,080
150	Brushs Road	Whitney Road	West End	1.0	61.0	Gravel				35,000				26,460			61,460
160	Whitney Road	Brushs Road	Old Novar Road	2.3	76.0	Gravel				90,000		62,910					152,910
170	Old Novar Road	Whitney Road	West Municipal Boundary	2.6	55.1	Gravel					69,120						69,120
180	Boundary Road	Whitney Road	1.2km E of Whitney Road	1.2	65.9	Gravel							32,400				32,400
190	Boundary Road	1.2km E of Whitney Road	Bittern Lake Lane	1.6	73.7	Gravel							42,120				42,120
200	Boundary Road	Bittern Lake Lane	0.1km E of Jenkins Lane (Edge of Surface Treatment)	1.7	88.1	Gravel							44,550				44,550
210	Boundary Road	0.1km E of Jenkins Lane	Long Lake Road	0.3	77.0	Surface Treated				9,600					13,440		23,040
220	Long Lake Road	Boundary Road	Shannon Road	4.0	74.9	Gravel						107,190					107,190
230	Shannon Road	Long Lake Road	South End	0.7	44.2	Gravel						17,820					17,820
240	Boundary Road	Long Lake Road	Gabriel Lane	1.0	85.4	Surface Treated				31,310						31,310	62,620
260	Ratray'S Road	Highway 11	0.2km W of Highway 11	0.2	71.5	Gravel						5,400					5,400
270	Ratray'S Road	0.2km W of Highway 11	0.4km W of Highway 11	0.2	52.4	Gravel							5,850				5,850
280	Ratray'S Road	0.4km W of Highway 11	South End	1.7	57.9	Gravel							46,710				46,710
290	Station Road	Highway 11	Wooden Bridge Road	0.3	73.0	Gravel		8,100								8,100	16,200
300	Wooden Bridge Road	Station Road	East End	0.7	67.8	Gravel		25,000								25,000	50,000
310	Station Road	Wooden Bridge Road	Highway 592	2.0	70.4	Gravel		80,000				54,000				80,000	214,000
320	Fish Lake Road	Highway 592	Langs Lane	2.5	74.4	Surface Treated				81,900						114,660	196,560
340	Savage Settlement Road	Highway 592	1.3km E of Highway 592	1.3	75.3	Surface Treated		42,250					59,150				101,400
350	Savage Settlement Road	1.3km E of Highway 592	Locke Road	1.0	62.1	Surface Treated		36,000		56,000						32,640	124,640
360	Savage Settlement Road	Locke Road	Lakeview Drive	1.5	62.7	Surface Treated		54,000		84,000						52,020	190,020
370	Savage Settlement Road	Lakeview Drive	Foote Lake Road	1.6	48.9	Surface Treated		57,600		89,600						55,420	202,620
380	Savage Settlement Road	Foote Lake Road	0.9km E of Foote Lake Road	0.9	69.8	Surface Treated		32,400		50,400						27,000	109,800
390	Savage Settlement Road	0.9km E of Foote Lake Road	Kearney Boundary	0.7	71.5	Gravel				18,630							18,630
400	Foote Lake Road	Savage Settlement Road	0.1km S of Savage Settlement Road	0.1	100.0	Surface Treated				3,400						4,760	8,160
410	Foote Lake Road	0.07km S of Savage Settlement Road	Sherwood Drive	1.5	100.0	Gravel							41,310				41,310
420	Sherwood Drive	Foote Lake Road	0.37km N of Foote Lake Road	0.4	100.0	Gravel							10,800				10,800
430	Sherwood Drive	Foote Lake Road	Sherwood Crescent	1.0	100.0	Gravel							26,190				26,190
440	Sherwood Crescent	Sherwood Drive	North End Cul De Sac	0.1	74.8	Gravel						3,240					3,240
450	Pinedale Road	Savage Settlement Road	North End	0.7	100.0	Gravel							19,440				19,440
460	Lakeview Drive	Savage Settlement Road	1.1km N of Savage Settlement Road	1.1	65.7	Surface Treated				35,600						51,590	87,190
470	Lakeview Drive	1.1km N of Savage Settlement Road	Locke Road	0.8	65.7	Surface Treated				29,100						34,020	63,120
480	Locke Road	Lakeview Drive	North End	1.4	57.9	Gravel (limited access)							38,610				38,610
490	Locke Road	Lakeview Drive	Savage Settlement Road	1.0	71.2	Surface Treated				32,300						49,490	81,790
500	Bay Lake Road	Highway 592	0.9km W of Rochester Lake Road	1.9	80.4	Surface Treated				61,975						61,975	123,950
