

FINAL REPORT

PREPARED BY HEMSON FOR THE MUNICIPALITY OF CASSELMAN

ASSET MANAGEMENT PLAN

July 2021



1000 - 30 St. Patrick Street, Toronto ON M5T 3A3
416 593 5090 | hemson@hemson.com | www.hemson.com

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EXECUTIVE SUMMARY

The following summarizes the findings of the Municipality of Casselman's Asset Management Plan (2021 Plan). The 2021 Plan follows the format set out in the *Building Together: Guide for Municipal Asset Management Plans* and it has also been developed to be consistent with the requirements of *Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17)* with consideration to the Municipality's Strategic Asset Management Policy. This 2021 Plan defines the current levels of service for all core and non-core assets in compliance with the asset management regulation.

The 2021 Plan incorporates all assets that the Municipality is responsible for to provide a comprehensive overview. All figures are in constant 2021 dollars and should be adjusted annually to account for the effects of inflation.

A. STATE OF LOCAL INFRASTRUCTURE

- The Municipality's infrastructure has a total replacement value of \$242.7 million.
 - Roads represent \$58.5 million (24%) and stormwater represents \$19.8 million (8%) of the total value;
 - The remaining tax supported assets represent \$25.9 million (11%); and
 - Engineering infrastructure related to water and sewer assets accounts for approximately \$138.5 million (57%).
- Overall, the Municipality's assets are considered to be in "Good" condition.
 - Of the total asset value, about 80% or \$190.8 million of the Municipality's assets are considered to be in "Good" or "Very Good" condition.
 - Conversely, about 9% (\$22.5 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition. These assets have largely been categorized based on their remaining useful life. Despite this rating, these assets continue to be in good working condition.

B. LEVEL OF SERVICE

- The Municipality's current levels of service have been defined based on the condition of assets and the measures required as per *O. Reg. 588/17*.

- Overall the Municipality’s asset base is considered to be in Good condition.
- The Municipality’s buildings, stormwater and sewer systems are maintained in “Good” condition, while the water system is in “Very Good” condition.
- The Municipality’s equipment, vehicles, land improvements and roads & related infrastructure, are maintained in “Fair” condition.
- Specific level of service measures related to *O. Reg. 588/17* are discussed in Section 3.

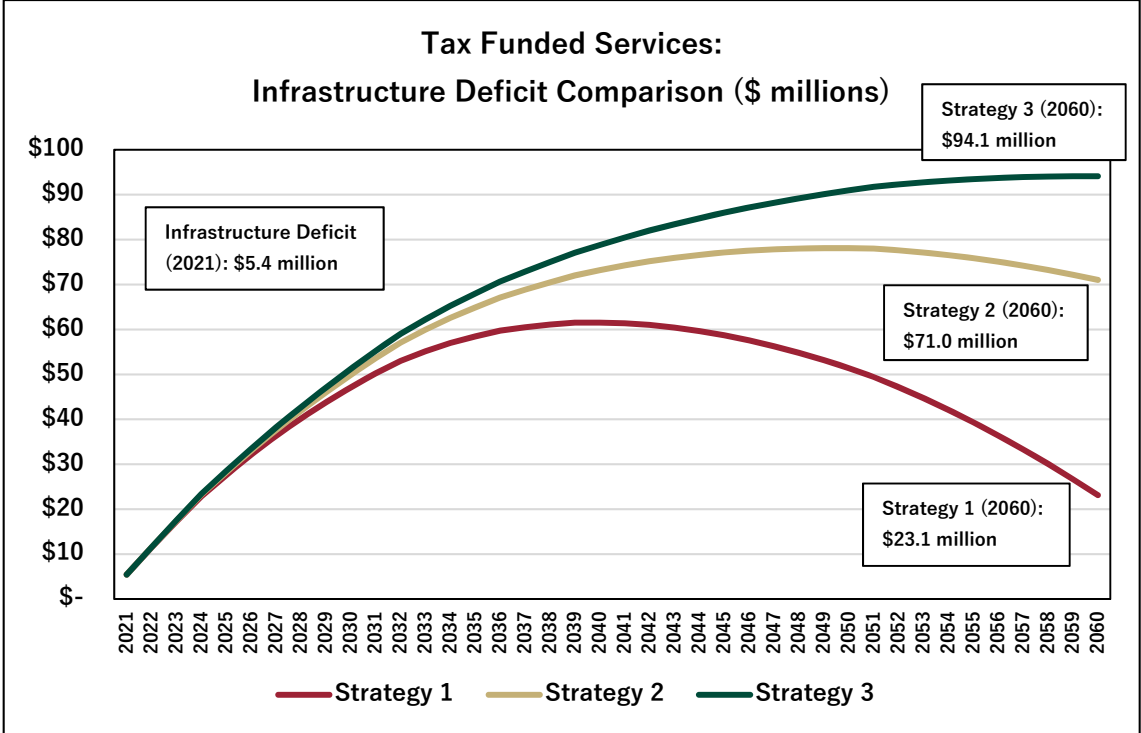
C. FINANCING STRATEGY

- The current 2021 infrastructure deficit for all tax supported assets is calculated to be about \$5.4 million, while the infrastructure deficit for rate supported assets is estimated at \$8.4 million. This represents the difference between the required in-year contributions to capital and the current contributions to capital.
- It is unrealistic in the current fiscal context to expect the Municipality to fully address the infrastructure deficit in the short-medium term;
- Three financing strategies were developed to determine what capital contributions would be required to meet asset replacement needs (Note: in any given year, actual capital expenditures may be greater or less than the noted capital contributions as reserves are assumed to accommodate variances between the contributions and actual expenditures);

Summary of Financing Strategies		
Financing Strategy	Tax Supported Strategy Parameters	Rate Supported Strategy Parameters
Strategy 1 Close in-year Funding Gap by 2040	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$155,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. ▪ The yearly revenue requirement is equivalent to 4.8% of the Municipality’s 2021 tax levy. 	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$179,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 8.6% of the Municipality’s 2021 utility rate revenues.

Summary of Financing Strategies		
Financing Strategy	Tax Supported Strategy Parameters	Rate Supported Strategy Parameters
Strategy 2 Close in-year Funding Gap by 2050	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$93,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. ▪ The yearly revenue requirement is equivalent to 2.9% of the Municipality's 2021 tax levy. 	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$105,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 5.0% of the Municipality's 2021 utility rate revenues.
Strategy 3 Close in-year Funding Gap by 2060	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$64,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. ▪ The yearly revenue requirement is equivalent to 2.0% of the Municipality's 2021 tax levy. 	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$72,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 3.5% of the Municipality's 2021 utility rate revenues.

- Of the three financing strategies identified for both tax and rate supported assets, strategy 3 poses the greatest risk to the Municipality as the infrastructure deficit continues to grow to 2060, and beyond. Strategies 1 and 2 demonstrate the infrastructure deficit being controlled over the planning period. Detailed tables of each strategy are provided in Appendix E; however, the tax supported cumulative infrastructure gaps are summarized in the graph below.



1. INTRODUCTION

The Municipality of Casselman's 2021 Asset Management Plan (2021 Plan) provides the Municipality with a tool to assist in capital financing decisions. The Plan covers all municipal assets: equipment, vehicles, buildings, land improvements, roads and related, stormwater, water, and sewer systems.

The 2021 Plan follows the format set out by the Ministry of Infrastructure through the Building Together: Guide for Municipal Asset Management Plans and it has also been developed to be consistent with the requirements of Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17) and the Municipality's Strategic Asset Management Policy. All figures reported in this 2021 Plan are in constant 2021 dollars and therefore should be adjusted annually to account for the effects of inflation.

An Excel based asset management financial model has been developed as part of the 2021 Plan. The model contains the Municipality's asset inventory and it is intended to be updated on a regular basis to inform future capital investment decisions. The model contains the information required to update the State of the Local Infrastructure Report Cards presented in Appendix B, which can be reproduced annually to help Council and the public understand the state of assets and overall funding levels.

A. ASSET MANAGEMENT OVERVIEW

Well-managed public infrastructure is vital to the prosperity and quality of life of communities. Given the range and scope of services provided, Ontario municipalities have a special responsibility in ensuring that infrastructure is planned, built, and maintained in a sustainable way. A detailed asset management plan is essential to carry out this responsibility. Asset management has several benefits, including:

- Municipality can make informed and traceable decisions;
- Municipality has the opportunity to coordinate and plan accordingly by taking a risk-based approach to asset management;
- Higher customer satisfaction is possible;
- Documents a funding plan and strategy to manage infrastructure; and
- Demonstrates compliance with regulations and legislation.

Asset management is an ongoing practice in the Municipality of Casselman. Council and staff have applied sound asset management principles to maintain records on tangible capital assets, monitor asset performance, and plan for infrastructure acquisition, repair, rehabilitation, and replacement over the long-term.

The purpose of the 2021 Plan is to build on existing practices by identifying how best to manage municipal infrastructure over the planning period to 2060. A strategy for maintaining infrastructure so that existing service levels are maintained is an important element. In this respect, the 2021 Plan has been prepared to be consistent with the Municipality's Strategic Asset Management Policy. Ultimately, the 2021 Plan will provide Council with information that can guide sustainable infrastructure investment decisions.

B. ONTARIO'S ASSET MANAGEMENT REGULATION (O. REG. 588/17)

In 2015, the Province of Ontario established the Infrastructure for Jobs and Prosperity Act. The purpose of this Act is to establish mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth, protection of the environment, and incorporate design excellence into infrastructure planning.

In December 2017, Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure (O. Reg. 588/17) was passed under the Infrastructure for Jobs and Prosperity Act. The regulation requires municipalities to develop a Strategic Asset Management Policy, which will help municipalities document the relationship between their Asset Management Plan and existing policies and practices as well as provide guidance for future capital investment decisions. Municipality Council approved the Strategic Asset Management Policy in 2019.

The regulations also contain more specific requirements on the type of analyses municipal asset management plans should include. The aim is to provide guidance to municipalities so that asset management plans are more consistent across the Province. Furthermore, in March 2021 the Province amended the regulation to extend the regulatory timelines by one year. Table 1 provides a summary of the key regulatory timelines as outlined by Regulation 588/17 and where the Municipality currently stands in the timeline.

**Table 1
O. Reg. 588/17 Timeline**

Regulation Timeline	Requirement	Progress
July 1, 2019	<ul style="list-style-type: none"> ▪ Municipalities shall prepare their first strategic asset management policy. ▪ Municipalities shall review, and if necessary, update the policy every 5 years. 	<ul style="list-style-type: none"> ▪ Municipality Council approved the Strategic Asset Management Policy in 2019. ▪ The next review is expected in 2024, although earlier reviews are encouraged whenever a change in policy directives occurs.
July 1, 2022	<ul style="list-style-type: none"> ▪ Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets. ▪ The current levels of service must be defined for all core assets. 	<ul style="list-style-type: none"> ▪ This 2021 Plan has incorporated the information from the Municipality's asset inventory. The inventory has incorporated condition data for the engineered services of roads, stormwater, water and sewer. ▪ Current level of service measures have been identified through this plan, with the Municipality expecting to develop other metrics on an ongoing basis. ▪ It is expected that service level data continue to be monitored and refined over the long-term.
July 1, 2024	<ul style="list-style-type: none"> ▪ Every municipality shall prepare an asset management plan in respect of all other municipal infrastructure assets. ▪ The current levels of service must be defined for all other municipal assets 	<ul style="list-style-type: none"> ▪ This 2021 Plan has incorporated all non-core assets contained in the Municipality's inventory. Some of these assets include condition assessments based on internal staff reviews. ▪ Current level of service measures have been identified through this plan, with the Municipality expecting to develop other metrics on an ongoing basis.
July 1, 2025	<ul style="list-style-type: none"> ▪ Municipalities must establish proposed levels of service for a minimum of 10 years. ▪ A lifecycle management and financial strategy that covers a minimum of 10 years. 	<ul style="list-style-type: none"> ▪ The Municipality is expecting to develop the analysis needed to establish proposed levels of service and a financial plan to achieve the proposed levels of service. ▪ The proposed levels of service will be established through consultation with Council and the public in a subsequent update of this 2021 Plan.

C. ASSET MANAGEMENT PLAN STRUCTURE

The 2021 Plan is developed to be consistent with the structure recommended through the 2013 Building Together: Guide for Municipal Asset Management Plans. At the same time, it has been developed to meet the requirements of O. Reg. 588/17. Table 2 below provides a guide to the sections of the 2021 Plan.

Table 2 Guide to the 2021 Asset Management Plan	
Section	Requirement
Section 2 - State of Local Infrastructure	Summarizes the state of the Municipality's infrastructure with reference to infrastructure quantity and quality. Additional details are provided in Appendix B.
Section 3 - Level of Service	A summary of the current levels of service is presented as well as recommendations on additional metrics the Municipality can look to track in the future. Additional details are provided in Appendix C.
Section 4 - Asset Management Strategy	Sets out several strategies that will assist the Municipality in maintaining assets so that current service levels are maintained. This section also includes a risk analysis of Municipality assets. Additional details are provided in Appendix D.
Section 5 - Financing Strategy	Establishes how asset management can be delivered in a financially sustainable way for both tax and utility rate supported services. Additional details are provided in Appendix E.
Section 6 – Continuous Improvements and Updates	Provides key recommendations on how to administer the 2021 Plan and keep it up to date.
Section 7 - Conclusions and Recommendations	Provides recommendations based on the analysis undertaken.

