



BURNSIDE



## **Asset Management Plan**

**Township of Amaranth**

**374028 6th Line**

**Amaranth ON L9W 0M6**



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**374028 6th Line**

**Amaranth ON L9W 0M6**



**R.J. Burnside & Associates Limited  
15 Townline  
Orangeville ON L9W 3R4 CANADA**

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-	October 3, 2024	Draft Report to Township of Amaranth
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## **Executive Summary**

This report contains the Asset Management Plan for the Township of Amaranth (Township) 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: Financing 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 – **Good** condition
- Bridge and Culvert assets – **Good** condition
- Roadway assets – **Average** condition
- Storm Water assets – **Average** condition
- Facility assets – **Good** condition
- Land Improvement assets – **Good** condition
- Vehicle assets – **Average** condition
- Equipment assets – **Good** condition
- Software & Hardware assets – **Good** condition

### **Ratepayer Based Assets**

- Water assets – **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.

Please also note that Water assets which are funded by system ratepayers have been separated from the tax-based assets. Each asset class has been subset for better understanding of the asset classes.

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, two tax supported asset types; Roadway assets and Crossroad Culverts show approximately 12% of their service life remains or these assets are approaching their last 1/10 of their lifecycle.

The Roadway assets (Barriers, Street Lights, Sidewalks and Signs) are reviewed regularly by staff who provide maintenance and capital improvement recommendations for the most appropriate levels of service to the public. The street signs are replaced as

required and maintain Provincial Maintenance Standards (Ontario Regulation 239/02) with the Township having a contractor review all street signs once every two years. So it is expected that the identified Useful Life of the street signs is set too low and generally will exceed the noted lifecycle. Also, streetlights have been converted to LED lights and are expected to have a longer lifecycle than in the past.

The Crossroad Culverts are potentially getting old, and it is recommended that they be inspected for condition and assessment of their remaining life. This will better prepare the Township for appropriate reserves for these asset replacements. Weighted averages are good high-level values that may require some additional detailed information for clarity.

The rate payer Water Facility assets are going through some major upgrades which will provide the Township with good water resources for identified growth plans.

Asset 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		Low	60		
Road Surface Asphalt	Good	Low	25	10	41%
Road Surface Gravel	Good	Low	5	2	38%
Roadway Assets	Average	Moderate	25	3	12%
Bridge & Culverts	Good	Moderate	70	24	34%
Storm Mains	Average	Moderate	73	37	51%
Catch Basins	Good	Low	100	64	64%
Storm Manholes	Good	Moderate	100	66	66%
Crossroad Culverts	Average	Moderate	33	4	12%
Storm Ponds	Good	Moderate	100	65	65%
Discharge Points	Average	Moderate	50	14	28%
Facilities & Components	Good	Moderate	46	15	33%
Land Improvements	Good	Low	28	10	36%
Vehicles	Average	Low	15	6	40%
Equipment	Good	Low	16	7	44%

Asset Type	Condition (Weighted Average)	Risk (Weighted Average)	Useful Life (UL) - Weighted Average	Remaining Service Life (RSL) - Weighted Average	RSL as a % of UL
Software & Hardware	Good	Moderate	9	4	44%
Water Facilities & Components	Very Good	Moderate	48	40	84%
Water Mains	Good	Low	100	69	69%
Water Fittings	Average	Moderate	75	40	53%
Hydrant	Average	Moderate	50	19	38%
Hydrant Laterals	Good	Low	100	66	66%
Water System Valves	Average	Moderate	75	42	56%
Wells	Average	Moderate	50	20	40%

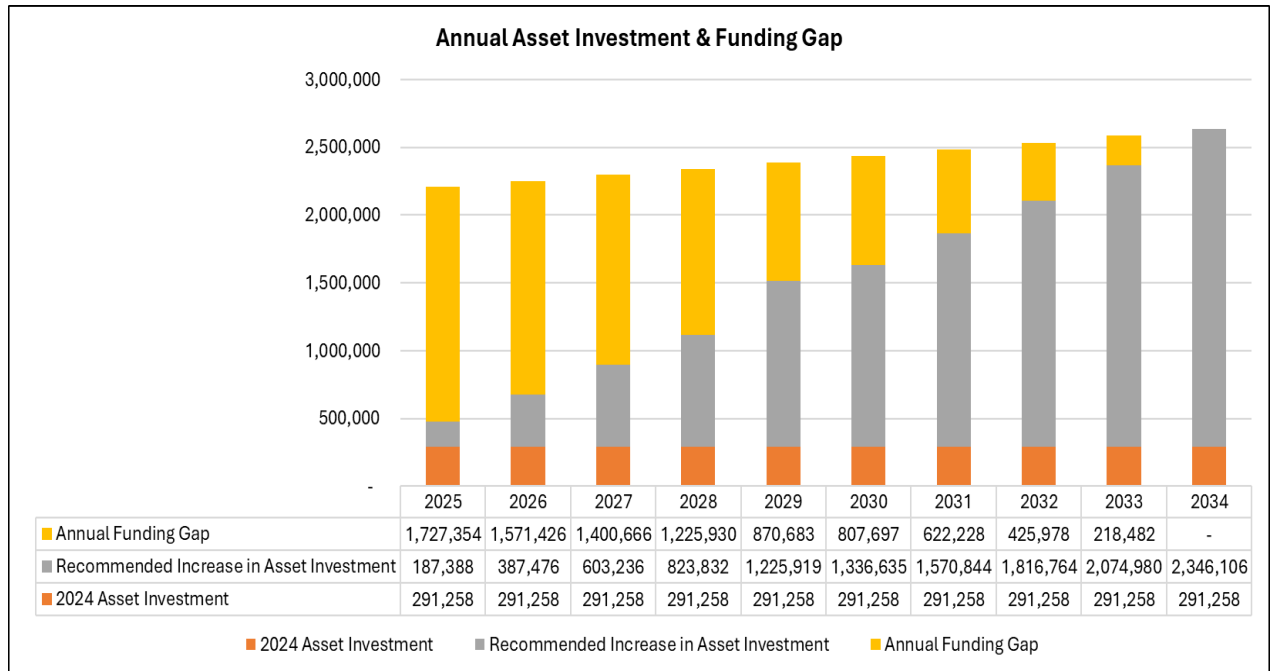


Expected Levels of Service compares the current level of service provided by the Township, and the recommended levels of service that will help extend the life of the above-mentioned asset types. The Township takes great care in the service levels they offer their constituents and public. This report 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 R.J. Burnside & Associates Limited (Burnside) to create a complete asset dataset. Gaps in this data have been found and estimates were made where possible. The Township has completed a Facilities inspection assessment in 2024 by a contractor providing updated information of asset inventory and condition, as well as replacement costs which was incorporated in this asset management plan. 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.

The Asset Management Financing Strategy described in Section 5.0 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.



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.

Please note that this study incorporated all of the Township’s tangible capital assets with some updates to the Township Facilities and Water Facility assets.

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Appendix A Asset Management Plan Financing Strategy

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## 1.0 Introduction

### 1.1 Overview

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Amaranth (Township) to prepare an asset management plan for all Township tangible 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 for sustainable infrastructure planning going forward.

Assets included in this asset management plan are the following:

#### **Tax Supported**

- Roads (Asphalt and, Gravel)
- Bridges/Culverts (greater than 3 m diameter)
- Roadway Assets (Sidewalks, Guiderails, Street Lights and, Signs)
- Storm Water (Mains, Catch Basins, Manholes, Crossroad Culverts, Storm Ponds and, Discharge Points)
- Facilities
  - Administration Building
  - Public Works Garage
  - Sand Domes
- Land Improvements (Parks, Ball Fields and, Pavilions)
- Vehicles
- Equipment
- Software & Hardware

#### **Ratepayer Supported**

- Water (Facilities and Components, Wells, Mains, Fittings, Valves, Hydrants and, Hydrant Laterals).

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, other than ratepayer water, 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
  - Facility Condition Assessment Report
  - 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 financing strategy to support the asset management strategy, thus determining how the operating and capital related expenditure forecast will be funded over the plan period.
- 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.



Asset Management Plan  
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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 summarizes and links 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.

Please note that the Township is undertaking major upgrades to the rate payer Water Facilities asset data. This project has incorporated these updated assets that are not yet part of the Township's tangible capital asset inventory. This is also true of the Township tax based facilities, as the 2024 Facilities Condition Assessment data was incorporated into this asset management plan. The additional and new assets will need to be incorporated into the Township tangible capital asset inventory for the Township 2024 financial statements.

## 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 2023 in some cases 2024 replacement costs. Other valuations were made using a current 2023/24 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 reports (such as spreadsheets; documents; and notes and discussions with staff).
- Township 2022 Updated Road Needs Study.
- Township 2023 Bridge Inspection Report.
- Township Facility Condition Assessment Report 2024.
- Township Water Rate study 2015 and Water Financial Report 2020.
- Township Water system expansion assets, from Township Engineer.
- Recent purchase information from the Township.
- Many 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 the environment and use of the asset. 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 1-10)	Condition
9 - 10	Very Good
7 - 8	Good
5 - 6	Average
3 - 4	Poor
1 - 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 \$192.7 million, broken out in Table 2.2 and summarized as follows:

- \$158.5 million Core tax supported assets (Roads, Roadway Assets, Bridges, Storm Water).
- \$19.0 million Non-core tax supported assets (Facilities, Land Improvements, Equipment, Vehicles, Software & Hardware)
- \$15.2 million Water ratepayers supported assets.

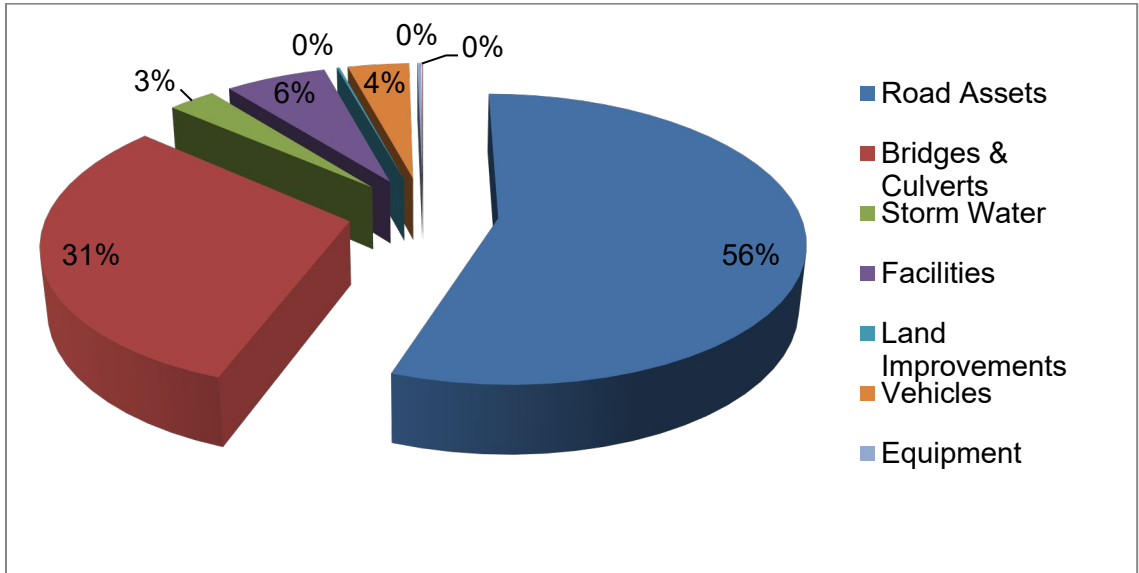
Table 2-2: Asset Assessment Summary

Asset Type	Historic Cost	2023 Accumulated Amortization	2023 Net Book Value	2024 Replacement Cost	Condition Value (weighted average)	Condition Text (weighted average)	Useful Life (UL) - Weighted Average	Age (weighted average)	Remaining Life (weighted average)	Risk Value (weighted average)	Risk Text (weighted average)
Road Base	\$8,706,483	\$5,647,808	\$3,058,676	\$89,346,337	N/A	N/A	60	55	5	N/A	Low
Road Surface Asphalt	\$4,670,598	\$2,163,920	\$2,506,678	\$8,183,785	8.0	Good	25	14.1	10.2	1.5	Low
Road Surface Gravel	\$712,057	\$545,933	\$166,124	\$512,044	7.0	Good	5	4.1	1.9	1.3	Low
Bridge & Culverts	\$7,597,768	\$2,382,794	\$5,247,742	\$54,705,500	6.6	Good	70	55.0	24	2.2	Moderate
Roadway Assets	\$365,694	\$346,175	\$19,519	\$455,658	5.7	Average	25	27.8	3.0	1.6	Moderate
Storm Mains	\$1,286,684	\$640,958	\$645,726	\$2,994,543	5.1	Average	73	35	37	2.0	Moderate
Catch Basins	\$276,838	\$93,384	\$183,454	\$867,900	6.6	Good	100	35.6	64.4	1.0	Low
Storm Manholes	\$184,081	\$62,588	\$121,494	\$385,000	7.0	Good	100	34	66	2.0	Moderate
Crossroad Culverts	\$245,481	\$145,699	\$99,782	\$965,901	5.3	Average	33	51	4	1.9	Moderate
Storm Ponds	\$36,615	\$12,909	\$23,706	\$60,000	6.0	Good	100	35	65	2.0	Moderate
Discharge Points	\$13,353	\$9,558	\$3,795	\$45,000	5.0	Average	50	36	14	2.0	Moderate
Facilities & Components	\$3,903,220	\$2,600,275	\$1,302,946	\$11,266,375	6.6	Good	46	35	15	1.9	Moderate
Land Improvements	\$198,582	\$150,203	\$48,379	\$316,500	6.8	Good	28	10	10	1.0	Low
Vehicles	\$3,835,409	\$1,937,839	\$1,897,570	\$6,840,000	7.5	Average	15	9	6	1.4	Low
Equipment	\$378,620	\$230,668	\$147,951	\$415,838	8.0	Good	16	10	7	1.1	Low

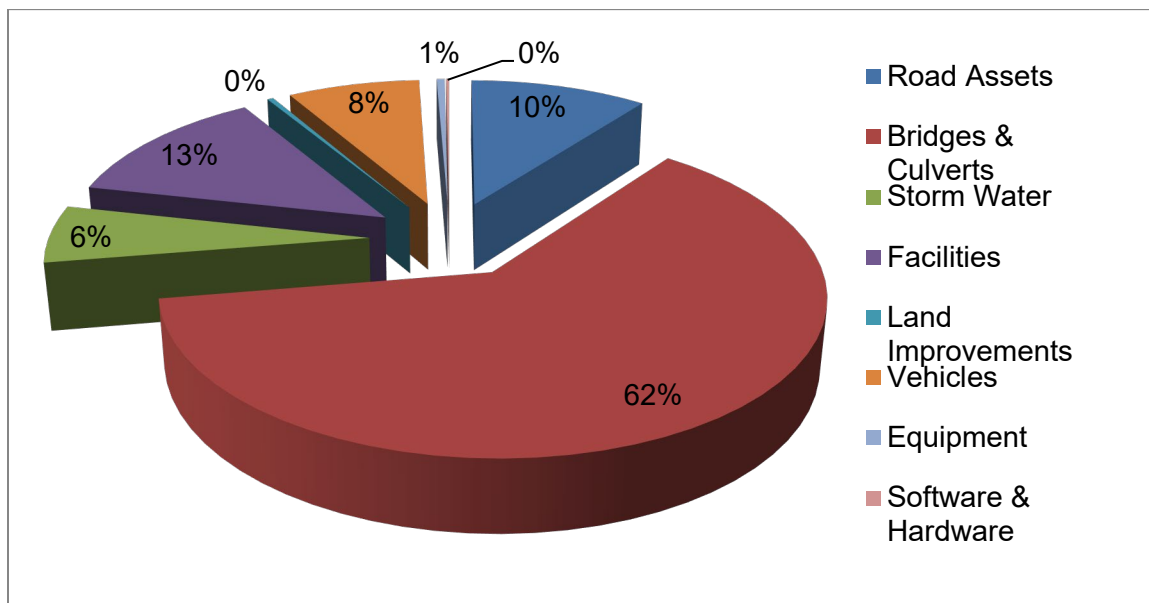
Asset Type	Historic Cost	2023 Accumulated Amortization	2023 Net Book Value	2024 Replacement Cost	Condition Value (weighted average)	Condition Text (weighted average)	Useful Life (UL) - Weighted Average	Age (weighted average)	Remaining Life (weighted average)	Risk Value (weighted average)	Risk Text (weighted average)
Software & Hardware	\$132,009	\$64,298	\$67,711	\$156,188	6.9	Good	9	6	4	1.6	Moderate
Water Facilities & Components	\$3,208,058	\$883,920	\$2,324,138	\$6,380,000	9.1	Very Good	48	8	40	1.8	Moderate
Water Mains	\$3,353,600	\$1,004,571	\$2,349,029	\$6,687,829	7.0	Good	100	31	69	1.2	Low
Water Fittings	\$205,733	\$145,214	\$60,519	\$383,000	5.0	Average	75	35	40	2.0	Moderate
Hydrant	\$151,762	\$103,198	\$48,564	\$234,000	6.0	Average	50	34	19	2.0	Moderate
Hydrant Laterals	\$21,211	\$7,212	\$13,999	\$36,000	7.0	Good	100	34	66	1.0	Low
Water System Valves	\$304,310	\$199,526	\$104,784	\$690,000	5.3	Average	75	33	42	1.9	Moderate
Wells	\$299,432	\$208,255	\$91,177	\$780,000	7.2	Average	30, 50	30	20	2.0	Moderate
<b>Total</b>	<b>\$40,087,597</b>	<b>\$19,586,905</b>	<b>\$20,533,461</b>	<b>\$192,707,397</b>	<b>6.0</b>	<b>Average</b>		<b>34</b>	<b>25</b>	<b>1.0</b>	<b>Low</b>
<b>Total without Road Base Replacement Costs</b>				<b>\$103,361,061</b>	<b>6.9</b>	<b>Good</b>		<b>40</b>	<b>24</b>	<b>1.9</b>	<b>Moderate</b>