510	Bay Lake Road	0.9km W of Rochester Lake Road	Rochester Lake Road	0.9	80.4	Surface Treated				30,150						30,150	60,300
520	Churchill Gardens	Bay Lake Road	Homeland Drive	1.4	62.2	Gravel		50,000	70,000					46,150			166,150
530	Beach Road	Bay Lake Road	Churchill Gardens	0.5	79.4	Gravel		16,000	20,000					15,000			51,000
540	Homeland Drive	Bay Lake Road	Churchill Gardens	0.7	79.6	Surface Treated					21,780					30,492	52,272



2030	Florence Street	Boundary Road	North End Cul De Sac	0.7	100.0	Surface Treated		17,934									17,934		
2040	Adelaide Crescent	Florence Street	Florence Street	0.4	100.0	Surface Treated		9,940									9,940		
2050	Mcphail Crescent	Florence Street	East End	0.2	100.0	Surface Treated		4,970									4,970		
2070	Oak Street	Boundary Road	North End	0.1	100.0	Surface Treated		1,000									1,000		
2080	Boundary Road	Gabriel Lane	Pond Crescent West Leg	0.3	84.2	Surface Treated	14,105				10,075						24,180		
2090	Boundary Road	West Leg Pond Crescent	Main Street	0.1	67.7	Surface Treated			5,915					4,225			10,140		
2100	Boundary Road	Main Street	Peter Street	0.3	77.8	Asphalt				65,000							65,000		
2110	Boundary Road	Peter Street	Highway 11	0.1	81.1	Asphalt						3,800					3,800		
2120	Mccrandle Street	Boundary Road	North End Cul De Sac	0.7	100.0	Surface Treated		17,934									17,934		
2130	Main Street	Boundary Road	North End Cul De Sac	0.5	71.1	Asphalt				115,000							115,000		
2140	Barbara Street	Main Street	Main Street	0.2	67.8	Asphalt				45,000							45,000		
2150	Jessie Street	Main Street	Laurie Street	0.2	64.7	Surface Treated				30,000					6,300		36,300		
2160	Laurie Street	Main Street	East End	0.2	64.4	Asphalt				45,000							45,000		
2170	Peter Street	Laurie Street	Boundary Road	0.2	76.2	Asphalt				45,000							45,000		
2180	George Street	Peter Street	Main Street	0.1	84.4	Asphalt				20,000							20,000		
3010	James Street	Highway 518 East	Ellen Street	0.2	70.7	Surface Treated		6,500				9,100					15,600		
3020	Parish Street	James Street	Highway 518 East	0.2	72.9	Gravel	4,590						4,590				9,180		
3030	Richmond Street	Ellen Street	Highway 592	0.3	66.1	Surface Treated		10,200				14,280					24,480		
3040	Ellen Street	Highway 592	James Street	0.2	77.6	Surface Treated				7,475					10,465		17,940		
3050	Mary Street	Highway 592	Mitchell Street	0.1	70.7	Surface Treated			2,700					3,780			6,480		
3060	Mitchell Street	Mary Street	Highway 518 East	0.1	77.6	Surface Treated				2,700					3,780		6,480		
3070	Joseph Street	Highway 592	Highway 592	0.2	62.6	Surface Treated				8,820					6,300		15,120		
4000	Emsdale Road	Highway 518	Old Muskoka Road	1.6	81.0	Asphalt						56,000					56,000		
4010	Emsdale Road	Old Muskoka Road	Scotia Road	0.3	81.1	Asphalt						11,200					11,200		
<b>Total Cost of Re-graveling</b>								\$264,820	\$271,250	\$190,000	\$403,630	\$221,470	\$1,281,533	\$500,310	\$354,940	\$180,330	\$190,000	\$3,858,283	
<b>Total Cost of Surface Treatment (double layer)</b>								\$112,105		\$429,493	\$285,915	\$130,845		\$198,590		\$570,311	\$217,147	\$1,944,406	
<b>Total Cost of Rehabs to Surface Treated roads</b>								\$160,000	\$180,000	\$96,420								\$436,420	
<b>Total Cost of Asphalt Re-surfacing</b>												\$365,000	\$314,820			\$108,900		\$788,720	
<b>Total cost of Micro-sealing</b>									\$171,487	\$8,000	\$630,850	\$155,105	\$73,425	\$71,000	\$348,770	\$430,170	\$108,750		\$1,997,557
<b>TOTAL - ALL TREATMENTS</b>								\$536,925	\$622,737	\$723,913	\$1,320,395	\$872,420	\$1,669,778	\$769,900	\$703,710	\$1,289,711	\$515,897		\$9,025,386
<b>ANNUAL AVERAGE - ALL TREATMENTS</b>								\$902,539											