Asset Management Plan

Township of Strong

FINAL DRAFT

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List of Acronyms and Abbreviations

CL	Centreline
BCI	Bridge Condition Index
CSP	Corrugated Steel Pipe
GPS	Global Positioning System
G/S	Gravel
HCB	High-Class Bituminous
HVAC	Heating, Ventilation, and Air Conditioning
IJPA	Infrastructure for Jobs and Prosperity Act
LCB	Low-Class Bituminous
MMS	Minimum Maintenance Standards
OCIF	Ontario Community Infrastructure Fund
OSIM	Ontario Structure Inspection Manual
PCI	Pavement Condition Index
PSAB	Public Sector Accounting Board
UL%	Percentage of Useful Life

Report

Chapter 1
Introduction

1. Introduction

1.1 Overview

The main objective of an asset management plan is to use a municipality's best available information to develop a comprehensive long-term plan for capital assets. In addition, the plan should provide a sufficiently documented framework that will enable continuous improvement and updates of the plan, to ensure its relevancy over the long term.

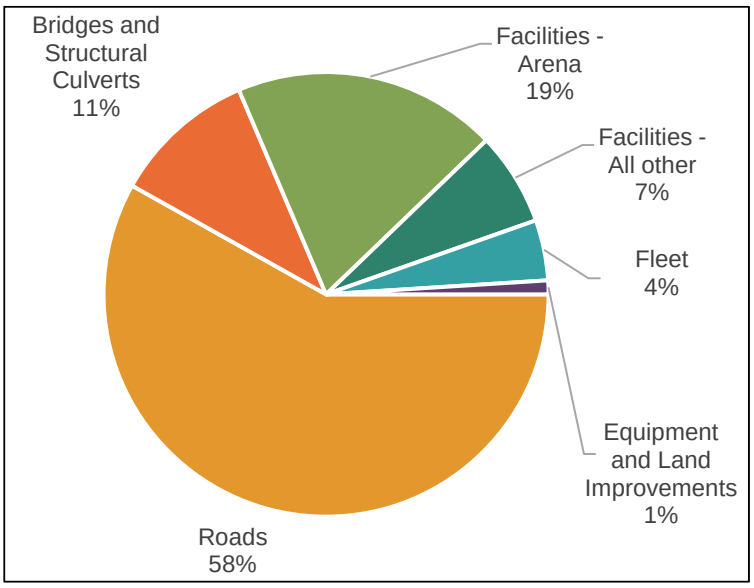
The Township of Strong (Township) retained Watson & Associates Economists Ltd. (Watson) to prepare a comprehensive asset management plan. One of the objectives of this plan is to move the Township's asset management practices into compliance with Ontario Regulation (O. Reg.) 588/17. It is intended to be a tool for municipal staff and Council to use during various decision-making processes, including the annual budgeting process and future capital grant application processes.

This is a comprehensive asset management plan covering all capital assets the Township has asset management responsibilities for. These assets and their replacement costs are shown in Table 1-1. Figure 1-1 shows the distribution of replacement cost by asset class. Roads accounts for more than half the replacement cost (58%), followed by facilities (26%), bridges and structural culverts (11%), fleet (4%) and equipment and land improvements (1%)

Table 1-1: Asset Classes and Replacement Cost

Asset Class	Replacement Cost
Roads	$34,410,000
Bridges and Structural Culverts	$6,190,000
Facilities – Arena	$11,380,000
Facilities – All other	$4,020,000
Fleet	$2,600,000
Equipment and Land Improvements	$600,000
Total	$59,190,000

Figure 1-1: Distribution of Replacement Cost by Asset Class



The Township's goals and objectives with respect to asset management are identified in the Township's Strategic Asset Management Policy. A major theme within that policy is for the Township's physical assets to be managed in a manner that will support the sustainable provision of municipal services to residents. Through the implementation of the asset management plan, the Township's practice should evolve to provide services at levels proposed within this document. Moreover, infrastructure and other capital assets should be maintained at condition levels that provide a safe and functional environment for the Township's residents. Therefore, the asset management plan and the progress with respect to its implementation will be evaluated based on the Township's ability to meet these goals and objectives.

1.2 Legislative Context for the Asset Management Plan

Asset management planning in Ontario has evolved significantly over the past decade.

Before 2009, capital assets were recorded by municipalities as expenditures in the year of acquisition or construction. The long-term issue with this approach was the lack of a capital asset inventory, both in the municipality's accounting system and financial statements. As a result of revisions to section 3150 of the Public Sector Accounting

Board (PSAB) handbook, effective for the 2009 fiscal year, municipalities were required to capitalize tangible capital assets, thus creating an inventory of assets.

In 2012, the Province launched the municipal Infrastructure Strategy. As part of that initiative, municipalities and local service boards seeking provincial funding were required to demonstrate how any proposed project fits within a detailed asset management plan. In addition, asset management plans encompassing all municipal assets needed to be prepared by the end of 2016 to meet Federal Gas Tax agreement requirements. To help define the components of an asset management plan, the Province produced a document entitled Building Together: Guide for Municipal Asset Management Plans. This guide documented the components, information, and analysis that were required to be included in municipal asset management plans under this initiative.

The Province's *Infrastructure for Jobs and Prosperity Act, 2015* (IJPA) was proclaimed on May 1, 2016. This legislation detailed principles for evidence-based and sustainable long-term infrastructure planning. IJPA also gave the Province the authority to guide municipal asset management planning by way of regulation. In late 2017, the Province introduced O. Reg. 588/17 under IJPA. The intent of O. Reg. 588/17 is to establish standard content for municipal asset management plans. Specifically, the regulations require that asset management plans be developed that define the current and proposed levels of service, identify the lifecycle activities that would be undertaken to achieve these levels of service, and provide a financial strategy to support the levels of service and lifecycle activities.

This plan has been developed to fully address the requirements of O. Reg. 588/17. It utilizes the best information available to the Township at this time.

1.3 Asset Management Plan Development

This asset management plan was developed using an approach that leverages the Township's asset management principles as identified within its strategic asset management policy, capital asset database information, and staff input.

The development of the Township's asset management plan is based on the steps summarized below:

1. Compile available information pertaining to the Township's capital assets to be included in the plan, including attributes such as size, material type, useful life, age, accounting valuation and current valuation. Update the current valuation, where required, using benchmark costing data or applicable inflationary indices.

2. Define and assess current asset conditions, based on a combination of field work performed by WalterFedy, municipal staff input, existing asset reports, and an asset age-based condition analysis.

3. Define and document current levels of service based on analysis of available data and consideration of various background reports.

4. Set proposed levels of service that the Township believes are achievable and affordable based on current information.

5. Develop lifecycle management strategies that identify the activities required to sustain the levels of service discussed above. The outputs of these strategies are summarized in the forecast of annual capital and operating expenditures required to achieve these level of service outcomes.

6. Develop a financing strategy to support the lifecycle management strategy. The financing plan informs how the capital and operating expenses arising from the asset management strategy will be funded over the forecast period.

7. Document the comprehensive asset management plan in a formal report to inform future decision-making and to communicate planning to municipal stakeholders.

1.4 Maintaining and Integrating the Asset Management Plan

The asset management plan should be updated as the strategic priorities and capital needs of the Township change. This can be accomplished in conjunction with specific legislative requirements (i.e., five-year review of the asset management plan under IJPA), as well as the Township's annual budget process. Further integration into other municipal financial and planning documents would assist in ensuring the ongoing accuracy of the asset management plan, as well as the integrated financial and planning documents. The asset management plan has been developed to allow

linkages to several strategic documents, as identified in the Township's Strategic Asset Management Policy.

When updating the asset management plan, it should be noted that the state of local infrastructure, lifecycle management strategy and financing strategy are integrated and impact each other. For example, the financing strategy outlines how the lifecycle management strategy will be funded. The lifecycle management strategy identifies the lifecycle activities that need to be planned for in order to enable the Township to maintain or achieve proposed levels of service, and the associated costs.

The asset management plan is a snapshot in time and is based on a number of assumptions regarding expected lifecycles and future performance of assets, lifecycle intervention costs, among others. The Township will need to establish processes for reviewing and updating these assumptions on a regular basis to keep the plan relevant.

Chapter 2
State of Local Infrastructure and Levels of Service

2. State of Local Infrastructure and Levels of Service

2.1 Introduction

This chapter provides an analysis of the Township's assets and the current service levels provided by those assets.

O. Reg. 588/17 requires that for each asset category included in the asset management plan, the following information must be identified:

- Summary of the assets;
- Replacement cost of the assets;
- Average age of the assets (it is noted that the regulation specifically requires average age to be determined by assessing the age of asset components);
- Information available on condition of assets; and
- Approach to condition assessments (based on recognized and generally accepted good engineering practices where appropriate).

Asset management plans must identify the current levels of service being provided for each asset category. For core municipal infrastructure assets, both the qualitative descriptions pertaining to community levels of service and metrics pertaining to technical levels of service are prescribed by O. Reg. 588/17. For all other infrastructure assets, each municipality needs to establish its own measures for levels of service.

Asset management plans must also include proposed levels of service for each asset class. The proposed levels of service will be defined using the qualitative descriptions and technical metrics that the municipality uses to define current levels of service.

The rest of this chapter addresses the requirements identified above, with each section focusing on an individual asset category.

2.2 Transportation

2.2.1 State of Local Infrastructure

The assets that support the Township's transportation services are comprised of roads, bridges, and structural culverts. Other transportation assets such as signs and streetlights are not included in this plan because their repair and replacement are treated as operating expenses.

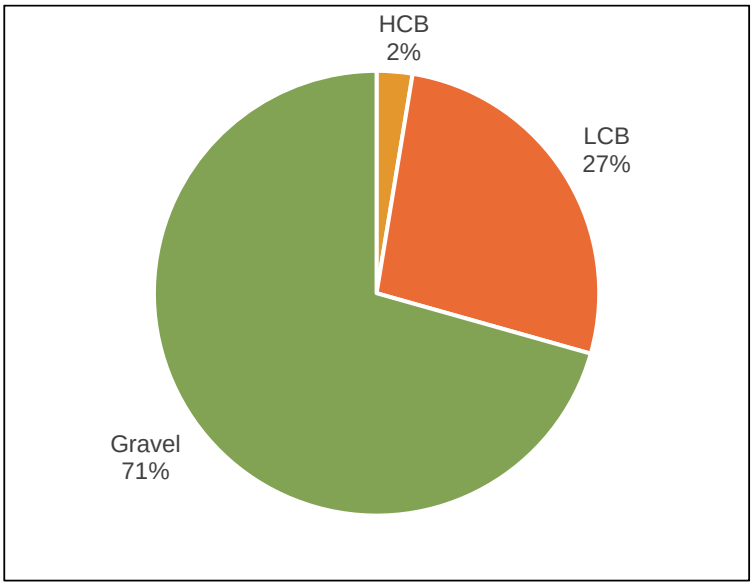
The road network consists of roads with various surface types, including high-class bituminous (HCB), low-class bituminous (LCB), and gravel (G/S). The estimated replacement cost of roads is $34.4 million. The average age of the road surfaces is 7.8 years for paved roads and 3.6 years for gravel roads. Table 2-1 provides a breakdown of the road network by surface type, while Figure 2-1 illustrates the breakdown as a proportion of the total.

More than two thirds of the network is gravel – 71%. The next most common surface type is LCB – 27% of the total road network length. Roads with HCB surface represent 2% of the total road network length. Map 2-1 provides a spatial illustration of the Township's road network and its extent.

