Asset Management Plan

Township of Melancthon

157101 Highway 10
Melancthon, ON L9V 2E6

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R.J. Burnside & Associates Limited
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Revision	Date	Description
-	July 8, 2024	Draft Report to Township of Melancthon
-	July 11, 2024	Final Report to Township of Melancthon

R.J. Burnside & Associates Limited

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AK:ao

Executive Summary

This report contains the Asset Management Plan for the Township of Melancthon (Township) capital assets. The report has been organized as follows:

- Section 1: Introduction
- Section 2: State of Local Infrastructure
- Section 3: Expected Levels of Service
- Section 4: Asset Management Strategy
- Section 5: Financial Strategy
- Section 6: Recommendations

The State of Local Infrastructure Section provides an overview of the capital assets owned by the Township. This includes detailed information on asset inventory, including asset attributes, accounting valuations, replacement costs, useful life, age, and asset condition. This information provides the foundation for other sections of the asset management plan.

Based on data provided by the Township and discussions with Township staff, it is believed that the Township's assets, based on weighted average condition (with the weighting based on asset replacement cost), are as follows:

Tax Based Assets

- Road assets – **Average** condition
- Bridge and Culvert assets – **Good** condition
- Roadway assets – **Good** condition
- Storm Water assets – **Good** condition
- Facility assets – **Good** condition
- Vehicles – **Average** condition
- Equipment – **Average** condition
- Information Technology Software & Hardware – **Average** condition
- Land Improvements – **Good** condition

As outlined in the following summary assets table, please note that weighted average conditions do not fully reflect the many assets that need to have capital improvement investments but provide an overall high-level perspective of all the assets found in that asset grouping / network at present time.

Looking at a weighted average of remaining life as a percentage of useful life can provide a quick estimate of how quickly the Township may be looking to invest in either capital improvements or asset replacement. It is important to view the Remaining Service Life percentages not as absolutes but as triggers to seek more information about an asset type. For example, Township sidewalks show a 3% Remaining Service Life percentage (RSL). In discussion with Township Staff, it is understood that the Township owns only 220 meters of sidewalk in Horning's Mills, and that this sidewalk does not

have many users. However, it is still important to ensure that sidewalks are inspected annually and well maintained, until the Township decides to replace this asset. Township vehicles is another example of low RSL 29%, and Average weighted average condition. In discussion with the Public Works Superintendent vehicles have been delayed for replacement as the older vehicles were outperforming the newer vehicles. This has delayed the replacement of the older vehicles but now even the older vehicles need to be replaced. The weighted average condition is Average due to the active maintenance program used to keep the vehicles running.

Bridges and Culverts is another example of an asset type that is showing just under 50% remaining life. The Township has worked hard at upgrading their bridges and culverts with some major investments over the last several years. This investment is providing a Good weighted average condition. The bridges are reviewed regularly by professional engineers who provide maintenance and capital improvement recommendations which provide the most appropriate levels of service to the public. So weighted averages are good high-level values that may require some additional detailed information for clarity.

Asset Type	Asset Sub-Type	Condition (weighted average)	Risk (weighted average)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL
Road Base	Base	N/A	Low	75	11	15%
Road Surface	Asphalt	Average	Moderate	25	9	36%
	Gravel	Average	Low	3	2	67%
Roadway Assets	Sidewalks	Average	Low	40	1	3%
	Signs	Poor	Moderate	10	2	20%
	Barriers	Good	Low	30	20	67%
	Streetlights	Good	Moderate	40	30	75%
Bridge & Culverts	Bridges & Culverts	Good	Moderate	70	31	44%
Storm Water	Storm Mains	Good	Low	100	71	71%
	Catch Basins	Average	Moderate	50	21	42%
	Crossroad Culverts	Very Good	Low	50	44	88%
Facilities & Components	Facilities	Good	Moderate	68	35	51%
Land Improvements	Land Improvements	Average	Low	37	17	46%
Equipment	Equipment	Average	Low	24	10	42%
IT Hardware and Software	IT	Average	Moderate	8	4	50%
Vehicles	Vehicles	Average	Moderate	17	5	29%

Expected Levels of Service compares the current level of service provided by the Township, and the recommended levels of service that will help extend the life of the above-mentioned asset types. The Township takes great care in the service levels they offer their constituents and public. This report has made a few additional Levels of Service (LOS) recommendations that can potentially extend the life of the Township's capital assets; therefore, reducing the total lifecycle costs of these assets.

The Asset Management Strategy provides a ten-year operating and capital forecast for asset-related costs, indicating the requirements for maintaining, rehabilitating, replacing / disposing, and expanding the Township's assets, while moving towards the specified expected levels of service identified above. The goal of the asset management strategy is to have the Township moving towards a more sustainable asset management position over the forecast period. We have also taken into consideration the potential risk of each asset by identifying the asset consequence of failure and probability of failure. Asset risk was assessed based on the asset's age, condition, consequence of failure, and probability of failure.

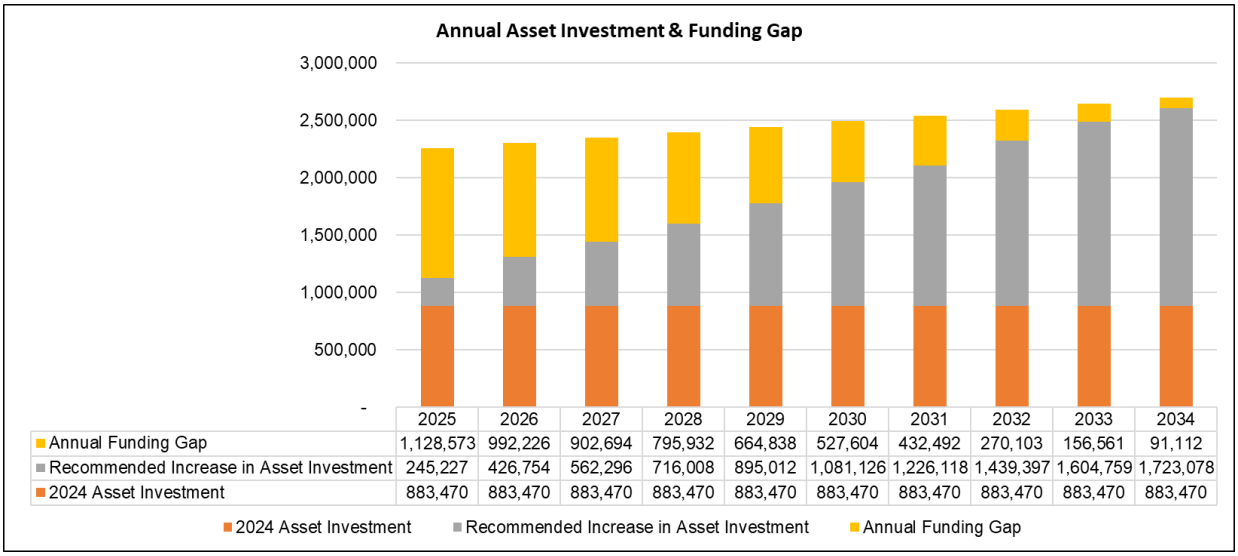
Great efforts were undertaken by Township staff and Burnside to create a complete asset dataset. For the facilities where limited information was identified, some assumptions were made based on the age of the buildings. It will be useful to review the asset useful life values over time as this will better reflect a more truthful lifecycle timeline for some Township assets. It is recommended that Township staff review the working data spreadsheets provided and update information as it becomes available. As assets are reviewed, the asset inventory can be updated creating an improved dataset annually.

Adding up the total costs of identified projects over the ten-year forecast period and comparing this to the Township's past capital funding investments shows a growing gap in infrastructure funding, which is found not only in the Township of Melancthon but throughout Ontario, and across Canada. See the graphic representation below that identifies the Township's funding gap. The Township has been making steps to close this funding gap and working hard to seek available funding grants to help close the gap. However, more needs to be done to ensure that the Township can offer appropriate levels of service to the public now and into the future.

We have recommended that detailed inspections of the Township's crossroad culverts are undertaken to provide an inventory and asset condition, remaining life, potential risk of failure, and future levels of service requirements.

The "financing strategy" described in Section 5 of this report identifies a funding plan for the recommended asset management strategy, including a review of historical results and recommendations with respect to the required amounts and types of funding

(revenue) annually over the forecast period. Also, any infrastructure funding gaps are identified, and recommendations are made regarding potential approaches to reduce and mitigate these gaps over the 10-year forecast period.



	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Funding Gap	1,128,573	992,226	902,694	795,932	664,838	527,604	432,492	270,103	156,561	91,112
Recommended Increase in Asset Investment	245,227	426,754	562,296	716,008	895,012	1,081,126	1,226,118	1,439,397	1,604,759	1,723,078
2024 Asset Investment	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470

In summary, at a very high level we have found that the Township requires approximately $2.7 million annually to fund long-term asset management planning needs.

Overall, this asset management plan is a tool to be used by the Township for capital and financial decision making. It can be tied to various existing reports (such as budget, official plan, and strategic planning reports) to ensure the asset management plan can be updated to reflect any changes in the Township's priorities.

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1.0 Introduction

1.1 Overview

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Melancthon (Township) to prepare an asset management plan for all Township capital assets. The asset management plan is intended to be a tool for the Township to use during various decision-making processes, including the annual budget process and Provincial / Federal capital grant application processes. This plan will serve as a road map towards sustainable infrastructure planning going forward.

Assets included in this asset management plan are the following:

- Roads (Asphalt and Gravel).
- Bridges/Culverts (over 3 m diameter).
- Roadway Assets (Sidewalks, Guiderails, Lights, Signs).
- Storm Water (Mains, Crossroad Culverts, Catch Basins).
- Facilities
  - Administration Office.
  - Works Yard (Works Garage, Sand Dome, Equipment Storage).
  - Horning's Mills Hall.
- Vehicles.
- Equipment.
- IT Hardware and Software.
- Land Improvements.

It is recommended that this plan be updated on an annual basis to ensure that it is kept up to date. All assets listed above, are tax supported and are discussed more thoroughly in this report.

1.2 Plan Objectives

The Township's goals and objectives, with respect to their capital assets, relate to the level of service being provided to the Township's residents and visitors. Services are provided at current levels of service. This asset management plan provides a few recommended service additions that will improve the asset lifecycles for these Township assets. The Township's infrastructure and other capital assets are anticipated to be maintained at condition levels that provide for a safe and functional environment for its residents and visitors. Therefore, the asset management plan and its implementation will be evaluated based on the Township's ability to meet these goals and objectives.

1.3 Plan Development

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

- Develop a complete listing of all Township capital assets, to be included in the plan, including attributes such as useful life, age, accounting valuation, and current replacement valuation. Update the replacement cost of assets to 2023 dollars, and where required, use applicable inflationary indices.
- Assess current condition of the assets, based on a combination of the following:
  - Existing reports.
  - Road Needs Study.
  - Bridge and Culvert Inspection reports.
  - Burnside desktop assessments based on reports.
  - Staff assessments.
  - Asset age analysis.
- Assess the risk of asset failure for each asset, based on determining the probability of each asset failing, as well as the consequence of the asset failing. This risk analysis is one of the components used to identify priority projects for inclusion in the asset management plan, as well as asset risk levels that require mitigation.
- Determine current levels of service, based on standard practices and discussions with Township staff. Further analysis of the maintenance practices and identification of additional measures that can be applied to the assets to extend their lifecycle and potentially provide a lower asset total lifecycle cost.
- Prepare an asset management strategy (i.e., operating, and capital forecast) based on the asset inventory, identified priorities, and level of service analysis discussed above.
- Prepare a final report, summarizing the process, strategy, and results of the asset management plan.

1.4 Maintaining the Asset Management Plan

The asset management plan should be updated as the capital needs and priorities of the Township changes. This can be accomplished in conjunction with the Township's budget process. With the delivery of this project's working spreadsheet file, the Township will have the tools available to perform updates to the plan when needed.

When updating the asset management plan, note that the state of local infrastructure, expected levels of service, and asset management strategy are integrated and impact each other. The asset management strategy illustrates the costs required to maintain expected levels of service at a sustainable level. The expected levels of service component summarize and link each service area to specific assets contained in the

State of Local Infrastructure Section and thus determines how these assets will be used to provide expected service levels.

This report covers a forecast period of 10-years; however, it is suggested that more focus and attention be put on the first five years of the asset management plan, to ensure accurate capital planning in the short term. It is also recommended that the Township start moving towards 50-year forecasts. This longer-term vision will ensure that future infrastructure investments are not lost in the shorter 10-year forecast window.

1.5 Plan Integration

The municipal environment is continually changing and demanding when it comes to legislation and other responsibilities. Integrating the asset management plan with the Township's budget process, as well as Public Standards Accounting Board Handbook Section 3150 (tangible capital asset) requirements can make updates in all three areas more efficient.

With respect to integrating the Township's budget process with asset management planning, the Township requires a projection of capital and operating costs over a future period. The budget outlines total operating and capital requirements for the Township, while the asset management plan focuses in on specific asset related requirements. With this link to the annual budget, the budget update process can also become an asset management plan update process.

Both asset management and PSAB 3150 require a complete and accurate asset inventory. The significant difference between the two lies in valuation approaches (PSAB 3150 requires historical cost valuation, while asset management requires future replacement cost valuation). Using a single asset inventory, as developed in the asset management spreadsheets for the Township assets (delivered to the Township as working documents for Township staff), containing both historic and current replacement valuation methods is an effective approach to maintaining the Township's asset data.

2.0 State of Local Infrastructure

2.1 Scope and Process

This section of the plan provides an opportunity to develop a greater understanding of the capital assets owned by the Township. The state of local infrastructure analysis includes:

- An asset inventory documenting asset types, sub-types including quantities, materials, and other similar asset attributes (where available).
- Financial accounting valuation (where available).
- Replacement cost valuation.
- Asset age distribution analysis and asset age as a proportion of expected useful life.
- Asset condition information (mostly based on report and / or staff assessment as well as the age of the asset).
- Documentation of assumptions made in creating the asset inventory.

Burnside developed a detailed asset inventory listing for the Township which was used as a starting point in fulfilling the requirements for this report. This inventory provides current financial accounting valuations (i.e., historical cost, accumulated amortization, and net book value) as well as attributes such as replacement cost, useful life, and age. With respect to replacement cost, the Township provided various recent valuations, which were inflated in order to estimate current 2023 replacement costs. Other valuations were made using a current 2023 replacement cost and deflating the value to the year or estimated year that the asset was constructed and / or acquired.

The following data and reports were used extensively to develop the Township's asset inventory during this project:

- Township PSAB 3150 asset inventory;
- Township 2020 Road Needs Study spreadsheets;
- Township 2023 Bridge Inspection Report;
- Recent purchase information from the Township; and,
- Discussions with Township staff.

Some adjustments to asset useful lives have been made but further analysis may reveal that the Township will want to update some useful life values in the tangible capital asset financial reporting so that they better reflect the lifecycle and remaining life of the Township's assets. Burnside engineers have reviewed the useful lives of the Township assets identified in this project and believe they now better reflect the conditions, maintenance practices, and management of the Township's assets.

2.2 Asset Condition

Each asset was tracked based on estimated total useful life and remaining service life. Using this data, along with staff information, and age analysis of the Township's assets assisted in identifying potential areas of focus where inspected asset condition was not available. We want to state that asset condition is always best defined via engineering best practices. Engineering based condition assessments can provide more realistic estimates of an asset's remaining service life, which can then be used to establish asset rehabilitation and / or replacement schedules. Age related condition values can be problematic if the asset's useful life is not appropriately defined. For example, if a useful life of an asset is defined shorter than the assets true performance, this will result in a lower / poorer age assessed condition rating. This method of condition approximation was only used when inspected conditions were not available.

A rating out of 10 was established for all assets and was based on a combination of past reported physical inspections, current inspections, staff assessment, and asset age analysis. This rating was then converted to a condition description of "Very Good" to "Very Poor" as shown in Table 2.1.

Table 2.1: Asset Condition Format for all Assets

Condition (Value 0 to 10)	Condition
9 to 10	Very Good
7 to 8	Good
5 to 6	Average
3 to 4	Poor
1 to 2	Very Poor

The condition of the assets is an important element of any lifecycle assessment process. This process also identifies maintenance and operating practices that can be applied to ensure appropriate service levels, as well as extending the life of the asset to its maximum service life.

A high-level summary of the average conditions for the Township's assets are shown in Table 2.2. The conditions listed in Table 2.2 were calculated using weighted average conditions. The weighting factor used was the asset replacement costs so that the greater the cost the greater the weighting of that asset's condition used to determine the average. Using this method provides more emphasis on the more expensive to replace assets. However, please note that averages are a composition of many assets in a group. Averages can be misleading with respect to immediate needs as the new assets offset the old assets requiring urgent replacement.

2.3 Capital Asset Overview

The Township presently owns capital assets with a 2023 replacement value of approximately $177.5 million, broken out in Table 2.2 and summarized as follows:

- $1,69.2 million Core tax supported assets (Roads, Bridges, Storm Water).
- $8.3 million Non-core tax supported assets (Facilities, Roadway Assets, Equipment, IT Hardware and Software, Land Improvements, Vehicles)

All of the assets studied in this project are tax supported assets. Over 63% of the total replacement value is contained in Road Base assets ($112.5 million) which then results in the remaining replacement asset value of $65.1 million. Table 2.2, Figure 2.1, and Figure 2.2 outline the breakdown of these totals into the Township's asset categories.