2. STATE OF LOCAL INFRASTRUCTURE

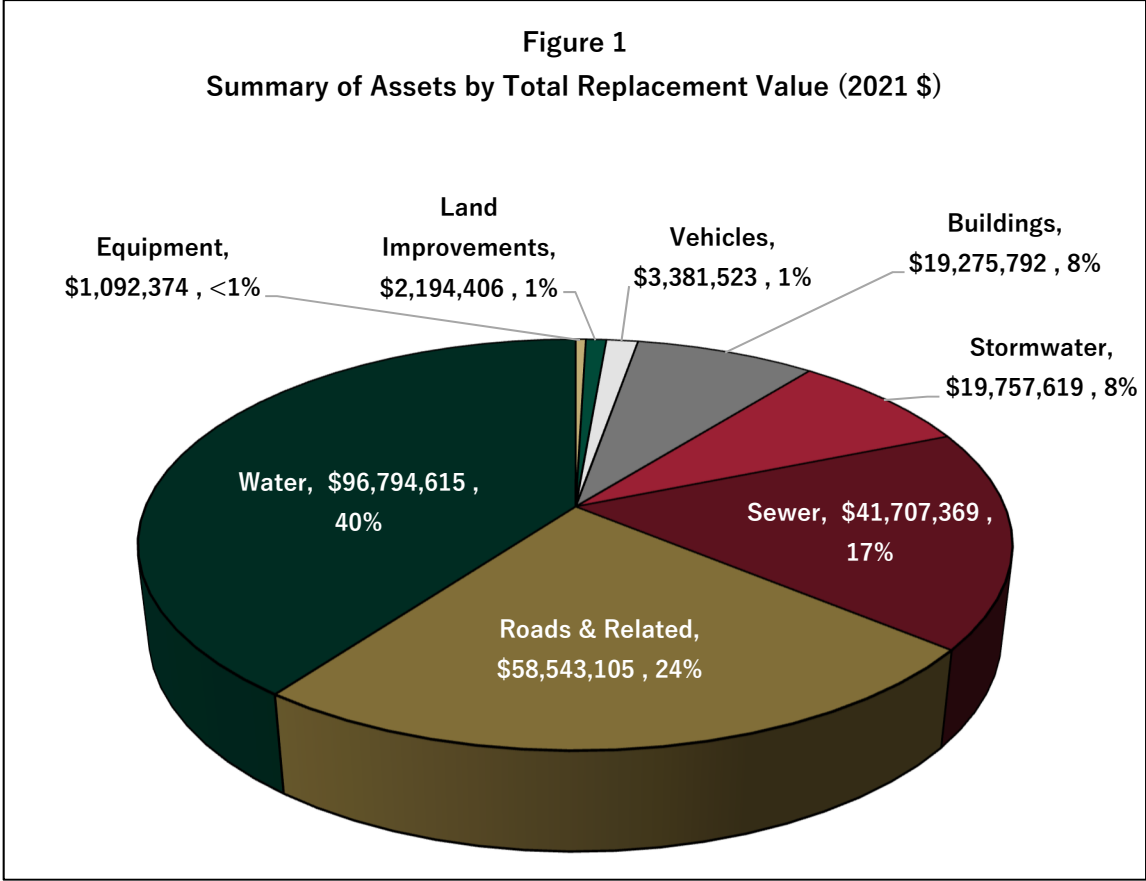
This section provides a summary of the Municipality's assets with reference to asset quantity and quality. Some assets have condition assessments based on engineering inspections (roads, water and sewer), while the balance of assets considered are based on the useful life of the asset relative to its age as well as independent staff assessments. Useful life assumptions for the assets considered under this 2021 Plan were acquired from the Municipality's tangible capital asset information. Detailed technical information on the asset inventory, remaining useful life and conditions for each asset category is provided in Appendix B.

A. REPLACEMENT COST OF INFRASTRUCTURE

The replacement cost for all Municipality assets considered in the 2021 Plan is estimated at \$242.7 million (represented in constant 2021 dollars). The largest share is related to water and accounts for about \$96.8 million (40%) of the total replacement cost. The next highest share is attributed roads and related at \$58.5 million (24%) and this is followed by the sewer system at \$41.7 million (17%).

The other asset categories in the Municipality's asset portfolio make up the remaining \$45.7 million (19%). These are made up of \$19.8 million (8%) for the stormwater system, \$19.3 million (8%) for buildings, \$3.4 million (1%) in vehicles, \$2.2 million (1%) for land improvements and \$1.1 million (<1%) in equipment assets.

The replacement costs have been developed based on historical information maintained by staff in the asset inventory, recent benchmark costs and costs based on the development charges background study. Where information was not available, historical acquisition costs were inflated to current 2021 dollars at a rate of 2%. Detailed replacement cost for each asset category is provided in Appendix B.



Note: Replacement costs are expressed in constant 2021 dollars.

B. SUMMARY OF STATE OF LOCAL INFRASTRUCTURE

Table 3 provides a summary of the state of local infrastructure for all asset categories considered in this study which is valued at \$242.7 million. The weighted remaining useful life (WRUL) and weighted average condition (WAC) for each asset category has been derived relative to the replacement value of each asset. Detailed information is provided in Appendix B. The table illustrates several key findings:

- Weighted Remaining Useful Life:** the WRUL of the Municipality’s assets is approximately 17 years. The weighted average is largely driven by the relative age of buildings, and the storm and sewer systems, which have well over 17 years of useful life remaining on average. Roads, which includes paved roads and related infrastructure, show 11 years of remaining useful life on average, however, this value does not reflect the condition of the road network, and is solely based on the acquisition year recorded in the asset inventory.

- **Weighted Condition:** Overall, the Municipality’s assets are determined to be in Good condition. Buildings, and the stormwater and sewer systems are maintained in Good condition, the water system is maintained in Very Good condition, while the remaining assets are considered to be in Fair condition.

Table 3 Summary State of Local Infrastructure				
Asset Type	Replacement Cost 2021	Weighted Remaining Useful Life	Weighted Condition	
Equipment	\$ 1,092,374	4	Fair	3.0
Vehicles	\$ 3,381,523	3	Fair	3.3
Buildings	\$ 19,275,792	33	Good	4.0
Land Improvements	\$ 2,194,406	10	Fair	2.7
Roads & Related	\$ 58,543,105	11	Fair	3.5
Stormwater	\$ 19,757,619	30	Good	3.7
Water	\$ 96,794,615	10	Very Good	4.5
Sewer	\$ 41,707,369	31	Good	4.0
Total	\$ 242,746,803	17	Good	4.0

C. CONDITION ASSESSMENTS

Consistent with the Canadian National Infrastructure Report Card, as well as other major organization and institution reporting formats, a five-point rating scale was used to assign a condition to all assets. This methodology provides a standard and easy to understand way of reporting on the condition of assets. Table 4 summarizes the assumed parameters.

Table 4 Condition Assessment Parameters	
Condition Rating	Definition
Very Good	<ul style="list-style-type: none"> ▪ Well maintained, good condition, new or recently rehabilitated asset.
Good	<ul style="list-style-type: none"> ▪ Good condition, few elements exhibit existing deficiencies.
Fair	<ul style="list-style-type: none"> ▪ Some elements exhibit significant deficiencies. Asset requires attention.

Table 4 Condition Assessment Parameters	
Condition Rating	Definition
Poor	<ul style="list-style-type: none"> A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.
Very Poor	<ul style="list-style-type: none"> Widespread signs of deterioration, some assets may be unusable. Service is affected.

Assets were categorized in the 5-tier rating system on an asset by asset basis. Condition assessments for the roads, stormwater, water, and sewer components are based on the condition assessments developed through the 2014 AMP. These conditions were adapted to the 5-tier system. Furthermore, staff performed a high level review of the condition of assets. Wherever the condition of an asset was known, its condition was recorded from Very Poor to Very Good. Finally, wherever information was not available on the condition of assets the age of the asset was used as a proxy. Under this method, older assets are assumed to be in poorer condition. Table 5 below provides a summary of the asset categories and the methodology used to assign a condition. Additional details on the methodology used for condition assessments is provided in Appendix B.

Table 5 Condition Rating Methodology			
Condition Assessment	Roads & Related (2014 AMP)	Water & Sewer (2014 AMP)	All Other Asset Categories (% of Remaining Useful Life)
Very Good	5	5	80%-100%
Good	4	4	60%-80%
Fair	3	3	40%-60%
Poor	2	2	20%-40%
Very Poor	1	1	Less than 20%

Note: Condition assessments from the 2014 AMP were also based on a 5-tier rating system.

Moving forward, updating and identifying asset conditions should be part of regular inventory updates. There are several methods to identify asset condition. The ideal methods are outlined as follows:

1. Condition rating systems based on engineered metrics and professional standards. For example, Facility Condition Index for buildings, Pavement Condition Index for roads or professional mechanic inspections for vehicles. These metrics can then be translated into a 5-tier rating system. The municipality should continually update the conditions in the asset inventory to reflect changes in conditions or when assets are replaced.
2. Estimates based on expert staff opinion. This approach is important where there is low confidence that age and useful life represents a particular set. This method has already been used as part of the 2021 AMP and should continue to be utilized.
3. Estimates based on age and the remaining useful life of the asset. This has been used for all assets, which the Municipality was not able to provide a condition assessment based on existing knowledge or inspection. It is the intention that the Municipality move towards a condition assessment methodology using approach 1 and 2 as needed. With this said, this methodology can be utilized for lower valued assets that have a shorter useful life.

3. LEVEL OF SERVICE

Asset management decisions must be made with reference to the level of service planned for by the Municipality. Current service levels in Casselman have been developed based on a combination of internal asset management practices, community expectations, statutory requirements, and industry operation and safety standards. Typically, the level of asset investment made by the Municipality in any one year has been determined by funding availability. That said, the Municipality has in the past been responsive to repair needs to address immediate environmental or health risks. The Municipality has therefore done a good job in assessing and maintaining levels of service.

The community expects that services be delivered in a cost effective and efficient way. Generally, community expectations revolve around the Municipality's accessibility of "soft" services (e.g. recreation facilities; libraries; fire stations) within neighbourhoods. However, safety and performance are also important for core services such as roads, stormwater, water, and sewer infrastructure.

Developing levels of service and tracking over time is essential to measuring the success of service delivery and the asset management strategy overall. This section outlines current levels of service as they relate to the requirements outlined in Ontario Regulation 588/17.

A. CURRENT LEVELS OF SERVICE

The Municipality has determined the current levels of service through the analysis and model developed in this 2021 Plan. The current level of service measures for each asset category are summarized in Table 6:

- **Weighted Condition:** the condition of the Municipality's assets are determined to be in Good condition overall. The Municipality's buildings, stormwater, and sewer system are in Good condition and the water system is in Very Good condition. Equipment, vehicles, land improvements and roads and related assets are considered to be in Fair condition

It is important to note that assets in Fair condition may transition into the Poor or Very Poor category in the near future and may require attention in the short to medium term, if proper asset maintenance and rehabilitation is not achieved. It will be important for the Municipality to determine which assets in the Fair category should be prioritized to ensure that current levels of service do not decline.

Finally, it is important to note that O. Reg. 588/17 includes a prescribed set of level of service measures. Table 6 includes these level of service measures as required in the regulation, a brief summary is provided below:

- **Roads:** The average pavement condition index value of the roads is 3.5 (or Fair condition) based on the 5-tier scale used in the 2014 AMP. The ratio of lane kilometres to land area is 490%, largely attributed to Casselman's small urban land area and a road network that serves the entire municipality. All municipal roads are paved with no gravel roads.
- **Storm System:** It is assumed that the current system is resilient to 5-year and 100-year storms based on conversations with municipal staff. Staff have identified only a few properties in a potential flood zone, with this said there has not been any floods in recent years and the risk remains low.
- **Water System:** The Municipality ensures the water system operates in a safe and efficient manner and provides for clean drinking water to residents that exceeds standards. As the Municipality is entirely serviced nearly 100% of residents are connected to the system and fire flow is available throughout the Municipality. No water boil advisories or watermain breaks have occurred in the past few years.
- **Sewer System:** The Municipality ensures the sewer system operates in a safe and efficient manner and meets all Provincial regulatory requirements. There are no events of sewer flow exceeding capacity or sewer backups in the last few years. There have been some issues with ammonia discharge, however, it is still within acceptable range and municipal staff continues to monitor this closely on a regular basis.

B. COSTS TO MAINTAIN CURRENT LEVELS OF SERVICE

The Municipality undergoes reviews of the levels of service and services it provides on an annual basis through the budget process. Therefore, the Municipality considers the short-term implications of any changes in the level of service with consideration to the availability of funds and impacts to residents through the tax and water/wastewater rates. The AMP considers the longer term costs of maintaining levels of service over a 40-year period. To do so the financing strategy considers three financing strategy scenarios which are discussed further in Section 5.

**Table 6
Municipality of Casselman
Level of Service Tracker**

Asset Category	Value to Residents	Corporate Level of Service/Objective	Community Level of Service (as per O. Reg. 588/17)		Description of LOS Measure	Source of Information	Current LOS	Notes	
Equipment	Cost Efficiency	Providing equipment in an efficient manner.			Total annual budget maintenance expenditures	2021 Budget	\$ 17,916		
					Annual budget maintenance per household	2021 Budget	\$ 12.06		
					Annual budget maintenance per capita	2021 Budget	\$ 5.03		
	Reliability	Providing reliable equipment.			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Fair	Based on replacement value.	
					% of assets at or above "Good" or "Very Good" condition	AMP	43%	Based on replacement value.	
					% of assets beyond their useful life	AMP	39%	Based on replacement value.	
Vehicles	Cost Efficiency	Providing vehicles in an efficient manner.			Total annual budget maintenance expenditures	2021 Budget	\$ 65,573		
					Annual budget maintenance per household	2021 Budget	\$ 44.13		
					Annual budget maintenance per capita	2021 Budget	\$ 18.40		
	Reliability	Providing reliable vehicles.			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Fair	Based on replacement value.	
					% of assets at or above "Good" or "Very Good" condition	AMP	31%	Based on replacement value.	
					% of assets beyond their useful life	AMP	3%	Based on replacement value.	
	Reliability	Providing reliable land improvements.			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Fair	Based on replacement value.	
					% of assets at or above "Good" or "Very Good" condition	AMP	14%	Based on replacement value.	
					% of assets beyond their useful life	AMP	9%	Based on replacement value.	
	Buildings	Cost Efficiency	Providing buildings in an efficient manner.			Total annual budget maintenance expenditures	2021 Budget	\$ 21,200	
						Annual budget maintenance per household	2021 Budget	\$ 14.27	
						Annual budget maintenance per capita	2021 Budget	\$ 5.95	
Reliability		Providing reliable buildings.			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Good	Based on replacement value.	
					% of assets at or above "Good" or "Very Good" condition	AMP	71%	Based on replacement value.	
					% of assets beyond their useful life	AMP	0%	Based on replacement value.	
Roads	Legislative	To meet reporting requirements of O. Reg. 588/17	Description, which may include maps, of the road network in the municipality and its level of connectivity.	The municipality is made up of a small urban area with 25km of paved roads. The municipality has no gravel roads. The Municipality's asset management financial model includes a detailed inventory of each road segment, and indicates if the roads include a curb/gutter. Furthermore the inventory	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality (O. Reg. 588/17).				
					Arterial		N/A		
					Collector		N/A		
					Local	AMP	490%	Assumed all roads are local roads.	
	Description or images that illustrate the different levels of road class pavement condition.	The Municipality's asset management financial model includes a detailed inventory of each road segment based on the 5-tier scale. The data on conditions is based on the assessments developed through the 2014 AMP.	1. For paved roads in the municipality, the average pavement condition index value (O. Reg. 588/17).	AMP	3.50				
			2. For unpaved roads in the municipality, the average surface condition (O. Reg. 588/17).	AMP	N/A	No gravel roads in the Municipality			
	Cost Efficiency	Providing road services in an efficient manner.				Total annual budget maintenance expenditures	2021 Budget	\$ 264,420	
						Annual budget maintenance per household	2021 Budget	\$ 177.94	
						Annual budget maintenance per capita	2021 Budget	\$ 74.21	
Annual budget per lane km of roads						2021 Budget	\$ 10,535		

**Table 6
Municipality of Casselman
Level of Service Tracker**

Asset Category	Value to Residents	Corporate Level of Service/Objective	Community Level of Service (as per O. Reg. 588/17)		Description of LOS Measure	Source of Information	Current LOS	Notes
Stormwater	Legislative	To meet reporting requirements of O. Reg. 588/17	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	Appendix C includes maps of the Municipality's linear stormwater system. The Municipality is a small urban area which is completely serviced by the storwater system.	1. Percentage of properties in municipality resilient to a 100-year storm (O. Reg. 588/17).	Departmental	100%	Staff have identified only few properties in a flood zone although there has not been any floods in recent years.
					2. Percentage of the municipal stormwater management system resilient to a 5-year storm (O. Reg. 588/17).	AMP	100%	Based on assets that have 1 or greater years of remaining useful life.
	Reliability	Providing reliable stormwater infrastructure.			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Good	Based on replacement value.
					% of assets at or above "Good" or "Very Good" condition	AMP	73%	Based on replacement value.
					% of assets beyond their useful life	AMP	0%	Based on replacement value.
Water	Legislative	To meet reporting requirements of O. Reg. 588/17	1. Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	Appendix C includes maps of the Municipality's linear water system and fireflow connections.	1. Percentage of properties connected to the municipal water system (O. Reg. 588/17).	Departmental	Almost 100%. Only 10 not connected.	
			2. Description, which may include maps, of the user groups or areas of the municipality that have fire flow.		2. Percentage of properties where fire flow is available (O. Reg. 588/17).	Departmental	100%	
			Description of boil water advisories and service interruptions.	The Municipality has not had any boil water advisories in recent years. There have been some issues with water discoloration, however this does not affect the safety of the water. The Municipality conducts over 450 analyses per year to ensure that water meets quality standards and complies with the Safe Drinking Water Act, 2002. The	1. The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system (O. Reg. 588/17).	Departmental	0	
					2. The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system (O. Reg. 588/17).	Departmental	0	
	Cost Efficiency	Providing water services in an efficient manner.			Total annual budgeted maintenance expenditures	2021 Budget	\$ 60,000	
					Annual budget maintenance per household	2021 Budget	\$ 40.38	
					Annual budget maintenance per capita	2021 Budget	\$ 16.84	
	Reliability	Providing reliable water services			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Very Good	Based on replacement value.
					% of assets at or above "Good" or "Very Good" condition	AMP	98%	Based on replacement value.
					% of assets beyond their useful life	AMP	0%	Based on replacement value.