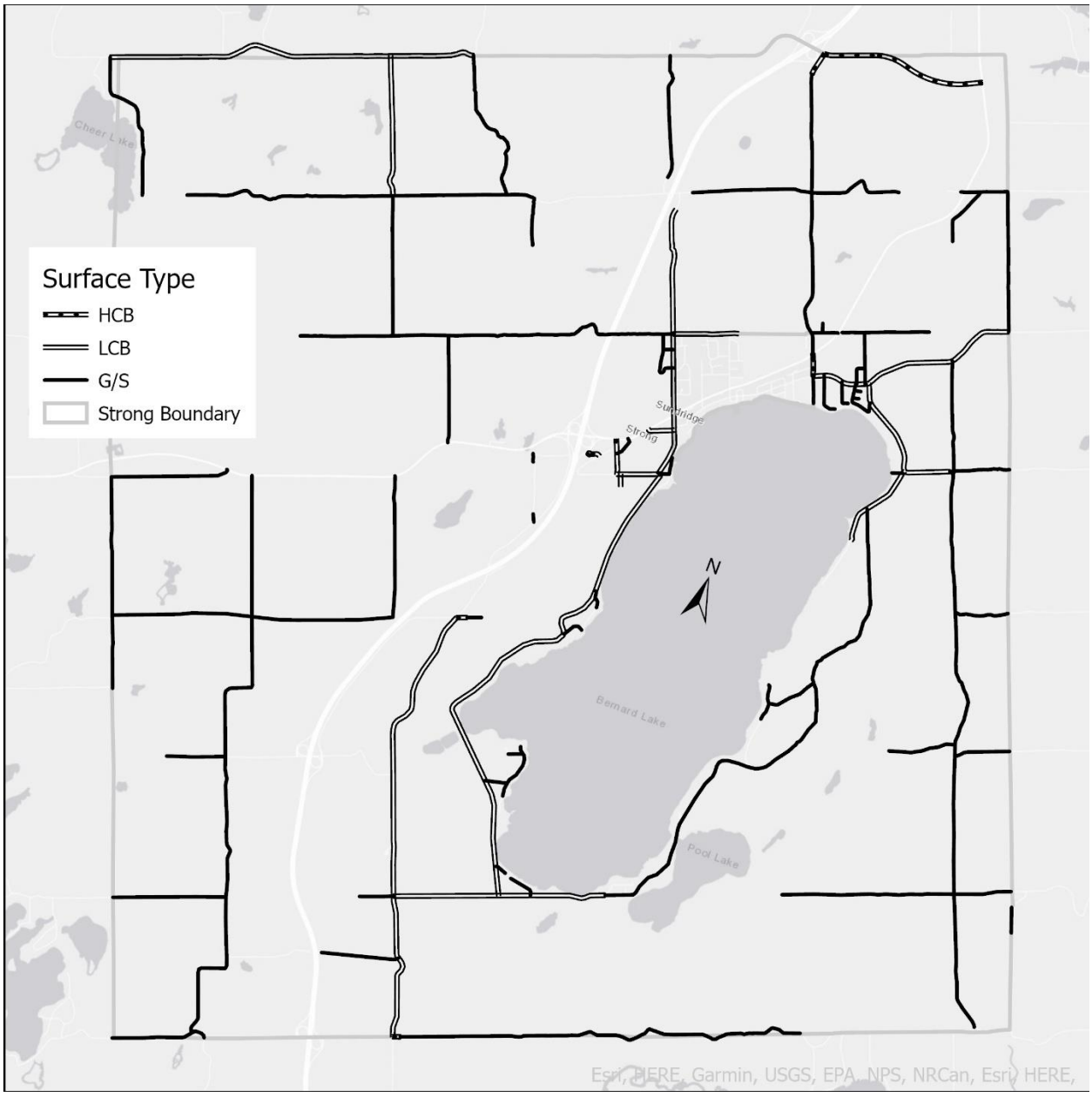
Table 2-1: Road Network – Surface Type

Surface Type	Centreline Kilometres	Replacement Cost
HCB	3.7	$2,280,000
LCB	38.2	$13,000,000
Gravel	100.7	$19,130,000
Total	**142.7**	**$34,410,000**

Figure 2-1: Road Network Distribution –
Surface Type Based on Centreline-Kilometres



Map 2-1: Roads by Surface Type

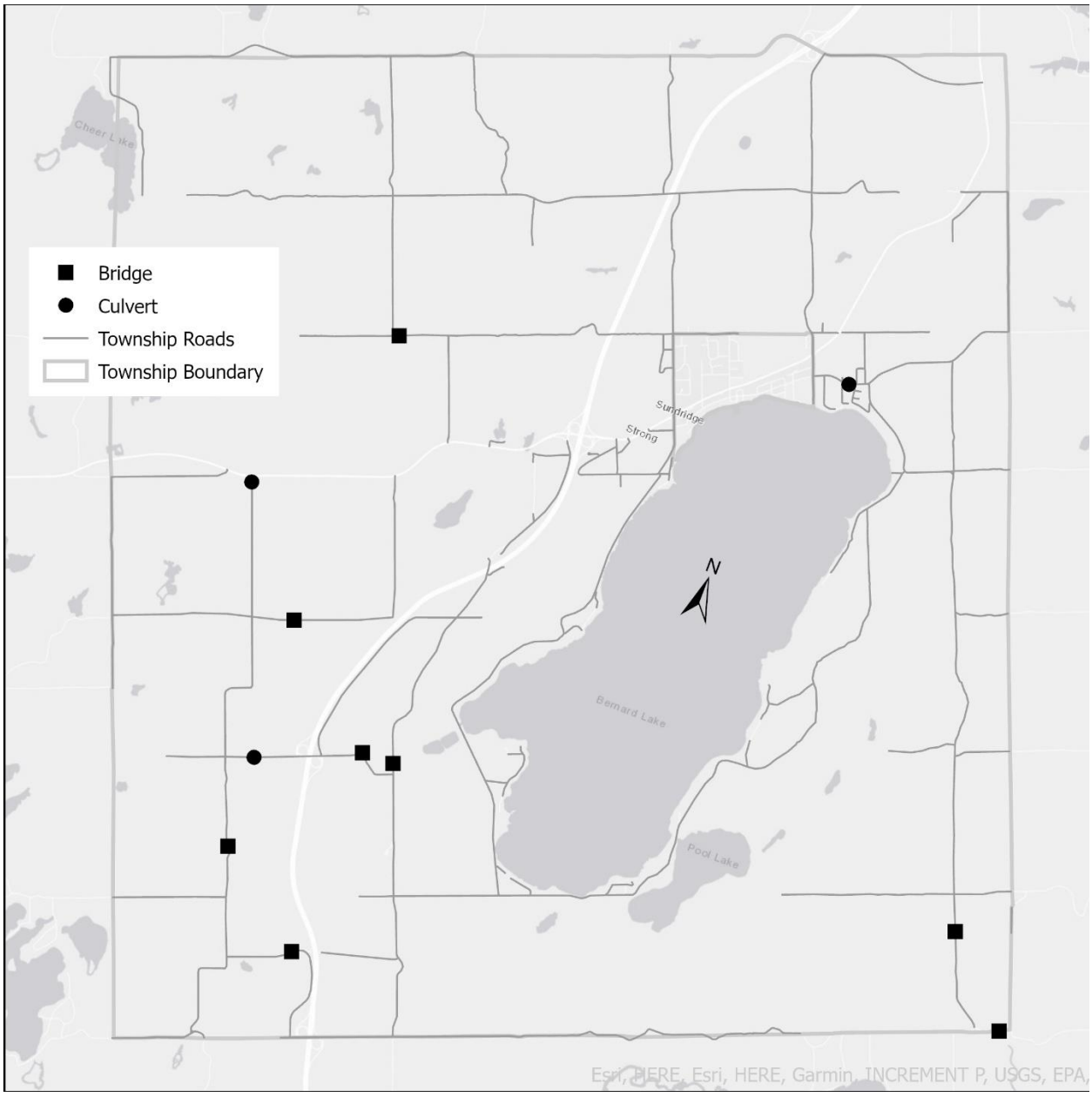


The Township has eight bridges and three structural culverts. The estimated replacement cost of the bridges and structural culverts is $6.19 million. The average age is 30 years for bridges and 28 years for structural culverts. Table 2-1 provides counts and replacement costs for bridges and structural culverts. Map 2-2 provides a spatial illustration of the Township's bridges and structural culverts.

Table 2-2: Bridges and Structural Culverts

Surface Type	Count	Replacement Cost
Bridges	8	$5,170,000
Structural Culverts	3	$1,010,000
Total	**11**	**$6,190,000**

Map 2-2: Bridges and Structural Culverts



2.2.2 Condition

The Township assessed the condition of its paved roads in 2020 using TotalPave and assessed the condition of gravel roads in 2021 as a desktop exercise. Paved roads were assessed using the Pavement Condition Index (PCI). The PCI is measured on a scale from 0 to 100, with 100 being an asset in as-new condition and 0 being a failed

asset. Gravel roads were assessed on a subjective three-point scale: Good (3), Fair (2), and Poor (1).

Going forward, it will be important for the Township to keep the condition data up to date so that it can be used to accurately plan asset interventions. To this end, the Township plans to formally re-assess the condition of its roads every five years using external consultants that can provide a consistent, objective assessment of condition. The PCI will be assessed using the methodology in the Ontario Ministry of Transportation's Manual for Condition Rating of Flexible Pavements MTO SP024. The timing of the condition assessments will be aligned with the timing of the update to the asset management plan required every five years by O. Reg. 588/17. Annual adjustments to the PCI will be done as a desktop exercise between the condition assessments. The annual adjustments will account for improvements done in the year and expected annual decreases in PCI due to typical use of the roads. The condition of gravel roads will be reviewed and updated periodically by staff.

To better communicate the condition of the road network, the numeric condition ratings for roads have been segmented into qualitative condition states. Moreover, descriptions of these condition states are provided to better communicate the condition to the reader. Table 2-3 summarizes the various physical condition ratings and the condition state they represent for paved roads. Table 2-4 summarizes the condition states for gravel roads.

Table 2-3: Road Condition States Defined with Respect to Pavement Condition Index

Pavement Condition Index (PCI) Range[1]	Condition State	Description
85 < PCI ≤ 100	**Excellent**	A very smooth ride. Pavement is in excellent condition with few cracks.
70 < PCI ≤ 85	**Good**	A smooth ride with just a few bumps or depressions. The pavement is in good condition with frequent very slight or slight cracking.
55 < PCI ≤ 70	**Fair**	A comfortable ride with intermittent bumps or depressions. The pavement is in fair condition with intermittent moderate and frequent slight cracking, and with intermittent slight or moderate alligatoring and distortion.
40 < PCI ≤ 55	**Poor**	An uncomfortable ride with frequent to extensive bumps or depressions. Cannot maintain the posted speed at lower end of the scale. The pavement is in poor to fair condition with frequent moderate cracking and distortion, and intermittent moderate alligatoring.
25 < PCI ≤ 40	**Very Poor**	A very uncomfortable ride with constant jarring bumps and depressions. Cannot maintain the posted speed and must steer constantly to avoid bumps and depressions. The pavement is in poor condition with moderate alligatoring and extensive severe cracking and distortion.
10 ≤ PCI ≤ 25	**Serious**	The pavement is in poor to very poor condition with extensive severe cracking, alligatoring and distortion.
0 ≤ PCI ≤ 10	**Failed**	

[1] The mapping of PCI values to Condition States (PCI Labels) is based on the intervals used in TotalPave.

Table 2-4: Road Condition States Defined – Gravel Roads

Condition State	Description[1]
Good	Roadway surface well shaped with shoulder between roundings. Some distress manifestations in slight to moderate class such as loose gravel, dust, potholes, etc. There may be a few soft spots of frost heaving when evaluation is made in late spring. Good drainage for surface run-off on roadway and shoulder.
Fair	Mixture of properly shaped roadway surface and improperly shaped areas. Shoulder distress manifestations such as ponding and overgrowth evident between roundings in slight to moderate class. Various surface distress manifestations present such as washboarding, potholes, etc., in slight to moderate class. Localized breakup may be present.
Poor	Majority of roadway surface improperly shaped. Shoulder distress manifestations in moderate to severe class. Various roadway surface distress manifestations making travel unpleasant because of washboarding, dust, potholes, distortions, etc. Localized breakup areas.

[1] Descriptions are from the Ministry of Transportation "SP-025 Manual for Condition Rating of Gravel Surface Roads."

Table 2-5 shows the average condition of the road network by surface type, which is weighted based on centreline-kilometres. On average, HCB roads are in the Excellent condition state, LCB roads are in the Good condition state, and gravel roads are in the Fair condition state. Figure 2-2 and Figure 2-3 show the distribution of road condition for paved and gravel roads in the Township. It is important to note that, in contrast to paved roads, the condition of gravel roads can change significantly in a short period. Wet or cold weather events can cause the condition of gravel roads to rapidly deteriorate, while routine maintenance activities such as grading can significantly improve their condition. The result is that the condition of gravel roads can vary significantly over the course of a single year, both up and down. Therefore, the average condition of gravel roads presented in Table 2-5 is only accurate within a short timeframe of the assessment. Map 2-3 provides a spatial illustration of the condition of the Township's roads. For greater clarity, maps showing the condition of paved and gravel roads separately are included in Appendix B.

Table 2-5: Road Condition Analysis

Road Surface	Centreline Kilometres	Condition (Weighted Average)	Average Condition State
HCB	3.7	87	**Excellent**
LCB	38.2	75	**Good**
Gravel	100.7	1.7	**Fair**
Total	**142.7**	**Not applicable[1]**	**Not applicable**

[1] The condition measures for paved and gravel roads are on different scales and cannot be averaged together in a meaningful way.