Table 2.2: Tax Supported Asset Assessment Summary

Asset Type	Asset Sub-Type	Historic Cost	2021 Accumulated Amortization	2021 Net Book Value	2021 Replacement Cost	Condition (weighted average)		Useful Life (years)	Age (weighted average)	Remaining Life (weighted average)	Risk (weighted average)	
						Value	Text				Value	Text
Roads	Base	$4,366,446	$2,715,151	$1,651,295	$112,451,524	**N/A**	**N/A**	75	141	11	**N/A**	Low
	Asphalt Surface	$5,475,281	$2,369,069	$3,106,212	$8,143,476	6.0	Average	25	21	9	2	Moderate
	Gravel Surface	$1,511,034	$714,810	$824,297	$1,932,901	6.0	Average	3	2	2	1	Low
Bridges & Culverts	Bridges & Culverts	$7,714,635	$3,105,270	$4,609,366	$46,225,750	8.0	Good	70	40	31	2	Moderate
Roadway Assets	Sidewalks	$4,073	$3,916	$157	$11,000	5.0	Average	40	39	1	2	Moderate
	Signs	$36,465	$17,224	$19,241	$49,465	4.0	Poor	10	8	2	2	Moderate
	Barriers	$3,247	$584	$2,663	$4,538	7.0	Good	30	10	20	2	Moderate
	Street Lights	$44,372	$9,902	$34,469	$146,000	8.0	Good	40	10	30	1	Low
Storm Water	Storm Mains	$86,104	$18,146	$67,958	$183,701	7.0	Good	100	29	71	1	Low
	Catch Basins	$47,368	$15,561	$31,807	$132,549	6.1	Average	50	29	21	2	Moderate
	Crossroad Culverts	$112,261	$11,559	$100,702	$145,702	9.0	Very Good	50	6	44	1	Low
Facilities & Components	Facilities	$1,104,801	$431,450	$673,351	$2,651,922	8.0	Good	68	34	35	2	Moderate
Land Improvements	Land Improvements	$101,830	$31,650	$70,179	$156,193	7.0	Average	37	24	17	1	Low
Equipment	Equipment	$157,410	$92,903	$64,507	$233,025	6.0	Average	24	17	10	1	Low
IT Hardware and Software	IT	$117,212	$65,044	$52,168	$151,990	6.0	Average	8	8	4	2	Moderate
Vehicles	Vehicles	$2,590,668	$1,584,401	$1,006,267	$4,930,000	6.0	Average	17	15	5	2	Moderate
	Total	**$23,473,208**	**$11,186,642**	**$12,314,639**	**$177,549,735**	**6.0**	**Average**	**49**	**43**	**19**	**1**	**Low**
	Total without Road Base Replacement Costs				**$65,098,211**	**7.5**	**Good**	**58**	**34**	**24**	**2**	**Moderate**

Figure 2.1: Township Assets Replacement Costs (2023)

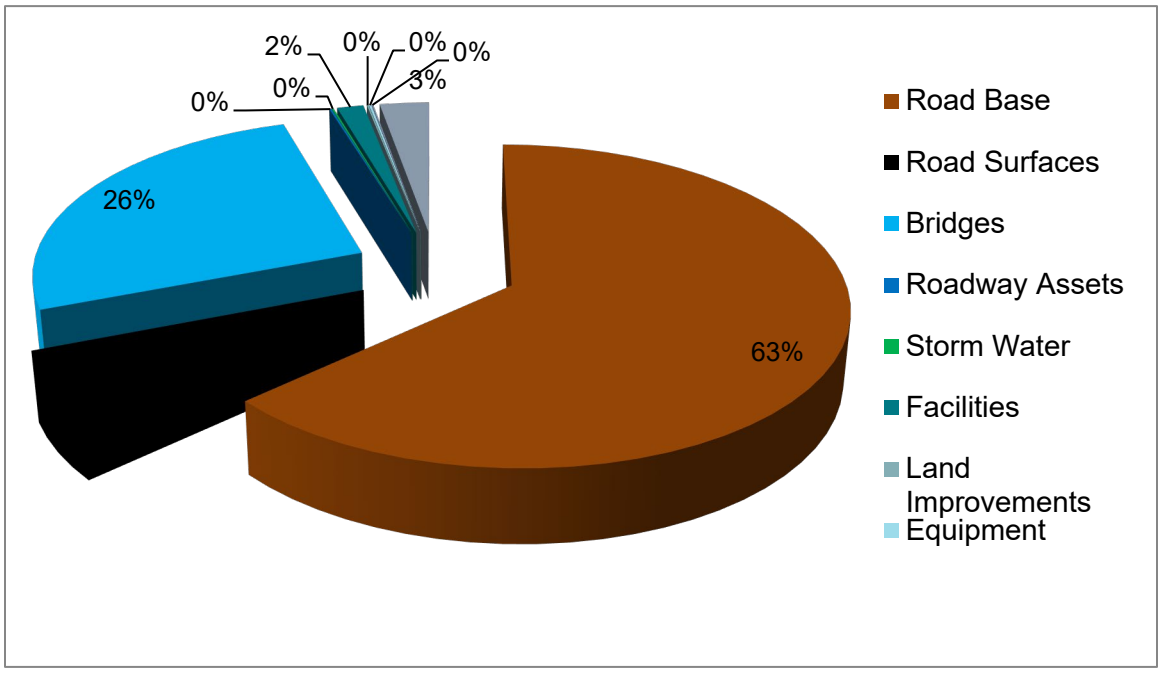
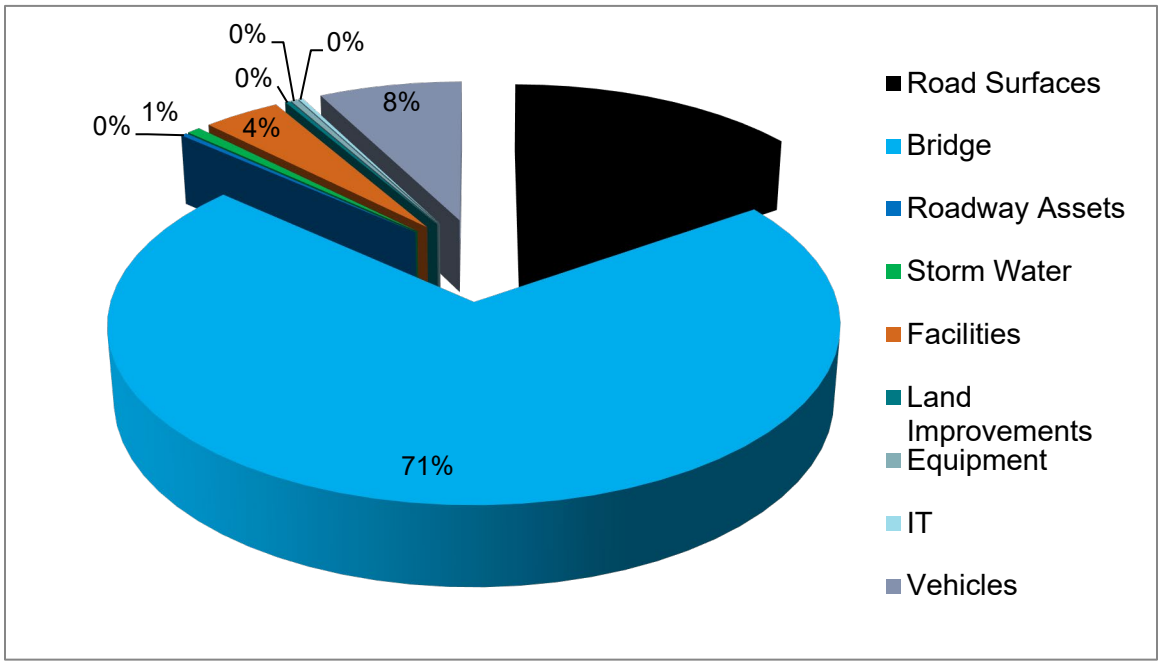


Figure 2.2: Township Assets Replacement Costs (2023) without Road Bases



The capital asset inventory was organized in a Microsoft Excel spreadsheet and delivered to the Township in digital form as working documents for Township staff to continue to use and update as required. Each of the asset types were assessed for their age, condition (where available) and for data accuracy and completeness.

Table 2.2 shows the Township's financial accounting valuation summary by asset type for all tax supported assets. Since 2009, municipalities across Canada have been required under the Public Sector Accounting Board Handbook Section 3150 (PSAB 3150) to maintain asset listings complete with historical cost (i.e., the original cost to purchase or construct an asset), accumulated amortization and net book value. These values were to be reported on the Township's audited financial statements each year. Burnside has done the additional work of developing the 2023 cost for assets that were not part of the Township's Financial asset inventory and added them to the delivered spreadsheet asset inventory.

Including all the Township's assets studied in this project, the total tangible capital asset historical cost is approximately $23.5 million. This is approximately 13.2% of the total replacement cost, or 29.4% excluding road base historic/replacement costs. It is expected that historical cost totals are less than replacement cost totals, given inflationary adjustments that would occur between the original asset purchase/ construction date and 2023. Total accumulated amortization for the Township's project assets is approximately $11.2 million or 48% of the total asset historical cost and $8.5 million or 44% without road base costs included. This represents the proportion of tangible capital assets that have been amortized (i.e., used up) to date from a financial valuation perspective. This also leads one to understand that the Township's assets are approaching their half life of their lifecycle, understanding that asset replacement usually occurs before the asset is at 70% amortized to ensure appropriate asset levels of service are being provided.

Clearly the Township owned road assets have the greatest percentage (69%) replacement cost if the road base values were included in the calculation (see Table 2.1). Road bases are considered assets that will never be totally replaced but will from time to time be improved and in spot locations reconstructed on an as needed basis. Therefore, by excluding road base asset values (see Figure 2.2), the Township's bridges percentage replacement costs are 71% of the asset types studied in this project. The following asset types are the assets studied in this project (percentages are excluding road bases):

- Roads – 15.5% of the total Township's asset replacement costs.
- Bridges and Culverts – 71.0% of the total Township's asset replacement costs.
- Other Roadway Assets – 0.3% of the total Township's asset replacement costs
- Storm Water – 0.7% of the total Township's asset replacement costs
- Facilities – 4.1% of the Township's asset replacement costs.
- Vehicles – 7.6% of the Township's asset replacement costs

- Equipment – 0.4% of the Township's asset replacement costs
- Information Technology Hardware and Software – 0.2% of the Township's asset replacement costs
- Land Improvements – 0.2% of the Township's asset replacement costs

Please note that the Township does not have a complete inventory of crossroad culverts. The crossroad culvert value documented in this project are those that the Township has replaced over the past 10 years. It is assumed that the value of the crossroad culverts has been incorporated in the approximate costs of the road sections.

A more in-depth discussion of the asset types follows below.

2.4 Road Environment Assets

The Township's Road assets make up a key service that reflects the economic and social development of the community. The road environment assets studied in this project and are made up of the following asset types:

- Road Surface Asphalt – 4.8% of the total Township's asset replacement costs;
- Road Surface Gravel – 1.1% of the total Township's asset replacement costs;
- Road Bases – 66.6% of the total Township's asset replacement costs;
- Bridges – 27.4% of the total Township's asset replacement costs;
- Roadway Assets – 0.1% of the total Township's asset replacement costs; and

Figure 2.3 and Figure 2.4 outline the replacement cost distribution of the Road Environment assets with and without Road Base values included.

Figure 2.3: Road Environment Asset Distribution Replacement Costs (2023)

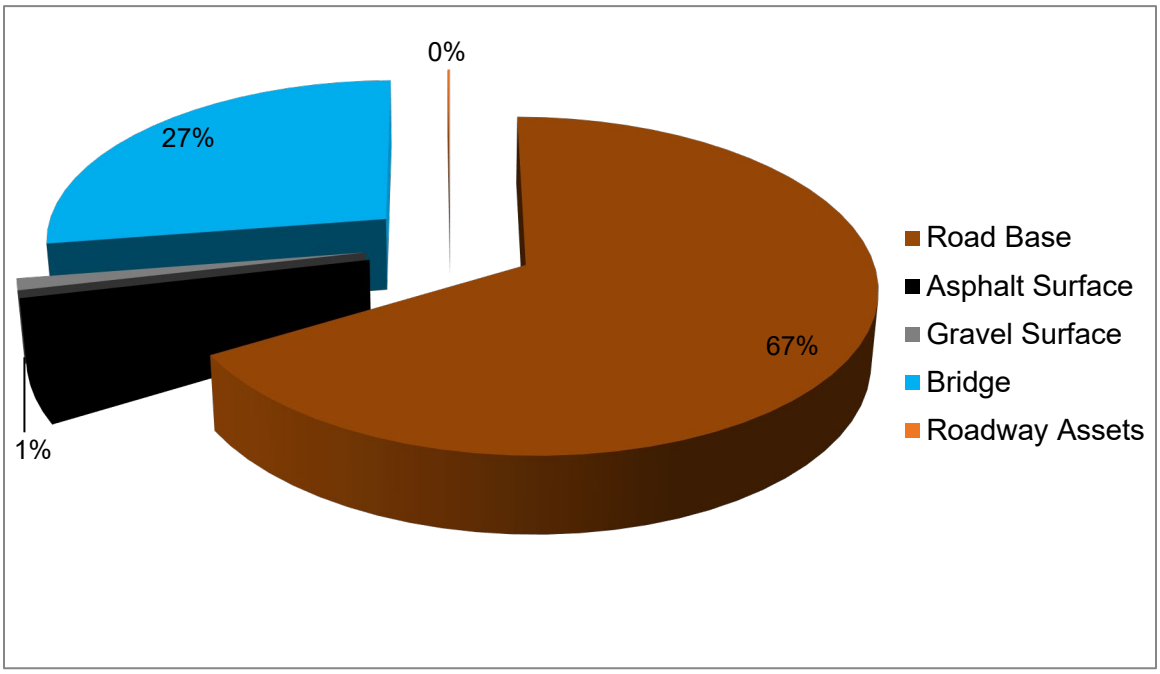
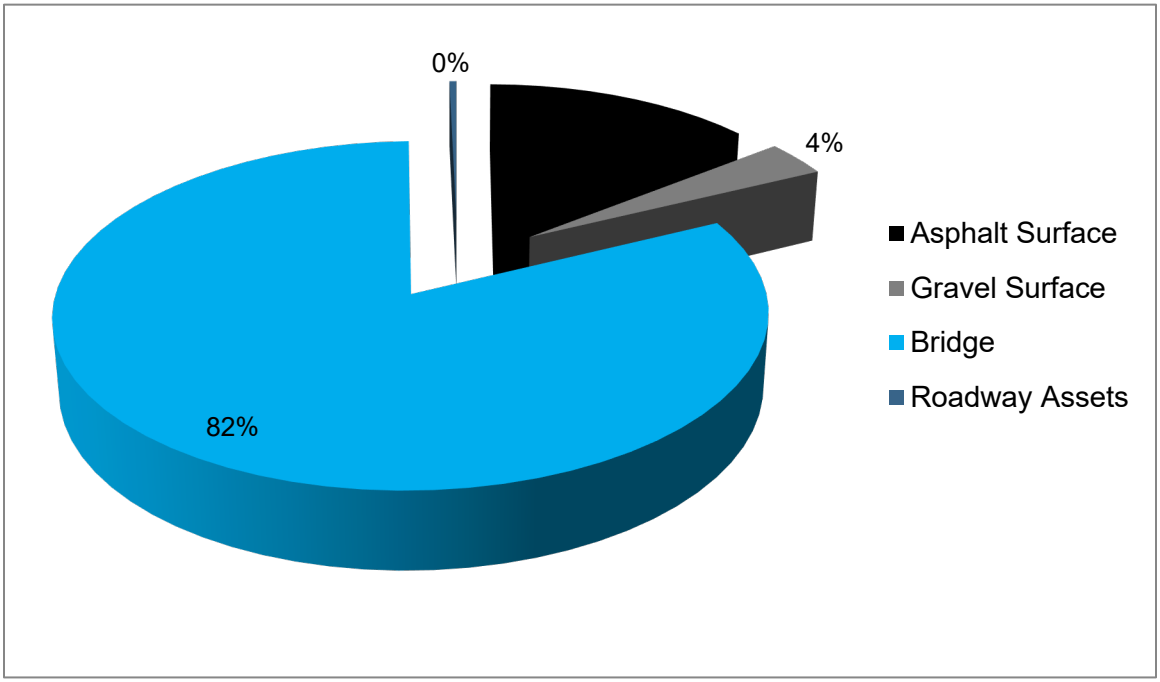


Figure 2.4: Road Environment Asset Distribution Replacement Costs (2023) without Road Bases



Below we provide more detail on the asset groups in the Road Environment group of assets.

2.4.1 Roads

At the current replacement cost the road assets account for $122.5 million dollars and without Road Bases included $10.1 million or 69% of the assets studied in this project. The composition of the road surfaces is outlined in Table 2.3.