**Table 6
Municipality of Casselman
Level of Service Tracker**

Asset Category	Value to Residents	Corporate Level of Service/Objective	Community Level of Service (as per O. Reg. 588/17)		Description of LOS Measure	Source of Information	Current LOS	Notes
Wastewater	Legislative	To meet reporting requirements of O. Reg. 588/17	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system.	Appendix C includes maps of the Municipality's linear sewer system.	Percentage of properties connected to the municipal wastewater system (O. Reg. 588/17).	Staff/department knowledge or master plan reports	Almost 100%. Only 7 users are not connected to the sewer system	
			1. Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes.	The Municipality has a dedicated stormwater system.	1. The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system (O. Reg. 588/17).	Staff/department knowledge or master plan reports	0	
			2. Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	There have not been any overflow events in recent years.	2. The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system (O. Reg. 588/17).	Staff/department knowledge or master plan reports	0	
			3. Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes.	The Municipality has a dedicated stormwater system in order to mitigate the occurrence of stormwater entering the sewer system.	3. The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system (O. Reg. 588/17).	Staff/department knowledge or master plan reports	There have been some issues with ammonia discharge but these are still within acceptable levels. The Municipality continue to monitor this closely on regular basis.	
			4. Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events described in paragraph 3.					
			5. Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system.	The Municipality adheres to all provincial regulations. There have been some recent issues around ammonia discharge however these remain within acceptable levels.				
	Cost Efficiency	Providing wastewater services in an efficient manner.			Total annual budget maintenance expenditures	2021 Budget	\$ 57,750	
					Annual budget maintenance per household	2021 Budget	\$ 38.86	
					Annual budget maintenance per capita	2021 Budget	\$ 16.21	
	Reliability	Providing reliable wastewater services			Average weighted condition assessment ("Very Poor" to "Very good")	AMP	Good	Based on replacement value.
					% of assets at or above "Good" or "Very Good" condition	AMP	89%	Based on replacement value.
					% of assets beyond their useful life	AMP	0%	Based on replacement value.

4. ASSET MANAGEMENT STRATEGY

This section sets out an action plan that will assist the Municipality in maintaining assets so that current service levels are maintained. The asset management strategy relates to a set of actions that, taken together, has the lowest total cost to maintain assets in a state of good repair as defined in the Building Together: Guide for Municipal Asset Management Plans.

The asset management strategy includes current practices and potential future practices related to non-infrastructure solutions, maintenance activities, renewal/rehabilitation, disposal, and expansion activities. The final component of this section includes a risk analysis, which can be used to assist Municipal staff and Council measure and manage risks to assets to maintain current levels of service.

A. A SET OF PLANNED ACTIONS

The Municipality employs various practices to maintain current levels of service. This set of existing actions involve activities to maintain assets in a state of good repair and to ensure that assets continue to be in service for their full life cycle, and in many cases, beyond the expected design life. Table 7 outlines the set of planned actions the Municipality undertakes to maintain assets. The set of existing actions and planned activities are summarized for each of the asset categories in Appendix D.

Table 7 Planned Actions		
Category	Description	Example
Non-infrastructure Solutions	<ul style="list-style-type: none"> Actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, managed failures, etc.). 	<ul style="list-style-type: none"> Road work completed jointly with water or sewer main replacement Water conservation campaigns Feasibility and design studies to construct new facilities or repair existing ones

Table 7 Planned Actions		
Category	Description	Example
Maintenance Activities	<ul style="list-style-type: none"> ▪ Servicing assets on a regular basis in order to fully realize the original service potential. Maintenance will not extend the life of an asset or add to its value. Not performing regular maintenance may reduce an asset's useful life. 	<ul style="list-style-type: none"> ▪ Road spot repairs, cleaning, cutting vegetation, pothole repair, winter maintenance, gravel surface, etc. ▪ Vehicle fluid changes, repairs, components replacements, etc. ▪ Facility lights, ceiling tiles, plumbing, etc.
Renewal/ Rehabilitation Activities	<ul style="list-style-type: none"> ▪ Mostly associated to significant repairs designed to extend the useful life of an asset. These types of activities are typically done at key points in the lifecycle of an asset to ensure the asset reaches its designed useful life. 	<ul style="list-style-type: none"> ▪ Sidewalk spot repair ▪ Catch basin repairs ▪ Engine or transmission overhaul in vehicles ▪ Building renovations or improvements
Replacement Activities	<ul style="list-style-type: none"> ▪ Activities that are expected to occur once an asset has reached the end of its useful life and renewal/ rehabilitation is no longer an option. 	<ul style="list-style-type: none"> ▪ Replacement of vehicles ▪ Asset replacement is common for heavily deteriorated linear infrastructure
Disposal Activities	<ul style="list-style-type: none"> ▪ The activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed. Typically, disposal costs are accounted under replacement activities. Some assets, such as landfills, may have perpetual maintenance costs. 	<ul style="list-style-type: none"> ▪ Landfill retirement obligations ▪ Disposal of assets that may be harmful to environment
Expansion Activities	<ul style="list-style-type: none"> ▪ Planned activities required to extend or expand municipal services to accommodate the demands of growth. 	<ul style="list-style-type: none"> ▪ Construction of roads, water, sewer and stormwater infrastructure to service new development ▪ Construction of new recreation facilities to service increased demand from growth

It should be noted that the Municipality undertakes all the activities described above, however, the Municipality’s budget generally accounts for these expenditures in different categories. Specific asset management strategies based on existing practices in the Municipality are documented in Appendix D. It is recommended that the Municipality continue to track the asset management activities required to continue to maintain levels of service.

B. RISK ANALYSIS

It is important to assess the risk associated with each asset and the likelihood of asset failure. Asset failure can occur as the asset reaches its limits and can jeopardize public/environmental safety. In addition, certain assets have a greater consequence of failure than others. A risk matrix can help prioritize which assets should be repaired/replaced, even those which the Municipality has already identified to be in Poor or Very Poor condition. The evaluation rating is then linked to the condition assessment parameter discussed in Section II. The formula to determine asset risk is as follows:

$$\text{(Probability of Failure) X (Consequence of Failure) = (Risk Rating)}$$

Each of the components of the Risk Rating methodology is defined as follows:

- **Probability of Failure:** is directly linked to the condition of an asset. For example, an asset in Very Poor condition would have the probability of asset failure in the short term be high. This type of asset may be near the end of its useful life or has deteriorated significantly. Conversely it would be considered rare for an asset to fail in the short term if it is considered to be in Good or Very Good condition. Table 8 below outlines the definition of probability of failure used for the Municipality’s assets.

Table 8 Probability of Failure		
Condition	Probability of Failure	Description
Very Good	1	Rare
Good	2	Unlikely
Fair	3	Possible
Poor	4	Likely
Very Poor	5	Almost Certain

Note: Definitions are based on the MFOA Asset Management Framework.

Consequence of Failure: refers to the impact on the Municipality if an asset were to fail. The consequence of failure has been determined separately for each asset category, as the impact to the Municipality differs greatly by asset type. For example, if a fire emergency vehicle was not available for service, the potential impact could be severe compared to a vehicle used for administrative purposes. For the purposes of this analysis, assets were assigned a consequence of failure based on an assessment of the relative importance of the asset. Table 9 below outlines the definition of consequence of failure used for the Municipality’s assets. The consequence of failure, rated on a 1-5 scale, was weighted relative to each category in Table 9 depending on how impactful the consequence may be to the Municipality.

Table 9 Consequence of Failure	
Consequence of Failure	Description
1- Insignificant	No impact to operations.
2 - Minor	Minor impact to operations, all major operations can continue to function.
3 - Moderate	Moderate impact to operations some critical operations may need to stop functioning temporarily.
4 - Major	Major operations seize and some damage control necessary.
5 - Significant	All operations seize to function and major damage control is necessary.

Note: The consequence of failure was developed based on the description of assets.

- **Risk Rating:** categorizes assets based on the level of risk to the Municipality. The risk rating provides a guide to prioritize assets by determining which assets require attention first and which capital works can be deferred. Higher risk assets should be prioritized for attention in the short term by determining which of the lifecycle actions is required to be performed on the asset (see Appendix D). Table 10 below provides a summary of the risk matrix.

Table 10 Risk Matrix							
Evaluation Rating		Consequence of failure					Color Code
		1	2	3	4	5	
Probability of Failure	1	1	2	3	4	5	Very Low Risk
	2	2	4	6	8	10	Low Risk
	3	3	6	9	12	15	Moderate Risk
	4	4	8	12	16	20	High Risk
	5	5	10	15	20	25	Very High Risk

Table 11 presents the findings of the risk analysis and illustrates the Municipality’s assets rated from low to high risk. Most of the Municipality’s assets continue to have relatively low risk, and indication of good maintenance practices overall. Only land improvements are considered to have moderate risk, largely based on the condition of the assets and their age.

The risk of each asset and asset category has been determined with reference to the parameters outlined in Table 10 above. It is important to note, that the Municipality will need to continue regular maintenance activities and capital works moving forward to maintain current levels of service – this ensures assets do not further deteriorate posing greater risk to the corporation.

Table 11 Summary Risk Assessment			
Asset Category	Replacement Cost 2021	Risk (Weighted Average)	
Equipment	\$1,092,374	Low	6
Vehicles	\$3,381,523	Moderate	8
Buildings	\$19,275,792	Low	6
Land Improvements	\$2,194,406	Moderate	8
Roads & Related	\$58,543,105	Low	5
Stormwater	\$19,757,619	Low	7
Water	\$96,794,615	Low	5
Sewer	\$41,707,369	Low	7
Total	\$242,746,803	Low	6

It is important to recognize the risk associated with the Municipality’s ability to deliver the plan while recognizing that any deviation may affect the overall ability to deliver service. Table 12 below provides a summary of the identified risks, potential impacts and mitigating actions associated with the asset management program.

Table 12 Risk Associated to the Plan		
Identified Risk	Potential Impact	Mitigating Action
Failed Infrastructure	<ul style="list-style-type: none"> ▪ Delivery of service ▪ Asset and equipment damage 	<ul style="list-style-type: none"> ▪ Repair and rehabilitate as necessary ▪ Increase investment ▪ Non-infrastructure solutions

Table 12		
Risk Associated to the Plan		
Identified Risk	Potential Impact	Mitigating Action
Inadequate funding	<ul style="list-style-type: none"> ▪ Delivery of service ▪ Increased risk of failure ▪ Shorten asset life ▪ Defer funding to future generations 	<ul style="list-style-type: none"> ▪ Reductions of service ▪ Find additional revenue sources
Regulatory Requirements	<ul style="list-style-type: none"> ▪ Non-compliance ▪ Mandatory investments ▪ Increased costs 	<ul style="list-style-type: none"> ▪ Find additional revenue sources ▪ Lobby actions
Plan is not followed	<ul style="list-style-type: none"> ▪ Shorten asset life ▪ Inefficient investments ▪ Prioritization process failure ▪ Failure to deliver service 	<ul style="list-style-type: none"> ▪ Monitor and review ▪ Create asset management network ▪ Implement processes

5. FINANCING STRATEGY

The Municipality has continually contributed to capital over the past few years for both tax funded and rate funded services. In order to continue to maintain levels of service, the Municipality will need to monitor funding levels over the next few years. Furthermore, the Municipality maintains some funding in reserves, which further enhances Council's commitment to its strategic objective to ensure infrastructure sustainability.

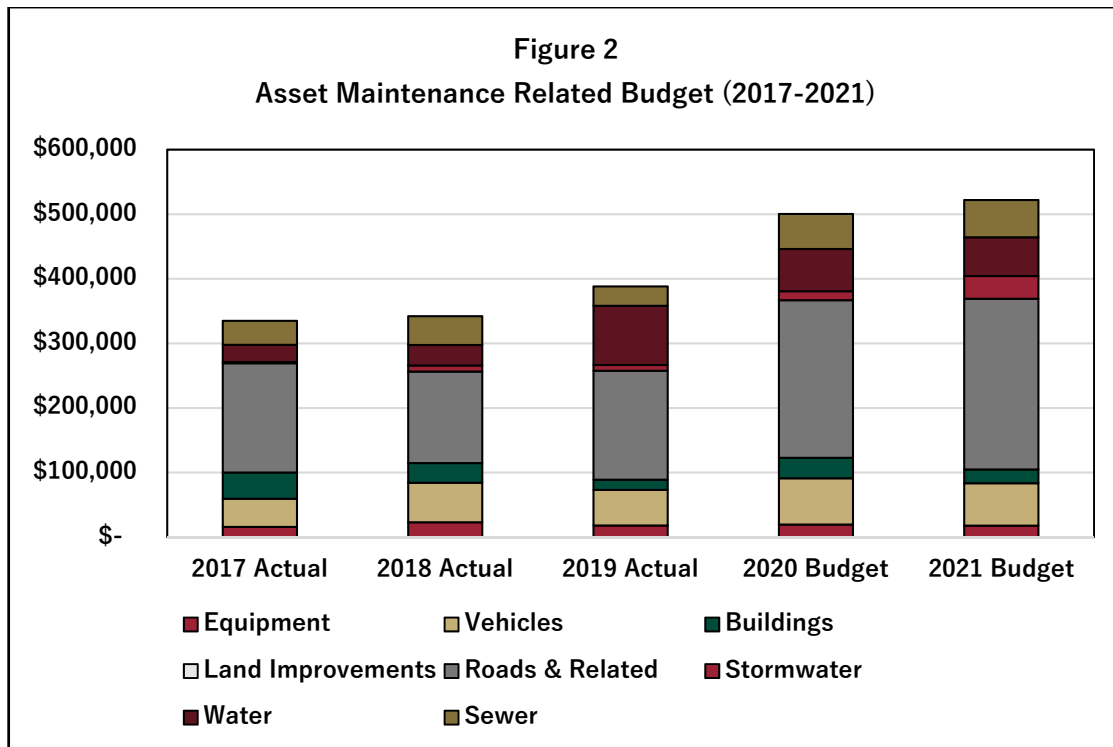
This section of the 2021 Plan is intended to help the Municipality build on the existing asset management practices already in place. The financing strategies presented provide the Municipality with feasible options to increase capital funding in a sustainable manner. At the same time, this section builds on the tools the Municipality already has in place to continue to monitor funding levels and the infrastructure gap over a 40-year time period.