Figure 2-2: Distribution of Paved Road Centreline Length by Condition State

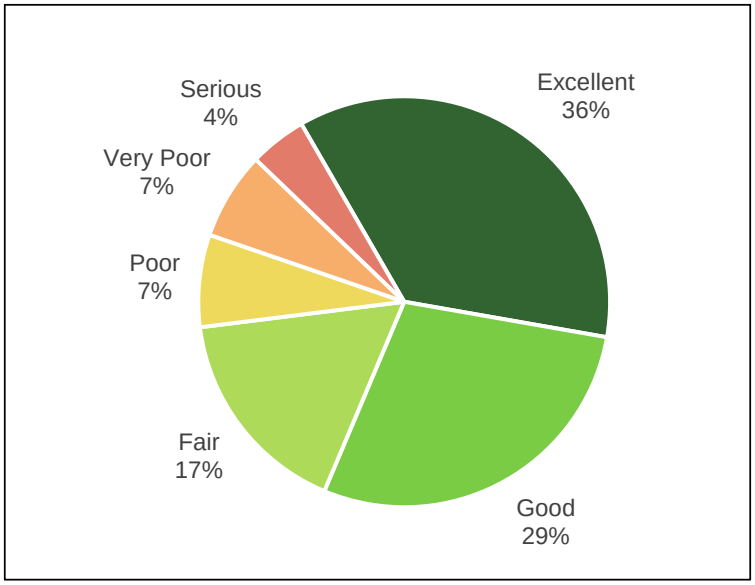
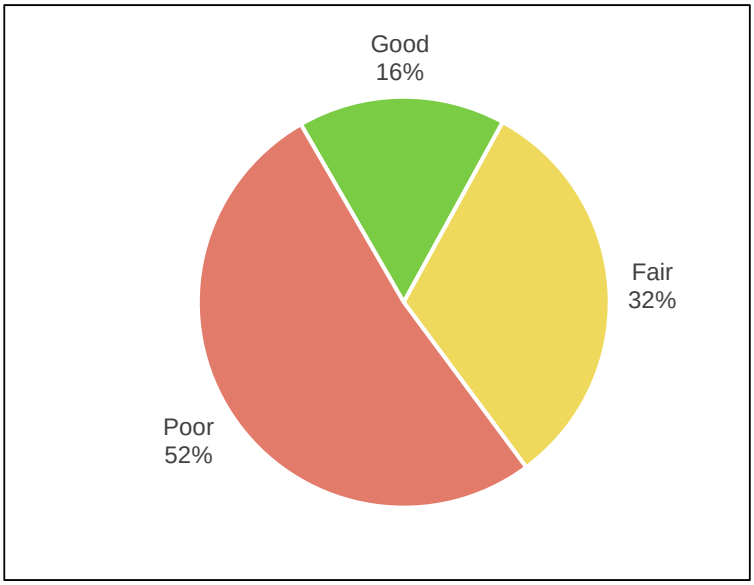
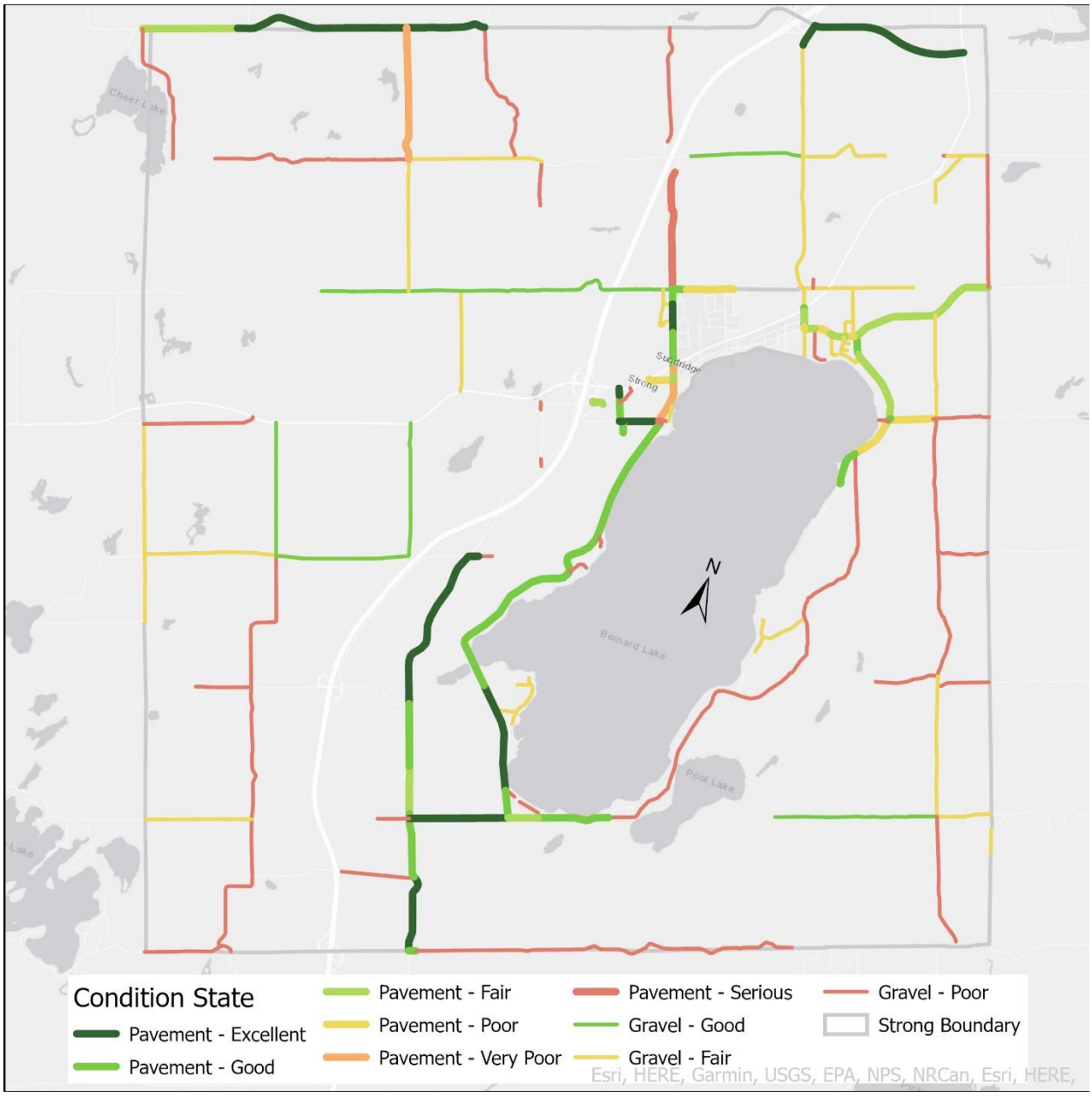


Figure 2-3: Distribution of Gravel Road Centreline Length by Condition State



Map 2-3: Roads by Condition



Similar to road assets, to better communicate the condition of the bridge and culvert inventory, the numeric condition ratings have been segmented into qualitative condition states. Photographs and descriptions of these condition states (and the corresponding range of BCI values) are provided in Table 2-6.

Table 2-6: Examples and Descriptions of Bridge and Culvert Condition States

BCI Range	Condition State	Bridge Photos	Culvert Photos	Description[1]
70 < BCI ≤ 100	**Good**			Maintenance is not usually required within the next five years
60 < BCI ≤ 70	**Fair**	**No Examples**		Maintenance work is usually scheduled within the next five years. This is the ideal time to schedule major bridge repairs to get the most out of bridge spending.
0 < BCI ≤ 60	**Poor**		**No Examples**	Maintenance work is usually scheduled within one year. Structure may be at increased risk of requiring a loading restriction to be posted.

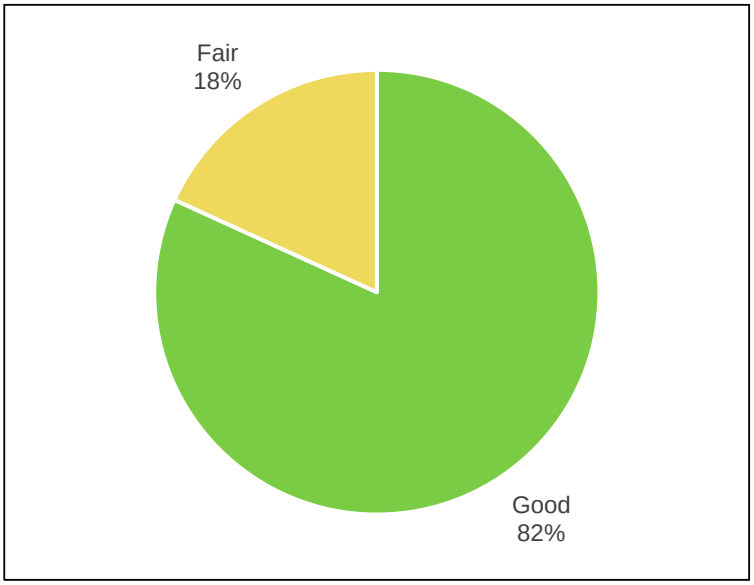
[1] Descriptions are based on descriptions in the Ministry of Transportation's "Ontario Structure Inspection Manual – 2008."

Table 2-7 shows the average BCI for bridges and structural culverts. On average, the Township's bridges and structural culverts are in the Good condition state. Figure 2-4 shows the overall distribution of condition for the Township. provides a spatial illustration of the condition of the Township's bridges and structural culverts.

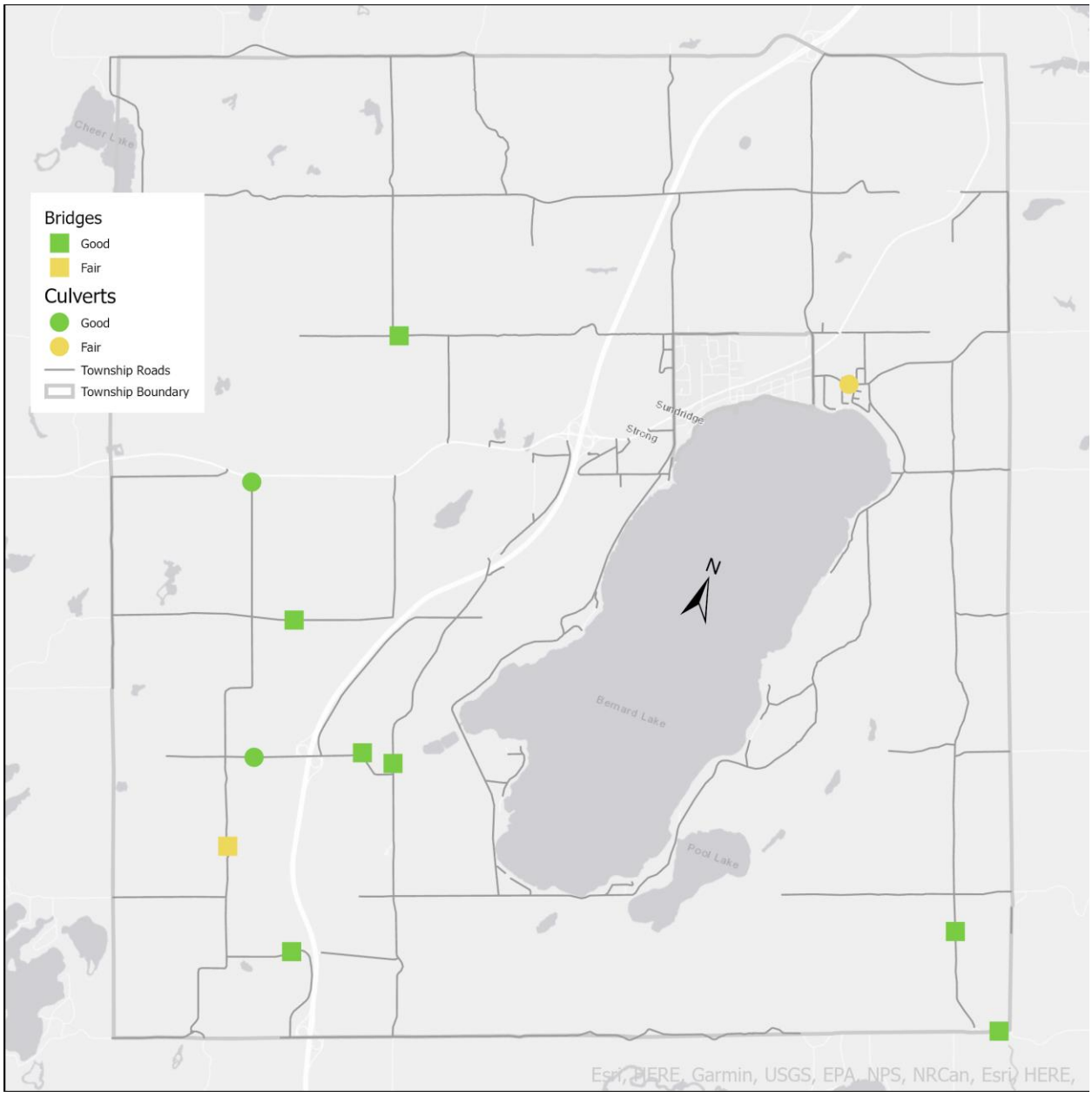
Table 2-7: Bridges and Structural Culverts Condition Analysis

Road Surface	Count	Condition (Weighted Average)	Average Condition State
Bridges	8	74	**Good**
Structural Culverts	3	72	**Good**
Total	**11**	**74**	**Good**

Figure 2-4: Distribution of Bridges and Structural Culverts by Condition State



Map 2-4: Bridges and Structural Culverts by Condition



2.2.3 Current and Proposed Levels of Service

This section provides an overview of the Township's level of service framework for transportation services.