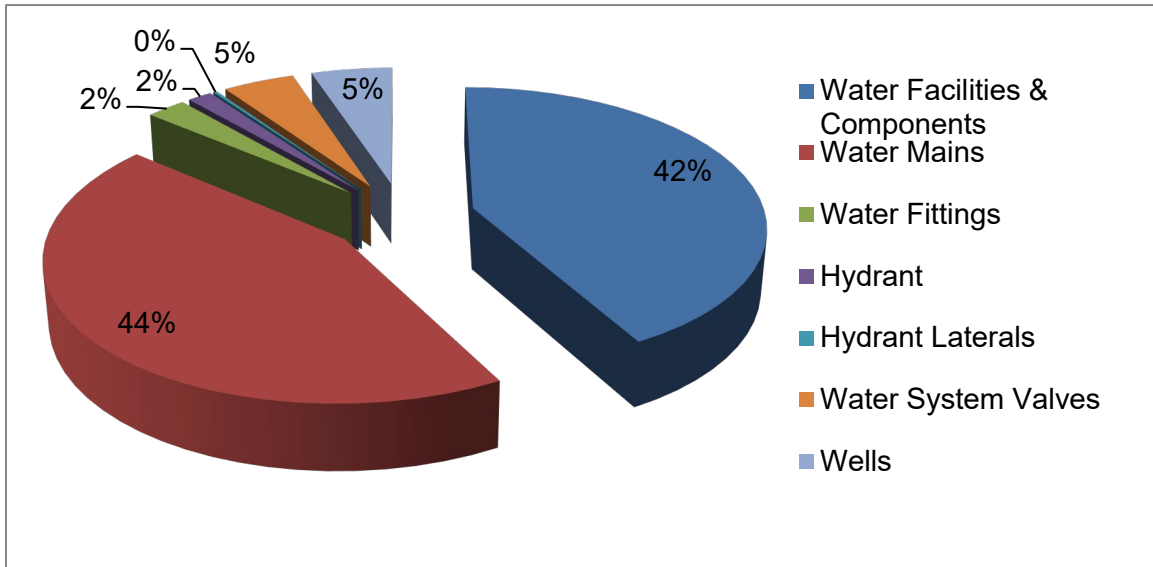
Figure 2.1, Figure 2.2, and Figure 2.3 outline the breakdown of these totals into the Township's asset categories.

**Figure 2-1: Township Tax Supported Assets Replacement Costs (2023) Including Road Bases**



**Figure 2-2: Township Tax Supported Assets Replacement Costs (2023) Excluding Road Bases**



**Figure 2-3: Township Ratepayers Supported Water Assets Replacement Costs (2023)**

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 2-1 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 spreadsheets provided. If the Township chooses to use the asset inventory developed in this project to report the PSAB 3150 values, the data / information is found in the delivered spreadsheets to Township Staff.

Including all the Township's assets studied in this project, the total tangible capital asset historical cost is approximately \$40.1 million or approximately 20.1% of the total replacement cost. 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 assets is approximately \$19.6 million or 48.9% of the total asset historical cost. 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 close to half of their lifecycle.



Clearly the Township's owned road assets have the greatest percentage tax supported replacement cost if the road base values were included in the calculation (see Table 2-2). 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 provide 62% of the tax supported assets. More in depth discussion of the asset types follows below

The Township's assets within the road allowance make up a key service that reflects the economic and social development of the community. The road environment or assets found within the road right-of-way make up 86.3% including road bases and 72.4 when road bases are excluded for tax supported assets studied in this project. The following tax supported asset types are the assets studied in this project:

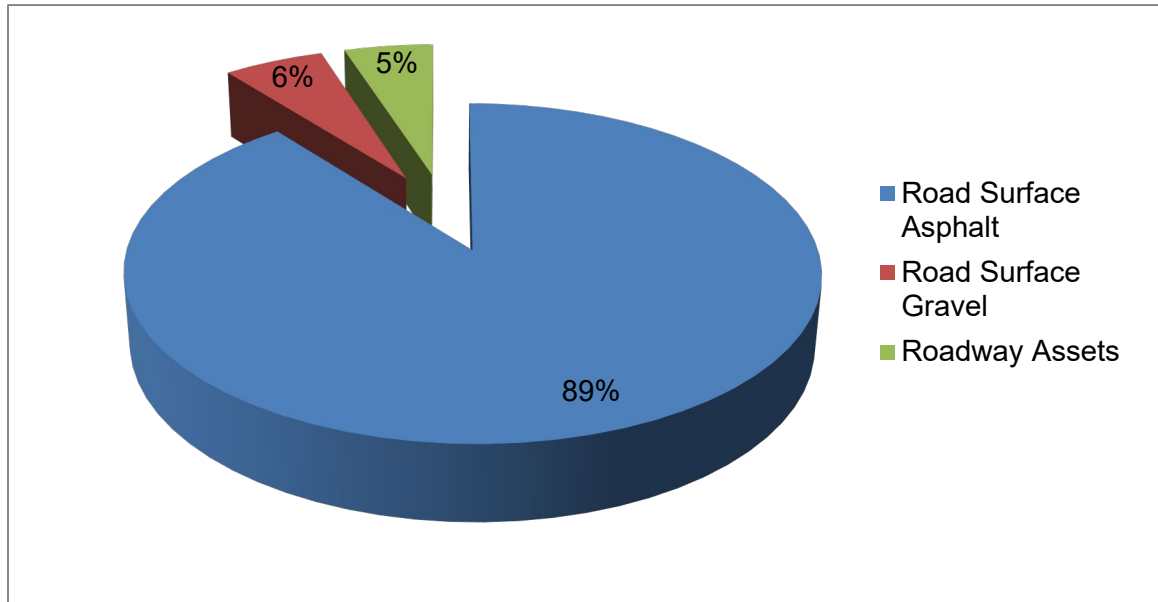
- Roads – 9.9% of the total Township's asset replacement costs (excluding road bases).
- Bridges and Culverts – 62.0% of the total Township's asset replacement costs (excluding road bases).
- Other Roadway Assets – 0.5% of the total Township's asset replacement costs (excluding road bases).
- Storm Water – 6.0% of the total Township's asset replacement costs (excluding road bases).
- Facilities – 12.8% of the total Township's asset replacement costs (excluding road bases).
- Land Improvements – 0.4% of the total Township's asset replacement costs (excluding road bases).
- Vehicles – 7.8% of the total Township's asset replacement costs (excluding road bases).
- Equipment – 0.5% of the total Township's asset replacement costs (excluding road bases).
- Software and Hardware – 0.2% of the total Township's asset replacement costs (excluding road bases).

More detailed discussion of these tax supported asset types is provided below.

### **2.3.1 Roads**

Figure 2-4 outlines the replacement cost distribution of the Township road environment assets excluding road bases.

**Figure 2-4: Road Environment Asset Distribution Replacement Costs (2023) excluding Road Bases**



At the current replacement cost the road assets account for approximately \$8.7 million dollars excluding road bases or approximately 9.9% of the tax supported assets studied in this project. The composition of the road surfaces is outlined in Table 2.3.

The Township completed a Road Needs Study two years ago which assists the Township in prioritizing both capital and operational maintenance programs. It is recommended that this type of road study be completed every five to ten years to provide engineering type inspections of the Township roads. The Road Study information was incorporated in this project.

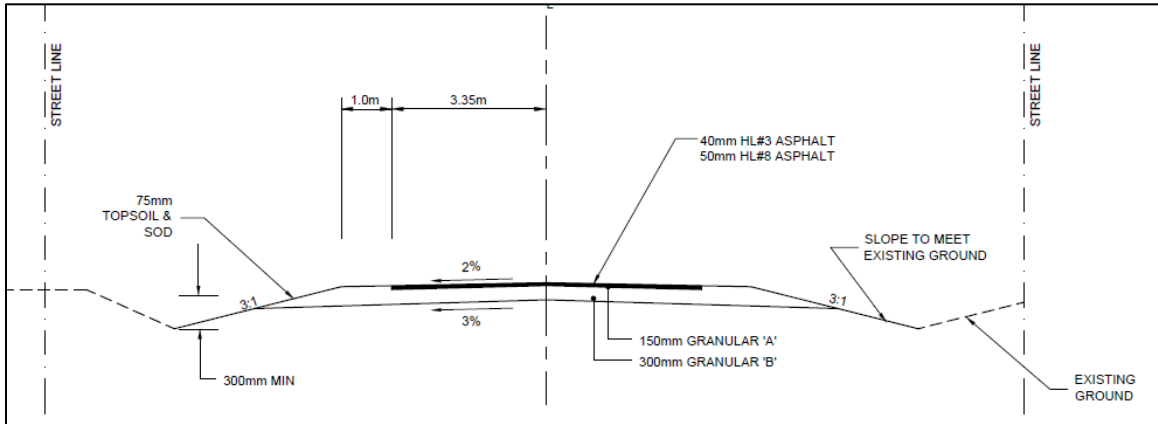
Key to all roads is the road base on which they are built. These road bases in most cases were established many years ago. Hard top (asphalt) road surface roads provide the longest life cycle with the best level of service when constructed on excellent road bases. Once the road base becomes soft, it cannot economically support a hardtop road surface, and it is 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 2.5), and without asphalt for gravel road surfaces.

Table 2-3: Road Surface Asset Summary

Road Surface	Surface Length (m)	Condition (weighted average)	Condition (Text)	Risk (weighted average)	Risk (Text)	Replacement Cost
Asphalt	45,051	8.0	Good	1.5	Moderate	\$8,183,785
Gravel	186,198	7.0	Good	1.3	Low	\$512,044
<b>Total</b>	<b>231,249</b>	<b>7.9</b>	<b>Good</b>	<b>1.5</b>	<b>Moderate</b>	<b>\$8,695,829</b>

Table 2-4: Other Roadway Assets Summary

Roadway Assets	Numbers or Length (m)	Useful Life (UL) - Weighted Average	Age (weighted average)	Remaining Life (weighted average)	Condition (weighted average)	Condition (Text)	Risk (weighted average)	Risk (Text)	Replacement Cost
Barriers	16	30	28	3	4.6	Average	2.0	Moderate	\$30,980
Streetlights	89	25	34	2	7.0	Good	1.0	Low	\$137,000
Sidewalks	485 m	50	39	11	6.0	Average	1.0	Low	\$72,750
Signs	869	15	20	1	4.9	Average	2.2	Moderate	\$214,927
<b>Total</b>		<b>25</b>	<b>28</b>	<b>3</b>	<b>5.7</b>	<b>Average</b>	<b>1.6</b>	<b>Moderate</b>	<b>\$455,658</b>

**Figure 2-5: Typical Asphalt Road Surface Cross Section**

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

The Township Road Needs Study report provides updates and 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. The road conditions from the road study were incorporated into this asset management plan. It is important to note that only current assumed roads were studied and listed in the asset inventory.

Table 2-4 provides the breakdown of other roadway assets which total \$455,658 in replacement cost. These include:

- Barriers (guardrails)
- Streetlights
- Sidewalks
- Signs

Sidewalks, guardrails and streetlights are inspected regularly as part of the standard Township road patrol process.

The Township uses a contractor to inspect bi-annually all road signs for retro-reflectivity and maintained as a maintenance standard.

These roadway assets continue to grow in number and replacement costs as the Township continues to assume new developments.

### 2.3.2 Bridges and Culverts

The Township is responsible for 41 bridges and culverts structures over the span of 3.0 m. The 2023 structure inspections focused on 20 structures as an additional 21 structures were never inspected before. There is one additional structure that has

been added to the Township asset inventory and is also included in this study. The inspection reports were reviewed, and information used in this asset management analysis. The additional 21 structures had bridge condition indexes approximated. Discussion with the structure inspectors enabled a higher level of confidence with the data used in the analysis.

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 \$54.7 million replacement cost of bridge and culvert assets. Table 2-5 provides the distribution of the types of bridges that the Township owns.

**Table 2-5: Bridge and Culvert Structure Types**

Bridge Type	Number	Replacement Cost
I-beam or Girders	4	\$12,886,000
Through Girder	2	\$4,248,000
T-Beam	1	\$1,508,000
Box Beams of Girders	1	\$3,790,000
Cast-In-Place Conc. Rigid Frame	23	\$19,351,500
Cast in Place Box Culvert	1	\$895,000
Guardian Bridge	1	\$1,885,000
Bowstring Arch	2	\$4,151,000
Multi-Plate Arch Culvert	4	\$3,148,000
Closed Bridge	2	\$2,843,000
Not Inspected - Unknown	1	
<b>Total</b>	<b>42</b>	<b>\$54,705,500</b>

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 four structures in the Township's inventory that have load postings and three additional structures with recommendations for load postings. See Table 2.6 for structure Load Posting details.

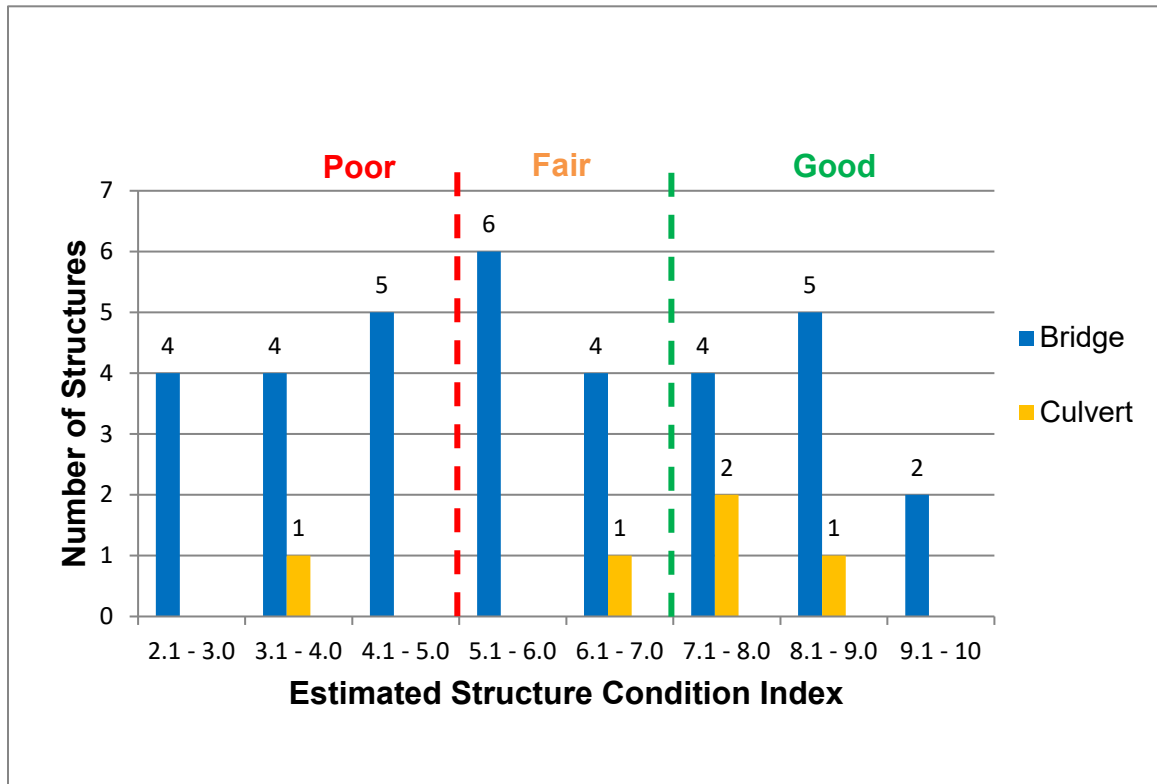
**Table 2-6: Structure Load Limit Posting Needs**

Asset ID	Bridge Number & Asset Name	Structure Type	Load Posting	Recommended Load Posting
2296	Bridge 10 MTO(4-72) - 7th Line - north of 10th SR	Through Girder	16	Yes
2289	Bridge 11 MTO(4-73) - 15th SR - west of 6th Line	Through Girder	12	Yes
2479	Bridge 12 MTO(4-76) - 6th Line - just south of 15th SR	Bowstring Arch	12	
2480	Bridge 13 MTO(4-75) - 6th Line - just north of 15th SR	Bowstring Arch	14	Yes
N/A	Bridge 22 - 2nd Line 1.1 km south of 10 SR	Cast-In-Place Conc. Rigid Frame		Yes
N/A	Bridge 23 - 2nd Line .35 km south of 10 SR	Cast-In-Place Conc. Rigid Frame		Yes
N/A	Bridge 40 - 9th Line 125 m north of County Rd 109	Cast-In-Place Conc. Rigid Frame		Yes

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 reports, the capital and maintenance works required are based on a priority of six to ten years, one to five years, and urgent now needs have been estimated and incorporated into the asset management strategy.