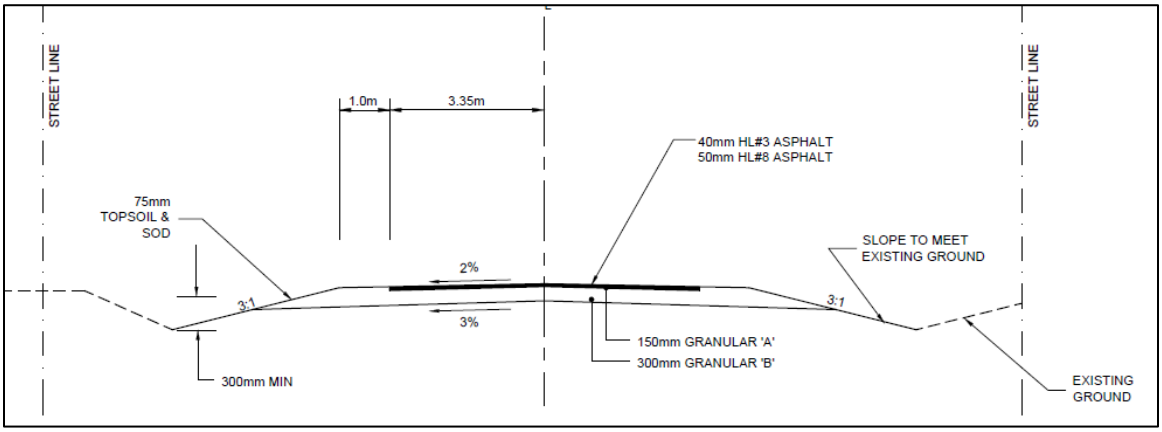
Table 2.3: Road Asset Summary

Road Surface	Road Class	Surface Length (m)	Condition (weighted average)	Condition (Text)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL	Replacement Cost
Asphalt	Rural	64,061	6.0	Average	25	9	36%	$7,497,219
	Semi-Urban	4,175	5.0	Average	25	6	24%	$500,944
	Urban	1,211	8.0	Good	25	14	56%	$145,313
Gravel	Rural	181,760	7.0	Good	3	2	67%	$1,932,901
Total		**251,206**	**6.0**	**Average**	**21**	**8**	**38%**	**$10,076,378**

The Township had completed a Road Management Plan study in 2019 and established the prioritization of both capital and operational maintenance programs for the Township. The Township has fallen behind in many of the recommendations from the Road Management Plan. As a result, it is recommended that another study for the asphalt roads be completed to identify a current road surface condition and new plan for Township hardtop roads.

Key to all roads is the road base on which they are built. These road bases in most cases have been established many years ago. Asphalt road surface roads provide the longest life cycle with best level of service when constructed on excellent road bases. Once the road base becomes soft it cannot economically support a hardtop road surface and it can be best to convert it to a gravel road until funding is made available and the base has been reinforced. Figure 2.5 provides a typical road cross-section diagram. This can be applied for all surface types as asphalt (shown in figure), and without asphalt for gravel road surfaces. Please note that the Township has some roads located in challenging wet areas, which require more specific localized engineering design.

Figure 2.5: Typical Asphalt Road Surface Cross-Section



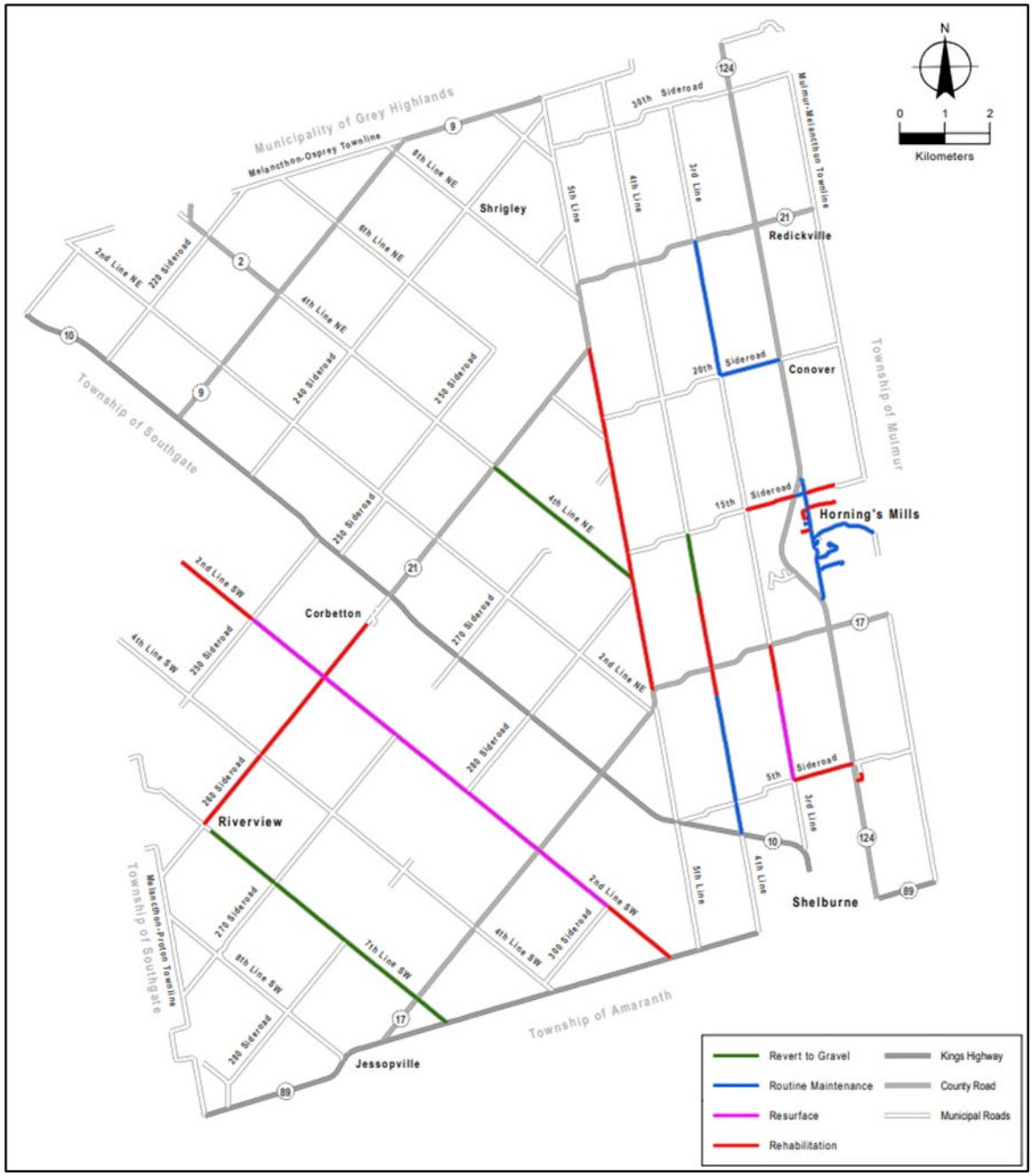
The Township's gravel surface roads are upgraded approximately every three to four years or as required with surface gravel replacement/top-up. In some locations additional gravel is at times required to help reinforce the road base.

The Road Management Plan study report provides detailed explanations of the Township's Road conditions and related deficiencies that impact longevity or operations of the roads, including road widths, drainage, surface type, alignment, and brushing maintenance where required.

Figure 2.6 shows the Road Management Plan 10-year improvement plan for Township roads. The Township pulverized the asphalt road surface of 5th Line OS and topped it up with gravel. This has reduced the over all cost for this now strong base road. But 7th Line SW continues to be patched with asphalt at a high cost to the Township.

We have concern that if the Township does not invest more in their roads that opportunities to resurface a good base road will result in a more costly rehabilitation or even a potential reconstruction project.

Figure 2.6: Ten Year Road Improvement Plan



2.4.2 Bridges and Culverts

The Township has fifty-one bridge and culvert structures over the span of 3.0 m inspected in 2023. The inspection report was reviewed, and information used in this asset management analysis. Please note that structure A is inspected by the Township of Mulmur as this is on their maintenance section of Townline. The Township only pays for 50% of any capital improvements to this structure.

Visual inspections are required to be carried out every two years in accordance with the Ministry of Transportation – Ontario Structure Inspection Manual (OSIM). The inspections are to be completed under the direction of a Professional Engineer to assess their condition and identify any material defects, performance deficiencies, maintenance needs, additional studies and/or repairs/rehabilitation work required on a structure-by-structure basis.

The Township has a total of just over $46.2 million replacement cost of bridge, and culvert assets. Table 2.4 provides the distribution of the types of bridges that the Township owns.

Table 2.4: Township Structure Types

Bridge Type	Number	Replacement Cost
Cast-In-Place Conc. Rigid Frame	20	$18,560,000
Precast Concrete I-Girder	1	$1,835,000
Precast Concrete Box Girder	2	$3,176,000
Steel I-Girder (Concrete Deck)	2	$3,688,000
Steel I-Girder (Timber Deck)	2	$1,861,750
Cast-In-Place Conc. Box Culvert	6	$4,295,000
Precast Concrete Box Culvert	6	$3,789,000
CSP Multi-Plate Arch Culvert(s)	10	$7,730,000
CSP Round Culvert(s)	2	$1,291,000
Total	**51**	**$46,225,750**

Load postings may be recommended for structures based on age, condition, noted performance deficiencies or based on the findings of a structural evaluation. There are currently no structures in the Township's inventory that have load postings.

Structure 004 previously had a load posting of 5 Tonnes but was closed to through traffic in 2020 and has been removed from the Township's biennial bridge inspection inventory while closed.

There was one structure 2029 (220 SR - 0.5 km East of County Rd 2) that was identified requiring a Monitoring Program for the substructure movement.

The Bridge Condition Index (BCI) for each structure was determined based on the Ministry of Transportation Ontario (MTO) methodology followed in the MTO Document, MTO Bridge Condition index and Overall Measure of Bridge Condition, July 2009.

It was identified that the Township's defined PSAB 3150 Useful Life for some of the structures was not representative of true nature of the lifecycle of these assets. The useful life was adjusted and can be reviewed in the project spreadsheets delivered to Township staff.

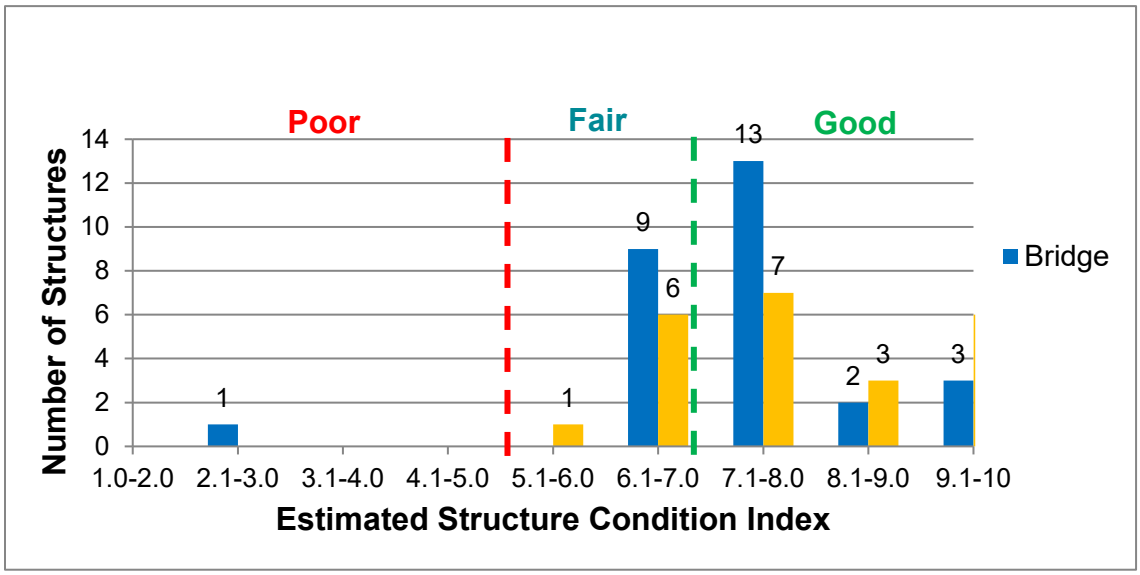
The capital works needs include any repair, rehabilitation or replacement work which would typically be completed by the Township's hired Contractor, to assist in extending the service life of a structure and increasing the Bridge Condition Index (BCI). In accordance with the OSIM, the capital and maintenance works required are based on a priority of 6 to 10 years, 1 to 5 years, within 1 year, and urgent now needs have been estimated and presented in Table 2.5.

Table 2.5: Bridge Capital Works Costs

Time Frame	Capital Works Cost
< 1 year	$275,000.00
1 – 5 years	$256,750.00
6 – 10 years	$2,924,500.00
TOTAL	**$3,456,250.00**

Based on the biennial inspection of each structure, the estimated Structure Condition Index Distribution graph, shown in Figure 2.7, provides a summary of the current state of the Township's structures.

Figure 2.7: Structure Condition Distribution



Currently, approximately 67% of the Municipality's structures are within the "good" range, with 31% of the structures classified as "fair" and 2% (one structure on Townline with Mulmur just south of River Road) is classified as "poor". Of interest, the MTO has established a goal of maintaining 85% of their structures in "good" condition (BCI ≥ 70) by addressing rehabilitations and replacements as necessary. Burnside recognizes that the above goal was not established by the Township, but it is noted that, based on the current state of the inspected structures, the Township is underperforming on the management of their bridge assets when compared to the MTO's established goal, however for a smaller municipality, in relative terms the Township is performing well on the management of their bridge assets.

The overall trend of average BCI of the Township's inventory has generally increased over the last 6 years due to recently completed capital works projects completed since the 2015 inspections, which include the following:

- Structure No. 2028 – Main Street, Replacement (2015);
- Structure No. 2010, 2020 & 2024 – Replacement (2016);
- Structure No. 15 – 2nd Line SW, Rehabilitation (2017);
- Structure No. 10 – 280 Sideroad, Rehabilitation (2018);
- Structure No. 2003 – 3rd Line, Rehabilitation (2019);
- Structure No. 2021 – 2nd Line NE, Temporary Repair (2019);
- Structure No. 2013 – 30th Sideroad, Replacement (2020);
- Structure No. 13 – 260 Sideroad, Rehabilitation (2021); and
- Structure No. 11 – 8th Line SW, Rehabilitation (2022).

Projects currently in design stage include:

- Structure No. 2023 – 4th Line NE Rehabilitation
- Structure A - Townline south of River Road – Replacement (discussions with Conservation Authority to try and replace current structure with two metal culverts as there is very few daily vehicles).

Continued maintenance and completion of rehabilitative or replacement works as recommended in the 2023 OSIM Bridge Inspection Reports will help to move the structure BCI conditions in an upward direction.

2.5 Roadway Assets

Roadway assets are identified as Township assets that fall within the road right-of-way or related asset types. The following are the asset types included in this $211,003 asset grouping:

- Sidewalks - $11,000 replacement cost
- Guardrails - $4,538 replacement cost
- Streetlights - $146,000 replacement cost
- Signs - $49,465 replacement cost

Table 2.6 provides information for each one of the roadway asset types. It is recommended that the Township collect some detailed information about each guardrail system in the Township, as it is suspected that not all barriers are identified in the asset inventory. It is also expected that once the inspections are completed, a multi-year project will be developed to address the guardrail deficiencies.

Table 2.6: Roadway Asset Summary

Roadway Assets	Condition (weighted average)	Condition (Text)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL	Replacement Cost
Sidewalks	5	Average	40	1	3%	$11,000
Signs	4	Poor	10	2	20%	$49,465
Guardrails	7	Good	30	20	67%	$4,538
Streetlights	8	Good	40	30	75%	$146,000
Total	**7**	**Good**	**33**	**22**	**67%**	**$211,003**

The Township has implemented LED lighting to ensure that energy costs are kept to a minimum.

Township signs are inspected during both daylight and evening road patrols as per Ontario Regulation 239/02. Any signs that are deficient in reflectivity or damaged are replaced.

The Township only has approximately 220 m of sidewalks located in Horning's Mills. These sidewalks are getting old and need to be reviewed annually for deficiencies and will eventually need to be replaced.

2.6 Storm Water Assets

The Township has only started since 2012 to identify and classify their crossroad culverts as Storm Water assets. These crossroad culverts are key to ensuring that water stays away from the Township's Road base. This is particularly important during extreme weather events which produce large volumes of rain over a short period of time.

It is recommended that the Township undertake an inventory to locate all the crossroad culverts and any other municipal drainage network assets that are not recorded along with their attributes (material, length, diameter, year of construction etc.). These assets are best incorporated, if possible, in the Township's GIS and/or Asset Management dataset.

Other Storm Water assets as catch basins and storm sewer pipes etc. in the Horning's Mills area are relatively new and are performing well. However, it has been noted that the Corbetton hamlet storm water assets were added to the asset inventory. These assets are performing well as identified by Township staff. Resurfacing of the Corbetton Main Street provided the required improvements to these storm water assets. It is recommended that the storm water assets in the Corbetton hamlet be inspected in five to ten years to assess their condition.