Table 1: Community Levels of Service – Roads and Bridges

Service Attribute	Community Levels of Service
Scope	The Township's transportation assets enable the movement of people and goods within the Township and provide connectivity to regional roads. The Township's transportation assets also provide tourists with access to camping areas and resorts. In addition to passenger vehicles, the Township's transportation assets support commercial and forestry truck traffic, and provide reliable emergency vehicle access to all areas of the Township. The Township's transportation network also supports various recreational activities, including the use of recreational vehicles, such as ATVs and snowmobiles, walking, cycling, and horseback riding.
	The scope of the Township's transportation assets is illustrated in Map 2-1 and Map 2-2. The maps show the geographical distribution of transportation assets and identify locations of the Township's bridges and structural culverts.
Quality	The Township strives to maintain road and bridge surfaces to a level that supports a comfortable travel experience for road users.
	Descriptions of roads, bridges and structural culverts in different condition states are shown in Table 2-3, Table 2-4, and Table 2-6.
Cost	The Township strives to deliver transportation services efficiently and at a cost that is affordable to Township taxpayers.

Table 4: Technical Levels of Service – Roads and Bridges

Service Attribute	Performance Measure	2020 Performance	Proposed Performance
Scope	Number of lane-kilometres of arterial roads as a proportion of square kilometres of land area of the Township	Not Applicable	➡
	Number of lane-kilometres of collector roads as a proportion of square kilometres of land area of the Township	Not Applicable	➡
	Number of lane-kilometres of local roads as a proportion of square kilometres of land area of the Township	1.8 km/km²	➡
	Percentage of bridges in the Township with loading or dimensional restrictions	63%[1]	➡

[1] Single-lane bridges were considered to have a dimensional restriction. Five of the Township's eight bridges are single-lane bridges. Two of the single-lane bridges also have loading restrictions.

Service Attribute	Performance Measure	2020 Performance	Proposed Performance
Quality	For paved roads in the municipality, the average pavement condition index value	76	⬆
	Lane-kilometres of paved roads in a condition state of poor or worse (Percentage of total lane-kilometres)	15.7 km (18%)	⬇
	For unpaved roads in the municipality, the average surface condition (Good = 3; Fair = 2; Poor = 1)	1.64 (Fair)	⬆
	Lane-kilometres of high-volume gravel roads in a condition state of Fair or Poor (Percentage of total lane-kilometres)	106.8 km (81%)	⬇
	Lane-kilometres of Low-volume gravel roads in a condition state of poor (Percentage of total lane-kilometres)	33.3 km (48%)	⬇
	Percentage of minimum maintenance standard deficiencies remedied within prescribed timeframe	Not currently available	
	For bridges in the municipality, the average BCI value	74	➡
	Number of bridges in the Poor condition state	0	➡
	For structural culverts in the municipality, the average BCI value	72	➡
	Number of structural Culverts in the Poor condition state	0	➡
	Average condition of non-structural culverts	Not currently available	
	Number of non-structural culverts in the poor condition state	Not currently available	
Cost	Annual road maintenance costs as a percentage of reconstruction cost for paved roads	0.34%	⬇
	Annual road maintenance costs as a percentage of reconstruction cost for gravel roads	1.31%	⬇

2.3 Facilities

2.3.1 State of Local Infrastructure

The Township is responsible for eleven facilities. Table 2-8 lists all of the Township's facilities.

Table 2-8: Listing of Facilities and Replacement Costs

Facility	Replacement Cost
B01 - Municipal Office	$1,461,000
B02 - Public Works Office	$802,000
B03 - Cold Storage Depot	$244,000
B04 - Sand Dome	$290,100
B05 - Quonset Hut	$474,800
B06 - Storage Building - Landfill No. 1	$138,700
B07 - Recycling Building - Landfill No. 1	$48,200
B08 - Storage Building - Landfill No. 2	$7,500
B09 - Former Church	$503,000
B10 - Cemetery Vault Building	$48,700
B11 – SSJ Arena	$11,375,000
Total	$15,393,000

2.3.2 Condition

All facilities except for the SSJ Arena were assigned a facility-level condition rating by Township staff using the scale shown in Table 2-9. The Township hired WalterFedy to do a component-level condition assessment of the SSJ Arena in 2021. WalterFedy used the four-point component rating scale shown in Table 2-10.

Table 2-9: Facility-level Rating Scale

Condition	Description
Very Good	No concerns.
Good	Deterioration causes minimal influence on use of facility. Occasional concerns raised by users.
Fair	Some deterioration beginning to be reflected in minor restrictions on operational uses. Concerns from users.
Poor	Regular complaints from users.
Very Poor	Generally not suitable for use.

Table 2-10: Facilities Condition Assessment Component Rating Scale

Condition	Description
Excellent (4)	Element(s) collectively are in a condition indistinguishable from new.
Good (3)	Element(s) are in a condition to have a collective remaining life span in excess of five years.
Fair (2)	Element(s) collectively require some level of immediate attention within the short term (less than five years) of either repair, replacement, or upgrade. Individual life spans may vary.
Poor (1)	Element(s) collectively require some level of immediate action of either repair, replacement, or upgrade. Individual life spans may vary.

To integrate the SSJ Arena into the facility level condition assessment done for the other facilities, it has been assigned a condition rating of Good based on the average component condition rating, weighted by replacement cost of the component. Figure 2-5 shows the distribution of component replacement cost at the SSJ Arena by condition rating.

Figure 2-5: Distribution of Replacement Cost of Assessed Components by Condition Rating – SSJ Arena

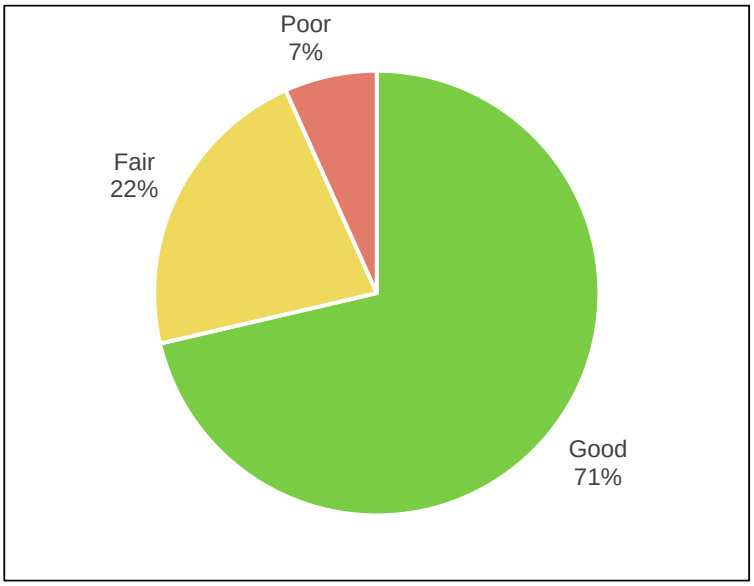
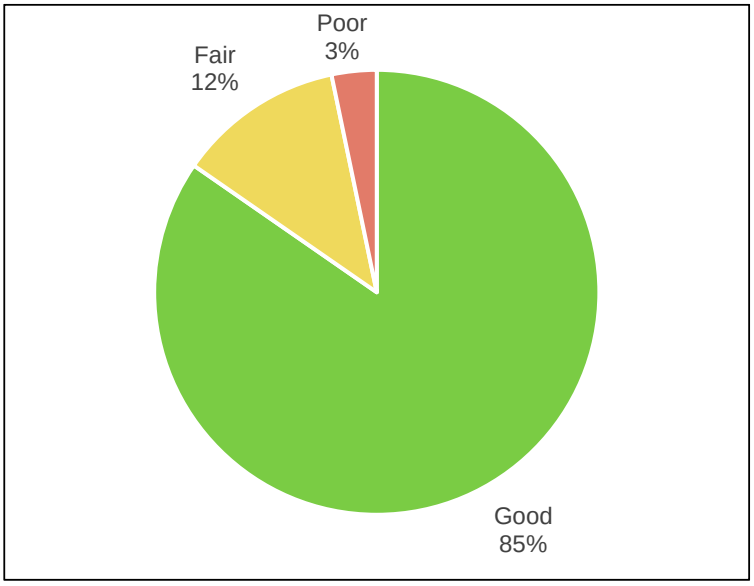


Table 2-11 lists facilities by condition. Figure 2-6 shows that facilities in good condition represent approximately 85% of the replacement cost of all facilities. The replacement cost of those in Fair condition is 12% of the total. Facilities in Poor condition have a replacement cost that is 3% of the total.

Table 2-11: Listing of Facility by Condition

Facility	Condition
B01 - Municipal Office	**Good**
B06 - Storage Building - Landfill No. 1	**Good**
B07 - Recycling Building - Landfill No. 1	**Good**
B08 - Storage Building - Landfill No. 2	**Good**
B11 - Arena	**Good**
B02 - Public Works Office	**Fair**
B03 - Cold Storage Depot	**Fair**
B04 - Sand Dome	**Fair**
B05 - Quonset Hut	**Fair**
B10 - Cemetery Vault Building	**Fair**
B09 - Former Church	**Poor**

Figure 2-6: Distribution of Facility Replacement Cost by Condition Rating



2.3.3 Current and Proposed Levels of Service

This section provides an overview of the Township's level of service framework for Facilities.

Table 5: Community Levels of Service – Facilities

Service Attribute	Community Levels of Service
Quality	The Township maintains facilities at a level that provides a reasonable user experience.
Accessibility	The Township strives to make facilities accessible where possible.

Table 6: Technical Levels of Service – Facilities

Service Attribute	Performance Measure	2020 Performance	Proposed Performance Target
Quality	Average condition of facilities	Good	➡
Accessibility	Number of facilities with accessibility concerns	1	0

2.4 Fleet

2.4.1 State of Local Infrastructure

The Township currently maintains a fleet of 19 vehicles with 18 supporting assets such as attachments and trailers. The total replacement cost of the Township's fleet assets is $2,603,000. The vehicles are divided between five departments, Public Works, Landfill, Arena, Joint Building Committee (JBC), and Bylaw. Table 2-12 shows the number of vehicles and supporting assets and the replacement costs broken down by department.

Table 2-12: Number of Fleet Assets and Replacement Costs by Department

Department	Number of Vehicles	Number of Supporting Assets	Replacement Cost
Public Works	11	12	$2,013,000
Landfill	4	1	$404,000
Arena	2	5	$146,000
JBC	1	0	$34,000
Bylaw	1	0	$6,000
Total	**19**	**18**	**$2,603,000**

2.4.2 Condition

The condition of fleet assets is evaluated based on age relative to the expected useful life (i.e., based on the percentage of useful life (UL%) consumed). A brand-new asset would have a UL% of 0%, indicating that zero percent of the asset's life expectancy has been utilized. On the other hand, an asset that has reached its life expectancy would have a UL% of 100%. It is possible for assets to have a UL% greater than 100%, which occurs if an asset has exceeded its typical life expectancy but continues to be in service. This is not necessarily a cause for concern; however, it must be recognized that assets that are near or beyond their typical life expectancy are expected to require replacement or rehabilitation in the near term. For fleet assets, the age-based conditions were reviewed (and adjusted where needed), by the Township's staff to

ensure that they are reflective of the physical condition and remaining service life of the assets.

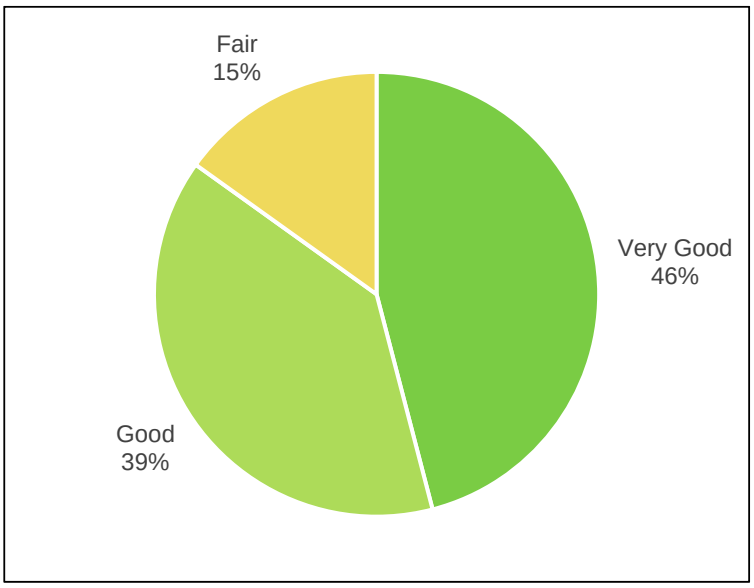
To better communicate the condition of fleet assets, the UL% ratings have been segmented into qualitative condition states as summarized in Table 2-13. The scale is set to show that if assets are replaced around the expected useful life, they would have a rating of Fair. The rating of Fair extends to 140% of expected useful life. Beyond 140% of useful life, the probability of failure is assumed to have increased to a point where performance would be characterized as Poor or Very Poor.