Based on the OSIM inspection of each structure, the estimated Structure Condition Index Distribution graph, shown in Figure 2.6, provides a summary of the current state of the Township's structures.

**Figure 2-6: Structure Condition Distribution**



Currently, the Township’s structures weighted average based on replacement cost and calculated Bridge Condition Index is Good (6.6) as illustrated in Figure 2.6. Of interest, the Ministry of Transportation Ontario (MTO) has established a goal to have 85% of their structures in “Good” condition by the year 2021, and to maintain that condition moving forward by addressing rehabilitations and replacements as necessary. Burnside recognizes that the above goal was not established by the Township. It should be noted that based on the current state of the inspected structures Township has some serious investment needs in their structures, as only 38% fall into the Good or Very Good categories.

Continued maintenance and completion of rehabilitative or replacement works as recommended in the 2023 OSIM Bridge Inspection Report along with identified 2024 and 2025 projects will help to move the structure BCI conditions in an upward direction.

Table 2-7 shows the Capital investment recommendations grouped by Now Needs, 1-5 Years and 6-10 Years.

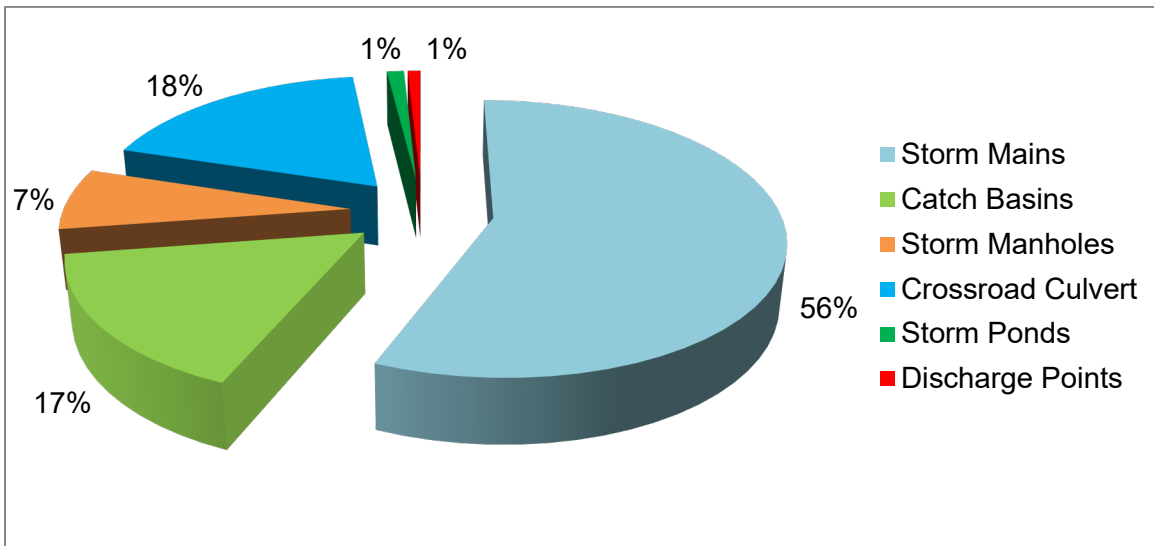
**Table 2-7: Bridge and Culvert Capital Needs**

Time Frame	Capital Cost
Now	\$4,248,000.00
1 – 5 years	\$3,622,000.00
6 – 10 years	\$2,478,000.00
<b>TOTAL</b>	<b>\$10,348,000.00</b>

**2.4 Storm Water Assets**

The Township has \$5.3 million of storm water assets replacement cost. The majority of the storm water asset value is made up with storm water mains total replacement cost approximately \$3.0 million or 56% of the Township’s tax supported storm water assets. Table 2-8 shows the distribution of the Township’s storm water assets. More detailed listing of the storm water assets was provided to Township staff with the working spreadsheet of asset inventory. In general, the storm water assets are in Average condition and have a weighted average of Moderate risk of failure.

**Figure 2-7: Storm Water Assets Replacement Cost Distribution (2023)**



As the storm water assets age beyond their mid lifecycle it will become more important to prioritize CCTV inspections of the older pipes and develop a Capital replacement plan.



It is also recommended the Township develop an inspection program to locate and inspect all Township crossroad culverts. Crossroad culverts become critical during extreme weather events. This type of project will provide key information to Township staff to ensure water is appropriately moving and not building up in areas which can harm other municipal or private assets. It is also expected that there will be some rural catch basins identified to further expand the Township asset inventory.

#### 2.4.1 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 approximately 267 km of municipal drains constructed under the *Drainage Act* (OMAFRA data).

A proactive approach to drainage includes a schedule for future maintenance of the Township's drains, including proposed years to complete cleanouts and brushing, frequency of recurring maintenance, and a recommended preventative inspection rotation. This proactive approach is recommended.

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 Township land.

Currently, the Township has the following scheduled drainage work:

- Reports currently in progress (Section 4 and 78 of the Drainage Act):
  - Menary Drainage Works 'C' & 'D' Drain – Replacement of Existing Tile / New Branch
  - Bryan Drainage Works, 'C' Drain – New Tile Installation
- Completed maintenance works to be levied:
  - Pearce Drainage Works – Cleanout
  - Menary Drainage Works, 'B' Drain – Tile Repair
- Maintenance work to be completed:
  - Hendry Drainage Works – Cleanout
  - Underwood Drainage Works, 'B' & 'D' Drains – Cleanout
  - No. 1 Drainage Works & No. 1 Extension Drainage Works – Cleanout
  - Connor Drainage Works – Cleanout
- Investigations to be completed:
  - Potter Drainage Works, 'C' Drain – Catch basin Replacement / Tile Repair
  - No. 50 Drain – Cleanout / New Engineer's Report ~ To Be Determined

**Table 2-8: Storm Water Assets**

Storm Water Assets	Length (m) / Number	Condition (weighted average)	Condition (Text)	Useful Life (weighted average)	Age (weighted average)	Remaining Life (weighted average)	Risk (weighted average)	Replacement Cost
Storm Mains	3132 m	5.1	Average	73.0	35.0	37.0	2.0	\$2,994,543
Catch Basins	74	6.6	Good	100.0	35.6	64.4	1.0	\$867,900
Storm Manholes	19	7.0	Good	100.0	34.0	66.0	2.0	\$385,000
Crossroad Culverts	410	5.3	Average	33.0	51.0	4.0	1.9	\$965,901
Storm Ponds	2	6.0	Good	100.0	35.0	65.0	2.0	\$60,000
Discharge Points	2	5.0	Average	50.0	36.0	14.0	2.0	\$45,000
<b>Total</b>		<b>5.5</b>	<b>Average</b>	<b>72.2</b>	<b>37.9</b>	<b>37.7</b>	<b>1.8</b>	<b>\$5,318,344</b>

## 2.5 Facility Assets

Township facility assets total \$11.3 million in replacement costs or 12.8% of the Township's tax-based asset inventory not including road bases. Table 2.9 expands on the Township Facility asset values. Based on weighted average, the condition of these facility assets is Good with Moderate risk of failure.

The Township has completed facility condition assessments for both the Administration Office and Public Works Garage identifying with the building structures and asset components. This information was incorporated in this asset management plan.

It needs to be noted that the Township Administration Office does not have a generator. This is something highly recommended for Township staff to be able to continue to work in the case of an emergency to help serve the public.

## 2.6 Land Improvements

The Township Land Improvements which are mostly parks and playgrounds amount to approximately \$316,500 or 0.4% of the total replacement cost of tax supported Township assets, not including road bases or land costs. The weighted average condition of all the Land Improvements identified assets is Good. These assets are at approximately their half life of their lifecycle.

## 2.7 Vehicles

The total replacement cost of vehicles is \$6.8 million with a weighted average of Average condition.

The Public Works fleet of vehicles has been identified with a weighted average remaining life of six years which means over half of the vehicle lifecycle is used up. The Township has been doing everything they can to extend the life of these very expensive assets, as painting them to prevent the vehicles from rusting. It is recommended that the Township review their fleet vehicles and develop a 10-year replacement plan to ensure that roads are well maintained.

## 2.8 Equipment

The Equipment category is made up of both Public Works machinery and general Administration equipment. The total replacement cost for this asset grouping is \$415,838 or 0.5% with respect to the total of tax-based Township assets excluding road bases. The weighted average condition of this asset grouping is Good and remaining life expectancy of approximately seven years.

**Table 2-9: Township Facilities (tax supported)**

Facilities (Tax Based)	2023 Historic Cost	2023 Accumulated Amortization	2023 Net Book Value	2024 Replacement Cost	Condition (weighted average)		Useful Life (weighted average)	Age (weighted average)	Remaining Life (weighted average)	Risk (weighted average)
					Value	Text				Text
<b>Administration Building</b>	\$2,663,365	\$1,694,667	\$968,697	\$6,866,262	7	Good	48	30	21	Moderate
<b>Public Works Garage</b>	\$745,859	\$592,653	\$153,207	\$3,850,114	5.9	Average	44	46	7	Moderate
<b>Sand Domes</b>	\$493,996	\$312,955	\$181,041	\$550,000	6.5	Good	25	20	6	Moderate
<b>Total</b>	<b>\$3,903,220</b>	<b>\$2,600,275</b>	<b>\$1,302,946</b>	<b>\$11,266,375</b>	<b>6.6</b>	<b>Good</b>	<b>46</b>	<b>35</b>	<b>15</b>	<b>Moderate</b>

## 2.9 Software and Hardware

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 \$156,188 with a weighted average Good condition. As many IT assets have a short lifecycle three to five years, the "Good" condition assessment may be due to this equipment being recently updated. It is recommended that the IT asset data be updated to ensure any unused/disposed old equipment is removed from the asset inventory.

## 2.10 Water Ratepayers Supported Assets

The Township water ratepayer supported assets provide potable water to the Waldemar community. These assets total \$15.2 million in 2023 replacement cost value which is 14.7% of all the Township assets excluding road bases. Table 2-9 provides a summary of all the water ratepayers supported assets. A more detailed review of these assets was delivered to Township staff in the asset inventory spreadsheets.

Each Water ratepayers supported asset component identified in Table 2-9 is critical to the acquiring, treatment, and distribution of potable water to the Waldemar community with sufficient quantity and pressure. As this is a Water ratepayers supported asset grouping, we shall only comment on the condition of the system based on the documented age of these assets. Please note that the water pump house internal assets are being totally replaced to provide for the increased water supply via the new stand pipe system.

In general, the condition of the water assets is Good with Moderate risk of failure. The Township is maintaining the appropriate water distribution levels of service. The water quality and pressure are at acceptable levels for the current number of homes being serviced.

## 2.11 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.

It is important to note that where gaps were found in the Township's asset inventory approximations were made to be able to complete this project. It is recommended that the Township use the asset inventory spreadsheets provided to staff as a starting point and that the highlighted cells be verified and corrected where required.

Asset Management Plan  
October 2024

Also as noted above we recommend that the Township undertake a project to inspect the crossroad culverts using qualified engineers to ensure asset condition, maintenance and rehabilitation plans and remaining life information is recorded and a plan implemented.

**Table 2-10: Summary of Water Assets**

Asset Type	Historic Cost	2023 Accumulated Amortization	2023 Net Book Value	2024 Replacement Cost	Condition Value (weighted average)	Condition Text (weighted average)	Useful Life (years)	Age (weighted average)	Remaining Life (weighted average)	Risk Value (weighted average)	Risk Text (weighted average)
<b>Water Facilities &amp; Components</b>	\$3,208,058	\$883,920	\$2,324,138	\$6,380,000	9.1	Very Good	48	8	40	1.8	Moderate
<b>Water Mains</b>	\$3,353,600	\$1,004,571	\$2,349,029	\$6,687,829	7.0	Good	100	31	69	1.2	Low
<b>Water Fittings</b>	\$205,733	\$145,214	\$60,519	\$383,000	5.0	Average	75	35	40	2.0	Moderate
<b>Hydrant</b>	\$151,762	\$103,198	\$48,564	\$234,000	6.0	Average	50	34	19	2.0	Moderate
<b>Hydrant Laterals</b>	\$21,211	\$7,212	\$13,999	\$36,000	7.0	Good	100	34	66	1.0	Low
<b>Water System Valves</b>	\$304,310	\$199,526	\$104,784	\$690,000	5.3	Average	75	33	42	1.9	Moderate
<b>Wells</b>	\$299,432	\$208,255	\$91,177	\$780,000	7.2	Average	50	30	20	2.0	Moderate
<b>Total</b>	<b>\$7,544,106</b>	<b>\$2,551,896</b>	<b>\$4,992,210</b>	<b>\$15,190,829</b>	<b>7.7</b>	<b>Good</b>		<b>21.4</b>	<b>51.4</b>	<b>1.6</b>	<b>Moderate</b>

### 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.

Burnside received both verbal and documented confirmation of maintenance practices that the Township staff undertake. We recommend that the Township continue to make use of their 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. Ensuring that appropriate levels of service are determined and recorded helps during the Township's future growth.

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 will require approximately \$100,000 annual increase in LOS funding for tax-based assets. The greatest contributor to this increase comes from road assets.

Table 3.1 to Table 3-7 outline broad LOS descriptions with identified additional costs to achieve enhanced expected LOS. This analysis was noted through discussions with the Township's staff and engineering best practices. Based on the information provided the Township is both budgeting and mostly completing appropriate levels of service. The Levels of Service cost impact analysis was factored into the asset management strategy discussed in Section 4.0 of this report.

Table 3-1: Road Expected Levels of Service

Roads Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Estimated Cost of Expected LOS	Cost Description
<b>Safe Roads</b>	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	staff	staff	Municipality has an AVL system in all vehicles recording Roads Patrolled.
<b>Fix Public Identified Issues Quickly</b>	Complaints are tracked on spreadsheet and replied within 24 hours	Track complaints by road segment so that history can be recorded.	Respond to Public Inquiry within 7 days	\$3,500	\$3,500	Municipality delivers this Level of Service well. Cost is for Pothole patching.
<b>Maintain Road System Network Condition for safe use</b>	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			Roads Needs Study every 10 years to include \$60,000 Network Condition analysis (next proposed for 2033).
<b>Asphalt Roads are Clean and Clear</b>	Street sweeping and flushing are completed annually	Roads are swept and flushed to ensure they are clear of debris and safe.		\$9,000	\$10,000	Municipality has minimal Asphalt roads. Debris is collected as per Minimum Maintenance Standards.
<b>Follow Best Practice for Asphalt Roads</b>	Completing a regular Crack Seal program.	Completing a regular crack seal program.		\$18,000	\$18,000	Municipality looking to implement an annual crack seal program.
<b>Gravel Roads are well maintained and Dust Inhibited</b>	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		\$185,000	\$203,500	Municipality delivers this Level of Service well
<b>Safe and well maintained Roadsides</b>	Municipality uses weed control spray	Roadsides are clear of obstructions and well maintained for safe road travel.		\$21,500	\$26,500	Municipality delivers this Level of Service well.
<b>Winter Road Maintenance</b>	Winter roads are cleared and safe.	Roads are maintained and meet "Minimum Maintenance Standards" as defined by Ontario Regulation 239/02 and Amendments.		\$83,387	\$85,000	Municipality uses sand to deliver Level of Service.
<b>Weather forecast information</b>	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 via County Agreement
<b>Signs can be seen clearly</b>	Retro-reflectivity completed every other year.	Signs: Visual inspections. Replace when needed.	Reflectivity Standard	\$250	\$2,300	Municipality delivers this Level of Service well. Cost for Contractor inspections based on annual cost
<b>Traffic Counts</b>	Updated traffic counts are recorded when required	Clear understanding of traffic counts are updated			\$1,000	Recommended to be completed every year
<b>Road Line Painting</b>	Paved Roads have clearly marked/lined lanes	Proper road lane paint distinction		\$4,000	\$17,000	Annual budget for line painting
<b>Safe Well lit Urban/Semi-Urban Street areas</b>	Maintenance activated by Public Notice for Street Lights	Maintenance activated by Public Notice for Street Lights	Correction of Issues within MMS		\$1,500	Municipality delivers this Level of Service well.