A. OPERATING BUDGET EXPENDITURES

The Municipality has historically set aside funds to maintain its capital assets in a state of good repair. This has meant that sufficient funds have typically been available to deal with immediate and critical asset repair and rehabilitation needs. Overall, the Municipality has been increasing its operational and capital budget expenditures to maintain assets and fund capital asset repair and replacement over the past few years.

Figure 2 illustrates total asset maintenance related expenditures by asset category based on the Municipality's annual budgets. Total expenditures were about \$335,000 in 2017 and increased to about \$522,000 in 2021. The largest share of expenditures has consistently been related to roads and related accounting for over 50% of the maintenance budget for 2021, at approximately \$264,000.

It is anticipated that the Municipality's operating expenditures will be adjusted annually, at minimum, to account for the effects of inflation. Although, if additional asset management strategies are adopted by the Municipality, annual costs could exceed regular inflationary adjustments.



Source: Municipality of Casselman annual budgets.

B. CAPITAL REPLACEMENT SCHEDULE

The 2021 Plan includes an estimate of the timing for replacement of all assets. Using the risk assessment discussed in Section 4, a schedule for the replacement of assets has been developed on an asset by asset basis. Assets with a higher risk rating are prioritized earlier in the schedule to reflect a higher priority, while assets with lower risk ratings are moved further out into the future forecast to reflect a more “smoothed” expenditure outlook. The timing is based on a percentage of the useful life of the asset. Table 13 below provides a summary of the risk thresholds used to calculate timing of replacement needs.

Table 13					
Risk Thresholds for Asset Life Extension					
Percentage of Useful Life					Color Code
100%	80%	60%	40%	20%	Very Low Risk
80%	65%	50%	30%	16%	Low Risk
60%	50%	35%	25%	10%	Moderate Risk
40%	30%	25%	15%	2%	High Risk
20%	16%	10%	2%	0%	Very High Risk

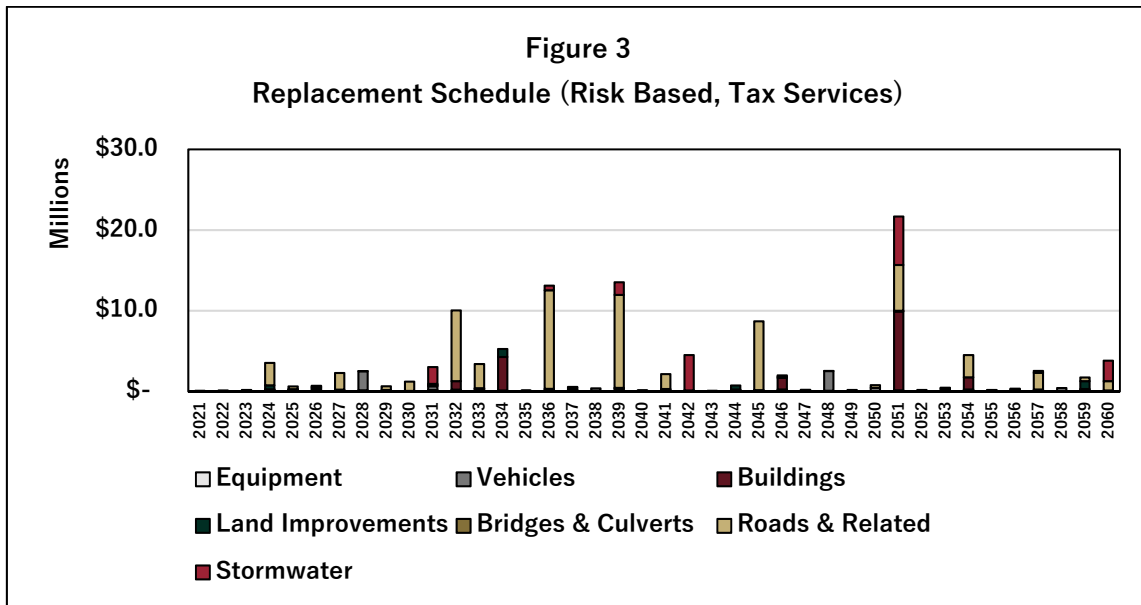
1. Tax Supported Assets

Figure 3 sets out the schedule of repair and replacement of assets, to maintain current levels of service for the tax supported assets considered in the 2021 Plan. Over the 40-year period, to 2060, the tax supported repair and replacement program totals about \$119.0 million. The average yearly replacement costs of these assets amount to approximately \$3.0 million per year.

Some larger valued assets have been identified over the next few years to require repair or replacement, in particular some major replacement projects include:

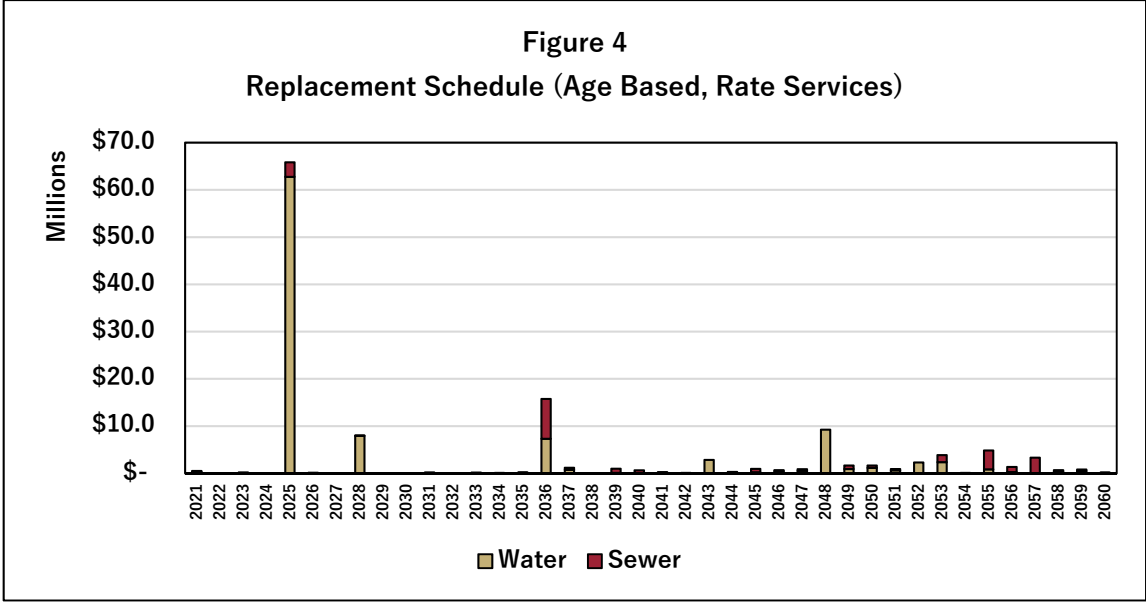
- **Equipment:** Over the next 5 years (2021-2025), various pieces of equipment are expected to be replaced as they have been identified to be in Poor or Very Poor condition. The total cost of these replacements amounts to approximately \$495,000. Of this amount \$115,000 is associated to a Zamboni expected to be replaced in 2024 and a photocopier valued at about \$50,000 is expected to be replaced in 2022.
- **Vehicles:** Over the next 5-years (2021-2025) about \$262,000 in vehicle replacements are expected. This includes a first response vehicle (\$65,000), Industrial Tractor (\$87,000), and Case Backhoe (\$110,000). It is also important to note that in 2028 significant vehicle expenditures are expected amounting to about \$2.4 million related to a pumper, a tanker, an aerial and a snow plow.
- **Buildings:** By 2025, the tennis court coating and fire hydrant at the JR Brisson Complex will require replacement at a cost of \$26,000 and \$9,000 respectively. It is important to note that in 2034, significant building expenditures of about \$4.2 million have also been identified related to components of the JR Brisson Complex.
- **Land Improvements:** By 2025, various land improvements will require repair or rehabilitation. Several major replacement projects include the splash water park at Parc Richelieu at \$160,000, lighting at the new ball field at \$112,000, outdoor rink \$121,000, and paving at Place Publique at \$79,000.
- **Roads:** In 2024, St. Isidore Street road rehabilitation work is expected to occur at a cost of \$2.7 million, which covers 1.2 km of road. Major roads replacement projects will also occur in 2036 totaling \$12.2 million including work on Laval Street, Montcalm Street, Sauve Terrace, Ste-Anne Street, and St-Jean Street. It will be important that the Municipality continue to monitor road conditions over the long-term.

- Storm System:** There are no storm assets that require repair or replacement over the short term as much of the system is relatively new, however, the Municipality will see major repair or replacement costs over the longer-term period as the system ages. Over the next ten years the three largest projects include 86m of pipe on Faucher Blvd (\$277,000), 70m of pipe on Lafleche Blvd (\$256,000) and another 91m of pipe also on Lafleche Blvd (\$338,000).



2. Rate Supported Assets

Figure 4 sets out the schedule of repair and replacement of assets, to maintain current levels of service for the rate supported (water and sewer) assets considered in the 2021 Plan. Over the 40-year period, to 2060, the rate supported repair and replacement program totals about \$146.6 million. The average yearly replacement costs of these assets amount to approximately \$3.7 million.



C. CAPITAL PROVISION SCHEDULE

A key component of the financing strategy is to identify the level of expenditure required on an annual basis to pay for asset management. Costs to maintain and eventually repair or replace municipal assets need to be understood and contributions to reserves and reserve funds need to be quantified. In this section, provisions for repair and replacement are calculated for each asset based on its remaining useful life and the anticipated cost of replacement in constant 2021 dollars. The aggregate of all individual provisions form an annual contribution to reserves for the purpose of asset repair and replacement.

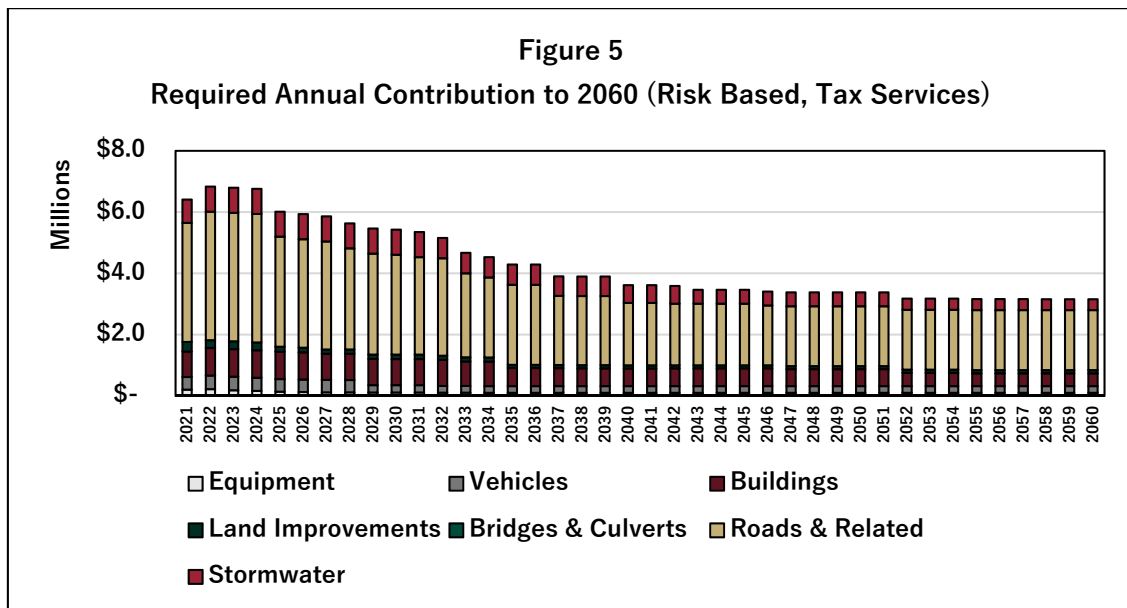
1. Tax Supported Assets

It is important to note that this provision includes costs associated to renewal/rehabilitation and replacement based on the replacement schedule in Figure 3 above. Furthermore, available tax supported capital reserves have been accounted and applied towards the 2021 infrastructure deficit.

Figure 5 shows the funds that would have to be contributed annually to reserves to maintain current levels of service for tax supported assets included in this 2021 Plan to 2060. Figure 5 demonstrates that:

- Average annual contributions over the 40-year period would have to be in the order of \$4.3 million per year (net of existing reserve funds), with road works as the most significant portions.

- Higher capital contributions would be required in the short-term for significant infrastructure expenditures identified in 2021, which amount to \$6.4 million (including transfers to reserves). However, there will likely be measures the Municipality could take to mitigate this financial pressure in 2021 (and future years). These measures are more fully discussed in Part E and G of this section.
- The Municipality will spend about \$969,300 (including grants, gas tax and transfers to reserves) in 2021 for repair/replacement of tax supported assets. The \$969,300 in capital spending is comprised of:
 - \$558,800 in tax levy capital funding (including reserve contributions);
 - \$112,500 in gas tax funding; and
 - \$298,000 in one-time grants.
- Investment in municipal assets would need to increase by over \$5.4 million to achieve the \$6.4 million requirement in 2021. It should be noted that of the 2021 capital funding sources, tax supported revenues are the most secure form of recurring revenue for the Municipality as other funding sources could be subject to review by the Province.