Table 2.7 provides a summary of the Township Storm Water assets.

Table 2.7: Storm Water Asset Summary

Storm Water Assets	Condition (weighted average)	Condition (Text)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL	Replacement Cost
Storm Mains	7	Good	100	71	71%	$4,930,000
Catch Basins	6	Average	50	21	42%	$177,549,735
Crossroad Culverts	9	Very Good	50	44	88%	$65,098,211
Total	**7**	**Good**	**51**	**28**	**55%**	**$247,577,946**

2.6.1 Township Municipal Drains

Municipal drainage infrastructure provides an important outlet to agricultural lands and rural settlements. The successful growth of crops depends on a suitable soil environment for germination, root anchorage, and plant growth. Lands that are subject to excess soil moisture and overland flooding require adequate outfalls for private drainage systems to achieve a successful standard of agriculture. There are hundreds of kilometers of municipal drains constructed under the *Drainage Act*. The Township has recently completed one new Schill drain. Currently, the Township has 7 drainage reports in progress.

Maintaining and repairing municipal drainage infrastructure is paid for proportionately by the landowners where the municipal drain flows. The Township only pays for the proportion of where these municipal drains cross land owned by the Township. New landowners in the Township are seeking better drainage on the properties for agricultural purposes. This is expected to continue for many more years, which will add to municipal costs annually. More information related to Municipal drains are recommended to be added to future asset management plans.

2.7 Facility Assets

Township facility assets total $2.7 million in replacement costs or 4.1% of the Township's asset inventory, not including road bases. Table 2.8 provides a summary of the Township asset values. Based on weighted average, the condition of these facility assets is Good with moderate risk of failure. Table 2.7 provides summary information about these Township buildings.

It needs to be noted that the Township has generators at their three main buildings to ensure services can continue to be provided to the public even if there are power outages. All three of these buildings have easy accessibility for the public.

Table 2.8: Facility Data Summary

Facility Assets	Condition (weighted average)	Condition (Text)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL	Replacement Cost
Administration Office	9	Very Good	91	62	68%	$734,819
Horning's Mills	7	Good	45	11	24%	$646,939
Public Works Garage	8	Good	69	29	42%	$831,328
Salt Storage Dome	7	Good	50	17		$250,000
Equipment Storage	9	Very Good	75	68	91%	$188,837
Total	**8**	**Good**	**68**	**35**	**51%**	**$2,651,922**

2.8 Vehicles

The Township, as most municipalities maintain their vehicles very well. This is potentially due to the staff's regular hands-on use of these assets. When vehicle assets are used regularly the end users want to ensure that they are maintained to the manufacturer's specifications. Even though there are many vehicles that have exceeded their identified useful lives they are still safe to use. Township staff indicated that some of the older vehicles were outperforming the newer vehicles. This provides for a short period when the Township did not replace some of the old vehicles. However, this does not mean that the old vehicles will never have to be replaced. The concern is that the fleet requires increasing maintenance budgets.

It should not be surprising that many of the Township's vehicles have been identified for replacement over the 10-year period of this study. A few of these vehicles are currently only being used to cover busier periods and will eventually have to be replaced.

The Township owns $4.9 million in replacement cost vehicles with an Average weighted average condition. This is 7.6% of the Township's assets (without road bases included), and they are a key functional asset used to provide clear drivable roads, and safe recreational fields and facilities.

Over the next ten years it is recommended that the Township invest approximately $600,000 annually to overcome the Township's gap in vehicle needs. Complete details of each vehicle is provided to Township staff in the asset inventory spreadsheet.

2.9 Equipment

The Equipment asset category is made up of Administration Office, Horning's Mills Hall and Public Works equipment that were not identified as part of one of their facilities. We believe this equipment is important enough to be identified. The total replacement cost for this asset grouping is $233,025 or 0.4% with respect to the total Township assets not including road bases. The weighted average condition of this asset grouping is Average and remaining life expectancy is 10 years. This leads us to believe that the Township will need to be investing in replacing some of these assets over the next 5-10 years. We suggest that the Township review these equipment assets and develop a replacement schedule to ensure that the critical equipment does not experience any equipment failures. Table 2.9 provides a summary of the Equipment grouping of assets.

Table 2.9: Equipment Assets Summary

Equipment Assets	Condition (weighted average)	Condition (Text)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL	Replacement Cost
Administration	5	Average	37	16	42%	$70,478
Horning's Mills	5	Average	23	4	18%	$33,412
Public Works	6	Average	18	8	46%	$129,134
Total	**6**	**Average**	**24**	**10**	**42%**	**$233,025**

2.10 Information Technology Hardware and Software

Information Technology (IT) has become a major requirement for municipal operations. This equipment is a requirement for Township staff to do their job that serves the public. Proper maintenance of these assets is becoming more and more expensive.

The Township IT equipment based on the information provided has a replacement value of $151,990 with an Average weighted average condition. As many IT assets have a short lifecycle three to five years, the “Average” condition assessment is due to older assets exceeding their lifecycles but still performing well enough for staff. At some point these assets will have to be replaced and over the next three years 11 of the 18 listed IT assets will need to be replaced. Over the next 10 years 10 of the 11 assets to be replaced in the first three years will need to be replaced a second time. It is recommended that the IT asset data be updated to ensure appropriate up to date equipment is being used.

2.11 Land Improvement Assets

The Township Land Improvement assets are mostly composed of park equipment and parking lots. This asset class has a total of $156,193 replacement cost value, with 0.2% of the Township’s total asset replacement cost excluding road bases. The weighted average condition of this asset class is Good.

Ensuring that Township residents have playgrounds and ball fields to play and be active is important for a thriving community. In the last few years, the Township has added a playground in the Corbetton hamlet.

2.12 Data Accuracy and Completeness

An important element of this asset management plan is ensuring that tools and procedures are in place to maintain accuracy and completeness of the asset data and calculations moving forward. As time passes, assets are used, maintained, improved, disposed of, and replaced.

All of these lifecycle events can trigger changes to the asset database used within the asset management plan. Therefore, tools and procedures are essential to ensure the asset data remains accurate and complete. This includes the timing of condition assessments for each asset type and what should be included within the condition assessment procedures.

As noted above it is recommended that the Township use the asset inventory spreadsheets provided to staff as a starting point and that the data be verified and updated were required.

Also as noted above we recommend that the Township undertake an inventory and assessment of their crossroad culverts using qualified staff to ensure an objective condition and culvert attributes are recorded for asset management purposes.

3.0 Expected Levels of Service

The Township has been offering and maintaining for its residents and visitors, good service levels, during challenging economic times. The Province has demanded via Ontario Regulation 588/17 that municipalities complete asset management plans on a regular basis to ensure that appropriate investments are being made in municipal infrastructure. Reviewing past records has shown that some investments were being made into maintaining and replacing the Township's assets. It is important to note that the long-term objective of the Township needs to be asset sustainability. In general, the Township is performing maintenance activities when required.

3.1 Scope and Process

A Levels of Service (LOS) analysis gives the Township an opportunity to document the levels of service that are currently being provided and compare it to the levels of service that will ensure the assets achieve their full lifecycle potential. This can be done through a review of current practices and procedures, an examination of trends or issues facing the Township and / or through an analysis of performance measures and targets that staff can use to measure performance.

Expected LOS can be impacted by a number of factors, including:

- Legislative requirements (e.g., minimum maintenance standards for roads, etc.).
- Strategic planning goals and objectives.
- Resident expectations.
- Visitor expectations.
- Council expectations.
- Financial or resource constraints.

The previous task of determining the state of the Township's local infrastructure establishes the asset inventory and condition, as well as asset management policies and principles to guide the refinement and upkeep of asset infrastructure. The LOS analysis utilizes this information and factors in the impact of asset service level targets. It is important to document an expected LOS that is realistic to the community. It is common to strive for the highest LOS; however, these service levels usually come at a cost. It is also helpful to consider the risk associated with a certain LOS. Therefore, expected LOS should be determined in a way that balances both level of investment and associated risk to the Township.

Over the course of this project the author received both verbal and documented confirmation of maintenance practices that the Township staff undertake. We recommend that the Township continue to make use of updating Road Needs Study and the biannual bridge inspections and analysis utilizing the most up to date MTO bridge / culvert degradation models. These engineering-based inspection practices provide historic condition information as well as information related to any changes to asset maintenance. This will also help better determine the remaining life of the municipality's assets.

This information will help not only identify the current Township needs but also future requirements due to Levels of Service changes.

The strategy of investing more often in smaller amounts which provides higher levels of service and better asset condition with an over all lower total cost over the lifecycle of the asset is recommended.

3.2 Current Levels of Service versus Expected Levels of Service

The Township's current LOS has resulted in the current state of infrastructure as discussed in the previous section of the report. The current LOS also relates to the risk assessment discussed in later report sections. Regarding the cost of this LOS, the Township has established an operating and capital budget for the current year that includes the cost of providing this LOS. After many discussions with Township staff, it was determined that over the 10-year project timeline that an increase in approximately $130,000 will be required in LOS funding. The greatest contributor to this increase comes from the need to add additional staff to help with road and park assets.

Table 3.1 outlines broad LOS descriptions (both current and enhanced LOS). This analysis was noted through discussions with Township staff and engineering best practices. Based on the information provided the Township needs to invest more in asset maintenance practices to ensure appropriate levels of service are maintained. The Levels of Service cost impact analysis was factored into the financing strategy discussed in Section 5 of this report.

Table 3.1: Road Expected Levels of Service

Road Assets Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Levels of Service	Expected LOS	Cost Description
Safe Roads	Meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02 and Amendments.	Meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02 and Amendments.	Regulation Standard	$48,500	$52,500	Municipality has an AVL system in all vehicles recording Roads Patrolled. Cost represent increase in annual patching and other road work.
Fix Public Identified Issues Quickly	Track complaints and resolve them as quickly as possible	Track complaints by road segment so that history can be recorded.	Respond to Public Inquiry within 7 days			Municipality delivers this Level of Service well
Maintain Road System Network Condition for safe use	Road Maintenance is completed regularly and when required	Maintain adequate road network condition index to ensure safe roads	Assess Road Conditions every 10 years with Internal assessment annually		$45,000 every 10 years, and $25,000 at 1/2	Roads Needs Study every 10 years to include Network Condition analysis (next proposed for 2029) with a reduced only asphalt roads review at 5-year mark (next proposed 2034). Municipality completing crack seal, and slurry seal program well.
Asphalt Roads are Clean and Clear	Street sweeping and flushing are completed annually	Roads are swept and flushed to ensure they are clear of debris and safe.		$5,500	$7,500	Municipality has minimal Asphalt roads. Debris is collected as per Minimum Maintenance Standards.
Follow Best Practice for Asphalt Roads	Completing a regular Crack Seal program.	Completing a regular crack seal program.		$0	$15,000	Municipality is looking to start a Crack Seal Program with some of the newly paved roads. The older asphalt roads are beyond this type of maintenance.
Gravel Roads are well maintained and Dust Inhibited	Gravel roads are smoothed when required, and Calcium Chloride applied to control dust	Gravel roads are smoothed when required, and Calcium Chloride applied to control dust		$130,000	$170,000	With 5th Line OS turned to gravel the costs for Calcium are expected to increase
Safe and well maintained Roadsides	Municipality provides brushing, ditching, grass mowing, and shoulder maintenance to ensure roadsides are safe and well maintained	Roadsides are clear of obstructions and well maintained for safe road travel.		$45,000	$50,000	Municipality delivers this Level of Service well
Winter Road Maintenance	Winter roads are cleared and safe.	Roads are maintained and meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02 and Amendments.		$55,000	$70,000	Municipality can use more material to deliver an improved Level of Service
Weather forecast information	Municipal staff check weather forecasts minimum 3 times per day in the Winter months (October 1 - April 30)	Weather forecasts are reviewed three times per day during the Winter Maintenance months.				Municipality delivers this Level of Service well
Traffic Counts are Completed Regularly	Township has Traffic Counting equipment and is used where and when required.	Clear understanding of traffic counts are updated				Municipality delivers this Level of Service well

Guardrails are safe and well maintained	Reviewed annually and during road patrols	Meet Provincial Standards				Municipality delivers this Level of Service well
Signs can be seen clearly	Signs: Visual inspections done in the evening. Replaced when required/needed.	Signs: Visual inspections. Replace when needed.	Reflectivity Standard			Municipality delivers this Level of Service well
Safe Well lit Urban and Semi-Urban Street areas	Maintenance activated by Winter Staff evening Patrols and Public Notice for Street Lights	Maintenance activated by Public Notice for Street Lights	Correction of Issues within MMS	$6,000	$6,500	Municipality delivers this Level of Service well
Line Painting is well defined	Line painting is completed as required	Meet Provincial Standards		$17,000	$18,000	Municipality delivers this Level of Service well

Table 3.2: Bridge Expected Levels of Service

Bridge & Culvert Assets Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Levels of Service	Estimated Cost Increase due to Expected LOS	Cost Description
Safe Bridges	Maintain good bridge condition and no bridges with load limits. Seven structures are being monitored for potential changes.	Maintain good condition and no-load limits.	MTO bridge guides		$5,000	Municipality delivers this Level of Service well. Cost is for a Monitoring program on Structure 2029, 220 SR - 0.5km East of County Rd 2
Bridges Maintained	Try to follow Bridge Inspection Report recommendations for Bridge and Culvert maintenance.	Proactive Bridge and Culvert maintenance (based on bridge inspection report).			$15,000	OSIM Report has recommended that the municipality complete the safety related improvements over the next 5 years. As this relates to risk tolerance of the municipality the recommendation is to improve safety annually starting with the greatest risk potential structures. There is also maintenance recommendations that will assist in the Level of Service and lifecycle of the structure.
Proper Bridge Spring Maintenance	Bridge washing is completed in Spring by staff	Blowing out Expansion Joints & Washing of Bridges in Spring				Municipality delivers this Level of Service well
Bridge Inspections	Bridge inspections (i.e. using OSIM forms) required every 2 years.	Bridge inspections (i.e. using current OSIM forms) required every 2 years.	Completed every 2 years	$16,600	$17,600	Municipality delivers this Level of Service well

Table 3.3: Storm Water Expected Levels of Service

Storm Water Assets Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Levels of Service	Estimated Cost Increase due to Expected LOS	Cost Description
Effective Storm Water Management	Investigate and respond based on public complaints/concerns	Proper flows and clear system with little to no inhibitors	No storm water back-up incidents			Municipality delivers this Level of Service well
Crossroad Culverts are Appropriately Sized and Maintained	Cross Road Culverts are replaced when required	Climate Change and/or Extreme Weather events do not cause adverse issues with the Municipal Road network				Cross road culverts are replaced when required. It is recommended that assessment of the size of the crossroad culverts can withstand extreme weather events to ensure Road Bases are secure.
Catch Basins are clear and well Maintained	Catch Basin cleaning annually	Annual Catch Basin cleaning		$3,000	$3,500	Municipality delivers this Level of Service most of the time
Discharge Points are clear and well maintained	No identified issues	Regular inspection for condition and no physical obstructions				Municipality delivers this Level of Service most of the time
Municipal Drains are well maintained	Continued growth with new farming establishments seeking better drained soils.	Follow Municipal Drainage Act	Municipal Drainage Act	$55,000	$55,000	Municipality delivers this Level of Service well
Storm Water Mains are clear and well Maintained	No identified issues	Regular inspection for condition and no physical obstructions				Municipality delivers this Level of Service most of the time

Table 3.4: Facilities Expected Levels of Service

Facilities Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Levels of Service	Estimated Cost Increase due to Expected LOS	Cost Description
Facilities are clean and safe for Public Use	Meet all legislative requirements.	Meet all Provincial legislative requirements.	Provincial Guidelines	$10,400	$11,664	Municipality provides this level of service
Source Water is well Protected	Source water protection zones are maintained	Maintaining appropriate Zoning and Planning to ensure Source Water Protection				Municipality provides this level of service
Wells are well Maintained	Appropriate maintenance is undertaken when required.	Appropriate maintenance is undertaken when required				Municipality provides this level of service
Water Treatment Processes Meet Legislative Requirements	Only small local systems for Office and Hall.	Meet all Provincial legislative requirements.	Provincial Guidelines	$125	$125	Municipality provides this level of service
Well Maintained Generators where applicable	All three generators are tested and well maintained.	Tested and well-maintained generator				Municipality provides this level of service
Safe Wastewater Treatment Structures (Tanks and Septic Beds)	Regular Septic maintenance is done annually or as required.	Meet legislative requirement (Building Code, Fire Code, Health & Safety, etc.)	Provincial Guidelines	$1,000	$1,250	Municipality provides this level of service
Facilities meet all Fire Code Requirements	Meet all Fire Code requirements based on year of construction.	Meet all Provincial legislative requirements.	Provincial Guidelines			Municipality provides this level of service
Well Maintained Emergency Services Equipment	Equipment is replaced as required	Meet all manufacturers maintenance schedules				Municipality provides this level of service

Heating Systems are inspected and maintained	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule			Regular maintenance and inspections done annually.
Air ducts are cleaned as required	Cleaned as required.	Meet standard maintenance schedules				Municipality provides this level of service
Well Maintained on site properties	Maintained by staff or volunteers	Safe on-site properties				Municipality provides this level of service
Fix Public Identified Issues Quickly	Complaints are resolved as quickly as possible	Track complaints by facility/property so that history can be recorded.	Respond to Public Inquiry within days			Municipality responds as quickly as possible.
Facilities have Handicap Accessibility	All Public buildings have appropriate accessibility	Meet all Provincial legislative requirements.				Municipality provides this level of service

Table 3.5: Land Improvement Expected Levels of Service

Land Improvements Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Levels of Service	Estimated Cost Increase due to Expected LOS	Cost Description
Parks are Safe and well maintained	Hired another staff person to help ensure maintenance is carried out regularly	Meet all Provincial legislative requirements.	Provincial Guidelines		$50,000	Municipality provides this level of service
Playground Structures are Safe	Visual weekly inspections completed regularly	Meet all Provincial legislative requirements.				Municipality provides this level of service
Fix Public Identified Issues Quickly	Complaints are resolved as quickly as possible	Track complaints by park/asset so that history can be recorded.				Complaints are resolved as quickly as possible

Table 3.6: Vehicles, Equipment and IT Expected Levels of Service

Vehicles, Equipment and IT Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)		Estimated Cost Increase due to Expected LOS	Cost Description
Vehicles are Safe and well maintained	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule	$203,000	$228,000	Municipality provides this level of service
Equipment is safe and well maintained	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule			Municipality provides this level of service
IT Data is Secure	Use Dufferin County as IT support	Meet all current IT Safety Protocols, with Backup and Redundancy Processes are implemented	IT Standards	$23,500	$32,500	Municipality provides this level of service
IT Hardware and Software are well Maintained	Use Dufferin County as IT support	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule			Municipality provides this level of service

3.3 Township Growth

The Township as a small rural community has not had much growth and currently does not have any new sub-division type developments identified. One area that continues to make an impact on the Township is the Mennonite community which continues to purchase farms and seek to have the land drained for expanded farmland. This taxes the Township Drainage Superintendent with the need to expand the municipal drain system across the Township. Even though most of this effort is recovered via the Municipal Drainage Act, there is still Township costs for these expanded municipal drains when they reach Township roads.