Table 2-13: Condition States Defined with Respect to UL%

UL%	Condition State
0% ≤ UL% ≤ 45%	**Very Good**
45% < UL% ≤ 90%	**Good**
90% < UL% ≤ 140%	**Fair**
140% < UL% ≤ 200%	**Poor**
200% < UL%	**Very Poor**

Figure 2-7 shows the distribution of replacement cost by condition state for fleet assets. While most fleet assets (85%) are in a condition state of Very Good or Good, there are also some older assets. Fifteen percent of the fleet assets are in a Fair condition state, four vehicles and two supporting assets. These assets may need replacing over the next few years. The replacements have been included in the 10-year capital plan.

Figure 2-7: Fleet Asset Condition State Distribution

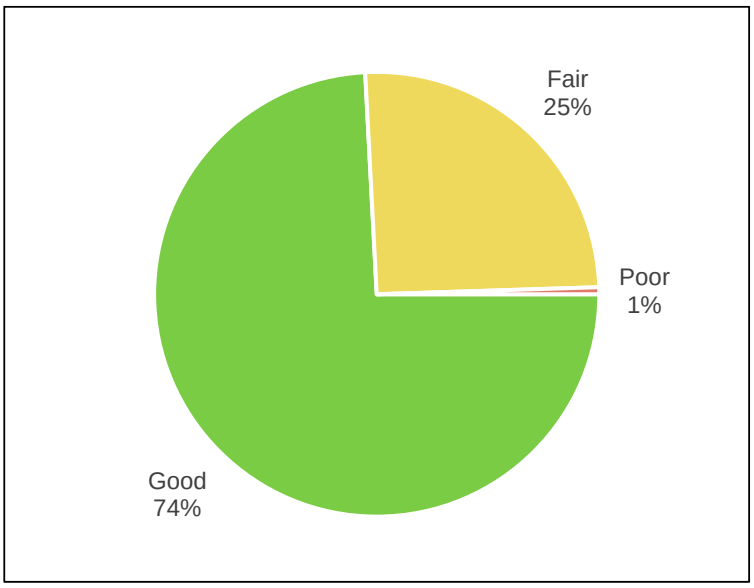


Closely related to condition is reliability. Township staff subjectively rated reliability on the three-point scale shown in Table 2-14. As shown in Figure 2-8, almost three-quarters of fleet assets (74%) were given a reliability rating of Good. A further 25% were given a reliability rating of Fair. Only 1% of fleet assets, corresponding to one piece of equipment, was given a reliability rating of Poor. The replacement of the asset in Poor condition has been included in the 10-year capital plan.

Table 2-14: Asset Condition States

Description	Reliability
Issues and breakdowns are not expected	**Good**
Minor issues can be expected and there is a risk of breakdowns	**Fair**
Breakdowns and failures are common	**Poor**

Figure 2-8: Distribution of Replacement Cost by Reliability



2.4.3 Current and Proposed Levels of Service

This section provides an overview of the Township's level of service framework for fleet.

Table 2-15: Community Levels of Service – Fleet

Service Attribute	Community Levels of Service
Reliability	The Township maintains vehicles so that they can be relied upon to perform as intended.
Efficiency	The Township strives to operate and maintain its fleet at the lowest cost while still ensuring reliability performance targets are met.

Table 2-16: Technical Levels of Service – Fleet

Service Attribute	Performance Measure	2020 Performance	Target
Reliability	Average reliability of vehicles as rated by staff (Good = 3; Fair = 2; Poor = 1)	2.74 (Good)	↑
	Count of vehicles with condition rating of Poor	0	→
Efficiency	Litres of diesel per 100 km for vehicles with odometers	Not currently available	
	Litres of gasoline per 100 km for vehicles with odometers	Not currently available	
	Litres of gasoline used for vehicles and equipment without odometers	Not currently available	

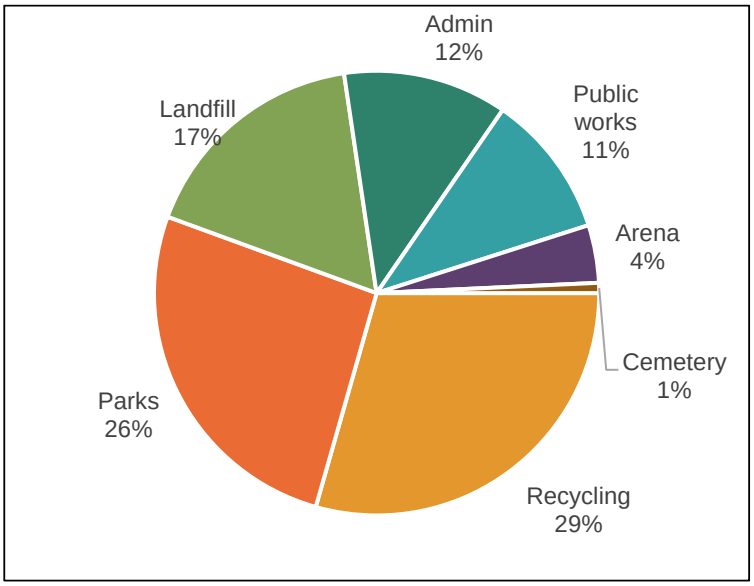
2.5 Equipment and Land Improvements

2.5.1 State of Local Infrastructure

The Township has 35 equipment and land improvement assets. The total replacement cost of these assets is $595,000.

Figure 2-9 shows how the replacement cost of these assets is distributed across departments. The Recycling department has the highest share (29%), followed by Parks (26%), Landfill (17%), Administration (12%), Public works (11%), Arena (4%), and the Cemetery with 1%.

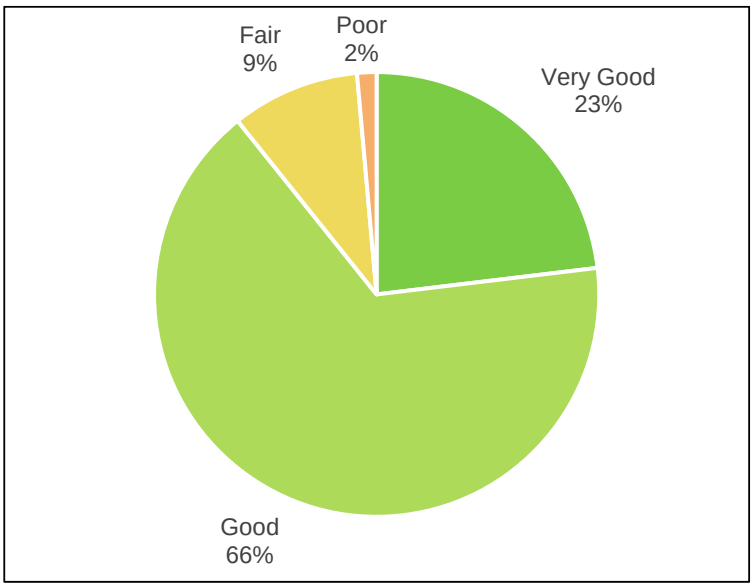
Figure 2-9: Distribution of Equipment and Land Improvement Replacement Costs by Department



2.5.2 Condition

The condition of equipment and land improvements is evaluated based on age in the same way fleet assets are, utilizing the condition states as summarized in Table 2-13 in the fleet section. The average UL% is 59.7%, which is categorized as Good. Figure 2-10 shows the distribution of replacement cost by condition state. Most assets, 89%, are in a Very Good or Good condition state according to this age-based analysis. Further, 9% of assets are in a Fair condition state indicating that they are likely to require replacement in the near future, and 2% of assets are in a Poor condition state, indicating that they are well past their expected useful life and replacement is likely imminent. Replacements of assets in Fair and Poor condition states have been included in the 10-year capital plan.

Figure 2-10: Equipment Asset Condition Distribution



2.5.3 Current and Proposed Levels of Service

This section provides an overview of the Township's level of service framework for equipment and land improvements.

Table 2-17: Community Levels of Service – Equipment and Land Improvements

Service Attribute	Community Levels of Service
Reliability	The Township maintains equipment and land improvements so that they can be relied upon to perform as intended.

Table 2-18: Technical Levels of Service – Equipment and Land Improvements

Service Attribute	Performance Measure	2020 Performance	Target
Reliability	Number of equipment items with condition rating of Poor or worse	2	↓
	Number of land improvement assets with condition rating of Poor or worse	0	→

2.6 Population and Employment Growth

As of the 2016 Census, the Township had a population of approximately 1,439. Between 2011 and 2016, the Township population grew from 1,341 to 1,439, an annual growth rate of 1.4% per year.

Continued population growth may result in incremental service demands that would impact levels of service. If needed, the Township would address these pressures through established planning processes such as development of master plans for specific services. If future master planning studies identify the need for new infrastructure and/or upgrades of existing infrastructure to accommodate future population growth, the Township should consider the option of imposing development charges. Utilizing development charges would ensure that the effects of future population growth do not increase the cost of maintaining levels of service for existing taxpayers.

Chapter 3
Lifecycle Management Strategy

3. Lifecycle Management Strategy

3.1 Introduction

This chapter details the lifecycle management strategies required to achieve the proposed levels of service presented in Chapter 2. A lifecycle management strategy identifies the recommended lifecycle activities required to achieve the levels of service discussed Chapter 2. Within the context of this asset management plan, lifecycle activities are the specified actions that can be performed on an asset in order to ensure it is performing at an appropriate level, and/or to extend its service life.[1] These actions can be carried out on a planned schedule in a prescriptive manner, or through a dynamic approach where the lifecycle activities are only carried out when specified conditions are met.

O. Reg. 588/17 requires that all potential lifecycle activity options be presented, with the aim of analyzing these options in search of identifying the set of lifecycle activities that can be undertaken at the lowest cost to maintain current levels of service or to provide proposed levels of service. Asset management plans must include a ten-year capital plan that forecasts the lifecycle activities resulting from the lifecycle management strategy.

While human resources fall outside the scope of this asset management plan, it is important recognize that they are critical assets in themselves and are vital to the implementation of this plan. In order for the Township to successfully manage its infrastructure, it will be imperative to maintain appropriate staffing levels to plan, procure, supervise, and in some cases directly perform the lifecycle activities identified in the lifecycle management strategies contained herein.

What follows are the lifecycle management strategies for all assets contained within this asset management plan, with each section focusing on an individual asset class. Each section has two parts. The first part, Decision Making Process, discusses how projects are selected and prioritized for implementation. The second part, Estimating Long-run

[1] The full lifecycle of an asset includes activities such as initial planning and maintenance which are typically addressed through master planning studies and maintenance management, respectively.

Needs, presents a generalized lifecycle model for how assets typically are expected to perform, average annual lifecycle costs, and a long-range forecast of investment needs.

3.2 Transportation

3.2.1 Decision Making Process – Transportation

3.2.1.1 HCB roads

Lifecycle activities for HCB roads will be done on an as-needed basis as identified by Township staff. If significant work needs to be done, the option of changing surface type to LCB should be considered because of the lower lifecycle cost and the efficiency of integrating management of the segment into the management process for the much larger LCB road inventory.

3.2.1.2 LCB roads

The decision to do resurfacing work on LCB roads is made by staff based on observations of distresses such as extensive patching and alligator cracking. If an overlay is being considered, a microseal is used unless there are indications of surface breakup that would cause a microseal to fail early. In this case, a single surface treatment overlay is used. If re-grading is needed to address issues that are identified, the surface is pulverized and a double surface treatment is applied.

3.2.1.3 Gravel roads

Gravel roads are assessed by Township staff. In general, the roads in the worst condition are re-gravelled first. Factors such as the volume and type of traffic can result in roads in relatively good condition being re-gravelled. The intent is to have all high-volume gravel roads kept in Good condition, low-volume gravel roads kept in Fair or Good condition.

3.2.1.4 Bridges and Structural Culverts

The biennial OSIM reports required by O. Reg. 104/97 form a starting point for short- and medium-term planning. They include recommendations for lifecycle activities that should be done over a ten-year timeframe. These recommendations are reviewed by Township staff to ensure they are affordable and that potential lower cost alternatives have been explored.

3.2.2 Estimating Long-run Needs for Transportation Assets

To estimate long-run needs, the Township's roads have been broken down into five categories based on surface type and traffic volume as shown in Table 3-1. The categorization of the LCB and gravel roads into high-volume and low-volume traffic roads was done by Township staff based on their experience managing the roads. If formal traffic counts are done in the future, a data driven definition could be used.