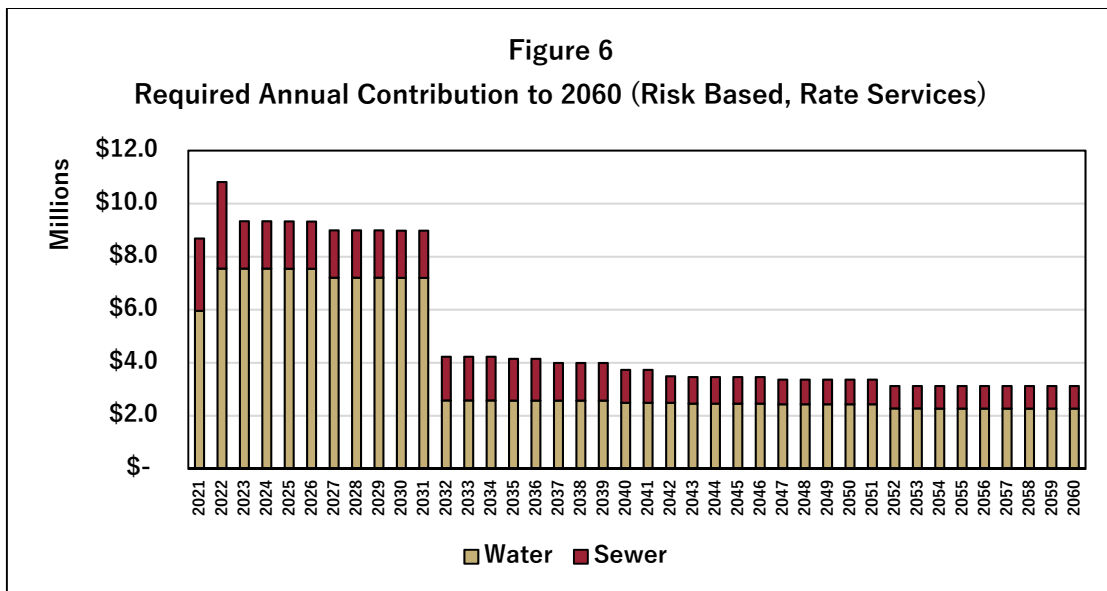


Note: Existing tax funded capital reserve funds amounting to \$505,000 have been applied against the annual requirement in 2021.

2. Rate Supported Assets

Figure 6 shows the funds that would have to be contributed annually to reserves to maintain current levels of service for rate supported assets included in this 2021 Plan to 2060. Figure 6 demonstrates that:

- Average annual contributions over the 40-year period would have to be in the order of \$5.1 million per year (net of existing reserve funds), with water works as the most significant portions.
- Higher capital contributions would be required in the short-term for significant infrastructure expenditures identified in 2021, which amount to \$8.4 million (including transfers to reserves). However, there will likely be measures the Municipality could take to mitigate this financial pressure in 2021 (and future years). These measures are more fully discussed in Part E and G of this section.
- The Municipality will spend nearly \$328,500 in 2021 for repair/replacement of rate supported assets (including transfers to reserves).
- Investment in municipal assets would need to increase by approximately \$4.8 million to achieve the \$5.1 million average requirement. The Municipality’s utility rate studies will continue to inform the level of investment required annually while considering future rate increases.



Note: Existing rate funded capital reserve funds amounting to \$2.1 million have been applied against the annual requirement in 2021.

D. CURRENT INFRASTRUCTURE DEFICIT

To implement sustainable asset management practices the Municipality needs to have an understanding of the current “infrastructure deficit” as well as the funding gaps that would arise should the required annual contributions to capital, identified in Part C: Capital Provision Schedule, be delayed.

The current infrastructure deficit shown in Table 15 represents the difference between the required in-year contributions to capital and the current contributions to capital for tax and rate supported assets in this 2021 Plan. Using the tax supported services as a reference, the total 2021 capital provision required is \$6.2 million (including infrastructure backlog) and current capital spending is \$3.3 million (includes capital from tax, transfer to reserves and gas tax). The current in-year infrastructure deficit is therefore \$2.9 million, which represents about 1.7% of the total tax supported replacement value. The infrastructure deficit would continue to grow should the required annual contributions to capital, identified in Part C, be delayed.

Table 15		
Infrastructure Deficit for Base Year 2021		
Description	Tax Supported	Rate Supported
Projected 2021 Capital Provision	\$6,407,000	\$8,689,000
Total 2021 Capital Spending (Budget)	\$969,000	\$328,000
Funding Gap	\$5,438,000	\$8,361,000
Cumulative Infrastructure Deficit	\$5,438,000	\$8,361,000
Cumulative Infrastructure Deficit as a Percentage of Total Replacement Value	5.2%	6.0%

Note: Total 2021 capital spending is derived from 2021 budget and includes in year-funding for capital from: tax levy (or utility rates), transfer to reserves, gas tax, OMAFRA/OCIF and one-time grants.

E. FINANCING STRATEGY

It is unrealistic to expect the Municipality to address the total infrastructure deficit in the short-term. Therefore, a long-term funding strategy that identifies options for addressing current and future asset expenditures is required. This analysis recognizes that the Municipality has not kept pace with the required contributions to perform the work set out in

the calculated asset repair and replacement schedule in Part B: Capital Replacement Schedule.

Tax Supported Assets

If the Municipality were to implement a funding strategy to eliminate the tax supported infrastructure deficit by 2060, the Municipality would be required to increase capital contributions on an annual basis by an average of about \$184,000 for 40 years. For 2021, the increase would be in addition to the \$559,000 tax supported capital funding, \$113,000 in Gas Tax funds and \$298,000 in one-time grants. The yearly revenue requirement is equivalent to 5.7% of the Municipality's 2021 tax levy revenues of about \$3.2 million. A detailed table of this strategy can be found in Appendix E – Table 1.

Eliminating the infrastructure deficit by 2060 is an aggressive objective and is an initiative the Municipality may not want to explore at this time; a few reasons include:

- The required capital contributions (to eliminate the deficit) will necessitate an increase to property taxes beyond a reasonable measure;
- The Municipality may need to decrease or limit funding of other key Municipality services or initiatives in lieu for capital repair and replacement activity;
- Assets can remain in use past their engineered design life and are capable of performing to meet the Municipality's current level of service under these circumstances. Therefore, in such instances, the asset does not necessarily need to be replaced by virtue of exceeding their design life; and
- Prudent asset management strategies, which are currently employed by the Municipality (Appendix D) can often extend the requirement of major repair or replacement of capital assets and may prolong the life of the asset.

Further to the above noted comments, three financing strategies were developed to illustrate a rational capital contribution level to meet asset replacement needs for tax supported assets as outlined in Figure 5. The financing strategies illustrate the “smoothed options” to the capital repair and replacement requirements identified in Part B. Assumptions for each of the three tax supported funding strategies is shown in Table 16 and each financing strategy is shown in Table 17.

Table 16	
Financing Strategy Key Assumptions	
Category	Assumptions
Tax Levy Support (including reserve contributions)	<ul style="list-style-type: none"> Existing 2021 tax supported capital funding of \$559,000 is assumed to be the starting point and base case for increasing annual capital contributions.
Gas Tax Reserve Fund	<ul style="list-style-type: none"> Gas tax funding for 2021 is approximately \$113,000. Post 2021 gas tax funding is assumed based on AMO allocations to 2023 and remain constant afterwards.
Other Grants	<ul style="list-style-type: none"> One-time government grants of approximately \$298,000 are assumed for 2021 only. This includes OMAFRA and OCIF.
Inflation	<ul style="list-style-type: none"> Financing strategy is expressed in constant 2021 dollars.
Existing Reserves	<ul style="list-style-type: none"> Existing reserve balances have been accounted and are used against the expenditures in 2021 for the purposes of forecast calculation.
Growth Assets	<ul style="list-style-type: none"> The financial requirements identified in the strategies below only consider the Municipality's existing asset base.

Table 17	
Summary of Financing Strategies – Tax Supported Assets	
Financing Strategy	Strategy Parameters
Strategy 1 Close in-year Funding Gap by 2040	<ul style="list-style-type: none"> Increase annual capital contributions by approximately \$155,000 per year. For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. The yearly revenue requirement is equivalent to 4.8% of the Municipality's 2021 tax levy.
Strategy 2 Close in-year Funding Gap by 2050	<ul style="list-style-type: none"> Increase annual capital contributions by approximately \$93,000 per year. For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. The yearly revenue requirement is equivalent to 2.9% of the Municipality's 2021 tax levy.

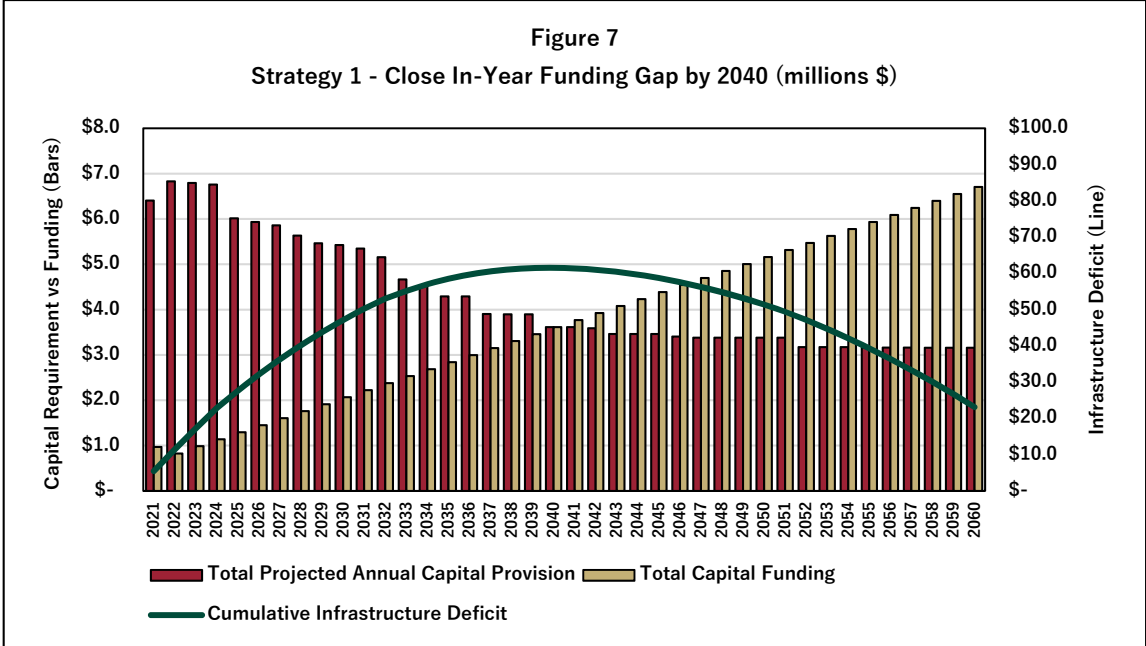
Table 17 Summary of Financing Strategies – Tax Supported Assets	
Financing Strategy	Strategy Parameters
Strategy 3 Close in-year Funding Gap by 2060	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$64,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$559,000 tax supported capital funding. ▪ The yearly revenue requirement is equivalent to 2.0% of the Municipality's 2021 tax levy.

Note: Key assumptions noted in Table 16 are maintained for all three financing strategies.

1. Financing Strategy 1 – Close in-year Funding Gap by 2040

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach \$61.5 million before the Municipality begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2040 (Figure 7). The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision. This strategy represents an annual increase in capital contributions (including transfers to reserves) of about \$155,000 per year. This represents 4.8% of the Municipality's 2021 net tax levy budget of about \$3.2 million. A detailed table of Strategy 1 can be found in Appendix E – Table 2.

It is important to note that even though the in-year funding gap has been addressed by 2040, the infrastructure deficit poses risk to the Municipality. The cumulative deficit in 2040 of \$61.5 million is indicative of overdue assets that have fully depreciated and may be in Very Poor condition. These assets would need to be addressed in a longer time frame and are at risk for asset failure.

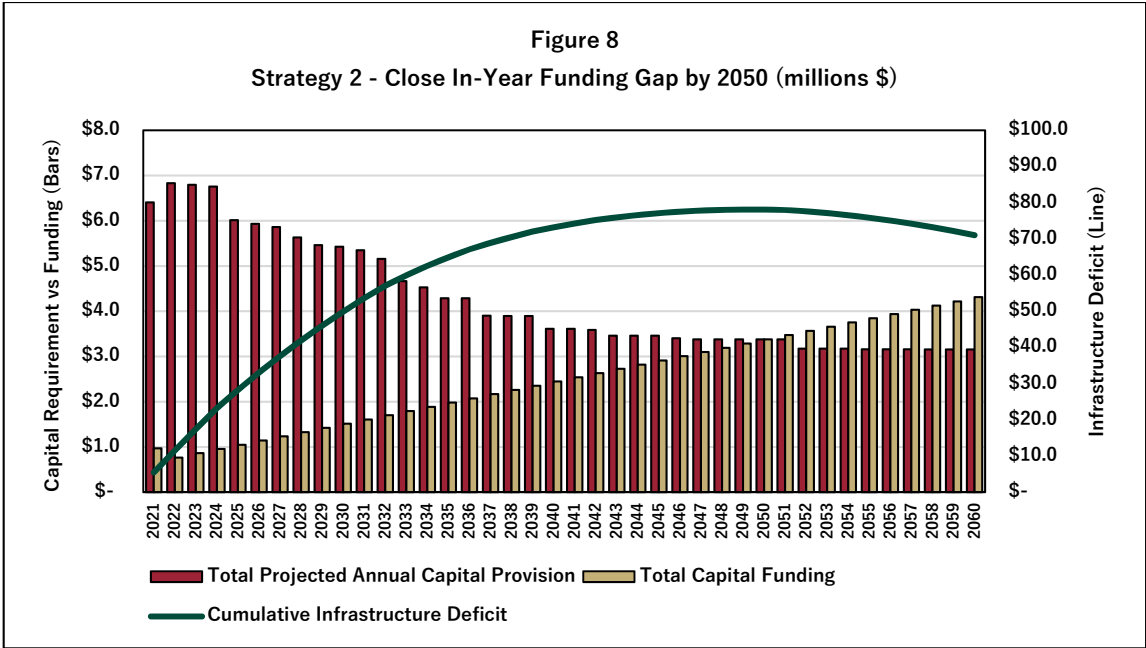


Note: The projected capital provision represents the annual requirement to repair and replace existing Municipality assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated).

2. Financing Strategy 2 – Close in-year Funding Gap by 2050

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach \$78.1 million before the Municipality begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2050 (Figure 8). The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision. This strategy represents an annual increase in capital contributions (including transfers to reserves) of about \$93,000 per year, representing 2.9% of the Municipality’s 2021 net budget of \$3.2 million. A detailed table of Strategy 2 can be found in Appendix E – Table 3.

It is important to note that even though the in-year funding gap has been addressed by 2050, the infrastructure deficit poses risk to the Municipality. The cumulative deficit in 2050 of \$78.1 million, is indicative of overdue assets that have fully depreciated and may be in very poor condition. These assets would need to be addressed in a longer time frame and are at risk for asset failure.