Another factor in growth needs are two additional Public Works vehicles (excavator and tractor) to help better maintain the Township Road network. These additions to the fleet have been included in the Township capital purchases over the 10-year project period.

4.0 Asset Management Strategy

4.1 Scope and Process

The asset management strategy provides the recommended course of actions required to maintain (or move towards) a sustainable asset position while delivering the levels of service discussed in the previous section. The course of actions, when combined, form a long-term operating and capital forecast that includes:

- **Non-infrastructure solutions:** Reduce costs and / or extend expected useful life estimates.
- **Maintenance activities:** Regularly scheduled activities to maintain existing levels of service levels, or repairs needed due to unplanned events.
- **Renewal / Rehabilitation:** Significant repairs or maintenance planned to maintain the levels of service and increase the remaining life of assets.
- **Replacement / Disposal:** Complete disposal and replacement of assets when renewal or rehabilitation is no longer an option.

Priority identification becomes a critical process during the development of an asset management strategy. Priorities have been determined based on assessment of the overall risk of asset failure, which is determined by looking at both the probability of an asset failing, as well as the consequences of asset failure. The consequences of the municipality not meeting desired levels of service must also be considered in determining risk. As discussed in Section 3.0, adding enhanced/expected levels of service results in both operating and capital budget impacts over the 10-year forecast period has to be taken into consideration, with the overall objective of reaching sustainable levels while mitigating risk.

4.2 Risk Assessment

The risk of an asset failing is defined by the following calculation:

Risk of Asset Failure = Probability of Failure X Consequence of Failure

Probability of failure has been linked to the condition assessment for each asset, assuming that an asset in “very good” condition has a “rare” probability of failure. The following table outlines the probability factor tied to each condition rating:

Table 4.1: Probability of Failure Matrix

Condition (value 0-10)	Condition	Probability of Failure
9 to 10	Very Good	Rare
7 to 8	Good	Unlikely
5 to 6	Average	Possible
3 to 4	Poor	Likely
1 to 2	Very Poor	Almost Certain

Consequence of failure has been determined by examining each asset type separately. Consequence refers to the impact on the municipality if a particular asset were to fail.

Types of impacts include the following:

- Cost Impacts: the cost of failure to the Township (i.e., capital replacement, rehabilitation, fines and penalties, damages, etc.).
- Social impacts: potential injury or death to residents / public.
- Environmental impacts: the impact of asset failure on the environment.
- Service delivery impacts: the impact of the asset failure on the Township's ability to provide services at desired levels.

Each type of impact was reviewed and consequence of failure for each asset type was determined by using the information contained in Table 4.2 as a guide to assess the level of impact. Levels of impact were documented as ranging from "significant" to "insignificant".

Table 4.2: Consequence of Failure Matrix

	Cost	Social	Environmental	Service Delivery
Significant	Significant Cost – Difficult to Recover	Death, Serious Injury	Long-term Impact – Permanent	Major Interruptions
Major	Substantial Cost – Multi-year Budget Impacts	Major Injury	Long-term Impact – Fixable	Significant Interruptions
Moderate	Considerable Cost – Requires Revisions to Budget	Moderate Injury	Medium-term Impact – Fixable	Moderate Interruptions

Minor	Small/Minor Cost – within Budget Allocations	Minor Injury	Short-term/Minor Impact – Fixable	Minor Interruptions
Insignificant	Negligible or Insignificant Cost	No Injury	No Impact	No Interruptions

With both probability of failure and consequence of failure documented, total risk of asset failure was determined using the matrix contained in Table 4.3.

Total risk has been classified under the following categories:

- Extreme Risk (E): Risk beyond acceptable levels.
- High Risk (H): Risk slightly beyond acceptable levels.
- Medium/Moderate Risk (M): Risk at acceptable levels, monitoring required to ensure risk does not become high.
- Low Risk (L): Very little risk.

Table 4.3: Total Risk of Asset Failure Matrix

Probability of Failure	Consequence of Failure				
	Significant	Major	Moderate	Minor	Insignificant
Almost Certain	E	E	H	H	M
Likely	E	H	H	M	M
Possible	H	H	M	M	L
Unlikely	H	M	M	L	L
Rare	M	M	L	L	L

Risk levels can be reduced or mitigated through planned maintenance, rehabilitation and / or replacement of an asset. An objective of this asset management plan is to identify ways to reduce risk levels where they are deemed to be too high, as well as ensure assets are maintained in a way that keeps risk at acceptable levels.

4.3 Climate Change

Over the past decade there has been increased numbers of extreme weather events which are putting greater stress on municipal infrastructure, and pressure to ensure levels of service are maintained. Climate change poses a real risk management question which needs to be addressed within the context of municipal decision making.

Some climate change projections (Federation of Canadian Municipalities):

- Warmer summer temperatures.
- Warmer winter temperatures.
- More intense storms.
- Longer droughts.
- Increased frequency and amount of ice.
- Summers stretching longer.
- Sea level rising.

The Township of Melancthon has witnessed some of these climate change projections already causing potential challenges with road washouts from extreme weather events, or quick winter thaw runoff. Many roads as well as crossroad culverts have not been designed for such intense high-volume rainstorms.

Identifying areas of concern will help the Township to design road and storm water assets to improve resiliency to extreme weather events. This type of investment will reduce risk of failure of infrastructure and ensure appropriate levels of service are maintained for the public.

Another factor to climate change issues is the materials used in asset construction. The focus is to reduce the total carbon footprint on the construction of infrastructure assets. Investing in infrastructure with a long-term view provides both better levels of service as well as reducing the total carbon footprint.

As noted above it is recommended that the Township undertake a project to inspect the crossroad culverts to determine condition and a true remaining life. This type of project will provide guidance to the Township on the crossroad culverts that need to be replaced and potentially increased in size for better water flow during extreme weather events. The Township continues to take measures with respect to the maintenance of the municipal drains across the Township. This will also help the Township make good progress to becoming a more climate change resilient municipality.

4.4 Long-term Forecast

For many years, lifecycle costing has been used in the field of engineering to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use recently in the management of capital assets. By definition, lifecycle costs are **all** the costs which are incurred during the lifecycle of a capital asset, from the time it is purchased or constructed, to the time it is taken out of service for disposal/replacement.

In defining the 10-year forecast for the Township's asset management strategy, costs incurred through an asset's lifecycle, the asset's condition, expected LOS, and risk were considered and documented. The increased cost for expected LOS is included in the total costs presented. Asset analysis in forecasting the Township's asset replacement rehabilitation and maintenance/LOS needs are summarized in Figure 4.1 (uninflated) and Figure 4.2 (inflated) which we are calling Asset Strategy based on expected levels of service.

The asset strategy incorporated all of the information discussed above in this report and based on the information provided by the Township, past reports, staff input, and understanding of the asset's reaction in their current environment as well as the expected asset maintenance levels, and the current asset condition, which is expected to produce a reduced asset potential risk of failure. The outcome of this approach was to provide appropriate asset service levels, and the assets were expected to meet or exceed their useful life which reduces expected infrastructure deficits. In total, $27.2 million in assets (uninflated) and $29.7 million in assets (inflated) are shown as maintenance, improvement, rehabilitation and replacement needs over the 10-year forecast. This is the recommended asset strategy for the Township of Melancthon.

Assets like Bridges, major culverts, Facilities are not expected to be replaced for usually 50-80 years. It needs to be stated, these assets need to ensure to have reserve funding for their rehabilitation / replacement schedule in the future. The Financial Strategy provides the Township with an investment plan into their reserve accounts.

For the recommended asset strategy to be feasible, the expected level of service adjustments discussed in Section 3 are needed in conjunction with the current level of service amounts in order to effectively maintain and rehabilitate the assets as required.

The financing strategy discussed in the next section will incorporate the level of service adjustments into the recommended financing analysis.

Figure 4.1: Proposed Asset Strategy Based on Expected Levels of Service (uninflated)

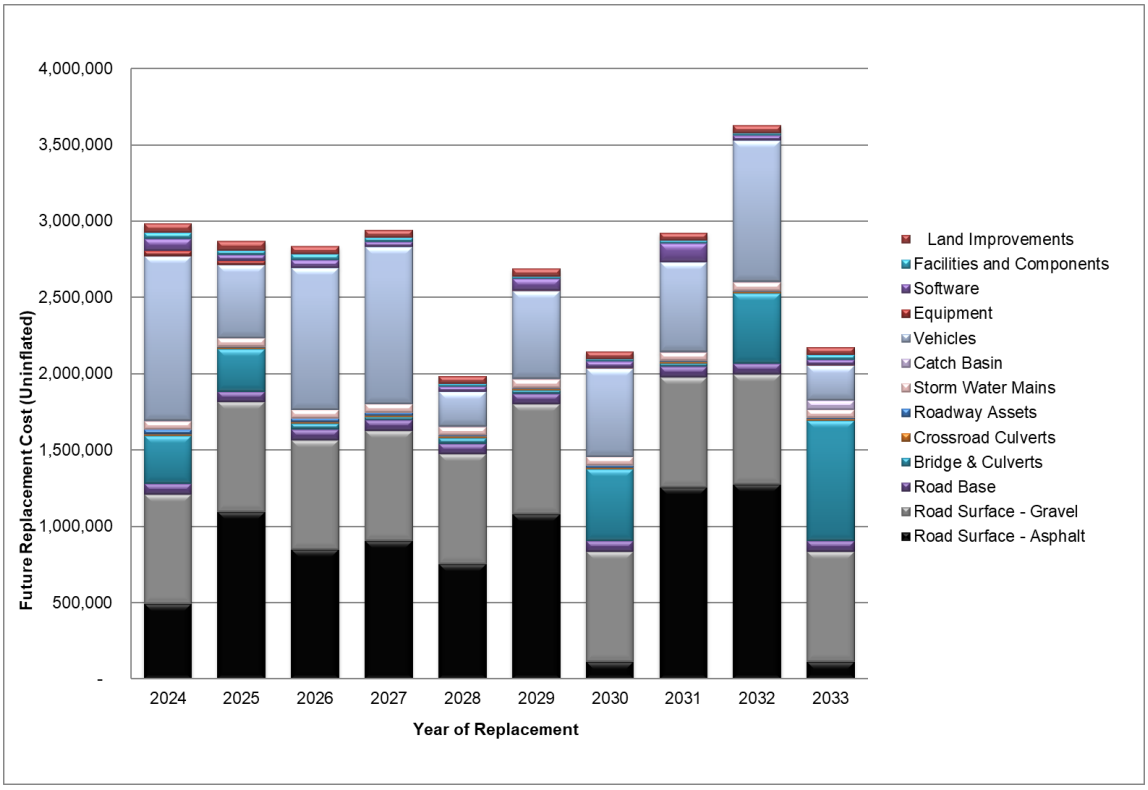
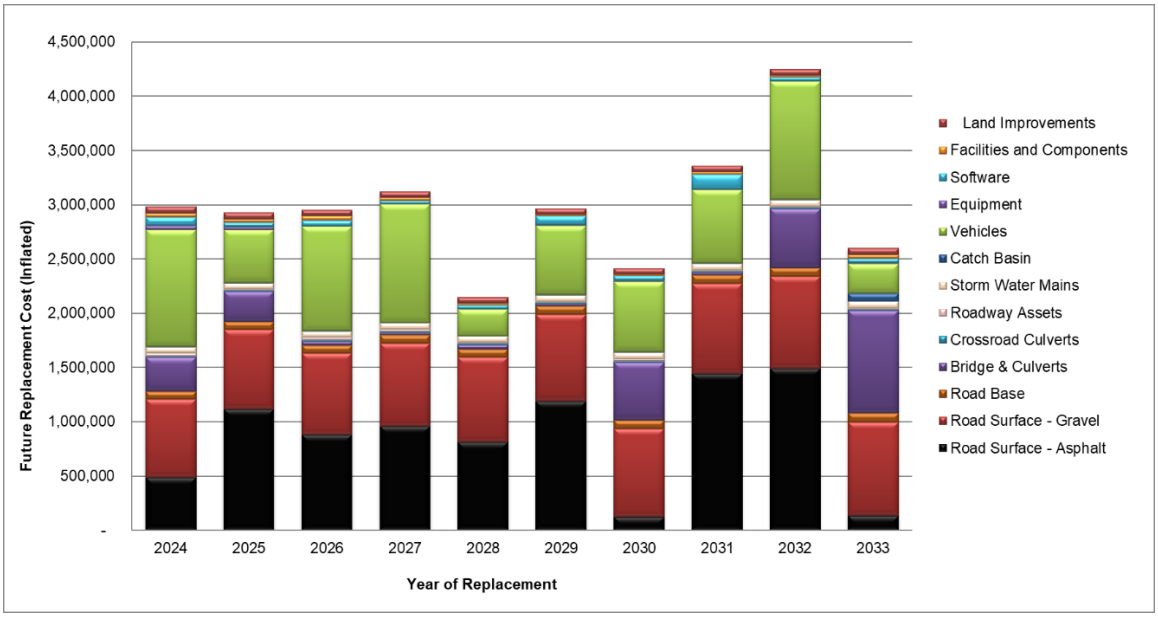


Figure 4.2: Proposed Asset Strategy Based on Expected Levels of Service (inflated)



5.0 Financing Strategy

5.1 Scope and Process

The financing strategy provides the recommended use of various funding sources to finance the asset management strategy and levels of service recommendations discussed in Chapters 3 and 4. The financing strategy also provides recommendations to increase annual investments in assets that will be used beyond this report's 10-year forecast period.

5.2 Funding Sources

The following funding sources have been used within the financing strategy:

Grant Funding: It has been assumed that the Canada Community Building Fund (formerly Federal Gas Tax) will continue throughout the forecast period. The Township's allocation is expected to reach $102,573 in 2025 and 2026, and 106,676 in 2027. It has been assumed that funding will remain constant at this amount moving forward beyond 2027.

It has also been assumed that Ontario Community Infrastructure Fund (OCIF) annual amounts will remain constant at 2024 levels, $100,000 per year, over the forecast period. The province has implemented a formula for future OCIF funding, based on each municipality's asset replacement values.

Operating Budget: The Township includes annual amounts in the operating budget to fund capital projects. This is either funding directly from annual revenues or from Working Capital. It has been assumed that $405,000 of this funding will be dedicated to asset management funding annually throughout the forecast period.

Given that there are levels of service recommendations that are operating in nature, it has been assumed that these costs will be funded from the annual operating budget. This could be through existing funding or proposed increases each year. Proposed increases for levels of service have been included in the financing strategy.

Reserves: The Township's existing capital reserves have been utilized as a funding source for asset management needs over the forecast period. These reserves become a primary source of capital funding over the forecast period. A summary of existing reserves included is provided below. It is recommended that increases in annual asset investment be allocated to reserves for capital use.