Table 3-1: Categorization of Roads for Lifecycle Management Strategies

Lifecycle Management Strategy Category	Description	Quantity (Centreline-kilometres)	Replacement Cost
HCB	All asphalt roads	3.7	$2,280,000
LCB – High-Volume	Surface treated roads with high traffic volume	31.4	$10,680,000
LCB – Low-Volume	Surface treated roads with low traffic volume	6.8	$2,320,000
Gravel – High-Volume	Gravel roads with high traffic volume	65.7	$12,480,000
Gravel – Low-Volume	Gravel roads with low traffic volume	35.0	$6,650,000
Total		**142.7**	**$34,410,000**

Bridges and structural culverts are broken down into three categories as shown in Table 3-2. The generalized lifecycle models have lifecycle activity costing represented as percentages of replacement costs. Short- and medium-term funding requirements are identified in the biennial OSIM reports required by O. Reg. 104/97.

Table 3-2: Categorization of Bridges and Structural Culverts for Lifecycle Management Strategies

Lifecycle Management Strategy Category	Quantity	Replacement Cost
Bridge	8	$5,172,000
Concrete Culvert	2	$739,000
Steel Culvert	1	$275,000
Total	**11**	**$6,187,000**

3.2.2.1 HCB Road Generalized Lifecycle Model

Table 3-3 shows the parameters of the generalized lifecycle model for HCB roads. Average annual lifecycle capital costs are $14,760 per centreline-kilometre. With 3.7 centreline-kilometres of roads in this category, the total average annual lifecycle capital cost is $55,100

Table 3-3: Generalized Lifecycle Model for HCB Roads: Capital

Activity Description	Cost per Centreline-kilometre	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Microseal	$35,000	$1,400	15	PCI ~ 55
Pulverize and repave	$334,000	$13,360	25	PCI ~ 55
Total	**$369,000**	**$14,760**		

3.2.2.2 LCB – High-Volume Road Generalized Lifecycle Model

Table 3-4 shows the parameters of the generalized lifecycle model for LCB – High-Volume roads. Average annual lifecycle capital costs are $11,170 per centreline-kilometre. With 31.4 centreline-kilometres of roads in this category, the total average annual lifecycle capital cost is $350,800

Table 3-4: Generalized Lifecycle Model for LCB High-Volume Roads: Capital

Activity Description	Cost per Centreline-kilometre	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Single surface treatment	$28,000	$1,870	3	
Microseal	$35,000	$2,330	7	PCI ~ 55
Replace culverts	$4,790	$320	14	
Ditching	$14,000	$930	14	
Brushing	$17,500	$1,170	14	
Pulverize surface and double surface treatment	$68,250	$4,550	15	PCI ~ 55
Total	**$167,540**	**$11,170**		

3.2.2.3 LCB – Low-Volume Road Generalized Lifecycle Model

Table 3-5 shows the parameters of the generalized lifecycle model for LCB Low-Volume roads. Average annual lifecycle capital costs are $8,380 per centreline-kilometre. With 6.8 centreline-kilometres of roads in this category, the total average annual lifecycle capital cost is $57,100

Table 3-5: Generalized Lifecycle Model for LCB – Low-Volume Roads: Capital

Activity Description	Cost per Centreline-kilometre	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Single surface treatment	$28,000	$1,400	5	
Microseal	$35,000	$1,750	10	PCI ~ 55
Replace culverts	$4,790	$240	19	
Ditching	$14,000	$700	19	
Brushing	$17,500	$875	19	
Pulverize surface and double surface treatment	$68,250	$3,410	20	PCI ~ 55
Total	**$167,540**	**$8,380**		

3.2.2.4 Gravel – High-Volume Road Generalized Lifecycle Model

Table 3-6 shows the parameters of the generalized lifecycle model for Gravel – High-Volume roads. Average annual lifecycle capital costs are $1,670 per centreline-kilometre. With 65.7 centreline-kilometres of roads in this category, the total average annual lifecycle capital cost is $109,700

Table 3-6: Generalized Lifecycle Model for Gravel – High-Volume Roads: Capital

Activity Description	Cost per Centreline-kilometre	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Regravelling	$8,350	$1,670	5	
Total	**$8,350**	**$1,670**		

3.2.2.5 Gravel – Low-Volume Road Generalized Lifecycle Model

Table 3-7 shows the parameters of the generalized lifecycle model for Gravel – Low-Volume roads. Average annual lifecycle capital costs are $1,040 per centreline-kilometre. With 35.0 centreline-kilometres of roads in this category, the total average annual lifecycle capital cost is $36,500

Table 3-7: Generalized Lifecycle Model for Gravel – Low-Volume Roads: Capital

Activity Description	Cost per Centreline-kilometre	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Regravelling	$8,350	$1,040	8	
Total	**$8,350**	**$1,040**		

3.2.2.6 Bridges Generalized Lifecycle Model

Table 3-8 shows the parameters of the generalized lifecycle model for bridges. Average annual lifecycle capital costs are 2% of replacement cost. With a total replacement cost of $5,172,000 for eight bridges, the total average annual lifecycle capital cost is $103,400.

Table 3-8: Generalized Lifecycle Model for Bridges: Capital

Activity Description	Percentage of Replacement Cost	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Minor Rehabilitation	15%	0.20%	25	
Major Rehabilitation	35%	0.47%	50	
Replacement[1]	100%	1.33%	75	
Total	**150%**	**2%**		

3.2.2.7 Concrete Culverts Generalized Lifecycle Model

Table 3-9 shows the parameters of the generalized lifecycle model for concrete culverts. Average annual lifecycle capital costs are 1.8% of replacement cost. With a total replacement cost of $739,000 for two concrete culverts, the total average annual lifecycle capital cost is $13,300.

[1] It is assumed that bridges will be replaced with like-for-like. The 2020 OSIM report suggests that some narrow bridges should be replaced with 10 metre wide bridges to meet current standards. The increased cost of the larger bridges is not incorporated into the generalized lifecycle model.

Table 3-9: Generalized Lifecycle Model for Concrete Culverts: Capital

Activity Description	Percentage of Replacement Cost	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Major Rehabilitation	35%	0.47%	40	
Replacement	100%	1.33%	75	
Total	**135%**	**1.8%**		

3.2.2.8 Steel Culverts Generalized Lifecycle Model

Table 3-10 shows the parameters of the generalized lifecycle model for steel culverts. Average annual lifecycle capital costs are 2% of replacement cost. With a total replacement cost of $275,000 for one steel culvert, the total average annual lifecycle capital cost is $5,500.

Table 3-10: Generalized Lifecycle Model for Steel Culverts: Capital

Activity Description	Percentage of Replacement Cost	Average Annual Cost per Centreline-kilometre	Age	Condition / Performance
Replacement	100%	2%	50	
Total	**100%**	**2%**		

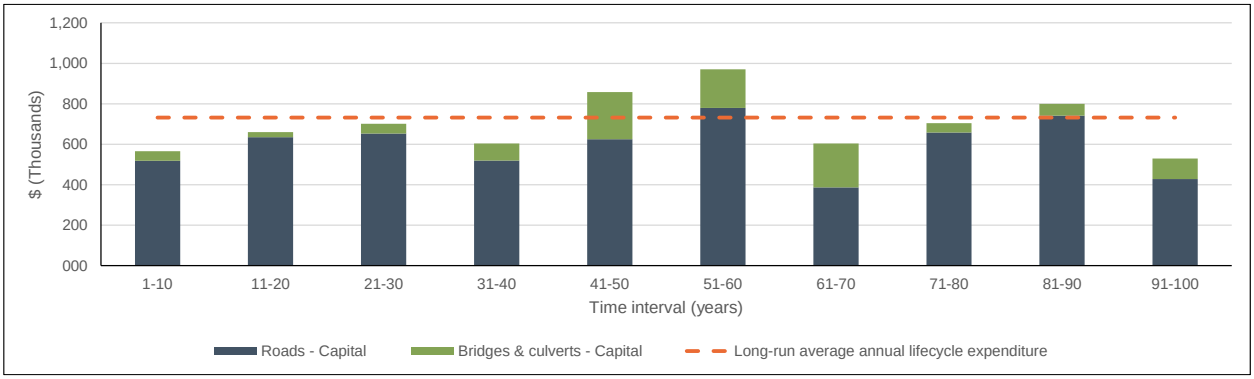
3.2.3 Average Annual Lifecycle Costs and Long-run Forecast

The generalized lifecycle models were used to estimate average annual lifecycle costs and to develop a high level 100-year forecast by decade. Table 3-11 shows that the total average annual lifecycle capital cost for transportation assets is $731,500. This is comprised of $609,300 for roads and $122,300 for bridges and structural culverts. Figure 3-1 shows average annual funding requirements by decade. Funding requirements for the next 40 years are below average. The following two decades are above average with years 51-60 being 33% above the long-run average. To smooth this peak, either some projects should be done early, or a reserve should be built up to fund the peaks.

Table 3-11: Average Annual Lifecycle Costs – Transportation Assets

Asset Class	Average Annual Lifecycle Cost (Capital)
Roads	$609,300
Bridges and Structural Culverts	$122,300
Total	**$731,500**

Figure 3-1: Transportation Assets Lifecycle Management Strategy – Average Annual Funding Requirements by Decade



3.3 Facilities

3.3.1 Decision Making Process – Facilities

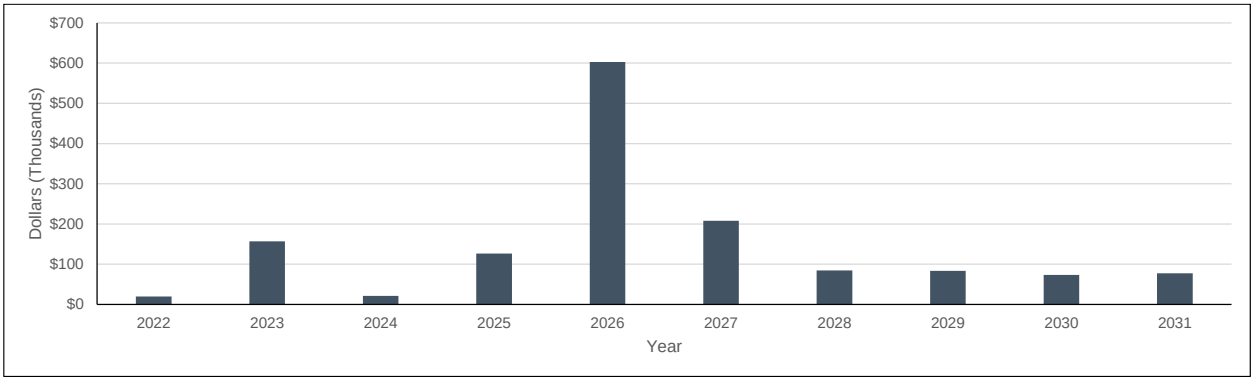
Facilities are composite assets with individual components being replaced at the end of their useful life. For example, over time the shingles on a roof deteriorate. At some point, all the shingles are removed and replaced with new ones. The timing of this replacement is independent of the state of other facility components. All of the Township's facilities are evaluated by Township staff to identify components that need repair or replacement. For all facilities except for the SSJ Arena, staff inspections are sufficient to identify components that need to be repaired or replaced. The SSJ Arena is a larger facility and periodically requires structural inspections to ensure the

soundness of the substructure and superstructure. Components that are identified as needing replacement are prioritized by staff and addressed when funding is available.

3.3.2 Estimating Long-run Needs for Facilities

Township staff produced a 10-year capital plan for all of the facilities except the SSJ Arena. For the arena, the Township hired WalterFedy to do a formal facility condition assessment. Figure 3-2 shows the total funding need identified for facilities. The large value in 2026 is due mainly to some large projects identified at the SSJ Arena. The average over the 10-year period is $160,400.

Figure 3-2: Facilities – 10-year Capital Forecast



Longer term funding requirements were identified at a high level by breaking down the list of facilities into simple facilities and more complex facilities. Simple facilities consist mainly of a shell. For example, a shed would be considered a simple facility. More complex facilities have services such as water, wastewater, electricity, and HVAC. Four of the Township's facilities were identified as being more complex: B01 – Municipal Office, B02 – Public Works Office, B09 – Former Church, and B011 Arena. The more complex facilities account for 92% of the total replacement cost of facilities.

To estimate the long run lifecycle cost for more complex facilities, guidance in the 2016 Canadian Infrastructure Report Card was used. This report recommends lifecycle funding between 1.7% and 2.5% of replacement cost. The Township chose the lower end of this range because its facilities are not as complex as facilities in larger municipalities. The replacement cost of the four more complex facilities is $14.1 million. The long-run funding requirement for these facilities is 1.7% of this amount, $240,400.

For the simple facilities, it was felt that the funding needs identified over the next 10 years are representative of longer-term needs. The average of the 10-year forecast for these facilities is $13,100. This represents 1.0% of replacement cost.

Combining the amounts for simple and more complex facilities, total long-run funding needed for facilities is $253,400

3.4 Other Assets

The remainder of the Township's assets do not currently have an assessed condition, and as such will all be subject to an age-based lifecycle management strategy. The following subsections apply to Fleet, Equipment and Land Improvements.