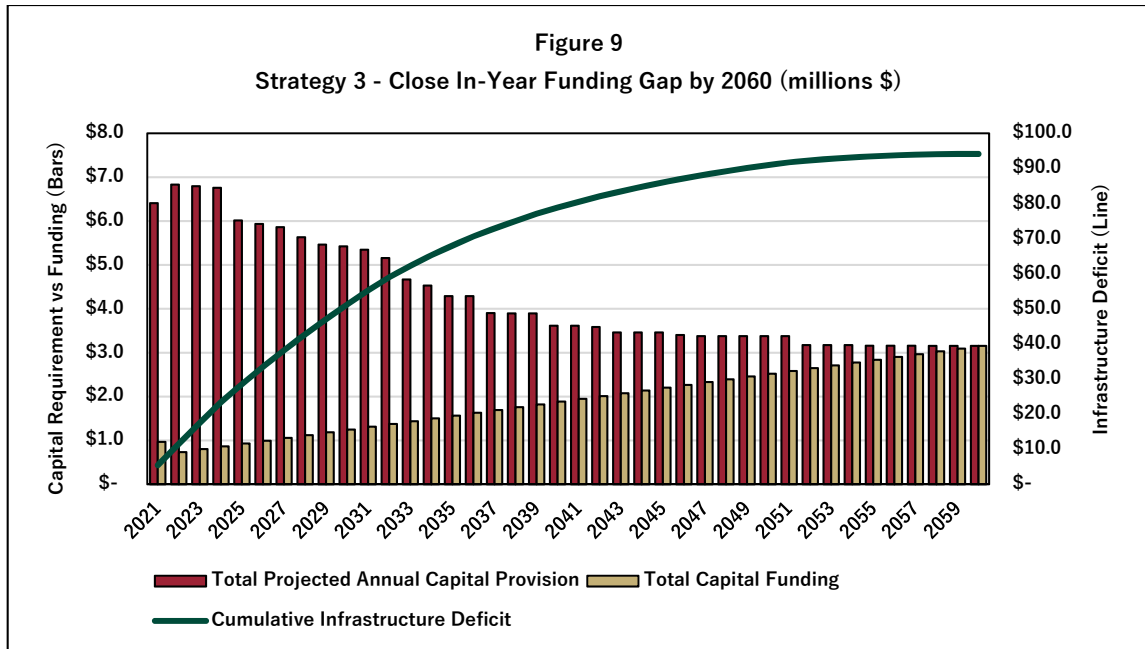


Note: The projected capital provision represents the annual requirement to repair and replace existing Municipality assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated).

3. Financing Strategy 3 – Close in-year Funding Gap by 2060

Given the capital expenditure requirement to meet the asset replacement needs, the cumulative infrastructure deficit will reach \$94.1 million before the Municipality begins to reduce this amount by increasing capital contributions by more than the annual provision requirement in 2060 (Figure 9). The infrastructure deficit will increase by the annual funding gap and decrease once the annual contributions are greater than the annual provision. This strategy represents an annual increase in capital contributions (including transfers to reserves) of about \$64,000 per year, representing 2.0% of the Municipality’s 2021 net budget of \$3.2 million. A detailed table of Strategy 3 can be found in Appendix E – Table 3.

It is important to note that even though the in-year funding gap has been addressed by 2060, the infrastructure deficit poses risk to the Municipality. The cumulative deficit in 2060 of \$94.1 million, is indicative of overdue assets that have fully depreciated and may be in very poor condition. These assets would need to be addressed in a longer time frame and are at risk for asset failure.



Note: The projected capital provision represents the annual requirement to repair and replace existing Municipality assets as scheduled, based on the condition of each asset and the remaining useful. The projected annual capital provision requirement shown is net of existing reserves (e.g. existing funds have been incorporated).

Rate Supported Assets

If the Municipality were to implement a funding strategy to eliminate the user rate supported infrastructure deficit by 2060, the Municipality would be required to increase capital contributions on an annual basis by an average of about \$245,000 for 40 years. For 2022, the increase would be in addition to the \$328,000 user rate supported capital funding.

To provide consistency with the analysis on the tax supported assets, similar timeframes for additional funding strategies were developed. Strategy 1 in the case of the rate supported assets provides a more aggressive target of closing the in-year funding gap by 2040 where strategies 2 and 3 provide for more modest rate impacts. Assumptions used to develop each strategy is summarized in Table 18.

The financing strategies identified in Table 18 portray the “smoothed options” to the rate supported capital repair and replacement requirements identified in Part B. Assumptions for each of the three funding strategies is shown below; however, it is expected that the Municipality incorporate this information in future utility rate setting studies to balance the annual asset management requirements with affordable user rates.

Table 18	
Summary of Financing Strategies – Utility Rate Supported Assets	
Financing Strategy	Strategy Parameters
Strategy 1 Close in-year Funding Gap by 2040	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$179,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 8.6% of the Municipality's 2021 utility rate revenues.
Strategy 2 Close in-year Funding Gap by 2050	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$105,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 5.0% of the Municipality's 2021 utility rate revenues.
Strategy 3 Close in-year Funding Gap by 2060	<ul style="list-style-type: none"> ▪ Increase annual capital contributions by approximately \$72,000 per year. ▪ For 2022, the increase would be in addition to the 2021 budgeted \$328,000 rate supported capital funding. ▪ The yearly revenue requirement is equivalent to 3.5% of the Municipality's 2021 utility rate revenues.

F. CAPITAL EXPENDITURE FORECAST

A capital expenditure forecast is outlined in Table 18. The forecast is based on the Municipality's 2021 operating budget and the replacement schedule from Section B. A provision for a level of service adjustment to account for requirements of O. Reg. 588/17 to define and implement desired levels of service has been included in 2025 and onwards. This provision amounts to \$50,000, which is approximately 1.5% of the 2021 tax levy of \$3.2 million. This amount is not a regulatory requirement, however it is expected that the Municipality may incur additional expenditures relating to public consultation, additional analysis or implementation costs related to defining proposed levels of service as part of O. Reg. 588/17 requirements by 2025. The Municipality's yearly infrastructure related capital and operating expenditures are subject to the yearly budget and are adjusted on an ongoing basis. The Municipality can however look to develop a 5 to 10 year capital program in the future.

Table 19 10-Year Expenditure Forecast (Tax Funded Services)					
Expenditures	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast
Maintenance Activities	\$ 317,700	\$ 317,700	\$ 317,700	\$ 317,700	\$ 317,700
Replacement Activities	\$ 118,947	\$ 176,064	\$ 3,530,689	\$ 612,123	\$ 696,561
Total	\$ 436,647	\$ 493,764	\$ 3,848,389	\$ 929,823	\$ 1,014,261
<i>Level of Service Adjustment</i>	\$ -	\$ -	\$ -	\$ 50,000	\$ 50,000
Grand Total Lifecycle Costs	\$ 436,647	\$ 493,764	\$ 3,848,389	\$ 979,823	\$ 1,064,261
Expenditures	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast	2031 Forecast
Maintenance Activities	\$ 317,700	\$ 317,700	\$ 317,700	\$ 317,700	\$ 317,700
Replacement Activities	\$ 2,291,437	\$ 2,503,672	\$ 644,851	\$ 1,220,003	\$ 3,024,683
Total	\$ 2,609,137	\$ 2,821,372	\$ 962,551	\$ 1,537,703	\$ 3,342,383
<i>Level of Service Adjustment</i>	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
Grand Total Lifecycle Costs	\$ 2,659,137	\$ 2,871,372	\$ 1,012,551	\$ 1,587,703	\$ 3,392,383

G. COSTS TO MAINTAIN LEVELS OF SERVICE AND RELATIONSHIP WITH FINANCING STRATEGIES

As outlined in Figure 2 total budgeted asset maintenance expenditures in 2021 were about \$522,000. The largest share of expenditures has consistently been related to roads and related assets accounting for over 50% of the maintenance budget for 2021, at approximately \$264,000.

In addition, the Municipality will spend about \$969,300 (including grants, gas tax and transfers to reserves) in 2021 for repair/replacement of tax supported assets. The \$969,300 in capital spending is comprised of:

- \$558,800 in tax levy capital funding (including reserve contributions);
- \$112,500 in gas tax funding; and
- \$298,000 in one-time grants.

For water and sewer services, the Municipality will spend \$328,000 for repair/replacement of assets. This amount is associated to budgeted transfers for rate funded capital reserves.

Both the capital maintenance requirements (from operating) and the capital spending provision identified are attributed to maintaining the service level associated with the \$242.7 million of tax and rate supported assets.

Overall, this funding allocation is required to ensure the Municipality delivers the existing levels of service identified in Section 3 of the Asset Management Plan for both core and non-core infrastructure assets. Overall, it is recommended that the Municipality continues to monitor levels of service on an annual basis in the context of budget expenditures. In this manner, the Municipality can identify any significant changes in levels of service and identify if funding levels are appropriate to address any asset pressures.

Furthermore, the financing strategies represent options at maintaining the current levels of service from a long-term perspective. In summary, the following conclusions can be made:

- The option to “do nothing” and allow the infrastructure back-log to accumulate would mean that existing funding levels would not be sufficient to manage the infrastructure in place over the long-term. Therefore, the assets in service would deteriorate with a series of assets moving into poor and very poor condition which would effectively provide a reduction in the level of service over the short and long-term.
- Strategy 1 would ultimately result in a service level increase over the long-term as assets are replaced as required based on condition and useful life. Therefore, the deficit would largely be eliminated over the planning period. This strategy would represent a more optimal level of asset repair and replacement than existing trends and should be targeted with the determination of proposed levels of service moving forward.
- The adoption of either the 2nd or 3rd strategy would ensure, that over the long-term, the funding gap-stabilizes and the infrastructure deficit is controlled. Under this approach, the additional funding would allow for increased targeted investments in asset areas (such as: equipment, vehicles, land improvements, roads and related, etc.) currently in “fair” condition to ensure these assets don’t transition into the poor category in the next 5 -10 years therefore maintaining the existing level of service.
 - Also of importance, the assets in Good/Very Good condition require continued investment to ensure service levels are maintained. As these assets age, they may also transition in the Fair or lower category. Continued contributions to reserves will ensure funds are available whenever assets require works to be completed.

H. AVAILABLE FUNDING TOOLS

The following section discusses, at a high level, the range of tools available to the Municipality for funding capital expenditures.

Federal and Provincial Grants

Historically, the Municipality has had some success in securing grant funding from higher orders of government to assist in funding capital projects. The Municipality will continue to seek financial assistance from upper levels of government (where available) to fund non-growth related capital works.

The Municipality of Casselman has indicated that it expects to continue receiving Gas Tax funds – these funds have been incorporated into the financing strategies at current levels. The Municipality has indicated that other external grants, such as OCIF, may potentially be at risk in future years; therefore, no other future grant funding is assumed for the purposes of the financing strategy beyond 2021. If the Municipality continues to receive other funding sources over the long-term, it is expected that these funds would be directed to high-priority projects in an effort to reduce the overall infrastructure deficit.

Development Charges

Development charges may be imposed to pay for increased capital costs required because of increased needs for services arising from development. The Municipality of Casselman is currently undergoing a development charges background study. The study has identified approximately \$6.1 million of development charge eligible costs to 2031.

It is important that the Municipality consider the annual asset management requirements associated with any new assets acquired in addition to the net annual requirement for the Municipality's existing assets as identified in the previous sections. The 2021 development charges background study identified additional annual lifecycle expenditures of \$346,000 associated to the long-term repair and replacement of growth related assets.

Property Taxes and Utility Rates

According to the 2021 budget, property taxes represent about \$3.2 million in revenues, while utility rates account for an additional \$2.1 million. The use of property taxes to fund municipal tax supported services is the most secure source of funding for the Municipality. The most common and secure avenue to generate additional funding to support increased capital asset management functions would be to increase property tax revenues.

The Municipality manages utility rate supported infrastructure separately though water and sewer fees for serviced properties. The Municipality regularly reviews the utility rates and financial plans to ensure the systems are self funding.

Non-Utility Related User Fees

To the extent that user fees are being collected to fund repair and replacement of capital infrastructure, user fees should be allocated to capital reserves. The Municipality should look to review and ensure user fees are being utilized to the full extent as allowed under Provincial legislation. This will help alleviate funding pressures from the tax base and allow for greater flexibility to fund capital asset repair and replacement activities. Most commonly, municipalities undertake detailed user fee reviews of their building, planning and engineering fees in order to recover the full cost of providing services – the full cost recovery user fee rates generally incorporate a component for building capital replacement.

The Municipality reviews its building permit fees on an annual basis to ensure these fees recover costs associated to providing building permit related services. The reviews also account for capital costs associated to building permit services and these costs are reflected through the fees.

Public Private Partnerships

Public Private Partnerships (P3s) are a common tool for delivering infrastructure services throughout communities across Canada to build roads, hospitals, light rail transit, water and wastewater treatment facilities and other infrastructure. P3s can offer more effective project and lifecycle cost control and risk management than traditional procurement methods. The Municipality could explore P3s as a tool to carry out capital related activities.

Local Improvement Charges

Municipalities, through local improvement charges, have the ability to recover the costs of capital improvements made on public or privately owned land from property owners who will benefit from improvement. The Municipality could use the local improvement process to undertake a capital project and recover all or part of the cost of the project.

Developer Contributions

Municipalities obtain a wide-range of assets through developer contributions; these contributions can be “in kind” direct provision of assets or funded, partially or fully, through agreement. The contributions are typically facilitated through condition of a subdivision or site plan agreement under the *Planning Act*. An important consideration in determining the

level and extent of developer contributions is the Municipality's "local service definitions" which, under the *Development Charges Act* and *Planning Act*, are used to establish which type, and shares, of capital expenses are considered eligible for direct development contribution or funding.

Assets funded, or provided, under developer contributions are typically "first round" assets but can, in certain circumstances, include replacement of existing assets and funding of non-DC recoverable shares. An example of replacement of an existing asset is when an existing road requires improvements or upgrades as a result of a specific development; the Municipality could endeavour to require the developer to undertake, or fund, the road improvements as a condition of the subdivision agreement. The Municipality benefits from the funding of the improved road, but is also an effective deferral of a capital renewal expense as the existing, and therefore depreciated asset, is also replaced or renewed.

I. FINANCING AND FINANCIAL MANAGEMENT PRACTICES

This section discusses, at a high level, the means by which capital revenue can be raised or secured.

Debt (as a financing tool)

Debt financing is a viable tool available to fund capital projects. Planned debt is a responsible way to spread the costs of a project over the life of an asset. This ensures the tax payers who benefit from the asset share the cost, therefore, the burden of capital is distributed equally between the current tax/rate payer and future tax/rate payers. It is important to note that debt funding is subject to interest costs.

The amount of debt a Municipality can carry is set by Provincial regulations to ensure municipalities continue to operate in a fiscally sound environment. The Ministry of Municipal Affairs mandates that a municipality's annual debt repayment must not exceed 25% of annual own-source revenues. The repayment limit has been calculated based on data contained in the 2020 Annual Repayment Limit, as submitted to the Ministry. The Municipality currently has about \$902,000 in annual net debt payments, this equates to about 13% of own-source revenues relative to the 25% Provincial limit.

The requirements of the *Municipal Act* and best practice, suggests that any potential debt should not be financed for a period longer than the average useful life of the asset. This will ensure the Municipality is not paying for an asset outside the design life and beyond the asset's expected use.