**Table 3-2: Bridge Expected Levels of Service**

Bridge Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Estimated Cost of Expected LOS	Cost Description
<b>Safe Bridges</b>	Township just identified 21 structures that need to be added to their OSIM inspections. There are 4 bridges with load limits. Two structures are closed.	Maintain good condition and no load limits.	MTO bridge guides		\$27,500	Municipality is working towards completing this LOS. Costs are for Monitoring 6 structures.
<b>Bridges Maintained</b>	Follow Bridge Inspection Report recommendations for Bridge and Culvert maintenance.	Proactive Bridge and Culvert maintenance (based on bridge inspection report).			\$41,000	Municipality is completing this LOS, with improving the safety features identified in the Municipality's Bridge Inspection Report. Required funds to complete all identified maintenance in OSIM report for 2024
<b>Proper Bridge Spring Maintenance</b>	Bridge washing is completed in Spring	Blowing out Expansion Joints & Washing of Bridges in Spring		staff	staff	Municipality delivers this Level of Service well
<b>Bridge Inspections</b>	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	\$3,500	\$7,500	Municipality needs to ensure that the engineering firm inspecting the bridges and culverts (greater than 3 m diameter) use the most current MTO inspection forms, so that appropriate Bridge Condition Indexes are calculated. Cost is an annual Capital cost.

**Table 3-3: Storm Water Expected Levels of Service**

Storm Water Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Estimated Cost to Move to Expected LOS	Cost Description
<b>Effective Storm Water Management</b>	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. Municipality is looking for funding to complete a Storm Water assets condition assessment.
<b>Cross Road Culverts are Appropriately Sized and Maintained</b>	Cross Road Culverts are replaced when required. Assessment of appropriate size is completed before replacement using HDPE material for longer lifecycle potential	Climate Change and/or Extreme Weather events do not cause adverse issues with the Municipal road network		Staff	Staff	Municipality delivers this Level of Service.
<b>Catch Basins are clear and well Maintained</b>	Catch Basin cleaning every 3 years	Annual Catch Basin cleaning		\$500	\$500	Cost is broken down into annual value
<b>Storm Water Mains are clear and well Maintained</b>	No identified issues	Regular inspection for condition and no physical obstructions				Municipality delivers this Level of Service.
<b>Discharge Points are clear and well Maintained</b>	No identified issues. Staff inspect annually.	Regular inspection for condition and no physical obstructions		Staff	Staff	Recommend discharge points are inspected annually
<b>Municipal Drains are well Managed and Maintained</b>	Drainage Superintendent responds to Landowner concerns and follows Ontario Drainage Act	Drainage Superintendent responds to Landowner concerns and follows Ontario Drainage Act	Follow Ontario Drainage Act	\$70,000	\$80,000	Municipality delivers this Level of Service. Cost shows the increase in effort required by the Drainage Superintendent

**Table 3-4: Facilities Expected Levels of Service**

Facilities Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Est. Increase in Cost from Current to Expected LOS	Cost Description
<b>Facilities are well maintained and safe for Public Use</b>	Meet all legislative requirements.	Meet all Provincial legislative requirements.	Provincial Guidelines	\$25,000	\$25,000	Municipality provides this level of service
<b>Facilities are clean safe for Public Use</b>	Municipality has regular cleaning of facilities	Safe for Public use		\$5,000	\$7,200	Municipality provides this level of service
<b>Source Water is well Protected</b>	Source water protection zones are maintained and mapped in County GIS	Maintaining appropriate Zoning and Planning to ensure Source Water Protection				Municipality provides this level of service
<b>Wells are well Maintained</b>	Appropriate maintenance is undertaken when required.	Appropriate maintenance is undertaken when required				Municipality provides this level of service
<b>Water Treatment Processes Meet Legislative Requirements</b>	Water sampling and testing is completed for the Municipal Office water.	Meet all Provincial legislative requirements.	Provincial Guidelines			Municipality provides this level of service
<b>Well Maintained Generators where applicable</b>	Tested and well maintained.	Tested and well maintained generator		\$450	\$450	Municipality provides this level of service
<b>Safe Wastewater Treatment Structures (Tanks and Septic Beds)</b>	Regular Septic maintenance is completed every 5 years or as required.	Meet legislative requirement (Building Code, Fire Code, Health & Safety, etc.)	Provincial Guidelines	\$260	\$350	Municipality provides this level of service. Cost is subset annual value.
<b>Facilities meet all Fire Code Requirements</b>	Meet all Fire Code requirements based on year of construction.	Meet all Provincial legislative requirements.	Provincial Guidelines			Municipality provides this level of service
<b>Well Maintained Emergency Services Equipment</b>	Administration building is having the Fire Escape replaced in 2024.	Meet all manufacturers maintenance schedules				Municipality provides this level of service
<b>Heating Systems are inspected and maintained</b>	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule	\$600	\$600	Regular maintenance and inspections done annually.
<b>Well Maintained on site properties</b>	Maintained by staff	Safe on site properties				Municipality provides this level of service
<b>Fix Public Identified Issues Quickly</b>	Complaints are tracked on spreadsheet and replied within 24 hours	Track complaints by facility/property so that history can be recorded.	Respond to Public Inquiry within days			Municipality provides this level of service
<b>Facilities have Handicap Accessibility</b>	Municipality has all necessary accessibility systems in place.	Meet all Provincial legislative requirements.				Municipality provides this level of service

**Table 3-5: Land Improvements Expected Levels of Service**

Land Improvements Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Estimated Increase in Cost from Current to Expected LOS	Cost Description
<b>Parks are Safe and well maintained</b>	Regular maintenance and standard levels of service are established. Visual inspections documented for parks, playgrounds.	Meet all Provincial legislative requirements.	Provincial Guidelines	\$28,000	\$29,000	Municipality provides this level of service. Cost is for all grass cutting.
<b>Trails are safe well maintained</b>	Visual inspections.	Safe and well maintained trails		Staff	Staff	Municipality provides this level of service
<b>Playground Structures are Safe</b>	Visual inspections	Meet all Provincial legislative requirements.	Provincial Guidelines	\$2,000	\$3,000	Municipality provides this level of service
<b>Parks have Handicap Accessibility</b>	Municipality has submitted to the Province for funding to make this improvement. Potential project in 2025.	Meet all Provincial legislative requirements.	Provincial Guidelines			Municipality is working towards this Level of Service
<b>Closed Solid Waste Site is Monitored</b>	Contracted monitoring program	Meet all Provincial legislative requirements	Provincial Guidelines	\$12,285	\$12,285	Municipality provides this level of service
<b>Fix Public Identified Issues Quickly</b>	Complaints are tracked on spreadsheet and replied within 24 hours	Track complaints by park/asset so that history can be recorded.				Municipality provides this level of service

**Table 3-6: Vehicles and Equipment Expected Levels of Service**

Vehicles & Equipment Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Current Cost of LOS	Estimated Increase in Cost from Current to Expected LOS	Cost Description
<b>Vehicles are Safe and well maintained</b>	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule	\$190,000	\$200,000	Vehicle maintenance/repair costs
<b>Vehicles Lifecycle is maximized</b>	Municipality repaints large vehicles to try and extend the life of these assets.	Extending the lifecycle of assets for most cost-effective net cost		\$15,000	\$21,000	Painting of Grader and Truck in 2024
<b>Winter Road Equipment is well maintained</b>	Grader and Ice blades are replaced annually and as required.	Equipment is well maintained and provides good service		\$17,500	\$17,500	Municipality uses sand to deliver Level of Service.
<b>GPS Tracking Systems are working well</b>	GPS vehicle tracking systems are well maintained	Help to complete Maintenance Standards for roads	Ont Regulation 239/02	\$5,000	\$5,000	Municipality provides this level of service. Cost is for GPS maintenance
<b>Equipment is safe and well maintained</b>	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule			Municipality provides this level of service
<b>IT Data is Secure</b>	Meet all current IT Safety Protocols, with Backup and Redundancy Processes are implemented	Meet all current IT Safety Protocols, with Backup and Redundancy Processes are implemented	IT Standards			Municipality provides this level of service
<b>IT Hardware and Software are well Maintained</b>	Meet all manufacturers maintenance schedules	Meet all manufacturers maintenance schedules	Manufacturers Maintenance Schedule	\$55,654	\$55,654	Dufferin County IT Support Consultant cost



**Table 3-7: Water Rate Payers Expected Levels of Service**

Water Expected Strategic LOS	Current LOS	Expected LOS	Benchmark (if Applicable)	Estimated Cost of Current LOS	Estimated Cost of Expected LOS	Cost Description
<b>Source Water is well Protected</b>	Maintaining appropriate Zoning and Planning to ensure Source Water Protection	Maintaining appropriate Zoning and Planning to ensure Source Water Protection		\$11,280	\$16,000	Township is completing this LOS. Annual Monitoring Program ensures compliance with Water Permits. Costs include contractor fees
<b>Production Wells are well Maintained</b>	Appropriate maintenance is undertaken when required. New water process system is being constructed with a new Stand Pipe.	Appropriate maintenance is undertaken when required		\$900	\$1,000	Township is completing this LOS. Cost is annual for well inspections that happen once every 10 years.
<b>Treatment Processes Meet Legislative Requirements</b>	Meet all Provincial legislative requirements using Contractor	Meet all Provincial legislative requirements.	Provincial Guidelines	\$88,100	\$89,862	Township is completing this LOS, via Contractor. Cost identified for Contractor.
<b>Well Maintained Generator</b>	Inspection completed every two years, tested monthly.	Tested and well maintained generator		\$2,500	\$2,750	Township is completing this LOS on the Generator that is in service.
<b>Appropriate Water Storage for Distribution Network</b>	Water Storage is sufficient for current needs. New Stand Pipe is being constructed in 2024.	Water Storage meets the needs of the Water Distribution Network				Township is completing this LOS, via Contractor.
<b>Efficient Water Distribution System</b>	Water main leak repairs are completed as identified using Township Contractor	Water Losses are tracked and minimized		\$2,400	\$2,500	Township is completing this LOS. Costs are broken down for annual value.
<b>System Valves are exercised and well maintained</b>	System valves are exercised on a 2 year rotation. Replaced when required	System valves are exercised and well maintained		Contractor	Contractor	Township is completing this LOS.
<b>Scada System Software Adjustments</b>	Scada system is new ensuring appropriate water quality and quantity distribution. Update is being developed with the new Stand Pipe and other infrastructure	Scada System is reviewed and well maintained to ensure appropriate water quality and quantity distribution				Township has system adjustments made as required to fulfill appropriate LOS. No updates are expected over the 10 Asset management Plan period.
<b>Sufficient Water pressure and supply for Fire Protection</b>	Water pressure meets and exceeds Fire Protection Standards. New system infrastructure ensures future capacity.	Water Pressure meets Fire Protection Standards of 50 psi and water supply is readily available.		Contractor	Contractor	Township is completing this LOS.
<b>Safe Pumphouse Buildings</b>	Meet legislative requirement (Building Code, Fire Code, Health & Safety, etc.)	Meet legislative requirement (Building Code, Fire Code, Health & Safety, etc.)	Provincial Guidelines	staff / Contractor	staff / Contractor	Township is completing this LOS. New internal rebuild of the main Pump House
<b>Facilities including Heating Systems are inspected and maintained</b>	Facilities including Heating Systems are well maintained to ensure proper operations	Facilities including Heating Systems are well maintained to ensure proper operations		\$500	\$500	Township is completing this LOS. Costs are broken down for annual value.
<b>Hydrant Inspection and Valve turning</b>	All are inspected and valves turned in the Spring. Select Hydrants are inspected and valves turned in the late Fall	Hydrants are inspected and valves exercised completing any required maintenance		\$1,250	\$1,500	Township is completing this LOS. Costs are broken down for annual value.
<b>Hydrants are Flushed and Swabbed</b>	Flushing Program meets Guideline Standards	Flushing Program meets Guideline Standards		Contractor	Contractor	Township is completing this LOS.



**Table 3-8: Unassumed Potential Development Assets**

Development Name	Asphalt Road Length (m)	Water Main Length (m)	Number of Water System Valves	Number of Hydrants	Length of Storm Main (m)	Number of Catch Basins	Number of Storm Manholes	Number of Crossroad Culverts	Number of Storm Ponds	Concrete Curb	Concrete Sidewalk	Street Lights
ACE Subdivision	840	NA	NA	NA	NA	NA	NA	3	1	NA	NA	8
Primrose Estate	960	NA	NA	NA	25	2	1	4	1	NA	NA	26
Cachet/Centurian Homes	2,000	3,000	20	26	2,700	34	42	NA	1	4,000	2,000	52
Hamount Valley Grove	3,400	3,300	20	23	3,400	60	60	NA	1	6,800	NA	117
Sarah Properties	2,160	3,240	22	28	2,900	37	45	NA	0	4,320	2,160	NA
<b>Total</b>	<b>9,360</b>	<b>9,540</b>	<b>62</b>	<b>77</b>	<b>9,025</b>	<b>133</b>	<b>148</b>	<b>7</b>	<b>4</b>	<b>15,120</b>	<b>4,160</b>	<b>203</b>
<b>Replacement Cost</b>	<b>\$5,148,000</b>	<b>\$12,879,000</b>	<b>\$93,000</b>	<b>\$1,001,000</b>	<b>\$8,573,750</b>	<b>\$1,433,075</b>	<b>\$2,812,000</b>	<b>\$14,000</b>	<b>\$40,000</b>	<b>\$604,800</b>	<b>\$624,000</b>	<b>\$304,500</b>

### 3.3 Township Growth

The Township continues to grow, and potentially will expand with new developments over the next ten years. The new developments over the next ten years will add roads, storm water, and water assets to the Township asset inventory. Some information was made available for this Asset Management Plan with respect to potential growth and is summarized in Table 3-8.

Table 3.8 shows that the Township will be assuming over \$33.5 million in replacement cost assets with the current development projects. This is approximately 17% increase in asset replacement cost including all Township assets. This will be a significant increase in infrastructure that the Township will have to maintain with respect to Levels of Service to the public.

## 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, 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 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 1-10)	Condition	Probability of Failure
9 - 10	Very Good	Rare
7 - 8	Good	Unlikely
5 - 6	Average	Possible
3 - 4	Poor	Likely
1 - 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 the 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**

	<b>Cost</b>	<b>Social</b>	<b>Environmental</b>	<b>Service Delivery</b>
<b>Significant</b>	Significant Cost – Difficult to Recover	Death, Serious Injury	Long-term Impact – Permanent	Major Interruptions
<b>Major</b>	Substantial Cost – Multi-year Budget Impacts	Major Injury	Long-term Impact – Fixable	Significant Interruptions
<b>Moderate</b>	Considerable Cost – Requires Revisions to Budget	Moderate Injury	Medium-term Impact – Fixable	Moderate Interruptions
<b>Minor</b>	Small/Minor Cost – within Budget Allocations	Minor Injury	Short-term/Minor Impact – Fixable	Minor Interruptions
<b>Insignificant</b>	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**

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 Amaranth 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 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 is also working diligently 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 long-term 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 additional or increased cost for the expected LOS is included in the total costs presented. Asset replacement analysis in forecasting the Township's asset replacement 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 for tax supported assets.



Figure 4-3 and Figure 4-4 are rate supported replacement forecasting of Water assets (uninflated and inflated respectively).