Existing Reserve	Est. 2024 Ending	
Building Maintenance	30,415	
Bridge Reserve Fund	118,724	
Equipment Replacement Reserve Fund	492,167	
Roads Capital Reserve Fund	55,034	
Recreation Capital Reserve Fund	10,818	
Paving Capital Reserve	5,155	
Road Construction Capital	11,942	
Corbetton Park Reserve	13,537	
Working Capital Reserve	175,074	- 25% of balance
Total Asset Management Consolidated - Jan 1, 2025	**912,866**	

Debt: If all other funding sources fall short in funding recommended lifecycle needs each year, debt financing is recommended. Debt financing is anticipated within the forecast period (see the analysis provided below). The impact of additional principal and interest payments on the annual budget have been included in this financing strategy.

5.3 Historic Asset Investment

The following table outlines the Township's historic capital investment in assets. As shown, the annual investment has fluctuated over the last three years.

Table 5.1: Historic Asset Investment - Capital

Funding Type - Tax Supported Assets	2022	2023	2024
Canada Community Building Fund (Gas Tax)	95,399	99,547	98,470
OCIF Funding	108,537	100,000	100,000
Transfer from Operating to fund Capital (includes gravel resurface)	371,963	762,000	405,000
Transfer to: Equipment Replacement Reserve	150,000	150,000	220,000
Transfer to: Roads Capital Reserve	-	-	50,000
Transfer to: Building Maintenance Reserve	10,000	-	-
Transfer to: Environmental Rehabilitation Reserve	10,000	10,000	10,000
Total Asset Investment - Capital (Sustainable)	**745,899**	**1,121,547**	**883,470**

* Excludes the Safe Restart and OMPF grants as they are operating in nature.
** Excludes the use of debt and existing reserve balances.

Therefore, a capital asset investment in 2024 of $883,470 becomes the starting point for recommending increases in annual asset investments over the forecast period.

5.4 Optimal Asset Investment

Based on an analysis of the Township's capital assets in terms of replacement cost and useful life, the following summary of optimal annual asset investment has been created.

Table 5.2: Optimal Asset Investment Summary

Tax Supported Assets	Replacement Cost	Weighted Average Useful Life	Annual Replacement Investment (2024)
Road Surface - Asphalt	8,143,476	25	325,700
Road Surface - Gravel	1,932,901	3	644,300
Road Base**	112,451,524	75	20,000
Bridge & Culverts	46,225,750	70	660,400
Crossroad Culverts	145,702	50	2,900
Sidewalks	11,000	40	300
Signs	49,465	10	4,900
Barriers	4,538	30	200
Street Lights	146,000	40	3,700
Storm Sewers	183,701	100	1,800
Catch Basin	132,549	50	2,700
Water (Wells)	77,000	28	2,800
Wastewater Assets (Septic)	106,500	25	4,300
Vehicles	4,930,000	17	290,000
Equipment	233,025	24	9,700
Software	151,990	23	6,600
Facilities and Components	2,651,922	68	39,000
Land Improvements	156,193	37	4,200
Total	**177,733,236**		**2,023,500**

** Road Base annual investment for maintenance only.

In summary, an annual asset investment of $2,023,500 is needed to fund long-term asset management planning needs. Annual asset investments for road base assets are based on the level of service costs identified in this asset management plan and not full replacement.

This $2,023,500 annual asset investment becomes the funding target over the forecast period. However, this target changes over time as inflation increases this amount annually. Assuming 2% annual inflation, the target annual capital asset investment amount becomes $2,466,660 by the year 2034.

5.5 Financing Strategy

The detailed 10-year financing strategy is provided in Appendix A to this report.

As the 2024 Budget has already been developed and passed by the Township, all recommendations provided in chapter 4 have been delayed by 1 year. For example, all 2024 recommendations from chapter 4 are shown as 2025 funding requirements in this chapter. Also, like chapter 4, a 2% inflation factor has been applied annually to all costs.

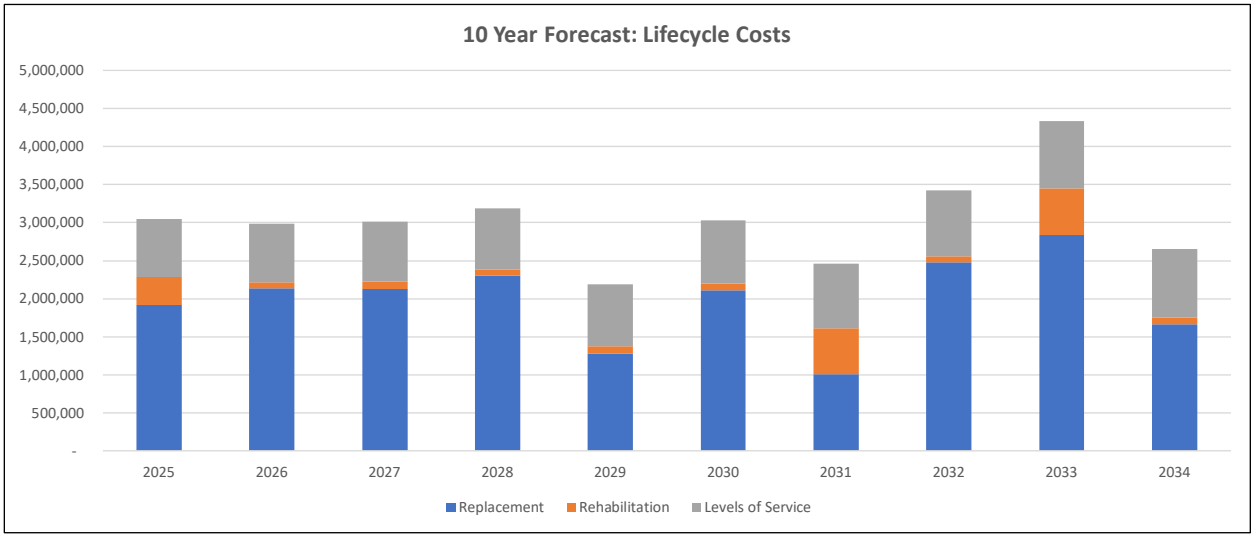
The following table provides a high-level summary of the 10-year forecast by cost type (i.e., asset replacement needs, asset rehabilitation needs, and levels of service recommendations).

Table 5.3: Forecast Summary

Forecast	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Replacement	1,917,422	2,140,755	2,128,580	2,304,799	1,275,617	2,112,261	1,012,015	2,474,252	2,835,606	1,661,176
Rehabilitation	372,402	75,429	95,614	78,477	99,478	81,647	602,026	84,945	614,994	88,377
Levels of Service	753,820	768,896	784,272	799,962	815,958	832,277	848,922	865,902	883,221	900,884
Total	**3,043,644**	**2,985,080**	**3,008,466**	**3,183,238**	**2,191,053**	**3,026,185**	**2,462,963**	**3,425,099**	**4,333,821**	**2,650,437**

Figure 5.1 shows the same forecast in graph form. As illustrated, there are fluctuations in annual lifecycle needs throughout the forecast.

Figure 5.1: Forecast Summary



As shown in Appendix A, the 10-year forecast has a recommended funding plan as follows:

Table 5.4: Capital Forecast with Funding Sources

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Totals by Asset Class (Replacement, Rehabilitation and Levels of Service)											
Road Surface - Asphalt	500,548	1,137,872	897,992	980,134	830,304	1,216,511	129,342	1,473,948	1,524,111	137,259	8,828,021
Road Surface - Gravel	734,808	749,504	764,494	779,784	795,379	811,287	827,513	844,064	860,944	878,163	8,045,940
Road Base	71,400	72,828	74,284	75,771	77,286	78,831	80,408	82,016	83,657	85,330	781,811
Bridge & Culverts	318,852	287,931	39,901	21,649	41,514	22,523	541,720	23,433	552,252	963,006	2,812,781
Crossroad Culverts	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190	111,688
Roadway Assets	30,883	6,763	24,139	20,540	7,177	7,320	16,616	7,616	7,768	7,923	136,745
Storm Sewers	56,100	57,222	58,366	59,534	60,724	61,939	63,178	64,441	65,730	67,045	614,279
Catch Basin	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183	76,241	111,065
Vehicles	1,099,560	497,311	984,801	1,112,741	251,730	650,922	663,940	688,935	1,109,046	277,931	7,336,917
Equipment	36,233	28,078	-	-	-	1,803	3,623	621	-	5,443	75,801
Software	81,049	41,629	54,431	35,179	37,539	88,853	48,704	142,421	38,841	41,446	610,092
Facilities and Components	39,241	29,260	42,672	29,171	19,291	14,684	14,978	23,203	15,583	37,510	265,593
Land Improvements	61,200	62,637	53,060	54,122	55,204	56,308	57,434	58,583	59,755	60,950	579,253
Total	3,043,644	2,985,080	3,008,466	3,183,238	2,191,053	3,026,185	2,462,963	3,425,099	4,333,821	2,650,437	30,309,986

Funding Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Total Funding by Source											
Canada Community Building Fund (Gas Tax)	102,573	102,573	106,676	106,676	106,676	106,676	106,676	106,676	106,676	106,676	**1,058,554**
OCIF Funding	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	**1,000,000**
Transfer from Operations	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	**4,050,000**
Transfer from/(to) Capital Reserves - 2024 Existing	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	**2,800,000**
Transfer from/(to) Capital Reserves - New	705,000	324,000	403,000	502,000	678,000	860,000	1,000,000	1,210,000	1,370,000	1,527,761	**8,579,761**
Operating Funding (LOS Impa	48,300	98,600	150,800	205,100	209,200	213,400	217,700	222,100	226,500	231,000	**1,822,700**
Debt Funding (see section 2)	1,402,771	1,674,907	1,562,990	1,584,462	412,177	1,061,109	353,587	1,101,323	1,845,645	-	**10,998,971**
Total	3,043,644	2,985,080	3,008,466	3,183,238	2,191,053	3,026,185	2,462,963	3,425,099	4,333,821	2,650,437	30,309,986

As noted in section 5.2 above, Canada Community Building Fund and OCIF funding is shown as a funding source in each year of the forecast period, reserves are used as the primary funding source, operating budget funding is used at a fixed $405,000 in capital funding annually as well as for levels of service recommendations that are considered operating in nature, and debt funding is used to finance the remaining funding needs each year, if applicable.

Debt Funding

Debt funding is anticipated within the forecast period. As shown above in Table 5.4, debt principal amounts of $10,998,971 is required in total from 2025 to 2034 to fund recommended asset lifecycle needs. Given that the Township's ability to use debt funding is restricted based on the province's debt capacity (annual repayment limit) calculations, an analysis of all current and proposed debt was completed (see Figures 5.2 and 5.3).

Figure 5.2: Summary of Current and Proposed Debt Payments

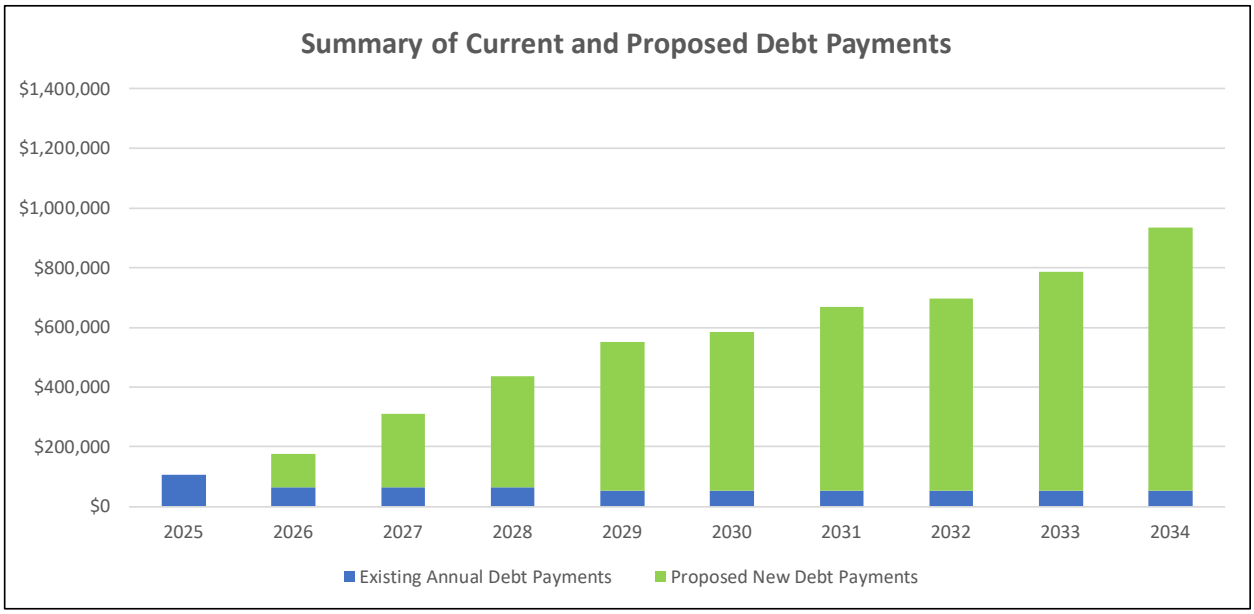
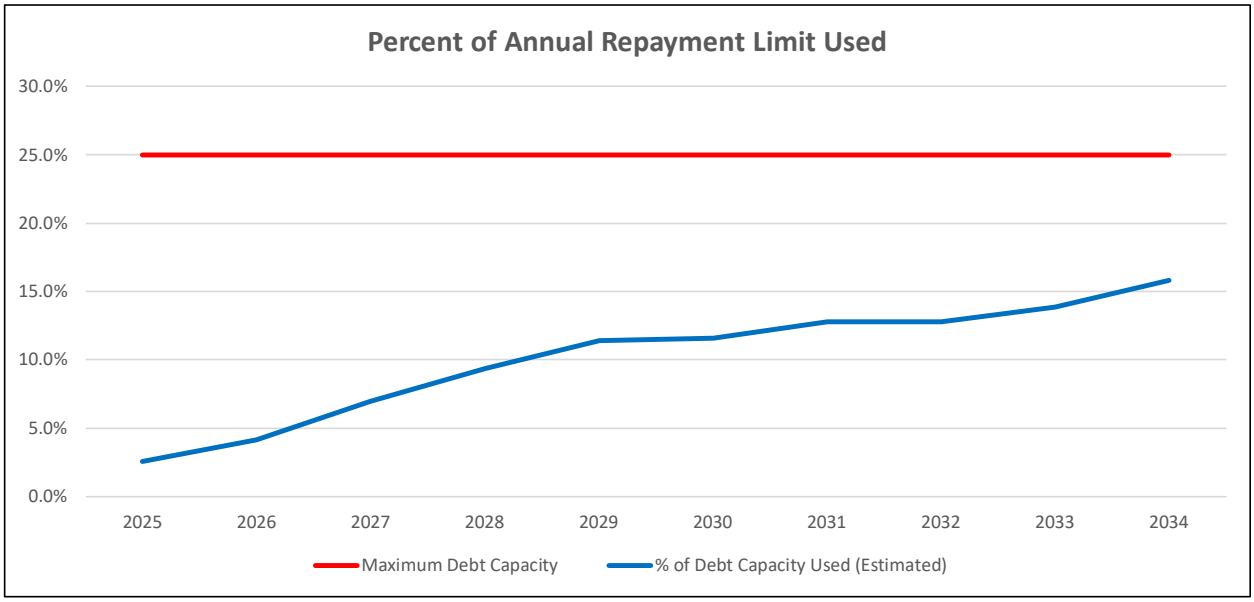


Figure 5.3: Percent of Annual Repayment Limit Used



Figures 5.2 and 5.3 above show that current and projected debt requirements are well within the annual debt capacity limits of 25% of Township revenues, reaching a maximum level of 15.8% of revenues in 2034. Future debt payments have been estimated assuming an interest rate of 5.0% over a 20-year term.

Levels of Service Implementation

This asset management plan recommends various changes to levels of service to move from current levels to expected levels throughout the forecast period. The financial impact of moving from current to expected levels for all assets totals $189,514 (refer to Table 5.5 below). As illustrated, a phase-in approach has been recommended over 4 years, resulting in achieving expected levels of service by 2028. More information on level of service recommendations can be found in Chapter 3 to this report.

Table 5.5: Levels of Service Analysis and Phase-In

Asset Area - Tax Supported	Increase in LOS
Roads	82,500
Bridges & Culverts	21,000
Storm Sewers	500
Facilities	1,514
Land Improvements	50,000
Vehicles & Equipment	34,000
Total (2024 $)	**189,514**

LOS Phase-In	2025	2026	2027	2028
Roads	30,364	30,364	69,122	82,500
Bridges & Culverts	15,000	15,000	21,000	21,000
Storm Sewers	500	500	500	500
Facilities	1,514	1,514	1,514	1,514
Land Improvements	-	47,379	50,000	50,000
Vehicles & Equipment	-	-	-	34,000
Total (2024 $)	**47,378**	**94,757**	**142,136**	**189,514**
% Phase-In	**25.0%**	**50.0%**	**75.0%**	**100.0%**

Reserve Funding

With reserve funding becoming a primary source of funding within this financing strategy, a recommended phased-in approach to increasing contributions to reserves is provided. Table 5.6 below outlines the calculated transfer amounts for the forecast period, with a recommended plan to increase those transfers to reach $1,483,872 by 2034. This combined with anticipated grant funding, existing reserve transfers, and transfers from operations allows the Township to reach an annual asset capital investment amount of $2,375,548 by 2034. This represents 96% of the optimal annual capital asset investment amount in 2034 of $2,466,660.