Reserves and Reserve Funds

Reserves are to be used to cope with high capital investment periods by saving during low capital investment periods. This practice will smooth annual expenditures and ensure the Municipality can complete the required annual capital works. In addition to contributions during low investment periods, many municipalities use annual surpluses, should one arise, to increase reserves. There is no prescribed amount of reserves for a Municipality to have at any given time, but they should be sufficient to cover emergency work (if required).

As of 2019, the Municipality had an estimated capital reserve balance of \$505,000 for tax supported assets, while utility rate supported reserve funds account for additional \$2.1 million. The reserve balances incorporated into the analysis only consider the money the Municipality has on hand to carry out capital projects related to the services to which this asset management plan applies and excludes operating and rate stabilization reserves. The entire \$505,000 in available tax supported capital reserves have been accounted and applied towards the 2021 infrastructure deficit. The same approach was used for the rate supported assets.

J. FUTURE DEMAND

The 2021 Plan reflects the assets that the Municipality currently owns and operates. Over the period 2021-2031, the Municipality is projected to increase by approximately 844 households, which accounts for about 1,900 additional residents. In addition, the Municipality will also add 950 new employees that will result in the construction of new building space. The figures are based on the Municipality's 2021 Development Charges Background Study.

In order to facilitate this growth, the Municipality will be required to emplace new infrastructure to service development. The DC Study has identified approximately \$6.1 million of development charge eligible growth related infrastructure to 2031. While development charges can be used to fund the acquisition capital, when assets require rehabilitation or are due for replacement, the source of funds is limited to reserves or contributions from operating. Capital expenditures to carry out the rehabilitation and replacement of aging infrastructure are not growth-related and are therefore not eligible for funding through development charge revenues or other developer contributions. The 2021 development charges background study identified additional annual lifecycle expenditures of \$346,000 associated to the long-term repair and replacement of growth related assets.

Despite the additional asset management requirements associated with new infrastructure, growth will have the effect of increasing the overall assessment base and additional user fee and charges revenues to help offset the capital asset provisions required to replace the infrastructure proposed to be funded under the development charges by-law. The collection of these funds is intended to be allocated to the Municipality's reserves for the future replacement of these assets. The Municipality should continue to prioritize the repair and replacement of existing "Very Poor" and "Poor" conditioned infrastructure.

6. CONTINUOUS IMPROVEMENTS AND UPDATES

The major premise of comprehensive corporate asset management is that an organization will seldom have perfect processes and data to manage the asset portfolio. Instead, the underlying culture of continuous improvement and reliability is its key to success. The improvements and next steps will form part of the Municipality's evolving Asset Management program moving forward.

A. NET BOOK VALUE VS. REPLACEMENT VALUE

As specified in the Ministry Guide, the value of the Municipality's assets is presented in two different formats: 'Net Book Value' and 'Replacement Value'. These are described below.

Net Book Value (NBV) is consistent with the financial accounting practices defined by the Public Sector Accounting Board and is reported in the Municipality's financial statements. The Municipality of Casselman reported Net Book Value covers the full scope of the Municipality's Tangible Capital Assets (TCA), including land. It is noted that the same scope of assets are considered under this 2021 Plan.

The Net Book Value is the original acquisition cost less accumulated depreciation, depletion or amortization. It is reported annually in accordance with reporting standards established by the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants. As shown on Table 20 below, the Municipality's 2018 Consolidated Financial Statement reported the NBV of the Municipality's TCA as of December 31, 2018 at \$34.6 million. Under the financial accounting approach many assets may be fully depreciated yet remain in use, therefore, Net Book Value is not the appropriate methodology to be employed for infrastructure renewal planning.

Table 20 Summary of Tangible Capital Asset Values	
Asset Category	2018 Closing NBV
Land	\$1,385,962
Land Improvements	\$2,441,138
Buildings	\$6,348,622
Machinery and Equipment	\$6,649,409
Vehicles	\$563,077
Linear Assets	\$16,654,888
Construction-In-Progress	\$568,975
Total	\$34,612,071

Source: Municipality of Casselman 2019 Financial Information Return.

Replacement Values are used to estimate the cost of replacing an asset when it reaches the end of its engineered design life. The total replacement cost of all assets is estimated at \$242.7 million.

Replacement Cost Valuation

The two basic methods to estimate replacement costs needed for infrastructure renewal planning are outlined:

- **Local price indices:** This is the most accurate method. The Municipality has collected some recent acquisition data demonstrating similar replacement activities. The Municipality's replacement costs are based on recent construction costs specific to the Municipality particularly for buildings, roads, water and sewer.
- **Accounting estimates:** When assets cannot be estimated against either index, the Municipality uses historic cost, estimated useful life and inflationary effects to determine replacement value.
- **Benchmark costs:** Some replacement costs are based on benchmark engineering costs per unit, in particular for roads, bridges, some buildings and linear water and sewer infrastructure. Detailed unit costs are provided in Appendix B.

B. ASSET MANAGEMENT INTERNAL NETWORK

It is recommended that the Municipality consider forming an Asset Management Committee to focus on the activities related to the management of Municipal assets and to coordinate asset management practices and policies. It is recognized that the Municipality's annual capital budget process considers capital planning at a corporate level based on available funding and municipal priorities. The intention of the asset management committee is to consider capital planning over a longer term period and co-ordinate any initiatives that need to be taken over the longer term.

C. PLAN MONITORING

The Municipality will need to carefully monitor and evaluate the asset management progress and effectiveness of the Plan on or before July 1 in each year starting in 2025. This ensures that the Plan is utilized to its full extent and any gaps are identified prior to the regulatory date. Although the extent to which the regulation applies would not be applicable to the

Municipality for several years, the Municipality could look to advance the review process and address the following criteria each year:

- a) The Municipality’s progress in implementing its asset management plan;
- b) Any factors impeding the Municipality’s ability to implement its asset management plan; and
- c) A strategy to address the factors described above in clause b).

D. DATA QUALITY AND CONFIDENCE

The Municipality should regularly review the confidence of existing data as well as its effectiveness integrating asset management activities into regular business processes. The Confidence Level Rating approach identified in Table 21 below will be used to identify what specific asset categories/areas the Municipality can improve upon. The Confidence Level Rating is based on principles of the Ministry’s Guide to Municipal Asset Management Plans, Federal Gas Tax Agreement Requirements, ISO 55000, and International Infrastructure Management Manual (IIMM). Current data used in the preparation of this asset management plan would be generally reliable and based on a **Level 4** recognizing that all asset categories are well documented. The data quality score is included in Appendix B complementing the State of the Local Infrastructure Reports.

Table 21 Data Quality Confidence Grading System		
Confidence Grade		Description
5	Highly Reliable	<ul style="list-style-type: none"> ▪ Data based on sound records, procedure, investigations and analysis, documented properly and recognized as the best method of assessment. ▪ <i>Dataset is complete and estimated to be accurate +/- 2%.</i>
4	Reliable Data	<ul style="list-style-type: none"> ▪ Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. ▪ <i>Dataset is complete and estimated to be accurate +/- 10%.</i>

Table 21 Data Quality Confidence Grading System		
Confidence Grade	Description	
3	Uncertain	<ul style="list-style-type: none"> ▪ Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade 4 or 5 data is available. ▪ <i>Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated +/- 25%.</i>
2	Very Uncertain	<ul style="list-style-type: none"> ▪ Data based on unconfirmed verbal reports and/or cursory inspection and analysis. ▪ <i>Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy +/- 40%.</i>
1	Unknown	<ul style="list-style-type: none"> ▪ None or very little data held

E. TIMEFRAMES FOR REVIEW AND UPDATES

This Asset Management Plan should be reviewed and updated on a regular basis. Recognizing that a full plan and related policies should only be updated at key intervals, it is important that other asset management components, such as capital budgeting, risk assessments and updates to the asset register should be integrated into staff's regular routine. Table 22 below outlines the key timelines.

Table 22 Timeframes for Reviews and Updates	
Asset Management Framework	Timeframe
Asset Management Policy	5 Years
Asset Management Plan	3-5 Years
Capital Budget	Annually
Asset Register and Data	Semi-Annually or Annually
Risk assessment (capital prioritization)	Semi-Annually or Annually
Level of Service Framework	Semi-Annually or Annually
Reporting to Council	Annually

This asset management plan has been endorsed by the executive lead of the Municipality and will need to be approved, by resolution, by Municipality Council. The Municipality will need to be mindful of the reporting timelines noted above relative to any potential changes to the timelines referenced by *Ontario Regulation 588/17*.

F. PUBLIC REVIEW AND COMMENT

Although the Asset Management Plan is intended to aid Municipality staff and Council make informed decisions regarding future capital investment needs, the plan is intended to be available to the public. Therefore, it is recommended that the Municipality post this plan as well as the strategic asset management policy on the website and provide a copy to anyone upon request.

The Municipality of Casselman will require further public consultation and input to develop the target levels of service required for July 1, 2025.

7. CONCLUSIONS AND RECOMMENDATIONS

The objective of this 2021 Plan is to provide the Municipality of Casselman with the information it needs to make decisions on how best to manage capital assets in a sustainable way to 2060. In this section, recommendations based on the analysis undertaken are made.

A. SUMMARY OF KEY FINDINGS

- The Municipality's asset base is valued at \$242.7 million, in relation to the census population of about 3,548 persons (\$68,000 per capita).
- Overall, a high proportion (about 80% or \$190.8 million) of the Municipality's assets are considered to be in "Good" to "Very Good" condition. At the same time, approximately 9% (\$22.5 million) of infrastructure is considered to be in "Poor" to "Very Poor" condition. The remaining share of \$29.4 million (11%) is in "Fair" condition. Note these shares exclude gravel roads.
- The Municipality of Casselman has made some effort in recent years to address the infrastructure gap and improve the condition of assets:
 - Upper level government grant money received has typically been allocated to capital asset repair and replacement activities;
 - The Municipality has capital replacement reserves, and has been contributing to reserves on an annual basis, which is in addition to in year funding from the capital tax levy;
 - Through its annual capital budgeting process, the Municipality addresses critical issues and assets in need of repair or replacement.
- The responsibility to maintain existing infrastructure is challenging, however, in addition to current capital funding, the Municipality should increase annual capital contributions to address current and future infrastructure requirements;
 - Property taxes are the most secure form of revenue and the Municipality should consider increasing tax base revenues, above current practices, to fund capital works;

- Ensure user fees are being utilized to the full extent as allowed under Provincial legislation. This will help alleviate funding pressures from the tax base and allow for greater flexibility to fund capital asset repair and replacement activities.
- Explore alternative arrangements to provide services – public private partnerships or shared services.
- Based on the 2021 Annual Repayment Limit, the Municipality is considered to be in good fiscal standing with strong budgetary performance and limited external debt (approximately \$902,000 in annual net debt payments) - the Municipality currently operates well below the annual repayment limit of \$1.8 million in total net debt charges. This debt capacity could allow the Municipality to use debt to carry out emergency asset replacements, improvements, or other strategic projects which typically provide a return on investment such as a reduction in operating costs.
- The Municipality should continue to seek funding from the Federal and Provincial government (when available) to undertake capital related works.

B. SUMMARY OF RECOMMENDATIONS

Based on the research and analysis undertaken for this 2021 Plan the following conclusions can be reached:

1. Continue to Improve Capital Development Planning Process

- The Municipality should develop a multi-year capital budget and forecasts for all services based on a 10-year forecast horizon. The capital budget can be based on the asset replacement schedule in the Municipality's Asset Management Model.
- Capital budgets and forecasts should identify and evaluate each capital project in terms of the following, including but not limited to:
 - gross and net project costs;
 - risk assessment;
 - timing and phasing;
 - funding sources;
 - potential financing and debt servicing costs;
 - long-term costs, including non-infrastructure solutions, maintenance activities, renewal/rehabilitation activities, replacement activities, disposal activities and expansion activities;
 - capacity to deliver; and
 - alternative service delivery and procurement options.

- A range of quantifiable service level targets that incorporate the quantity and quality of capital assets should be explored and established for all services over the next few years. Targets should be measured, reported on, and adjusted annually. This requirement will need to be in place by July 1st, 2025 as per O. Reg. 588/17.
- Repair and replacement capital works should be prioritized based on a risk assessment. For example, assets identified as “very poor” and “poor” and having a significant consequence of failure should be prioritized first.
- Infrastructure assets which have been provided a “fair” condition rating should be targeted for maintenance to ensure they continue to perform at current levels of service.
- The Municipality should, where possible, coordinate the construction of new infrastructure with infrastructure repairs and replacement to achieve cost efficiencies.

2. Ensure Asset Inventories are Updated Regularly

- Sound asset management decisions are only possible if information in the asset registry is accurate. The Municipality designated data champion should regularly update the registry to account for asset purchases, upgrades, and replacements, as well as asset condition ratings and information on useful life.
- The Municipality should continue to refine the condition assessments for all assets considered under this 2021 Plan; and
 - The Municipality should update this Asset Management Plan at a minimum every 5 years.

3. Optimize the Use of Existing Assets

- The Municipality should implement a range of engineering and non-engineering approaches to extend the useful life of current assets, taking the lifecycle actions presented in Appendix D.
- The Municipality should explore opportunities to dispose under utilized infrastructure/facilities which may not warrant repair/replacement. For example, underutilized facilities, or surplus land/parks, could be disposed and sold; and
- Coordinate assets into specific hubs to create operating and capital repair/maintenance efficiencies where possible.

APPENDIX A

DEFINITIONS

APPENDIX A – DEFINITIONS

This appendix contains definitions for commonly used terms throughout the Municipality's Asset Management Plan.

- 1. Annual Provision** - Given the timing and cost to replace an asset in the future, the amount of savings required year-over-year to replace that asset on schedule. This is also referred to as the annual requirement.
- 2. Condition Assessment** - A description of the state of an asset based on engineered or staff inspections on a 5-tier scale (very poor, poor, fair, good, and very good).
- 3. Cumulative Infrastructure Deficit** - The difference between available funding and the cost of works required based on the replacement schedule added over an extended time period. This difference includes the backlog of infrastructure work which remains unfunded. In years where funding continues to be less than the need, the deficit grows. Conversely, years where funding exceeds the need, the deficit decreases.
- 4. In-Year Funding Gap** - For any given year, this is the difference between capital requirement costs and available funding.
- 5. O. Reg. 588/17** - Ontario's Asset Management regulation that came into force on January 1st, 2018.
- 6. Provision Schedule** - The required savings year-over-year needed to replace an asset based on the replacement schedule.
- 7. Replacement Cost** - The cost of an asset to replace or reconstruct that asset at current prevailing market prices. The replacement cost will typically include all costs to procure, design, build and acquire the asset.
- 8. Replacement Schedule** - The timing for replacement of an asset based on remaining useful life, condition or risk.
- 9. Useful Life** - The expected service life of an asset expressed in years.
- 10. Weighted Condition** - The average condition of an asset category weighted against the replacement costs of assets.
- 11. Weighted Remaining Useful Life** - The average remaining useful life of an asset category weighted against the replacement cost of assets.