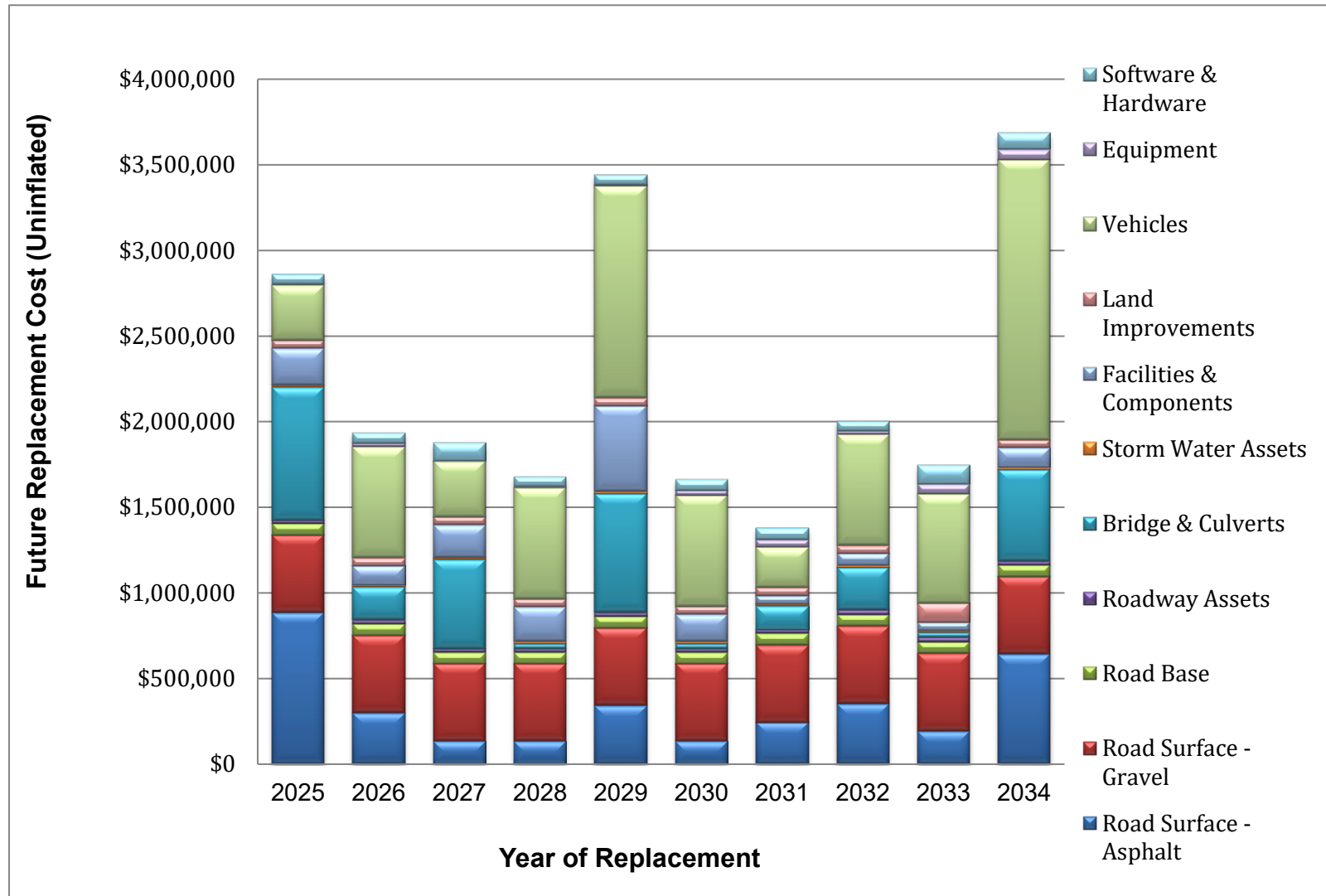
The asset strategy incorporated all the information discussed above in this report and based on the information provided by the Township, past reports, staff input, and understanding of the asset's reaction in their current environment as well as the expected asset maintenance levels, and the current 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, \$22.3 million (uninflated) and \$24.9 million (inflated) are shown as tax-based asset maintenance, improvement, rehabilitation and replacement needs over the 10-year forecast. This is the recommended asset strategy for the Township of Amaranth.

Assets like Bridges, major culverts, Facilities are not expected to be replaced for usually 50 to 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.

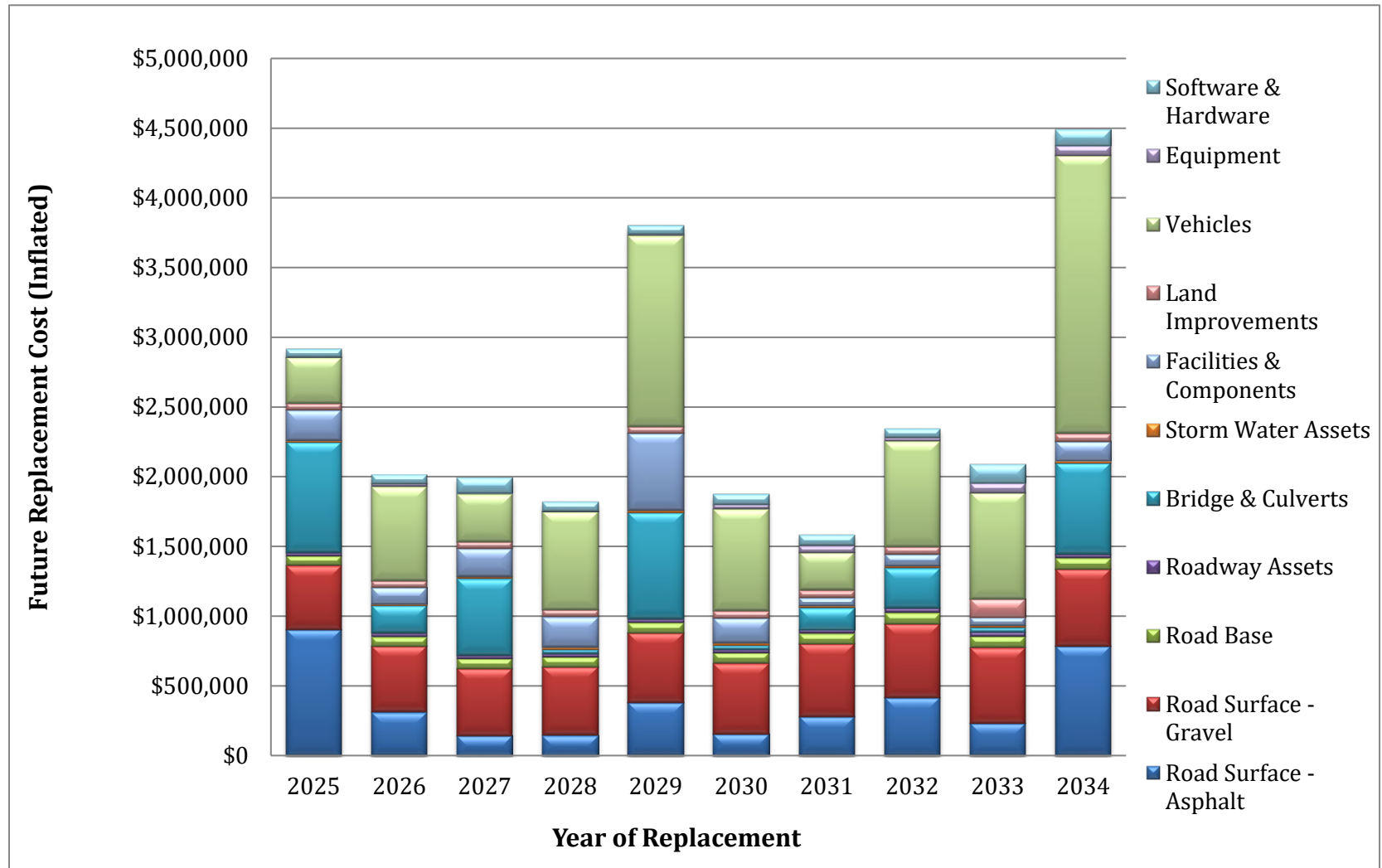
For the recommended asset strategy to be feasible, the expected level of service adjustments discussed in Section 3.0 are needed in conjunction with the current level of service amounts to effectively maintain and rehabilitate the assets as required.

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

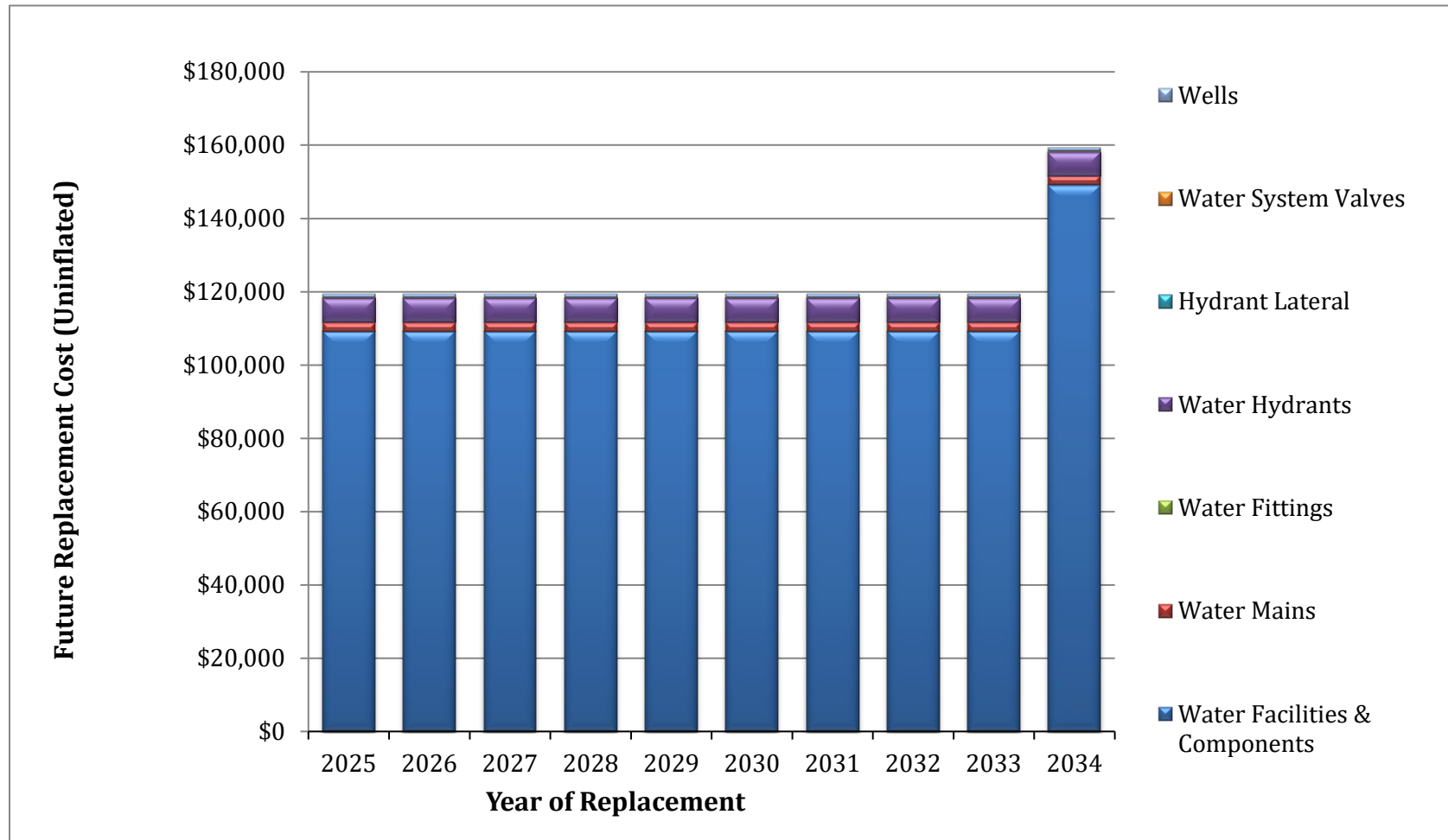
**Figure 4-1: Proposed Asset Strategy Based on Expected Levels of Service for Tax Supported Assets (uninflated)**



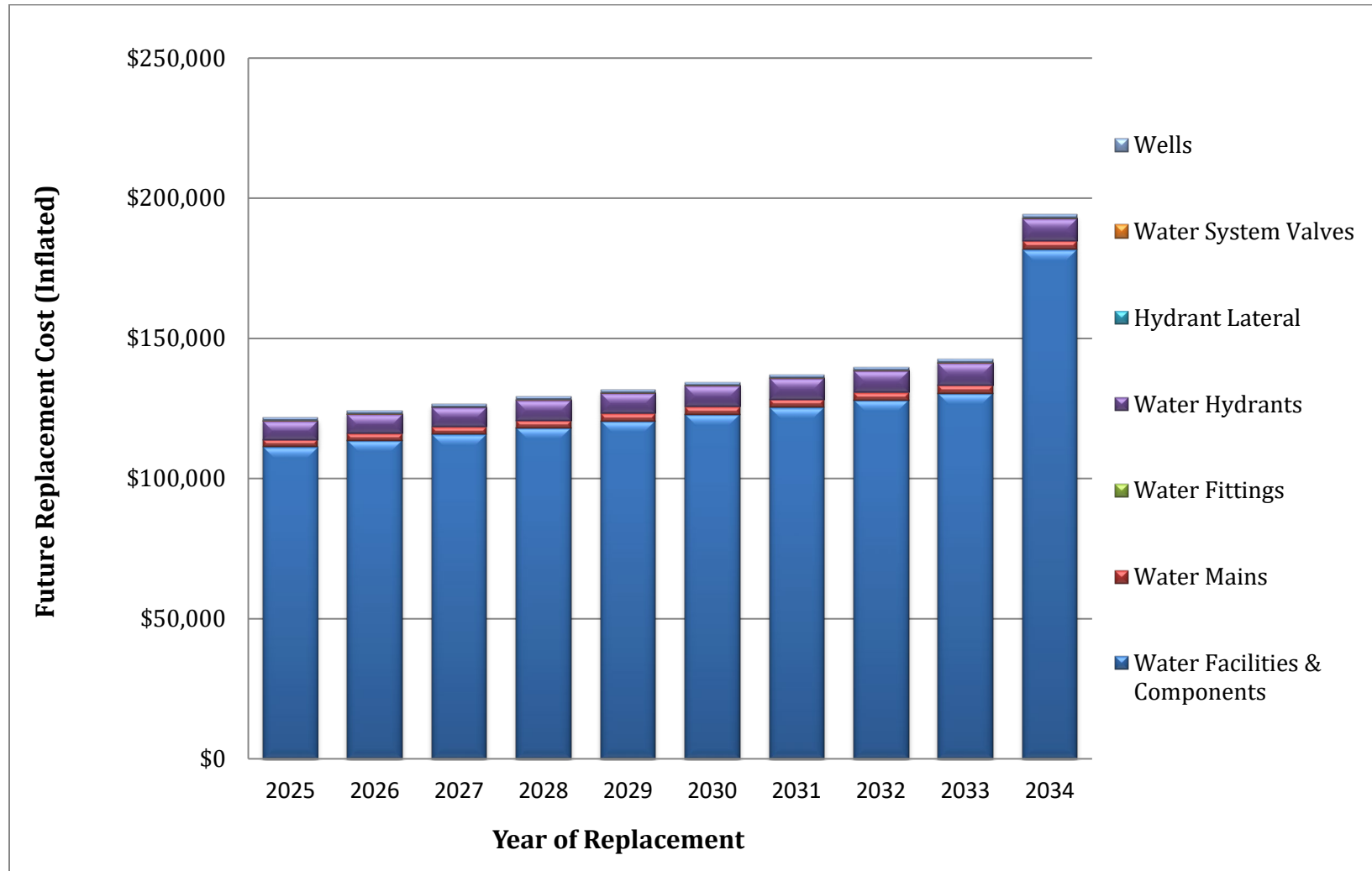
**Figure 4-2: Proposed Asset Strategy Based on Expected Levels of Service for Tax Supported Assets (inflated)**



**Figure 4-3: Proposed Asset Strategy Based on Expected Levels of Service for Water Ratepayers Supported Assets (uninflated)**



**Figure 4-4: Proposed Asset Strategy Based on Expected Levels of Service for Water Ratepayers Supported Assets (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 Sections 3.0 and 4.0. The financing strategy also provides recommendations to increase annual investment 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 \$141,710 in 2025 and 2026, and 147,378 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 2025 levels, \$146,376 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:** It has been assumed that \$0 in funding is currently available from the operating budget to fund capital. This means currently, capital is funded exclusively from grants, existing reserves, and/or debt. Also, it has been assumed that the \$250,000 currently in the 2024 Budget for gravel resurfacing will continue throughout the capital forecast.