At present, the Township only performs replacement lifecycle activities in the management of its age-based assets. The costs to perform a replacement is therefore simply the current replacement cost, as of 2021. These costs were estimated by inflating historical costs and were reviewed by the Township's staff for reasonableness. Similarly, the assumptions on expected useful lives were based on accounting useful life data and reviewed by the Township's staff.

3.4.1 Decision-making Process – Fleet, Equipment, and Land Improvements

Township staff identify the need to replace vehicles, equipment, and land improvements though ongoing observation of the assets during routine use. Needs are prioritized and addressed when funding is available.

3.4.2 Estimating Long-run Needs for Fleet, Equipment, and Land Improvements

The long-run average annual lifecycle cost of fleet, equipment, and land improvements is estimated by dividing the replacement cost of each asset by its expected useful life. Table 3-12 shows that the total average annual lifecycle cost for these assets is $219,300.

Table 3-12: Long-run Average Annual Lifecycle Needs – Fleet, Equipment, and Land Improvements

Asset Class	Average Annual Lifecycle Cost
Fleet	$190,300
Equipment and Land Improvements	$29,000
Total	**$219,300**

Figure 3-3 and Figure 3-4 show that there is some lumpiness in the average annual funding needs in the long run. As with roads and bridges, to smooth the funding needs, either some projects should be done early, or a reserve should be built up to fund the peaks.

Figure 3-3: Fleet Lifecycle Management Strategy – Average Annual Funding Requirements by Decade

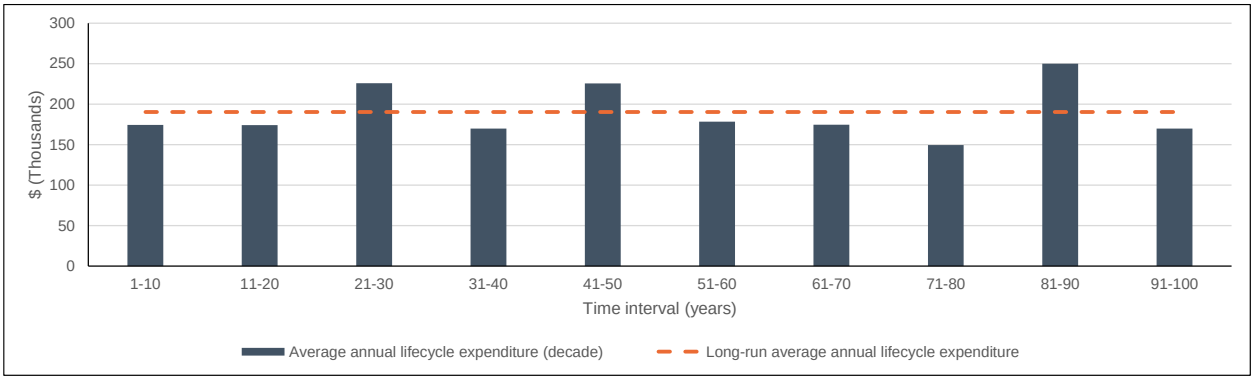
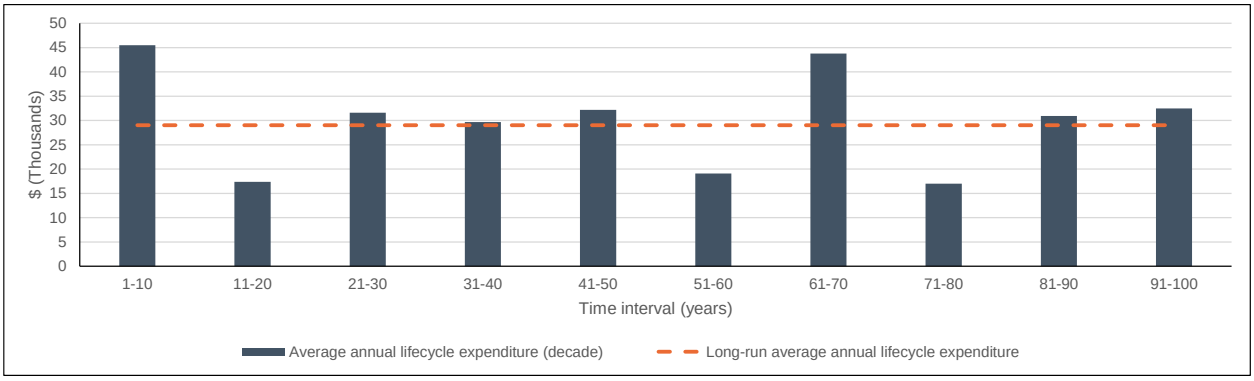


Figure 3-4: Equipment and Land Improvements Lifecycle Management Strategy – Average Annual Funding Requirements by Decade



Chapter 4
Financing Strategy

4. Financing Strategy

4.1 Introduction

This chapter outlines the financing strategy that would sustainably fund the lifecycle management strategies presented in Chapter 3. This financing strategy focuses on examining how the Township can fund the lifecycle activities required to maintain its assets at the proposed levels of service, as identified in Chapter 2. The strategy presented is a suggested approach which should be examined and re-evaluated during the annual budgeting processes to ensure the sustainability of the Township's financial position as it relates to its assets.

The state of local infrastructure and levels of service sections reported on all assets the Township has full or partial responsibility for. The financial analysis includes the full amount of capital expenditures and, where applicable, shows the funding contributions that will be made by other municipalities. Table 4-1 identifies the assets with shared responsibility along with their replacement and average annual lifecycle costs, and shows which municipalities contribute funding towards their renewal and replacement needs and their respective funding shares. It is assumed that the contributing municipalities will be able to continue funding their share of capital projects when required.

Table 4-1: Assets with Shared Responsibility

Asset	Municipalities and Funding Shares	Total Replacement Cost	Average Annual Lifecycle Cost (Total)
Sundridge Strong Joly Arena Facility	Strong – 50% Sundridge – 40% Joly – 10%	$11,375,000	$193,400
Sundridge Strong Joly Arena – Fleet and Equipment	Strong – 50% Sundridge – 40% Joly – 10%	$170,900	$8,600
Joint Building Committee - Fleet	Burk's Falls, Joly, Machar, Ryerson, South River, Strong, and Sundridge All 14%	$33,600	$3,000
Chapman Strong Road from Broomfield Road to south end	Strong – 50% Magnetawan – 50%	$591,200	$3,200
Boundary Bridge No. 5	Strong – 50% Armour – 50%	$500,300	$10,000
Total		**$12,671,000**	**$218,200**

O. Reg. 588/17 requires at minimum a ten-year capital plan that forecasts the costs of implementing the lifecycle management strategy and the lifecycle activities required therein. The financing strategy in this asset management plan has been developed for a 10-year forecast period in order to be in compliance with this requirement.

Various financing options, including reserve funds, debt, and grants were considered during the process of developing the financing strategy and are described in more detail in section 4.4 below.

4.2 Annual Contribution and Lifecycle Funding Target

An annual lifecycle funding target describes the amount of funding that would be required annually to fully finance a lifecycle management strategy over the long term. By planning to achieve this annual funding level, the Township would theoretically be able to fully fund capital works as they arise. In practice, capital expenditures often fluctuate year-to-year based on the asset replacement and renewal/rehabilitation projects being undertaken in a particular year. By planning to achieve the lifecycle funding target over the long term, however, the periods of relatively low capital needs would allow for the building up of lifecycle reserve funds that could be drawn upon in times of relatively high capital needs.

Table 4-2 presents the Township's current annual contributions towards capital-related needs – as detailed in the Township's 2021 Operating Budget – as well as the annual lifecycle funding target based on the lifecycle management strategies presented in Chapter 3 and the portion of the lifecycle funding target that the Township is responsible for.

Table 4-2: Contribution Towards Capital-related Needs and Lifecycle Target (2021$)

Asset Class	2021 Annual Contribution	Annual Lifecycle Funding Target	Township's Share of Annual Lifecycle Funding Target
Roads		$609,300	$607,600
Bridges and Culverts		$122,300	$117,300
Facilities		$253,400	$156,800
Fleet		$171,300	$165,000
Equipment and Land Improvements		$29,000	$28,000
Grand Total	**$541,900**	**$1,185,300**	**$1,074,700**

The Township's share of the annual lifecycle funding target has been estimated to total $1,074,700, and this is the amount that has been built into the financial strategy outlined below.

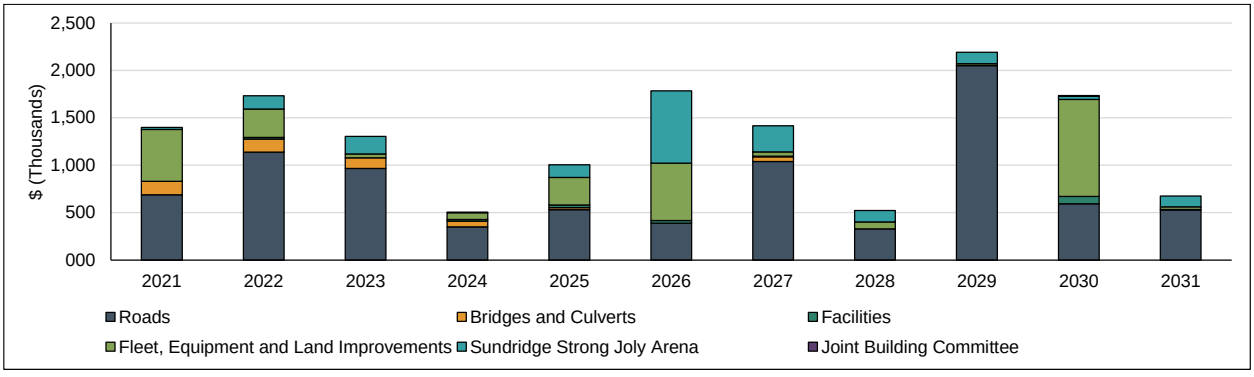
In comparison, the Township budgeted to contribute approximately $541,900 from the tax levy and other current revenue sources towards capital-related needs in 2021. Included in this are budgeted contributions to capital-related reserve funds, debt servicing costs, and reliable and long-term federal and provincial grants (i.e., Gas Tax and OCIF). The sum of these components is the amount of funding the Township contributed in 2021 to the provision of capital-related needs. It is noted that other capital funding sources, such as prior year surpluses and external debt financing used in 2021, are not captured in the Current Annual Contribution since they are a product of previous budgets and specific-purpose funding that cannot be relied on consistently in future years, respectively.

The difference between the annual lifecycle funding target and current annual contribution is referred to as the lifecycle funding gap. The existing gap indicates that the Township is currently underfunding the annual lifecycle funding target by approximately $532,800 annually.

4.3 Annual Costs

The annual capital expenditures for the Township's assets from 2021 to 2031 are presented in Table A-1 in Appendix A and are summarized in Figure 4-1 below. This expenditure forecast is based on the Township's 2021 capital budget and the lifecycle activities identified in preceding sections of this plan for 2022 and onwards.

Figure 4-1: Annual Capital Expenditures – Inflated $, in Thousands



The expenditure forecast includes a capital inflation factor of 3.5% annually, which aligns closely with the historical 20-year annual average rate of inflation as witnessed in Statistics Canada's Building Construction Price Index.

4.4 Funding

Table A-4 in Appendix A summarizes the recommended strategy to finance the asset lifecycle costs identified in Table A-1. This funding forecast was based on the funding sources identified in the Township's 2021 budget.

The lifecycle costs required to sustain established level of service targets are being recovered through several methods:

- Ontario Community Infrastructure Fund (OCIF) formula-based funding is identified for years in which the funding amount is known (2021). The 2021 level of OCIF funding is then maintained for the remaining years of the forecast, recognizing the OCIF as a stable and long-term funding source for capital projects.
- Gas Tax funding has been shown as a stable and long-term funding source for eligible capital projects. Annual funding estimates are based on the Township's 2021 funding level.
- Debt financing is shown as required in years where significant capital needs are identified. Specifically, the forecast includes total debt financing of $3,887,000 over the forecast period.

This financing strategy has been developed to be fully funded, and therefore no funding shortfall has been identified. This means, however, that if identified grants are not received at expected amounts then shortfalls may present themselves. In such an event, the difference could be made up through increases to the tax levy/user rates over-and-above those presented hereafter.

It is noted that this fully funded financing strategy phases in annual contributions towards capital such that the Township reaches full lifecycle funding levels by 2031.

4.5 Tax Levy Impact

As discussed in section 4.2, while the annual funding requirement may fluctuate, it is important for the Township to implement a consistent, yet increasing, annual investment in capital so that the excess annual funds can accrue in capital reserve funds. Table A-4 in Appendix A presents a summary of the impacts on the tax levy as a result of this financing strategy.