Table 5.6: Contributions to Reserves

	Forecast									
Funding Type - Tax Supported As	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Transfer to Reserves for Asset Management	192,824	324,051	403,290	502,702	677,606	859,520	1,000,212	1,209,091	1,370,053	1,483,872
Total	192,824	324,051	403,290	502,702	677,606	859,520	1,000,212	1,209,091	1,370,053	1,483,872
Transfer from Operations to Capital	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000
Transfer from/(to) Capital Reserves - 2024 Existing	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000
Canada Community Building Fund (Gas Tax)	102,573	102,573	106,676	106,676	106,676	106,676	106,676	106,676	106,676	106,676
OCIF Funding	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Total Asset Investment	**1,080,397**	**1,211,624**	**1,294,966**	**1,394,378**	**1,569,282**	**1,751,196**	**1,891,888**	**2,100,767**	**2,261,729**	**2,375,548**

It is recommended that existing capital reserves (identified above in Section 5.2) be used to fund asset management capital needs.

Operating Budget Funding

As discussed earlier in this chapter, the recommended financing strategy assumes that $405,000 will be available annually from the operating budget to fund asset management capital needs.

From a Level of Service perspective, many recommendations outlined in Chapter 3 are already implemented by the Township. Section 4 of Appendix A to this report outlines that adjustments are needed to the Township's operating budget to account for any further levels of service impacts that are not currently funded. Please refer to the Levels of Service Implementation discussion above.

If debt financing is needed to fund the recommended financing strategy, this has an impact on the Township's operating budget going forward. It has also been assumed that when existing debt payments are complete, the budget space created will be used to either fund new debt or to increase transfers to reserves. This is outlined in Appendix A and summarized below in Table 5.7.

Table 5.7: Increase in Funding Summary

Increase in Funding	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Increase (Decrease) in Transfers to Reserves	192,824	131,227	79,239	99,411	174,905	181,913	140,692	208,880	160,962	113,819
Increase (Decrease) in Operating - LOS	48,300	50,300	52,200	54,300	4,100	4,200	4,300	4,400	4,400	4,500
Increase (Decrease) in Operating - D	-	71,653	134,400	125,420	114,083	33,070	85,150	28,370	88,370	148,100
Total Impact on Annual Tax Supported Budget	**241,124**	**253,180**	**265,839**	**279,131**	**293,088**	**219,183**	**230,142**	**241,650**	**253,732**	**266,419**
Estimated Taxation Impact: 1% in 2024 = $33,042	**6.95%**	**6.95%**	**6.95%**	**6.95%**	**6.95%**	**4.95%**	**4.95%**	**4.95%**	**4.95%**	**4.95%**

Table 5.7 above outlines the total annual increase in funding recommended from 2025 to 2034. These increases can be incorporated through:

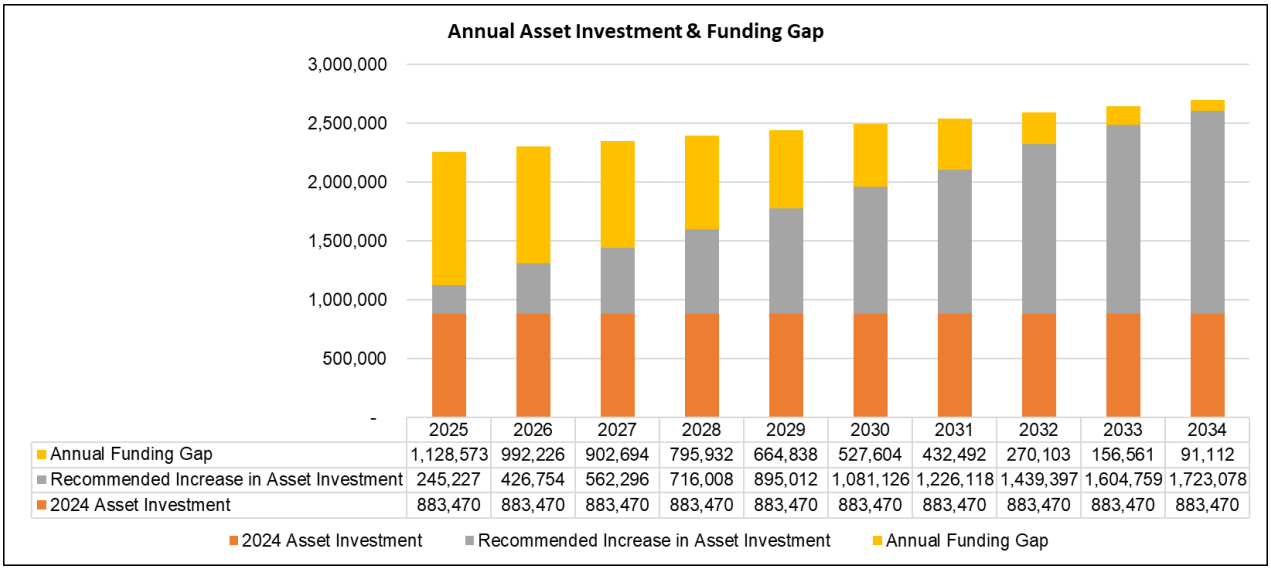
a) Finding efficiencies in the annual budget.
b) Increase in external funding (i.e., grants or third-party contributions).
c) Allocations of annual Township surpluses to capital reserves (if available).
d) Recommending budget (taxation) increases.

As shown in Table 5.7, if taxation increases are required each year to allow for the total recommended increases in funding (i.e., items a, b, and c above are not available), an increase in taxation would be required annually. A 6.95% increase in taxation would be required annually for the first five years, followed by a 4.95% annual increase for the remaining five years of the forecast period.

Funding Gap

Figure 5.4 below provides an overall summary of the recommended annual investment levels (shown in orange and gray) as well as the funding gap (shown in yellow). The funding recommendations outlined in this chapter ensure the funding gap is significantly reduced by 2034, where 97% of the optimal annual asset investment (operating levels of service and capital) is achieved.

Figure 5.4: Annual Asset Investment & Funding Gap



	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Funding Gap	1,128,573	992,226	902,694	795,932	664,838	527,604	432,492	270,103	156,561	91,112
Recommended Increase in Asset Investment	245,227	426,754	562,296	716,008	895,012	1,081,126	1,226,118	1,439,397	1,604,759	1,723,078
2024 Asset Investment	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470

This figure is also provided in Appendix A to this report, along with detailed figures to support the calculations.

5.6 Summary of Financing Strategy Recommendations

The following represents a list of financing strategy recommendations:

1. Use existing Township capital reserves identified in this chapter to fund asset management capital needs.
2. Use capital reserves as the primary source of asset investment annually. Funds should flow from the operating budget to these reserves, which are then used to fund capital projects.
3. Ensure a minimum of $405,000 is available from the annual operating budget (excluding reserve transfers) to fund asset management capital needs.
4. Increase asset management funding annually as outlined in Table 5.7.
5. Transfer any annual Township surpluses to capital reserves annually.
6. Dedicate any budget savings from the elimination of debt payments to funding asset management needs (i.e., either new debt or additional transfers to reserves).
7. Update this financing strategy and the Asset Management Plan as a whole, at a minimum, every five years as required in Ontario Regulation 588/17.

6.0 Recommendations

The following recommendations have been provided for the Township of Melancthon's consideration:

- That this Asset Management Plan for all Township tangible capital assets be received and approved by Township Council.
- That consideration of this Asset Management Plan be given as part of the annual budgeting process to ensure sufficient capital funds are available to fund capital requirements over the 10-year period.
- The current level of funding for asset replacement and renewal at the Township is not expected to sufficiently fund required capital needs or close the infrastructure funding gap. As such, it is recommended that the following be considered:
  - That the "levels of service" strategies discussed in this report be approved.
  - The Township uses Reserves to fund infrastructure capital needs.
  - The Township uses capital reserves as the primary source of asset investment annually. Funds should flow from the operating budget to these reserves, which are then used to fund capital projects.
  - The Township ensures a minimum of $405,000 is available from the annual operating budget (excluding reserve transfers) to fund asset management capital needs.
  - The Township increase asset management funding as outlined in Table 5.7;
  - The Township transfer annual surpluses to capital reserves;
  - The Township dedicate any budget savings from the elimination of debt payments to funding asset management needs (i.e., Either new debt or transfers to reserves);
  - The Township update the financing strategy every 5 years as per legislation or when there is significant change;
  - That this Asset Management Plan be updated as per the Township's Asset Management Strategy Policy; and
  - The Township consider the capital priorities identified within this report when applying for future grants or deciding how to utilize Gas Tax, OCIF funding, and/or other funding that becomes available.

Substantial investment in asset capital needs will be required over the 10-year forecast period and beyond. Through the recommendations provided above, proactive steps will be made to increase capital investment, as well as reduce the annual infrastructure funding gap for the Township's assets. Enhanced maintenance plans will assist in maintaining adequate asset conditions, mitigate asset risk as well as potentially defer capital needs within the forecast period. In addition, the Township of Melancthon is recommended to pursue all available capital grants wherever possible to further reduce the infrastructure funding gap.

Through the creation of this plan, the Township has been provided with Excel spreadsheets in which amendments and revisions can be made as needed by Township staff. It is anticipated that this plan adopted by the Township of Melancthon Council will be monitored and updated frequently as part of the budget process, with refinements and specific recommendations being provided with respect to the priority of each individual project.

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Appendix A

Financing Strategy Tables

Township of Melancthon
2024 Asset Management Plan
Financing Strategy

Table of Contents:

Section 1: Capital Forecast and Funding Analysis

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Capital Replacement											
Road Surface - Asphalt	385,696	1,020,723	778,500	858,252	705,985	1,089,705	-	1,342,019	1,389,544	-	**7,570,424**
Road Surface - Gravel	510,000	520,200	530,604	541,216	552,040	563,081	574,343	585,830	597,546	609,497	**5,584,357**
Road Base	-	-	-	-	-	-	-	-	-	-	**-**
Bridge & Culverts	-	267,123	-	-	-	-	-	-	-	938,626	**1,205,749**
Crossroad Culverts	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190	**111,688**
Roadway Assets	24,253	-	17,241	13,504	-	-	9,150	-	-	-	**64,148**
Storm Sewers	-	-	-	-	-	-	-	-	-	-	**-**
Catch Basin	-	-	-	-	-	-	-	-	-	71,975	**71,975**
Vehicles	867,000	260,100	742,846	865,946	-	394,157	402,040	421,797	836,565	-	**4,790,451**
Equipment	36,233	28,078	-	-	-	1,803	3,623	621	-	5,443	**75,801**
Software	47,899	7,816	19,942	-	1,656	52,253	11,372	104,342	-	1,829	**247,109**
Facilities and Components	25,941	15,694	28,835	15,057	4,895	-	-	7,926	-	21,616	**119,964**
Land Improvements	10,200	10,617	-	-	-	-	-	-	-	-	**20,817**
Subtotal - Capital Replacement	**1,917,422**	**2,140,755**	**2,128,580**	**2,304,799**	**1,275,617**	**2,112,261**	**1,012,015**	**2,474,252**	**2,835,606**	**1,661,176**	**19,862,483**
Capital Rehabilitation											
Road Surface - Asphalt	53,550	54,621	55,713	56,828	57,964	59,124	60,306	61,512	62,742	63,997	**586,357**
Road Surface - Gravel	-	-	-	-	-	-	-	-	-	-	**-**
Road Base	20,400	20,808	21,224	21,649	22,082	22,523	22,974	23,433	23,902	24,380	**223,375**
Bridge & Culverts	298,452	-	18,677	-	19,432	-	518,746	-	528,350	-	**1,383,657**
Crossroad Culverts	-	-	-	-	-	-	-	-	-	-	**-**
Roadway Assets	-	-	-	-	-	-	-	-	-	-	**-**
Storm Sewers	-	-	-	-	-	-	-	-	-	-	**-**
Catch Basin	-	-	-	-	-	-	-	-	-	-	**-**
Vehicles	-	-	-	-	-	-	-	-	-	-	**-**
Equipment	-	-	-	-	-	-	-	-	-	-	**-**
Software	-	-	-	-	-	-	-	-	-	-	**-**
Facilities and Components	-	-	-	-	-	-	-	-	-	-	**-**
Land Improvements	-	-	-	-	-	-	-	-	-	-	**-**
Subtotal - Capital Rehabilitation	**372,402**	**75,429**	**95,614**	**78,477**	**99,478**	**81,647**	**602,026**	**84,945**	**614,994**	**88,377**	**2,193,389**

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Levels of Service Costs											
Road Surface - Asphalt	61,302	62,528	63,779	65,054	66,355	67,682	69,036	70,417	71,825	73,262	**671,240**
Road Surface - Gravel	224,808	229,304	233,890	238,568	243,339	248,206	253,170	258,234	263,398	268,666	**2,461,583**
Road Base	51,000	52,020	53,060	54,122	55,204	56,308	57,434	58,583	59,755	60,950	**558,436**
Bridge & Culverts	20,400	20,808	21,224	21,649	22,082	22,523	22,974	23,433	23,902	24,380	**223,375**
Crossroad Culverts	-	-	-	-	-	-	-	-	-	-	**-**
Roadway Assets	6,630	6,763	6,898	7,036	7,177	7,320	7,466	7,616	7,768	7,923	**72,597**
Storm Sewers	56,100	57,222	58,366	59,534	60,724	61,939	63,178	64,441	65,730	67,045	**614,279**
Catch Basin	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183	4,266	**39,090**
Vehicles	232,560	237,211	241,955	246,795	251,730	256,765	261,900	267,138	272,481	277,931	**2,546,466**
Equipment	-	-	-	-	-	-	-	-	-	-	**-**
Software	33,150	33,813	34,489	35,179	35,883	36,600	37,332	38,079	38,841	39,617	**362,983**
Facilities and Components	13,300	13,566	13,837	14,114	14,396	14,684	14,978	15,277	15,583	15,894	**145,629**
Land Improvements	51,000	52,020	53,060	54,122	55,204	56,308	57,434	58,583	59,755	60,950	**558,436**
Subtotal - Levels of Service	**753,820**	**768,896**	**784,272**	**799,962**	**815,958**	**832,277**	**848,922**	**865,902**	**883,221**	**900,884**	**8,254,114**

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Totals by Asset Class (Replacement, Rehabilitation and Levels of Service)											
Road Surface - Asphalt	**500,548**	**1,137,872**	**897,992**	**980,134**	**830,304**	**1,216,511**	**129,342**	**1,473,948**	**1,524,111**	**137,259**	**8,828,021**
Road Surface - Gravel	**734,808**	**749,504**	**764,494**	**779,784**	**795,379**	**811,287**	**827,513**	**844,064**	**860,944**	**878,163**	**8,045,940**
Road Base	**71,400**	**72,828**	**74,284**	**75,771**	**77,286**	**78,831**	**80,408**	**82,016**	**83,657**	**85,330**	**781,811**
Bridge & Culverts	**318,852**	**287,931**	**39,901**	**21,649**	**41,514**	**22,523**	**541,720**	**23,433**	**552,252**	**963,006**	**2,812,781**
Crossroad Culverts	**10,200**	**10,404**	**10,612**	**10,824**	**11,041**	**11,262**	**11,487**	**11,717**	**11,951**	**12,190**	**111,688**
Roadway Assets	**30,883**	**6,763**	**24,139**	**20,540**	**7,177**	**7,320**	**16,616**	**7,616**	**7,768**	**7,923**	**136,745**
Storm Sewers	**56,100**	**57,222**	**58,366**	**59,534**	**60,724**	**61,939**	**63,178**	**64,441**	**65,730**	**67,045**	**614,279**
Catch Basin	**3,570**	**3,641**	**3,714**	**3,789**	**3,864**	**3,942**	**4,020**	**4,101**	**4,183**	**76,241**	**111,065**
Vehicles	**1,099,560**	**497,311**	**984,801**	**1,112,741**	**251,730**	**650,922**	**663,940**	**688,935**	**1,109,046**	**277,931**	**7,336,917**
Equipment	**36,233**	**28,078**	**-**	**-**	**-**	**1,803**	**3,623**	**621**	**-**	**5,443**	**75,801**
Software	**81,049**	**41,629**	**54,431**	**35,179**	**37,539**	**88,853**	**48,704**	**142,421**	**38,841**	**41,446**	**610,092**
Facilities and Components	**39,241**	**29,260**	**42,672**	**29,171**	**19,291**	**14,684**	**14,978**	**23,203**	**15,583**	**37,510**	**265,593**
Land Improvements	**61,200**	**62,637**	**53,060**	**54,122**	**55,204**	**56,308**	**57,434**	**58,583**	**59,755**	**60,950**	**579,253**
Total	**3,043,644**	**2,985,080**	**3,008,466**	**3,183,238**	**2,191,053**	**3,026,185**	**2,462,963**	**3,425,099**	**4,333,821**	**2,650,437**	**30,309,986**