Proposed increases for levels of service have been included in the financing strategy. 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.

- Reserves:** The Township's existing capital reserves have been utilized as a funding source for asset management needs over the forecast period. Specifically, existing balances for the Canada Community Building Fund, Equipment Replacement Reserve, Recreation Reserve, Building Reserve, Asset Management Reserve, and Bridge Reserve. These reserves have become a primary source of capital funding over the forecast period. It is recommended that increases in annual asset investment be allocated to reserves for capital use each year.
- Water:** The Township has a Water Rate Study that sets current and future water rates to support ongoing operating costs and capital needs. Rates are established in a manner that allows for transfers from the water operating budget to water capital reserves annually to fund asset investments.
- 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 has 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**

<b>Funding Type – Tax Supported Assets</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
Canada Community Building Fund (Gas Tax)	129,366	134,991	136,041
OCIF Funding	195,055	166,135	155,217
Gravel Resurfacing Program (operating)	250,000	250,000	250,000
Operating to fund Capital (excluding gravel resurface)	-	-	-
<b>Total Asset Investment – Capital (Sustainable)</b>	<b>574,421</b>	<b>551,126</b>	<b>541,258</b>

\* Excludes the OMPF grant as it is operating in nature.

\*\* Excludes the use of debt and existing reserve balances.



Therefore, a capital asset investment in 2024 of \$541,258 becomes the starting point for recommending increases in annual asset investments over the forecast period.

#### 5.4 Tax Supported 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 for tax supported assets (water related assets will be discussed later in this chapter).

**Table 5-2: Optimal Asset Investment Summary (Tax Supported)**

Tax Supported Assets	Replacement Cost	Weighted Average Useful Life	Annual Replacement Investment (2025)
Road Surface - Asphalt	8,183,785	24	341,000
Road Surface - Gravel	512,044	5	102,400
Road Base*	89,346,337	60	20,000
Roadway Assets	455,657	25	18,200
Bridge & Culverts	54,705,500	70	781,500
Facilities & Components	11,266,375	46	244,900
Land Improvements	316,500	28	11,300
Vehicles	6,840,000	15	456,000
Equipment	415,838	16	26,000
Software & Hardware	156,188	9	17,400
Storm Water Mains	2,994,543	73	41,000
Catch Basin	867,900	100	8,700
Storm Manholes	385,000	100	3,900
Crossroad Culverts	965,901	33	29,300
Storm Ponds	60,000	100	600
Discharge Points	45,000	50	900
<b>Total</b>	<b>177,516,568</b>		<b>2,103,100</b>

\* Road Base annual investment for maintenance only.

In summary, an annual asset investment of \$2,103,100 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 \$2,103,100 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 \$2,513,400 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 are shown to begin in 2025. Also, like Section 4.0, a 2% inflation factor has been applied annually to all costs.

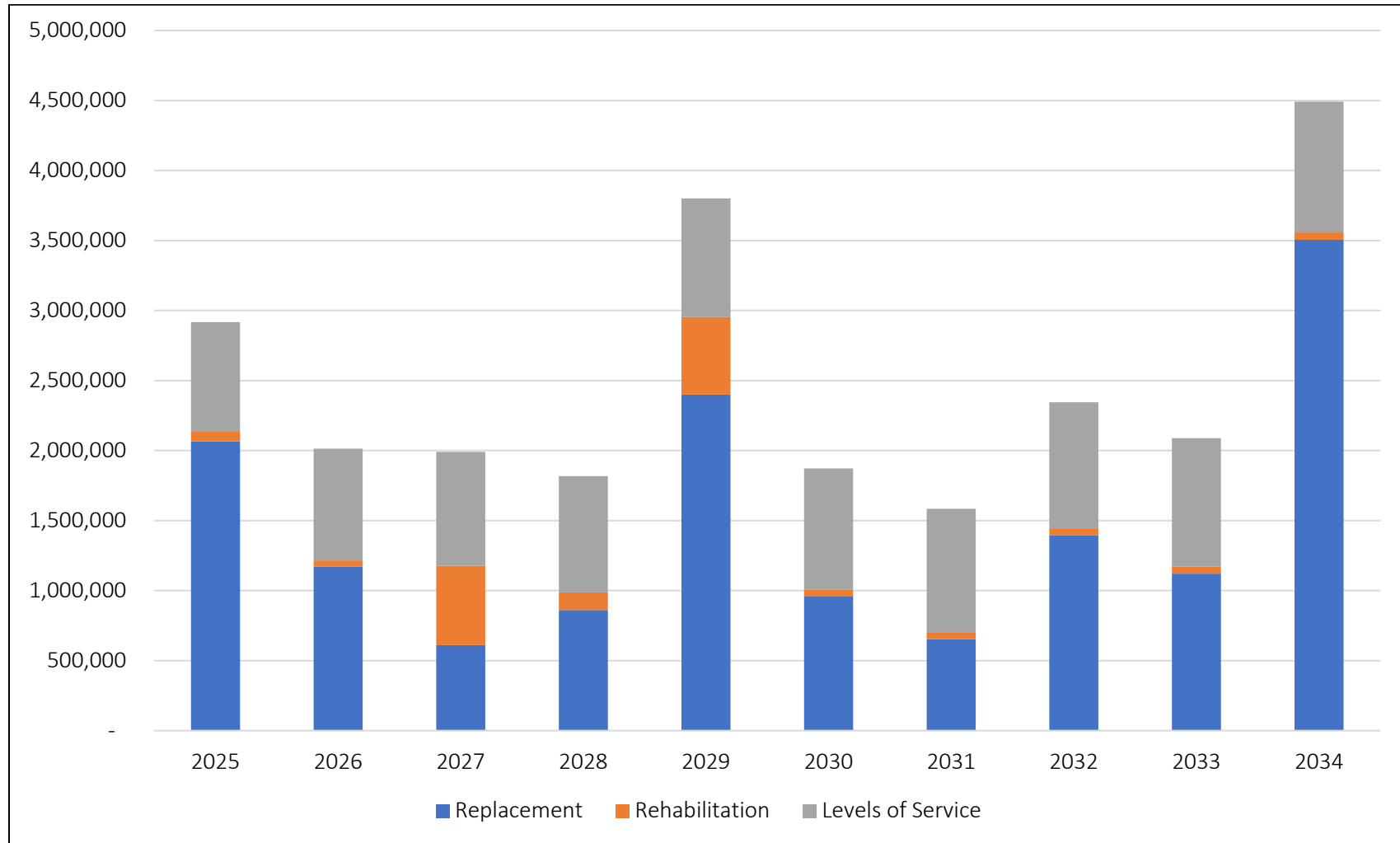
The following table provides a high-level summary of the 10-year forecast by cost type for tax supported assets (i.e., asset replacement needs, asset rehabilitation needs, and levels of service recommendations).

**Table 5-3: Forecast Summary (Tax Supported)**

Forecast	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Replacement	2,066,061	1,171,821	610,137	860,651	2,399,700	961,256	653,962	1,396,363	1,121,315	3,505,496
Rehabilitation	68,340	43,697	567,215	126,644	553,696	47,298	48,244	49,209	50,194	51,198
Levels of Service	782,686	798,339	814,307	830,593	847,204	864,147	881,432	899,061	917,041	935,380
<b>Total</b>	<b>2,917,087</b>	<b>2,013,857</b>	<b>1,991,659</b>	<b>1,817,888</b>	<b>3,800,600</b>	<b>1,872,701</b>	<b>1,583,638</b>	<b>2,344,633</b>	<b>2,088,550</b>	<b>4,492,074</b>

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 (Tax Supported)**

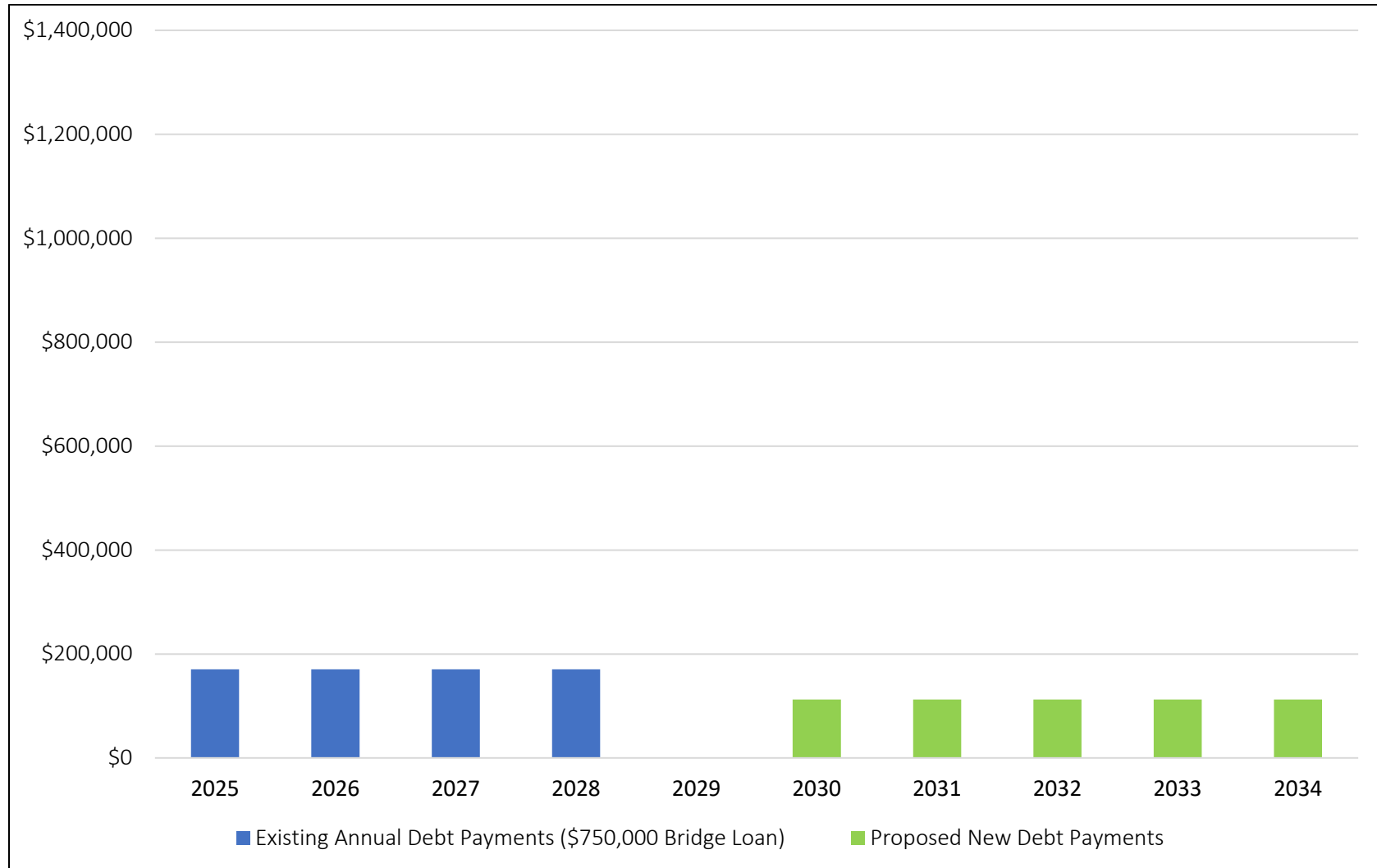
Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
<b>Totals by Asset Class (Replacement, Rehabilitation and Levels of Service)</b>											
Road Surface - Asphalt	902,190	312,028	142,732	145,587	378,468	151,469	280,443	414,711	232,446	783,853	3,743,927
Road Surface - Gravel	462,570	471,821	481,258	490,883	500,700	510,715	520,929	531,348	541,974	552,814	5,065,012
Road Base	67,830	69,187	70,570	71,981	73,421	74,889	76,387	77,915	79,474	81,063	742,717
Roadway Assets	21,726	22,161	22,604	23,056	23,517	23,987	24,467	32,859	32,545	25,964	252,886
Bridge & Culverts	793,050	200,705	551,828	29,767	767,656	30,969	157,534	289,344	32,865	653,420	3,507,138
Facilities & Components	217,752	116,407	202,975	220,300	553,702	179,654	57,582	82,290	56,687	139,698	1,827,047
Land Improvements	47,211	48,155	49,118	50,101	51,102	52,124	53,167	54,230	133,594	56,421	595,223
Vehicles	328,950	673,659	342,240	700,875	1,366,300	729,191	272,813	758,649	761,871	1,996,103	7,930,651
Equipment	4,534	22,232	3,714	7,306	8,584	35,812	49,968	23,433	68,718	72,225	296,526
Software & Hardware	58,524	64,497	111,355	64,502	63,349	69,814	75,990	65,208	133,437	115,276	821,952
Storm Water Mains	-	-	-	-	-	-	-	-	-	-	-
Catch Basins	510	520	531	541	552	563	574	586	598	609	5,584
Storm Manholes	-	-	-	-	-	-	-	-	-	-	-
Crossroad Culverts	12,240	12,485	12,734	12,989	13,249	13,514	13,784	14,060	14,341	14,628	134,024
Storm Ponds	-	-	-	-	-	-	-	-	-	-	-
Discharge Points	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,917,087</b>	<b>2,013,857</b>	<b>1,991,659</b>	<b>1,817,888</b>	<b>3,800,600</b>	<b>1,872,701</b>	<b>1,583,638</b>	<b>2,344,633</b>	<b>2,088,550</b>	<b>4,492,074</b>	<b>24,922,687</b>
<b>Funding Analysis</b>											
Canada Community Building Fund (Gas Tax)	141,710	141,710	147,378	147,378	147,378	147,378	147,378	147,378	147,378	147,378	1,462,444
OCIF Funding	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	1,463,760
<b>Transfer from Operations</b>	-	-	-	-	-	-	-	-	-	-	-
Operating - Gravel Resurfacing - 2024 Existing	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
Transfer from/(to) Capital Reserves - 2024 Existing	-	-	-	-	-	-	-	-	-	-	-
Transfer from/(to) Capital Reserves - New	1,623,615	720,385	692,519	518,748	1,101,460	573,561	284,498	1,045,493	789,410	3,192,934	10,542,623
Operating Funding (LOS Impacts already in 2024 budget)	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	7,553,860
Debt Funding	-	-	-	-	1,400,000	-	-	-	-	-	1,400,000
<b>Total</b>	<b>2,917,087</b>	<b>2,013,857</b>	<b>1,991,659</b>	<b>1,817,888</b>	<b>3,800,600</b>	<b>1,872,701</b>	<b>1,583,638</b>	<b>2,344,633</b>	<b>2,088,550</b>	<b>4,492,074</b>	<b>24,922,687</b>

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 \$250,000 in gravel resurfacing funding annually as well as for levels of service recommendations that are considered operating in nature. Debt funding is used to finance the remaining funding needs each year, if applicable.

### **Debt Funding (Tax Supported)**

Debt funding is anticipated within the forecast period. As shown above in Table 5-4, debt principal amounts of \$1,400,000 are required 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 Figure 5-2 and Figure 5-3).