In order to fund the recommended asset lifecycle activities over the forecast period using the Township's own available funding sources (i.e., using taxation, Gas Tax funding, OCIF funding, and debentures), an increase in the Township's taxation levy of 4.9% annually would be required from 2022 to 2031.

Consideration for cash flow and positive reserve fund balances has been included in setting the capital reserve transfer amounts. A detailed continuity schedule of all capital-related reserves/reserve funds can be viewed in Table A-3 in Appendix A.

Layering on assessment increases resulting from new assessment growth, assumed to be 0.50% annually, the impacts on individual property tax bills resultant from the financial strategy are estimated to be increases of 4.3% annually from 2022 to 2031.

The taxation impacts identified above include inflationary adjustments to the Township's operating costs and revenues as identified in its 2021 budget (i.e., general operating inflation of 2% annually). If, however, other funding sources become available (as mentioned above), or if maintenance practices allow for the deferral of capital works, then the impact on the Township's taxation levy would potentially decrease.

Further detail on the Financing Strategy is presented in Appendix A.

Appendices

Appendix A
Financing Strategy Tables

Table A-1 Capital Budget Forecast (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures											
Roads	688,400										
Resurfacing		403,220	571,337	156,809	446,373	304,757	908,769	203,254	544,029	409,604	306,093
Reconstruction		736,498	394,181	193,935	85,125	84,168	131,362	126,261	1,507,091	184,828	222,617
Bridges and Culverts	143,000	136,620	113,550	58,762	20,655	-	49,170	-	-	-	-
Facilities		17,743	-	18,197	28,039	28,569	5,962	-	891	75,730	5,369
Fleet, Equipment and Land Improvements	545,500	299,943	39,957	70,071	292,045	605,720	45,728	73,156	20,147	1,023,672	26,519
Sundridge Strong Joly Arena	22,000	139,168	185,485	7,662	132,170	760,798	275,645	118,900	120,321	34,509	115,176
Joint Building Committee	-	-	-	-	-	-	-	-	-	45,793	-
Total Expenditures	**1,398,900**	**1,733,192**	**1,304,509**	**505,437**	**1,004,406**	**1,784,012**	**1,416,637**	**521,572**	**2,192,479**	**1,774,136**	**675,775**
Capital Funding											
Debenture Issuance	400,000	206,629	685,932	-	239,023	617,860	433,399	-	709,217	595,012	-
Transfer from Operating	198,935										
Transfer from Capital R.F.s	788,965	1,449,217	525,835	501,606	694,144	775,658	820,830	462,122	1,423,102	1,122,618	618,187
Contribution from Other Municipalities	11,000	77,347	92,742	3,831	71,239	390,495	162,408	59,450	60,161	56,506	57,588
Total Funding	**1,398,900**	**1,733,192**	**1,304,509**	**505,437**	**1,004,406**	**1,784,012**	**1,416,637**	**521,572**	**2,192,479**	**1,774,136**	**675,775**

Table A-2 Schedule of Debenture Repayments

Year of Issuance	Principal	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2021	400,000	34,500	82,927	82,927	82,927	82,927	48,427	-	-	-	-	-
2022	206,629	-	-	24,223	24,223	24,223	24,223	24,223	24,223	24,223	24,223	24,223
2023	685,932	-	-	-	80,412	80,412	80,412	80,412	80,412	80,412	80,412	80,412
2024	-	-	-	-	-	-	-	-	-	-	-	-
2025	239,023	-	-	-	-	-	28,021	28,021	28,021	28,021	28,021	28,021
2026	617,860	-	-	-	-	-	-	72,432	72,432	72,432	72,432	72,432
2027	433,399	-	-	-	-	-	-	-	50,808	50,808	50,808	50,808
2028	-	-	-	-	-	-	-	-	-	-	-	-
2029	709,217	-	-	-	-	-	-	-	-	-	83,142	83,142
2030	595,012	-	-	-	-	-	-	-	-	-	-	69,754
2031	-	-	-	-	-	-	-	-	-	-	-	-
Total	**3,887,072**	**34,500**	**82,927**	**107,150**	**187,563**	**187,563**	**181,083**	**205,088**	**255,896**	**255,896**	**339,038**	**408,791**

Table A-3 Continuity of Capital Reserve Funds[1]

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Opening Balance	1,376,162	953,226	-	-	37,275	-	-	-	424,675	-	-
Transfer from Gas Tax	179,023	179,023	179,023	179,023	179,023	179,023	179,023	179,023	179,023	179,023	179,023
Transfer from OCIF	78,626	78,626	78,626	78,626	78,626	78,626	78,626	78,626	78,626	78,626	78,626
Proceeds of Disposal (Vehicles)	48,143	28,763	-	4,701	29,204	41,569	4,573	3,982	-	80,166	1,862
Transfer from Operating	50,800	209,579	268,186	276,162	370,016	476,440	558,609	620,960	740,778	784,804	850,078
Transfer to Capital	788,965	1,449,217	525,835	501,606	694,144	775,658	820,830	462,122	1,423,102	1,122,618	618,187
Closing Balance	943,788	-	-	36,906	-	-	-	420,470	-	-	491,402
Interest	9,438	-	-	369	-	-	-	4,205	-	-	4,914

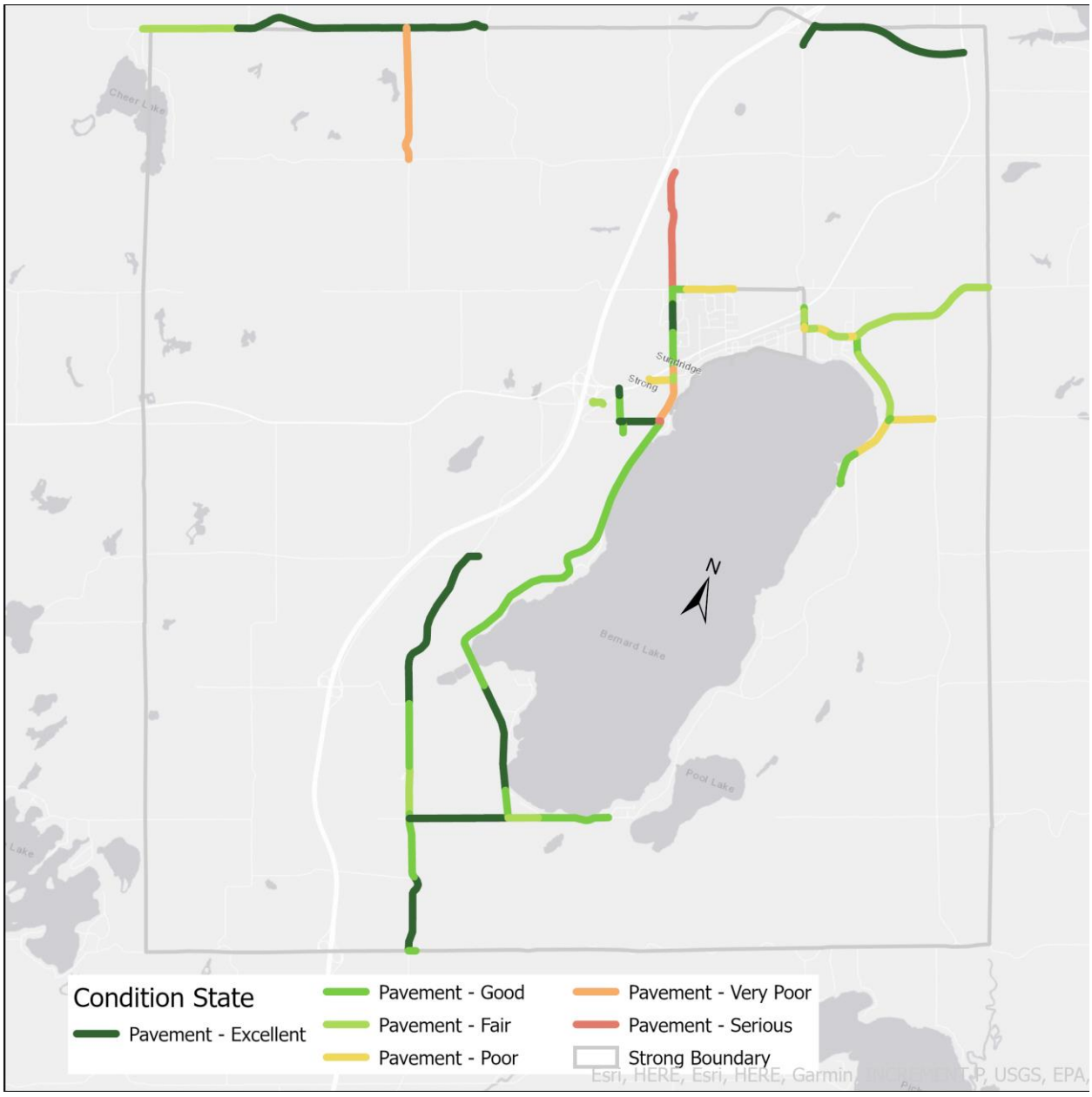
[1] Includes Gas Tax and OCIF Reserve Funds

Table A-4 Operating Budget Forecast (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Expenditures											
Operating Expenditures											
Council	92,900	94,800	96,700	98,600	100,600	102,600	104,600	106,700	108,800	111,000	113,200
Environmental Services	280,557	286,200	291,900	297,700	303,700	309,800	316,000	322,300	328,700	335,300	342,000
General Government	755,976	730,300	744,900	759,800	775,000	790,500	806,300	822,400	838,900	855,700	872,800
Health services	240,343	245,100	250,100	255,100	260,200	265,400	270,700	276,100	281,600	287,200	293,000
Planning and development	12,802	13,100	13,300	13,600	13,900	14,100	14,400	14,700	15,000	15,300	15,600
Protection	543,447	554,300	565,400	576,700	588,200	600,000	612,000	624,200	636,700	649,500	662,500
Recreation	306,529	210,700	214,900	219,200	223,600	228,000	232,600	237,200	242,000	246,800	251,800
Social and family services	225,777	230,300	234,900	239,600	244,400	249,300	254,300	259,300	264,500	269,800	275,200
Transportation	966,551	985,900	1,005,600	1,025,700	1,046,200	1,067,200	1,088,500	1,110,300	1,132,500	1,155,100	1,178,200
Capital-related Expenditures											
Transfers to Capital	198,935										
Transfers to Capital Res./R.F.s	50,800	209,579	268,186	276,162	370,016	476,440	558,609	620,960	740,778	784,804	850,078
New Debenture Repayments	34,500	82,927	107,150	187,563	187,563	181,083	205,088	255,896	255,896	339,038	408,791
Total Expenditures	**3,709,116**	**3,643,206**	**3,793,036**	**3,949,724**	**4,113,379**	**4,284,423**	**4,463,097**	**4,650,056**	**4,845,374**	**5,049,541**	**5,263,169**
Operating Revenues											
Department Revenue											
Federal Grants - Conditional	47,600	-	-	-	-	-	-	-	-	-	-
Provincial Grants - Conditional	5,000	-	-	-	-	-	-	-	-	-	-
Other	291,808	297,600	303,600	309,700	315,900	322,200	328,600	335,200	341,900	348,700	355,700
Miscellaneous											
Miscellaneous: One-Time Grants	156,734	-	-	-	-	-	-	-	-	-	-
Miscellaneous: OMPF	517,600	528,000	538,500	549,300	560,300	571,500	582,900	594,600	606,500	618,600	631,000
Miscellaneous: Other	118,836	121,200	123,600	126,100	128,600	131,200	133,800	136,500	139,200	142,000	144,900
Total Operating Revenues	**1,137,578**	**946,800**	**965,700**	**985,100**	**1,004,800**	**1,024,900**	**1,045,300**	**1,066,300**	**1,087,600**	**1,109,300**	**1,131,600**
Tax Levy											
Tax Revenues Required	2,571,539	2,696,406	2,827,336	2,964,624	3,108,579	3,259,523	3,417,797	3,583,756	3,757,774	3,940,241	4,131,569
Prior Year Tax Levy		2,571,539	2,696,406	2,827,336	2,964,624	3,108,579	3,259,523	3,417,797	3,583,756	3,757,774	3,940,241
Add: Tax Revenues from Incremental Assessment		12,858	13,482	14,137	14,823	15,543	16,298	17,089	17,919	18,789	19,701
Tax Revenues at 0% Tax Rate Increase		2,584,397	2,709,888	2,841,473	2,979,448	3,124,122	3,275,821	3,434,886	3,601,675	3,776,563	3,959,942
Additional Increase in Tax Levy		112,009	117,448	123,151	129,131	135,401	141,976	148,870	156,099	163,679	171,626
Total Tax Revenues	2,571,539	2,696,406	2,827,336	2,964,624	3,108,579	3,259,523	3,417,797	3,583,756	3,757,774	3,940,241	4,131,569
Estimated Impact on Tax Bills		4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%

Appendix B
Road Condition Maps

Map B-1: Paved Roads by Condition



Map B-2: Gravel Roads by Condition