Funding Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Total Funding by Source											
Canada Community Building Fund (Gas Tax)	102,573	102,573	106,676	106,676	106,676	106,676	106,676	106,676	106,676	106,676	**1,058,554**
OCIF Funding	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	**1,000,000**
Transfer from Operations	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	**4,050,000**
Transfer from/(to) Capital Reserves - 2024 Existing	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	**2,800,000**
Transfer from/(to) Capital Reserves - New	705,000	324,000	403,000	502,000	678,000	860,000	1,000,000	1,210,000	1,370,000	1,527,761	**8,579,761**
Operating Funding (LOS Impacts)	48,300	98,600	150,800	205,100	209,200	213,400	217,700	222,100	226,500	231,000	**1,822,700**
Debt Funding (see section 2)	1,402,771	1,674,907	1,562,990	1,584,462	412,177	1,061,109	353,587	1,101,323	1,845,645	-	**10,998,971**
Total	**3,043,644**	**2,985,080**	**3,008,466**	**3,183,238**	**2,191,053**	**3,026,185**	**2,462,963**	**3,425,099**	**4,333,821**	**2,650,437**	**30,309,986**

Total Cost less Funding	-	-	-	-	-	-	-	-	-	-	-

Section 2: Future Debt

Year	Principal Amount	New Annual Payments									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	1,402,771		112,560	112,560	112,560	112,560	112,560	112,560	112,560	112,560	112,560
2026	1,674,907			134,400	134,400	134,400	134,400	134,400	134,400	134,400	134,400
2027	1,562,990				125,420	125,420	125,420	125,420	125,420	125,420	125,420
2028	1,584,462					127,140	127,140	127,140	127,140	127,140	127,140
2029	412,177						33,070	33,070	33,070	33,070	33,070
2030	1,061,109							85,150	85,150	85,150	85,150
2031	353,587								28,370	28,370	28,370
2032	1,101,323									88,370	88,370
2033	1,845,645										148,100
2034	-										
Total	**10,998,971**	**-**	**112,560**	**246,960**	**372,380**	**499,520**	**532,590**	**617,740**	**646,110**	**734,480**	**882,580**

Assumptions:

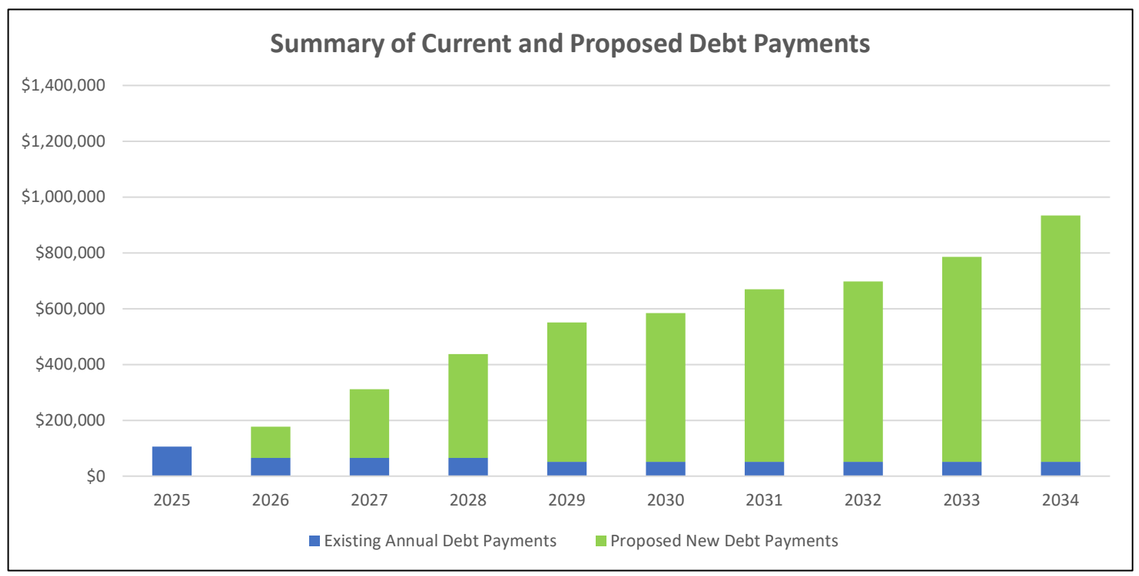
Term:	20	years
Rate:	5%	per year
Timing:	Debt is incurred at the end of the given year, with principal & interest payments starting in the following year.	

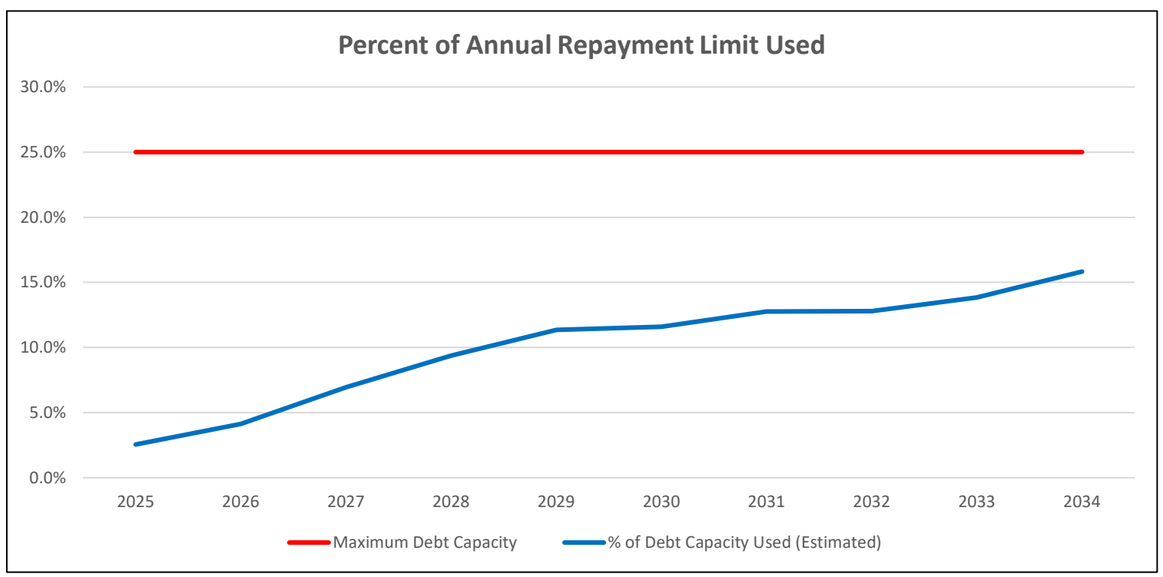
Debt Capacity Analysis

* Ontario municipalities must maintain annual debt principal and interest payments below the equivalent of 25% of revenues.

Debt Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing Annual Debt Payments	105,766	64,859	64,859	64,859	51,802	51,802	51,802	51,802	51,802	51,802
Proposed New Debt Payments	-	112,560	246,960	372,380	499,520	532,590	617,740	646,110	734,480	882,580
Total Anticipated Debt Payments	**105,766**	**177,419**	**311,819**	**437,239**	**551,322**	**584,392**	**669,542**	**697,912**	**786,282**	**934,382**
Estimated Revenues*	4,147,300	4,313,192	4,485,720	4,665,149	4,851,755	5,045,825	5,247,658	5,457,564	5,675,867	5,902,902
Maximum Debt Capacity	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
% of Debt Capacity Used (Estimated)	**2.6%**	**4.1%**	**7.0%**	**9.4%**	**11.4%**	**11.6%**	**12.8%**	**12.8%**	**13.9%**	**15.8%**

* Annual revenue estimate assumes inflation of 2% annually.





Section 3: Reserve Schedules

Asset Management: Consolidated Reserves	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	912,866	400,690	400,741	401,032	401,733	401,340	400,859	401,071	400,162	400,216
Add: Contributions from Operating	192,824	324,051	403,290	502,702	677,606	859,520	1,000,212	1,209,091	1,370,053	1,483,872
Less: Contributions (to)/from Capital	(705,000)	(324,000)	(403,000)	(502,000)	(678,000)	(860,000)	(1,000,000)	(1,210,000)	(1,370,000)	(1,527,761)
Interest Earned (if applicable)	-	-	-	-	-	-	-	-	-	-
Ending Balance	**400,690**	**400,741**	**401,032**	**401,733**	**401,340**	**400,859**	**401,071**	**400,162**	**400,216**	**356,327**

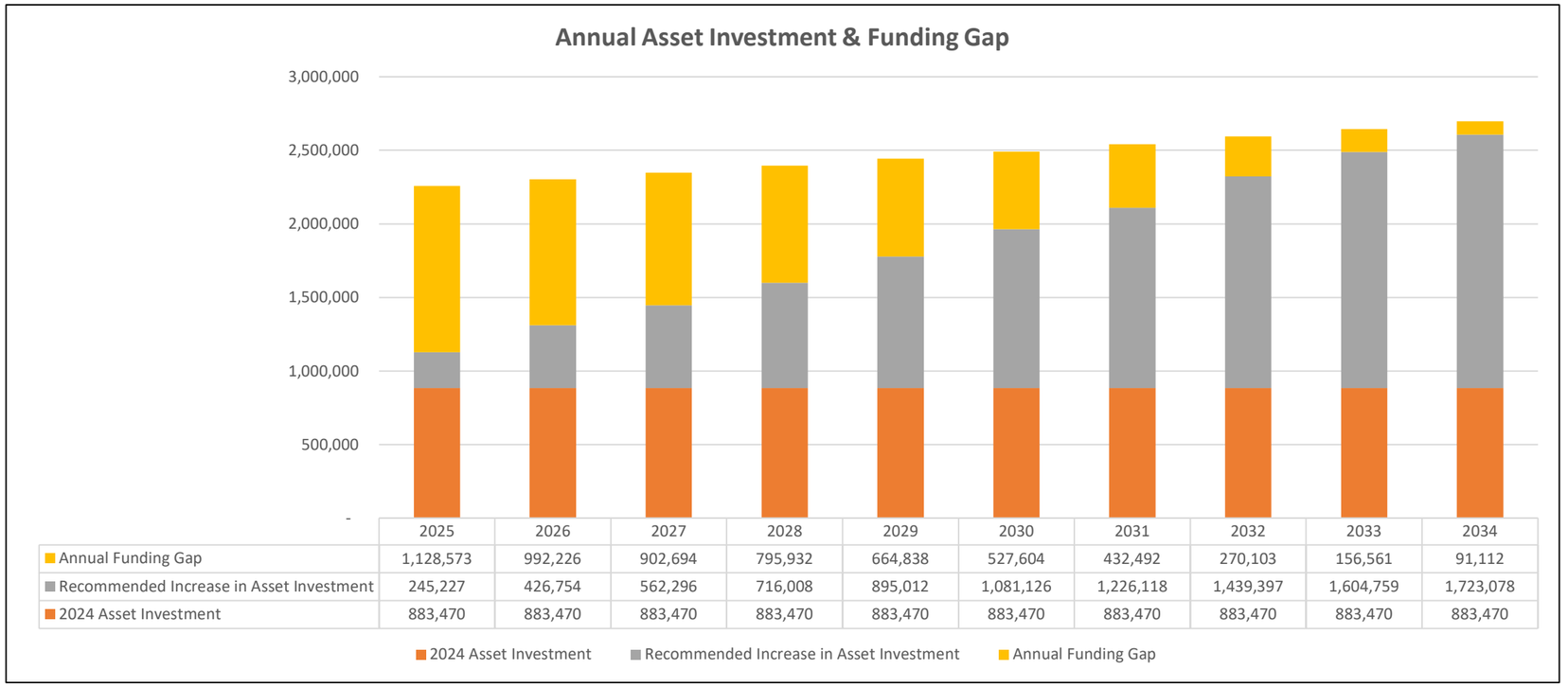
Section 4: Budget Impacts & Funding Gap

Optimal Annual Funding Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Optimal Investment - Capital	2,063,970	2,105,250	2,147,360	2,190,310	2,234,120	2,278,800	2,324,380	2,370,870	2,418,290	2,466,660
Optimal Investment - Operating LOS (increase from existing)	193,300	197,200	201,100	205,100	209,200	213,400	217,700	222,100	226,500	231,000
Total Annual Optimal Investment in Assets	**2,257,270**	**2,302,450**	**2,348,460**	**2,395,410**	**2,443,320**	**2,492,200**	**2,542,080**	**2,592,970**	**2,644,790**	**2,697,660**
Recommended Investment - Capital										
Canada Community Building Fund (Gas Tax)	102,573	102,573	106,676	106,676	106,676	106,676	106,676	106,676	106,676	106,676
OCIF Funding	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Transfer from Operations (for Capital)	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000	405,000
Transfer from/(to) Capital Reserves - 2024 Existing	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000
Transfer from/(to) Capital Reserves - New	192,824	324,051	403,290	502,702	677,606	859,520	1,000,212	1,209,091	1,370,053	1,483,872
Total Recommended Investment - Capital	**1,080,397**	**1,211,624**	**1,294,966**	**1,394,378**	**1,569,282**	**1,751,196**	**1,891,888**	**2,100,767**	**2,261,729**	**2,375,548**
% of Optimal Investment (Capital) Reached	*52%*	*58%*	*60%*	*64%*	*70%*	*77%*	*81%*	*89%*	*94%*	*96%*
LOS Impacts - Operating										
Recommended Investment (4 Year Phase-in)	48,300	98,600	150,800	205,100	209,200	213,400	217,700	222,100	226,500	231,000
Total Recommended Investment - LOS Operating	**48,300**	**98,600**	**150,800**	**205,100**	**209,200**	**213,400**	**217,700**	**222,100**	**226,500**	**231,000**
% of Optimal Investment (Capital) Reached	*25%*	*50%*	*75%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Total Recommended Investment - Capital & Operating	**1,128,697**	**1,310,224**	**1,445,766**	**1,599,478**	**1,778,482**	**1,964,596**	**2,109,588**	**2,322,867**	**2,488,229**	**2,606,548**
% of Optimal Investment (Operating & Capital) Reached	*50%*	*57%*	*62%*	*67%*	*73%*	*79%*	*83%*	*90%*	*94%*	*97%*
Funding (Gap) / Surplus	**(1,128,573)**	**(992,226)**	**(902,694)**	**(795,932)**	**(664,838)**	**(527,604)**	**(432,492)**	**(270,103)**	**(156,561)**	**(91,112)**

Investment in Capital	2024
Canada Community Building Fund (Gas Tax)	98,470
OCIF Funding	100,000
Transfer from Operating	405,000
Transfer to Reserves	280,000
Total Investment	**883,470**

Investment in capital "starting point" for the capital forecast.

	Impact on Funding	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	Total Recommended Investment - Capital	**1,080,397**	**1,211,624**	**1,294,966**	**1,394,378**	**1,569,282**	**1,751,196**	**1,891,888**	**2,100,767**	**2,261,729**	**2,375,548**
	Previous Year's Investment	**883,470**	**1,080,397**	**1,211,624**	**1,294,966**	**1,394,378**	**1,569,282**	**1,751,196**	**1,891,888**	**2,100,767**	**2,261,729**
	Annual Increase in Capital Investment										
	Grants	4,103	-	4,103	-	-	-	-	-	-	-
	Tax Supported	192,824	131,227	79,239	99,411	174,905	181,913	140,692	208,880	160,962	113,819
	Total Change	**196,927**	**131,227**	**83,342**	**99,411**	**174,905**	**181,913**	**140,692**	**208,880**	**160,962**	**113,819**
	Total Recommended Investment - Operating LOS (Increase Only)	48,300	98,600	150,800	205,100	209,200	213,400	217,700	222,100	226,500	231,000
	Previous Year's Investment Increase	**-**	**48,300**	**98,600**	**150,800**	**205,100**	**209,200**	**213,400**	**217,700**	**222,100**	**226,500**
	Annual Increase / (Decrease) in Operating LOS Investment										
	Tax Supported	48,300	50,300	52,200	54,300	4,100	4,200	4,300	4,400	4,400	4,500
	Total Change	**48,300**	**50,300**	**52,200**	**54,300**	**4,100**	**4,200**	**4,300**	**4,400**	**4,400**	**4,500**
A	**Total Change - Capital & LOS (excluding Grant Increase)**	**241,124**	**181,527**	**131,439**	**153,711**	**179,005**	**186,113**	**144,992**	**213,280**	**165,362**	**118,319**
B	**Net Increase / (Decrease) in Debt Payments**	**-**	**71,653**	**134,400**	**125,420**	**114,083**	**33,070**	**85,150**	**28,370**	**88,370**	**148,100**
A + B	**Total Impact on Annual Tax Supported Budget**	**241,124**	**253,180**	**265,839**	**279,131**	**293,088**	**219,183**	**230,142**	**241,650**	**253,732**	**266,419**
	Estimated Taxation Impact: 1% in 2024 = $33,042	**6.95%**	**6.95%**	**6.95%**	**6.95%**	**6.95%**	**4.95%**	**4.95%**	**4.95%**	**4.95%**	**4.95%**



	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual Funding Gap	1,128,573	992,226	902,694	795,932	664,838	527,604	432,492	270,103	156,561	91,112
Recommended Increase in Asset Investment	245,227	426,754	562,296	716,008	895,012	1,081,126	1,226,118	1,439,397	1,604,759	1,723,078
2024 Asset Investment	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470	883,470

R.J. Burnside & Associates Limited