**Figure 5-2: Summary of Current and Proposed Debt Payments (Tax Supported)**



**Figure 5-3: Percent of Annual Repayment Limit Used (Tax Supported)**

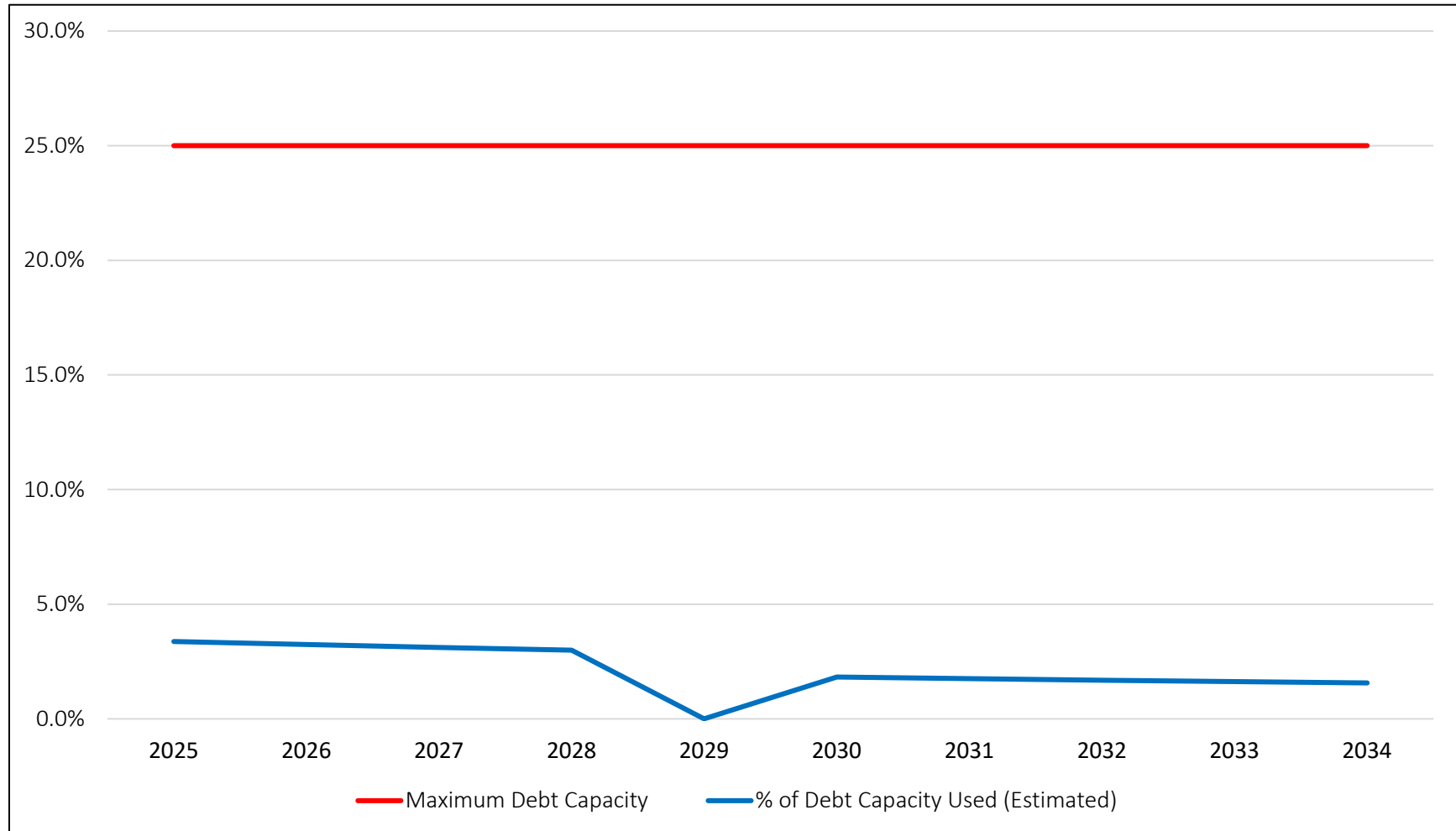




Figure 5-2 and Figure 5-3 above show that current and projected debt requirements are well within the annual debt capacity limits of 25% of Township revenues, reaching a maximum level of 3.4% of revenues in 2025. Future debt payments have been estimated assuming an interest rate of 5.0% over a 20-year term.

### **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 5-5 below outlines the calculated transfer amounts for the forecast period, with a recommended plan to increase those transfers to reach \$2,220,610 by 2034. This combined with anticipated grant funding allows the Township to reach an annual asset capital investment amount of \$2,514,364 by 2034. This represents 100% of the optimal annual capital asset investment amount in 2034.

**Table 5-5: Contributions to Reserves (Tax Supported)**

Funding Type - Tax Supported Assets	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Transfer to Reserves for Asset Management	87,660	285,648	493,640	712,136	1,112,023	1,220,539	1,452,448	1,696,068	1,951,884	2,220,610
<b>Total</b>	<b>87,660</b>	<b>285,648</b>	<b>493,640</b>	<b>712,136</b>	<b>1,112,023</b>	<b>1,220,539</b>	<b>1,452,448</b>	<b>1,696,068</b>	<b>1,951,884</b>	<b>2,220,610</b>
Transfer from Operations to Capital	-	-	-	-	-	-	-	-	-	-
Transfer from/(to) Capital Reserves - 2024 Existing	-	-	-	-	-	-	-	-	-	-
Canada Community Building Fund (Gas Tax)	141,710	141,710	147,378	147,378	147,378	147,378	147,378	147,378	147,378	147,378
OCIF Funding	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376
<b>Total Asset Investment</b>	<b>375,746</b>	<b>573,734</b>	<b>787,394</b>	<b>1,005,890</b>	<b>1,405,777</b>	<b>1,514,293</b>	<b>1,746,202</b>	<b>1,989,822</b>	<b>2,245,638</b>	<b>2,514,364</b>

It is recommended that existing capital reserves (identified above in Section 5.2) be used to fund asset management capital needs. Regarding new transfers to reserves recommended in Table 5-5, this can be accomplished with one consolidated asset management capital reserve, or by using multiple reserves by department (i.e., Recreation) or function (i.e., vehicles).

### **Operating Budget Funding**

As discussed earlier in this chapter, the recommended financing strategy assumes that \$250,000 will be available annually from the operating budget to the gravel resurfacing program.

From a levels of service perspective, many recommendations outlined in Section 3.0 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 will have 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 5-6.

**Table 5-6: Increase in Funding Summary (Tax Supported)**

<b>Increase in Funding</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>
Increase (Decrease) in Transfers to Reserves	87,660	197,988	207,992	218,497	399,886	108,516	231,909	243,620	255,816	268,726
Increase (Decrease) in Operating - LOS	102,900	2,100	2,100	2,100	2,200	2,200	2,300	2,300	2,400	2,400
Increase (Decrease) in Operating - Debt	-	-	-	-	(170,460)	112,340	-	-	-	-
<b>Total Impact on Annual Tax Supported Budget</b>	<b>190,560</b>	<b>200,088</b>	<b>210,092</b>	<b>220,597</b>	<b>231,627</b>	<b>223,056</b>	<b>234,209</b>	<b>245,920</b>	<b>258,216</b>	<b>271,126</b>
Estimated Taxation Impact: 1% in 2024 = \$51,853	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>

Table 5-6 above outlines the total annual increase in funding recommended from 2025 to 2034. These increases can be incorporated through:

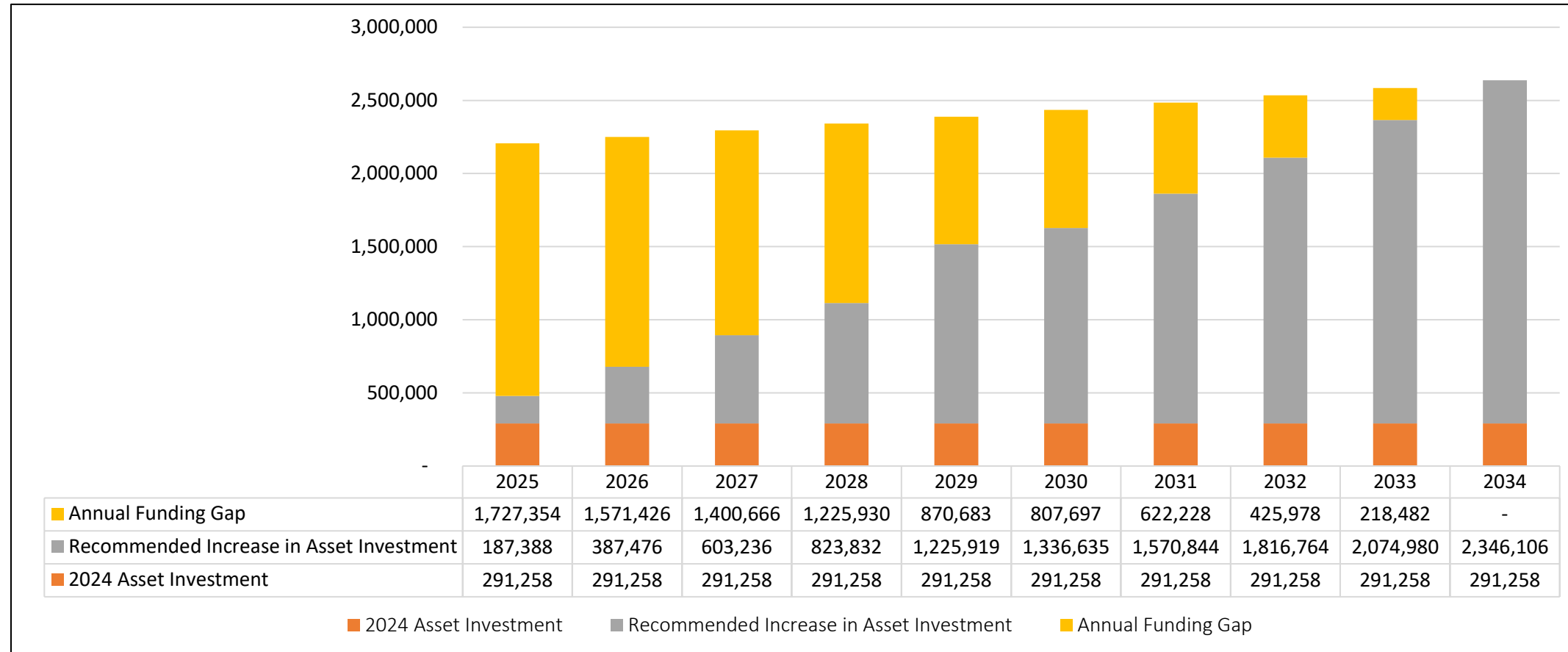
- Finding efficiencies in the annual budget
- Increase in external funding (i.e. grants or third-party contributions)
- Allocations of annual Township surpluses to capital reserves (if available)
- Recommending budget (taxation) increases

As shown in Table 5-6, 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 3.50% increase in taxation would be required annually for the first five years of the forecast followed by a 3.21% increase annually for the following five years.

### **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 eliminated by 2034, where 100% of the optimal annual asset investment (operating levels of service and capital) is achieved.

**Figure 5-4: Annual Asset Investment & Funding Gap**



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

## 5.6 Water Related Assets

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 5-7: Optimal Asset Investment Summary (Water Supported Assets)**

Water Supported Assets	Replacement Cost	Weighted Average Useful Life	Annual Replacement Investment (2025)
Water Facilities & Components	6,380,000	48	132,900
Water Mains	6,687,829	100	66,900
Water Fittings	383,000	75	5,100
Water Hydrants	234,000	50	4,700
Hydrant Lateral	36,000	100	400
Water System Valves	690,000	75	9,200
Wells	780,000	50	15,600
<b>Total</b>	<b>15,190,829</b>		<b>234,800</b>

In summary, an annual asset investment of \$234,800 is needed to fund long-term asset management planning needs for water assets. This annual investment amount grows with inflation.

These optimal investment amounts become the funding target over the forecast period. However, this target increases over time as inflation increases this amount annually. Assuming 2% annual inflation, the target annual capital asset investment amount becomes approximately \$280,600 by the year 2034.

The Township's 2020 Water Financial Plan provides for increasing contributions to water capital reserves:

- Water: A contribution of \$79,279 by 2030

The annual contributions to reserves are lower in the Water Financial Plan in comparison to the asset management recommendations discussed above. A change to water financial planning should be considered in the future to align optimal annual water asset investment timing with tax supported assets (i.e. reaching optimal annual funding in 2034).

The 2020 Water Financial Plan also recommends incurring \$139,920 in water related debt from 2021 to 2030. This is insignificant in comparison to the Township's estimated annual debt capacity (discussed above in this chapter) and does not impact debt recommendations provided.

It is recommended that the Township considers a more accelerated transition to optimal annual investment for water assets in the next update to the Water Financial Plan.

## **5.7 Summary of Financing Strategy Recommendations**

The following represents a list of financing strategy recommendations:

- Use existing Township capital reserves identified in this chapter to fund asset management capital needs.
- 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.
- Increase asset management funding annually as outlined in Table 5-6.
- Transfer any annual Township surpluses to capital reserves annually to assist with asset management investment needs.
- 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).
- Consider a more accelerated transition to optimal annual investment for water assets in the next update to the Water Financial Plan.
- 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 Amaranth'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 the 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 increases asset management funding as outlined in Table 5-6.
  - The Township transfers annual surpluses to capital reserves.
  - The Township dedicates 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 updates the financing strategy every five 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.
  - The Township consider the capital priorities identified within this report when applying for future grants or deciding on 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 tax supported 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 Amaranth 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 Amaranth 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

### Asset Management Plan Financing Strategy

Township of Amaranth  
2024 Asset Management Plan  
Financing Strategy (Tax Supported)

Table of Contents:

- Section 1: Capital Forecast and Funding Analysis
- Section 2: Future Debt
- Section 3: Reserve Schedules
- Section 4: Budget Impacts & Funding Gap

**Section 1: Capital Forecast and Funding Analysis**

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
<b>Capital Replacement</b>											
Road Surface - Asphalt	765,000	172,094	-	-	229,969	-	125,945	257,123	71,706	619,898	2,241,735
Road Surface - Gravel	255,000	260,100	265,302	270,608	276,020	281,541	287,171	292,915	298,773	304,749	2,792,179
Road Base	-	-	-	-	-	-	-	-	-	-	-
Roadway Assets	17,850	18,207	18,571	18,943	19,321	19,708	20,102	28,407	28,004	21,332	210,445
Bridge & Culverts	765,000	172,094	-	-	229,969	-	125,945	257,123	-	619,898	2,170,029
Facilities & Components	157,980	81,450	167,318	102,748	516,605	141,815	18,986	42,922	16,532	98,740	1,345,096
Land Improvements	-	-	-	-	-	-	-	-	78,279	-	78,279
Vehicles	86,700	426,564	90,203	443,797	1,104,081	461,727	-	480,380	478,037	1,706,592	5,278,081
Equipment	4,534	22,232	3,714	7,306	8,584	35,812	49,968	23,433	68,718	72,225	296,526
Software & Hardware	1,757	6,595	52,295	4,260	1,902	7,139	12,061	-	66,925	47,434	200,368
Storm Water Mains	-	-	-	-	-	-	-	-	-	-	-
Catch Basin	-	-	-	-	-	-	-	-	-	-	-
Storm Manholes	-	-	-	-	-	-	-	-	-	-	-
Crossroad Culverts	12,240	12,485	12,734	12,989	13,249	13,514	13,784	14,060	14,341	14,628	134,024
Storm Ponds	-	-	-	-	-	-	-	-	-	-	-
Discharge Points	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal - Capital Replacement</b>	<b>2,066,061</b>	<b>1,171,821</b>	<b>610,137</b>	<b>860,651</b>	<b>2,399,700</b>	<b>961,256</b>	<b>653,962</b>	<b>1,396,363</b>	<b>1,121,315</b>	<b>3,505,496</b>	<b>14,746,762</b>
<b>Capital Rehabilitation</b>											
Road Surface - Asphalt	-	-	-	-	-	-	-	-	-	-	-
Road Surface - Gravel	-	-	-	-	-	-	-	-	-	-	-
Road Base	40,800	41,616	42,448	43,297	44,163	45,046	45,947	46,866	47,804	48,760	446,747
Roadway Assets	-	-	-	-	-	-	-	-	-	-	-
Bridge & Culverts	-	-	522,645	-	507,325	-	-	-	-	-	1,029,970
Facilities & Components	25,500	-	-	81,182	-	-	-	-	-	-	106,682
Land Improvements	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390	2,438	22,336
Vehicles	-	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-	-
Software & Hardware	-	-	-	-	-	-	-	-	-	-	-
Storm Water Mains	-	-	-	-	-	-	-	-	-	-	-
Catch Basin	-	-	-	-	-	-	-	-	-	-	-
Storm Manholes	-	-	-	-	-	-	-	-	-	-	-
Crossroad Culverts	-	-	-	-	-	-	-	-	-	-	-
Storm Ponds	-	-	-	-	-	-	-	-	-	-	-
Discharge Points	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal - Capital Rehabilitation</b>	<b>68,340</b>	<b>43,697</b>	<b>567,215</b>	<b>126,644</b>	<b>553,696</b>	<b>47,298</b>	<b>48,244</b>	<b>49,209</b>	<b>50,194</b>	<b>51,198</b>	<b>1,605,735</b>

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
<b>Levels of Service Costs</b>											
Road Surface - Asphalt	137,190	139,934	142,732	145,587	148,499	151,469	154,498	157,588	160,740	163,955	1,502,192
Road Surface - Gravel	207,570	211,721	215,956	220,275	224,680	229,174	233,758	238,433	243,201	248,065	2,272,833
Road Base	27,030	27,571	28,122	28,684	29,258	29,843	30,440	31,049	31,670	32,303	295,970
Roadway Assets	3,876	3,954	4,033	4,113	4,196	4,279	4,365	4,452	4,541	4,632	42,441
Bridge & Culverts	28,050	28,611	29,183	29,767	30,362	30,969	31,589	32,221	32,865	33,522	307,139
Facilities & Components	34,272	34,957	35,657	36,370	37,097	37,839	38,596	39,368	40,155	40,958	375,269
Land Improvements	45,171	46,074	46,996	47,936	48,894	49,872	50,870	51,887	52,925	53,983	494,608
Vehicles	242,250	247,095	252,037	257,078	262,219	267,464	272,813	278,269	283,834	289,511	2,652,570
Equipment	-	-	-	-	-	-	-	-	-	-	-
Software & Hardware	56,767	57,902	59,060	60,242	61,447	62,675	63,929	65,208	66,512	67,842	621,584
Storm Water Mains	-	-	-	-	-	-	-	-	-	-	-
Catch Basin	510	520	531	541	552	563	574	586	598	609	5,584
Storm Manholes	-	-	-	-	-	-	-	-	-	-	-
Crossroad Culverts	-	-	-	-	-	-	-	-	-	-	-
Storm Ponds	-	-	-	-	-	-	-	-	-	-	-
Discharge Points	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal - Levels of Service</b>	<b>782,686</b>	<b>798,339</b>	<b>814,307</b>	<b>830,593</b>	<b>847,204</b>	<b>864,147</b>	<b>881,432</b>	<b>899,061</b>	<b>917,041</b>	<b>935,380</b>	<b>8,570,190</b>

Asset Class	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
<b>Totals by Asset Class (Replacement, Rehabilitation and Levels of Service)</b>											
Road Surface - Asphalt	902,190	312,028	142,732	145,587	378,468	151,469	280,443	414,711	232,446	783,853	3,743,927
Road Surface - Gravel	462,570	471,821	481,258	490,883	500,700	510,715	520,929	531,348	541,974	552,814	5,065,012
Road Base	67,830	69,187	70,570	71,981	73,421	74,889	76,387	77,915	79,474	81,063	742,717
Roadway Assets	21,726	22,161	22,604	23,056	23,517	23,987	24,467	32,859	32,545	25,964	252,886
Bridge & Culverts	793,050	200,705	551,828	29,767	767,656	30,969	157,534	289,344	32,865	653,420	3,507,138
Facilities & Components	217,752	116,407	202,975	220,300	553,702	179,654	57,582	82,290	56,687	139,698	1,827,047
Land Improvements	47,211	48,155	49,118	50,101	51,102	52,124	53,167	54,230	133,594	56,421	595,223
Vehicles	328,950	673,659	342,240	700,875	1,366,300	729,191	272,813	758,649	761,871	1,996,103	7,930,651
Equipment	4,534	22,232	3,714	7,306	8,584	35,812	49,968	23,433	68,718	72,225	296,526
Software & Hardware	58,524	64,497	111,355	64,502	63,349	69,814	75,990	65,208	133,437	115,276	821,952
Storm Water Mains	-	-	-	-	-	-	-	-	-	-	-
Catch Basin	510	520	531	541	552	563	574	586	598	609	5,584
Storm Manholes	-	-	-	-	-	-	-	-	-	-	-
Crossroad Culverts	12,240	12,485	12,734	12,989	13,249	13,514	13,784	14,060	14,341	14,628	134,024
Storm Ponds	-	-	-	-	-	-	-	-	-	-	-
Discharge Points	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,917,087</b>	<b>2,013,857</b>	<b>1,991,659</b>	<b>1,817,888</b>	<b>3,800,600</b>	<b>1,872,701</b>	<b>1,583,638</b>	<b>2,344,633</b>	<b>2,088,550</b>	<b>4,492,074</b>	<b>24,922,687</b>

Funding Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
<b>Total Funding by Source</b>											
Canada Community Building Fund (Gas Tax)	141,710	141,710	147,378	147,378	147,378	147,378	147,378	147,378	147,378	147,378	1,462,444
OCIF Funding	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	1,463,760
<b>Transfer from Operations</b>	-	-	-	-	-	-	-	-	-	-	-
Operating - Gravel Resurfacing - 2024 Existing	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
Transfer from/(to) Capital Reserves - 2024 Existing	-	-	-	-	-	-	-	-	-	-	-
Transfer from/(to) Capital Reserves - New	1,623,615	720,385	692,519	518,748	1,101,460	573,561	284,498	1,045,493	789,410	3,192,934	10,542,623
Operating Funding (LOS Impacts already in 2024 budget)	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	755,386	7,553,860
Debt Funding (see section 2)	-	-	-	-	1,400,000	-	-	-	-	-	1,400,000
<b>Total</b>	<b>2,917,087</b>	<b>2,013,857</b>	<b>1,991,659</b>	<b>1,817,888</b>	<b>3,800,600</b>	<b>1,872,701</b>	<b>1,583,638</b>	<b>2,344,633</b>	<b>2,088,550</b>	<b>4,492,074</b>	<b>24,922,687</b>
<b>Total Cost less Funding</b>	-	-	-	-	-	-	-	-	-	-	-

**Section 2: Future Debt**

Year	Principal Amount	New Annual Payments									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	-	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-	-
2029	1,400,000	-	-	-	-	-	112,340	112,340	112,340	112,340	112,340
2030	-	-	-	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-	-	-	-
2034	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1,400,000</b>	-	-	-	-	-	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>

Assumptions:

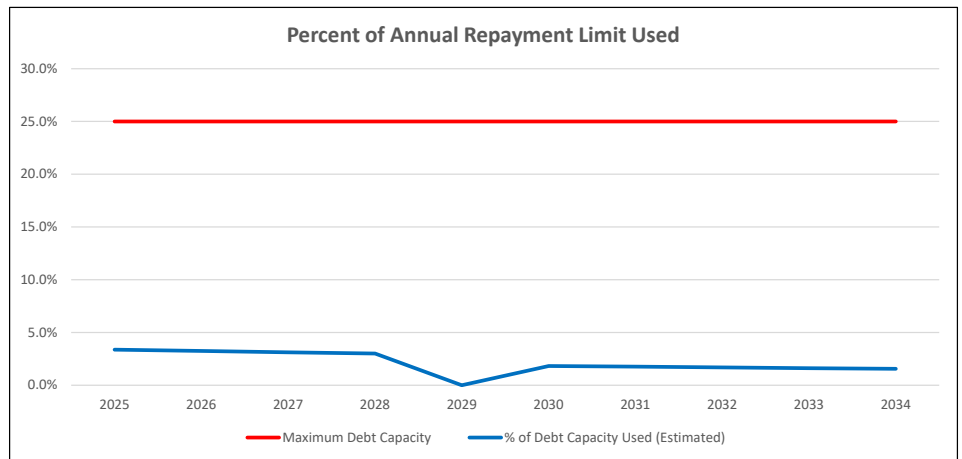
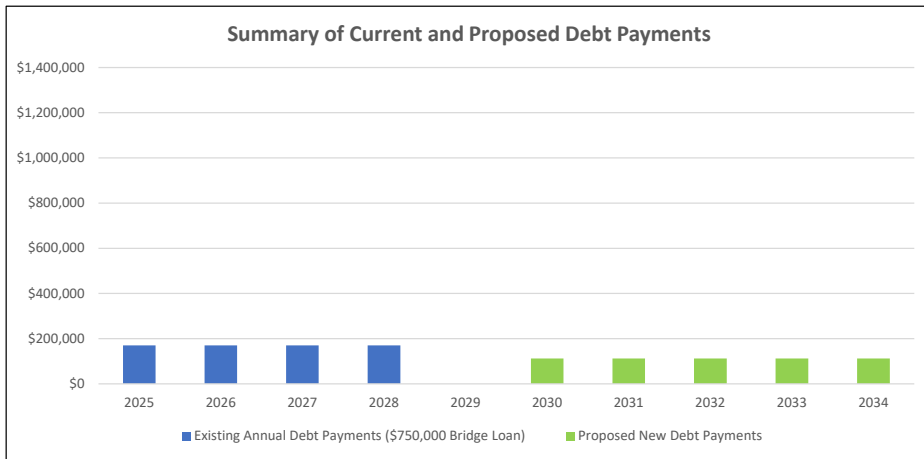
Term: 20 years  
 Rate: 5% per year  
 Timing: Debt is incurred at the end of the given year, with principal & interest payments starting in the following year.

**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 (\$750,000 Bridge Loan)	170,460	170,460	170,460	170,460	-	-	-	-	-	-
Proposed New Debt Payments	-	-	-	-	-	112,340	112,340	112,340	112,340	112,340
<b>Total Anticipated Debt Payments</b>	<b>170,460</b>	<b>170,460</b>	<b>170,460</b>	<b>170,460</b>	<b>-</b>	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>	<b>112,340</b>
Estimated Revenues*	5,054,434	5,256,612	5,466,876	5,685,551	5,912,973	6,149,492	6,395,472	6,651,291	6,917,343	7,194,037
Maximum Debt Capacity	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
<b>% of Debt Capacity Used (Estimated)</b>	<b>3.4%</b>	<b>3.2%</b>	<b>3.1%</b>	<b>3.0%</b>	<b>0.0%</b>	<b>1.8%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.6%</b>	<b>1.6%</b>

\* 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	2,823,132	1,287,177	852,439	653,560	846,948	857,511	1,504,489	2,672,439	3,323,014	4,485,488
Add: Contributions from Operating	87,660	285,648	493,640	712,136	1,112,023	1,220,539	1,452,448	1,696,068	1,951,884	2,220,610
Less: Contributions (to)/from Capital	(1,623,615)	(720,385)	(692,519)	(518,748)	(1,101,460)	(573,561)	(284,498)	(1,045,493)	(789,410)	(3,192,934)
Interest Earned (if applicable)	-	-	-	-	-	-	-	-	-	-
<b>Ending Balance</b>	<b>1,287,177</b>	<b>852,439</b>	<b>653,560</b>	<b>846,948</b>	<b>857,511</b>	<b>1,504,489</b>	<b>2,672,439</b>	<b>3,323,014</b>	<b>4,485,488</b>	<b>3,513,164</b>

### Section 4: Budget Impacts & Funding Gap

Optimal Annual Funding Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Optimal Investment - Capital	2,103,100	2,145,160	2,188,060	2,231,820	2,276,460	2,321,990	2,368,430	2,415,800	2,464,120	2,513,400
Optimal Investment - Operating LOS (increase from existing)	102,900	105,000	107,100	109,200	111,400	113,600	115,900	118,200	120,600	123,000
<b>Total Annual Optimal Investment in Assets</b>	<b>2,206,000</b>	<b>2,250,160</b>	<b>2,295,160</b>	<b>2,341,020</b>	<b>2,387,860</b>	<b>2,435,590</b>	<b>2,484,330</b>	<b>2,534,000</b>	<b>2,584,720</b>	<b>2,636,400</b>

#### Recommended Investment - Capital

Canada Community Building Fund (Gas Tax)	141,710	141,710	147,378	147,378	147,378	147,378	147,378	147,378	147,378	147,378
OCIF Funding	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376	146,376
Transfer from/(to) Capital Reserves - 2024 Existing	-	-	-	-	-	-	-	-	-	-
Transfer from/(to) Capital Reserves - New	87,660	285,648	493,640	712,136	1,112,023	1,220,539	1,452,448	1,696,068	1,951,884	2,220,610
<b>Total Recommended Investment - Capital</b>	<b>375,746</b>	<b>573,734</b>	<b>787,394</b>	<b>1,005,890</b>	<b>1,405,777</b>	<b>1,514,293</b>	<b>1,746,202</b>	<b>1,989,822</b>	<b>2,245,638</b>	<b>2,514,364</b>
<i>% of Optimal Investment (Capital) Reached</i>	<i>18%</i>	<i>27%</i>	<i>36%</i>	<i>45%</i>	<i>62%</i>	<i>65%</i>	<i>74%</i>	<i>82%</i>	<i>91%</i>	<i>100%</i>

#### LOS Impacts - Operating

Recommended Investment	102,900	105,000	107,100	109,200	111,400	113,600	115,900	118,200	120,600	123,000
<b>Total Recommended Investment - LOS Operating</b>	<b>102,900</b>	<b>105,000</b>	<b>107,100</b>	<b>109,200</b>	<b>111,400</b>	<b>113,600</b>	<b>115,900</b>	<b>118,200</b>	<b>120,600</b>	<b>123,000</b>
<i>% of Optimal Investment (Capital) Reached</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>
<b>Total Recommended Investment - Capital &amp; Operating</b>	<b>478,646</b>	<b>678,734</b>	<b>894,494</b>	<b>1,115,090</b>	<b>1,517,177</b>	<b>1,627,893</b>	<b>1,862,102</b>	<b>2,108,022</b>	<b>2,366,238</b>	<b>2,637,364</b>
<i>% of Optimal Investment (Operating &amp; Capital) Reached</i>	<i>22%</i>	<i>30%</i>	<i>39%</i>	<i>48%</i>	<i>64%</i>	<i>67%</i>	<i>75%</i>	<i>83%</i>	<i>92%</i>	<i>100%</i>

<b>Funding (Gap) / Surplus</b>	<b>(1,727,354)</b>	<b>(1,571,426)</b>	<b>(1,400,666)</b>	<b>(1,225,930)</b>	<b>(870,683)</b>	<b>(807,697)</b>	<b>(622,228)</b>	<b>(425,978)</b>	<b>(218,482)</b>	<b>964</b>
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#### Investment in Capital

	2024
Canada Community Building Fund (Gas Tax)	136,041
OCIF Funding	155,217
Transfer from Operating	-
Transfer to Reserves (for capital)	-
<b>Total Investment</b>	<b>291,258</b>

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

Impact on Funding	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<b>Total Recommended Investment - Capital</b>	<b>375,746</b>	<b>573,734</b>	<b>787,394</b>	<b>1,005,890</b>	<b>1,405,777</b>	<b>1,514,293</b>	<b>1,746,202</b>	<b>1,989,822</b>	<b>2,245,638</b>	<b>2,514,364</b>
<b>Previous Year's Investment</b>	<b>291,258</b>	<b>375,746</b>	<b>573,734</b>	<b>787,394</b>	<b>1,005,890</b>	<b>1,405,777</b>	<b>1,514,293</b>	<b>1,746,202</b>	<b>1,989,822</b>	<b>2,245,638</b>
<b>Annual Increase in Capital Investment</b>										
Grants	(3,172)	-	5,668	-	-	-	-	-	-	-
Tax Supported	87,660	197,988	207,992	218,497	399,886	108,516	231,909	243,620	255,816	268,726
<b>Total Change</b>	<b>84,488</b>	<b>197,988</b>	<b>213,660</b>	<b>218,497</b>	<b>399,886</b>	<b>108,516</b>	<b>231,909</b>	<b>243,620</b>	<b>255,816</b>	<b>268,726</b>
<b>Total Recommended Investment - Operating LOS (Increase Only)</b>	<b>102,900</b>	<b>105,000</b>	<b>107,100</b>	<b>109,200</b>	<b>111,400</b>	<b>113,600</b>	<b>115,900</b>	<b>118,200</b>	<b>120,600</b>	<b>123,000</b>
<b>Previous Year's Investment Increase</b>	<b>-</b>	<b>102,900</b>	<b>105,000</b>	<b>107,100</b>	<b>109,200</b>	<b>111,400</b>	<b>113,600</b>	<b>115,900</b>	<b>118,200</b>	<b>120,600</b>
<b>Annual Increase / (Decrease) in Operating LOS Investment</b>										
Tax Supported	102,900	2,100	2,100	2,100	2,200	2,200	2,300	2,300	2,400	2,400
<b>Total Change</b>	<b>102,900</b>	<b>2,100</b>	<b>2,100</b>	<b>2,100</b>	<b>2,200</b>	<b>2,200</b>	<b>2,300</b>	<b>2,300</b>	<b>2,400</b>	<b>2,400</b>
<b>A Total Change - Capital &amp; LOS (excluding Grant Increase)</b>	<b>190,560</b>	<b>200,088</b>	<b>210,092</b>	<b>220,597</b>	<b>402,086</b>	<b>110,716</b>	<b>234,209</b>	<b>245,920</b>	<b>258,216</b>	<b>271,126</b>
<b>B Net Increase / (Decrease) in Debt Payments</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(170,460)</b>	<b>112,340</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>A + B Total Impact on Annual Tax Supported Budget</b>	<b>190,560</b>	<b>200,088</b>	<b>210,092</b>	<b>220,597</b>	<b>231,627</b>	<b>223,056</b>	<b>234,209</b>	<b>245,920</b>	<b>258,216</b>	<b>271,126</b>
<i>Estimated Taxation Impact: 1% in 2024 = \$51,853</i>	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>	<b>3.21%</b>