APPENDIX B

TECHNICAL APPENDIX:

STATE OF LOCAL INFRASTRUCTURE

APPENDIX B – TECHNICAL APPENDIX: STATE OF LOCAL INFRASTRUCTURE

The appendix provides a summary of the Municipality's assets with reference to quality and quantity. Some assets have condition assessments based on the conditions developed through the 2014 AMP and others are based on staff level assessments. The balance of assets considered are based on the useful life of the asset relative to its age. Useful life assumptions for the assets considered under the 2021 Plan were acquired from the Municipality's tangible capital asset inventory. Hemson has prepared State of the Local Infrastructure report cards for each asset category which outline: summary of inventory, remaining useful life, asset condition, and data reliability. It is intended that these report cards be updated annually by staff and provided to Council through the annual budget process.

1. Summary of Inventory

The summary of inventory provides an overview of the Municipality's assets including asset components, the quantity of those components, the replacement cost in 2021 dollars, method used to determine the replacement cost and the engineered useful life of the assets. The inventory summary is developed based on the Municipality's capital asset information. Furthermore, an asset management financial model based in Excel was developed as part of the 2021 AMP, this model contains all detailed asset information.

The assets included in this 2021 Plan are consistent with the asset categories included in Schedule 51 of the Municipality's Financial Information Return. Inclusion of all assets in this Plan therefore meet the asset management plan requirements in the Municipality's Gas Tax Funding Agreement.

2. Remaining Useful Life

The remaining useful life summary provides information on the age of assets based on the year assets were acquired or emplaced and their engineered useful life. Assets are categorized by remaining useful life based on their replacement cost in 2021 dollars. Assets categorized as overdue are considered to be beyond their engineered useful life, however, the asset may still be in good operating condition and therefore age does not represent the ideal method to determine condition. Typically, assets such as facilities are used well beyond their engineered useful lives with proper maintenance and repairs.

3. Asset Condition

A summary of the condition of assets is presented in a pie graph based on the replacement cost of assets in constant 2021 dollars. As discussed in Section 2, conditions have been determined based on a 5-tier rating system from very poor to very good. Condition assessments are based on several sources including, staff assessments, conditions based on the 2014 AMP and aged based approach. Through the 2021 AMP process staff undertook a detailed review of the asset conditions, and based on their knowledge, provided a more up to date condition based on the 5-tier rating scale. In addition, the Municipality has indicated that the condition assessments developed through the 2014 AMP continue to be appropriate as not many changes have occurred since that time. Details on the methodology the Municipality uses to assess the condition of assets is summarized in Table 1 below.

Table 1 Methodology Used for Condition Assessments	
Service Category/Type	Methodology
Equipment	▪ Age based approach with some staff level conditions
Vehicles	▪ Age based approach with some staff level conditions
Buildings	▪ Age based approach with some staff level conditions
Land Improvements	▪ Age based approach
Roads & Related	▪ Condition assessments from 2014 AMP with updates from staff
Stormwater	▪ Condition assessments from 2014 AMP with updates from staff
Water	▪ Condition assessments from 2014 AMP with updates from staff
Sewer	▪ Condition assessments from 2014 AMP with updates from staff

4. Replacement Cost

Replacement values are used to estimate the cost of replacing an asset when it reaches the end of its engineered design life. The total replacement cost of all assets is estimated at \$242.7 million, and the replacement values are used as the basis for this plan. Specific methods used to determine replacement costs for asset categories are outlined below.

Roads

Replacement costs for the Municipality’s paved roads are based on an average cost per kilometre. Based on the 2016 DC Study, and adjusted for inflation at a rate of 2%, a value of \$2.3 million per kilometre was assumed.

Buildings

Table 2 below provides a summary of the replacement valuation assumptions used for the purposes of the asset management plan. The unit cost reflect the reconstruction costs of similar type facilities.

Table 2			
Summary of Building and Facility Replacement Value Assumptions			
Building Name	GFA (sq. ft.)	Cost per sq. ft.	Replacement Cost
Fire Hall	4,243	\$300	\$1,272,900
Splash Park Building	-	-	\$150,000
JR Brisson Complex	39,837	\$350	\$13,942,950
Centre Paul Émile Lévesque	7,211	\$220	\$1,586, 420
Salt Dome	4,000	\$45	\$180,000
Municipal Garage	5,664	\$235	\$1,331,040
Remaining Buildings	-	-	\$812,482
Total	-	-	\$19,275,792

Note: The valuations identified are based on values from the 2016 DC Study.

Water and Sewer Assets

Water and sewer asset replacement costs have been determined through the valuations developed through the 2014 AMP adjusted for inflation at a rate for 2%. The exception is for linear water infrastructure which is based on the benchmark costs outlined in Table 3 and 3 below.

Table 3		
Summary of Linear Water and Sewer Replacement Costs (\$/m)		
Diameter (mm)	Water Linear	Sewer Linear
100	\$660	\$660
150	\$660	\$660
200	\$800	\$800
250	\$800	\$800
300	\$990	\$820
350	\$1,060	\$850
375	\$1,125	\$870

Table 3 Summary of Linear Water and Sewer Replacement Costs (\$/m)		
Diameter (mm)	Water Linear	Sewer Linear
400	\$1,190	\$870
450	\$1,290	\$950
500	\$1,460	\$985
525	\$1,525	\$1,020
600	\$1,720	\$1,310
675	\$1,850	\$1,590
750	\$2,060	\$1,770
825		\$1,890
900		\$2,230

Remaining Asset Categories

For all other remaining asset categories, Hemson has particularly relied upon the initial acquisition costs and adjusted these values to current dollars. That said, some specific adjustments were made to specific high valued vehicles and land improvements where more accurate replacement cost valuations were available from the development charges background study.

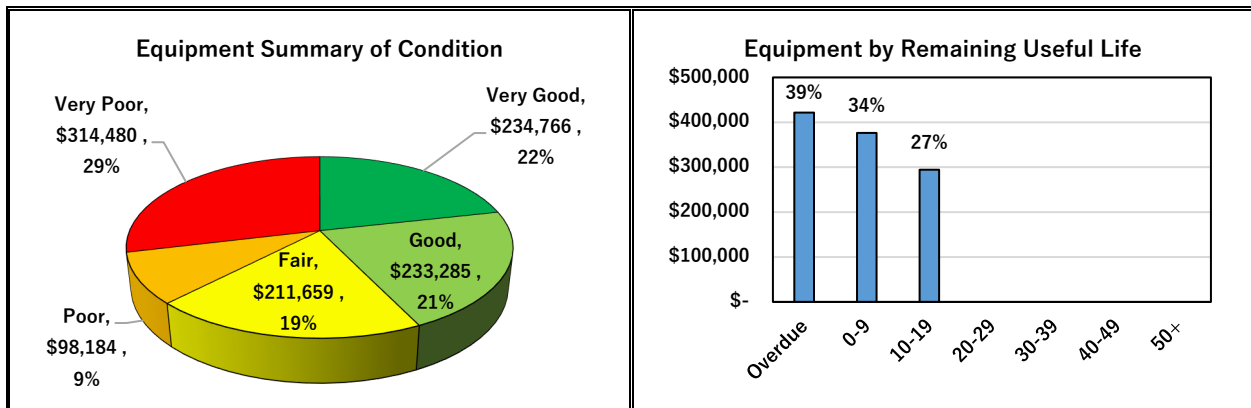


B.1 Equipment

Fair

Summary of Inventory				
Service Area	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
General Government	Pooled	\$52,317	Inflation	5-20
Protection Services	Pooled	\$345,257	Inflation	5-20
Recreation	Pooled	\$649,173	Inflation	5-15
Transportation	Pooled	\$45,627	Inflation	5-20
Total		\$1,092,374		

The Municipality maintains pooled units of equipment for various services, which includes equipment for general government, protection services, recreation, and transportation with a total replacement value of \$1.1 million. The equipment assets have an assumed useful life ranging between 5-20 years depending on the type of equipment. The asset replacement values have largely been derived by adjusting the original acquisition cost by inflation.



Overall, approximately \$422,000 (39%) of equipment assets are considered to be overdue by virtue of their design life. Although not overdue at this time, it should be noted that over 60% of the equipment (\$671,000) will require replacement over the next twenty years. As the condition analysis for this category is based on the relative age of each asset, the conditions closely link to the remaining useful life graph. Overall, the Municipality maintains \$468,000 (43%) of equipment assets in Good to Very Good condition. Nearly 40% (\$413,000) of equipment assets are considered to be in Poor or Very Poor condition, which would indicate signs of deterioration and these assets should be considered for repair or replacement. The remainder of the assets \$212,000 (19%) are maintained in Fair condition.

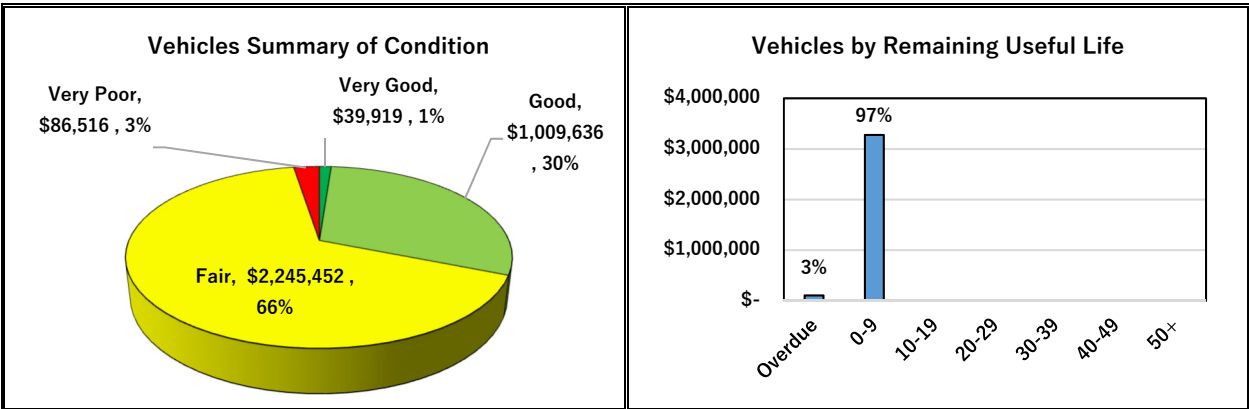
Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.



B.2 Vehicles Fair

Summary of Inventory				
Service Area	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Protection Services	7	\$2,585,452	Inflation/Recent Costing	7-20
By-law	1	\$40,000	Inflation/Recent Costing	7
Recreation	1	\$40,000	Inflation/Recent Costing	7-15
Transportation	6	\$676,152	Inflation/Recent Costing	7-20
Building	1	\$39,919	Inflation/Recent Costing	7
Total	16	\$3,381,523		

The Municipality's vehicles assets contain a total of 16 vehicles with a total replacement value of \$3.4 million and an assumed engineered useful life of 7-20 years. The inventory replacement costs are based on recent costing or the adjustment of historical values to current dollars.



Overall, the Municipality's vehicles have been categorized by remaining useful life. About \$3.3 million (97%) have less than 9 years of remaining useful life remaining, while 3% (\$106,000) of the Municipality's vehicles are considered to be overdue and may require replacement in the short-term.

A more robust condition assessment has been undertaken for the Municipality's vehicles based on an assessment by staff using the 5-tier condition system. The analysis identified that the Municipality maintains \$1.05 million (about 31%) of vehicles in Good to Very Good condition. That said, roughly \$87,000 (3%) are in Very Poor condition and can be considered for replacement in the short-term. Finally, \$2.2 million (66%) are considered to be in Fair condition. It is important to note that vehicles in Fair condition must be monitored closely as typically these vehicles will transition into the Poor/Very Poor categories over the short to medium term. Therefore, proper inspections and maintenance of these vehicles should continue over the short term.

Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.

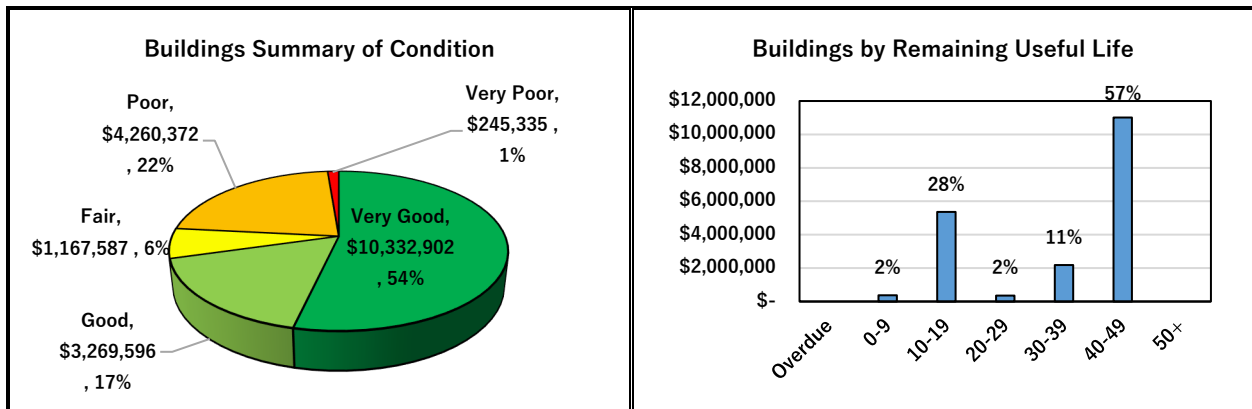


B.3 Buildings

Good

Summary of Inventory				
Building Name	Components	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Municipal Office	10	\$388,115	Inflation	15-50
School	2	\$402,665	Inflation	40
Fire Hall	5	\$1,272,900	Recent Costing	15-50
Splash Park Building	1	\$150,000	Recent Costing	50
JR Brisson Complex	29	\$13,942,950	Recent Costing	10-50
Centre Paul Émile Lévesque	5	\$1,586,420	Recent Costing	10-50
Salt Dome	1	\$180,000	Recent Costing	50
Municipal Garage	5	\$1,331,040	Recent Costing	20-50
Warehouse	3	\$21,702	Inflation	20-50
Total	61	\$19,275,792		

The Municipality maintains a total of 9 buildings and supporting facilities for a total replacement cost of \$19.3 million. The replacement costs for municipal offices, schools, and warehouses were based relative to inflation and the valuation of the remaining buildings is based on an average cost per square foot. The engineered useful life of the building assets ranges from 10-50 years.



The majority of the Municipality buildings (70% or \$13.5 million) have a remaining useful life greater than 20 years. Approximately 28% (\$5.4 million) have a remaining useful life between 10-19 years and about 2% (\$371,000) have a remaining useful life of 9 years or less.

Overall, the Municipality maintains \$13.6 million (71%) of the buildings in Good to Very Good condition by virtue of their design life, while about 23% (\$4.5 million) are in Poor to Very Poor condition. Finally, the Municipality's facilities considered to be in Fair condition amount to \$1.2 million (6%).

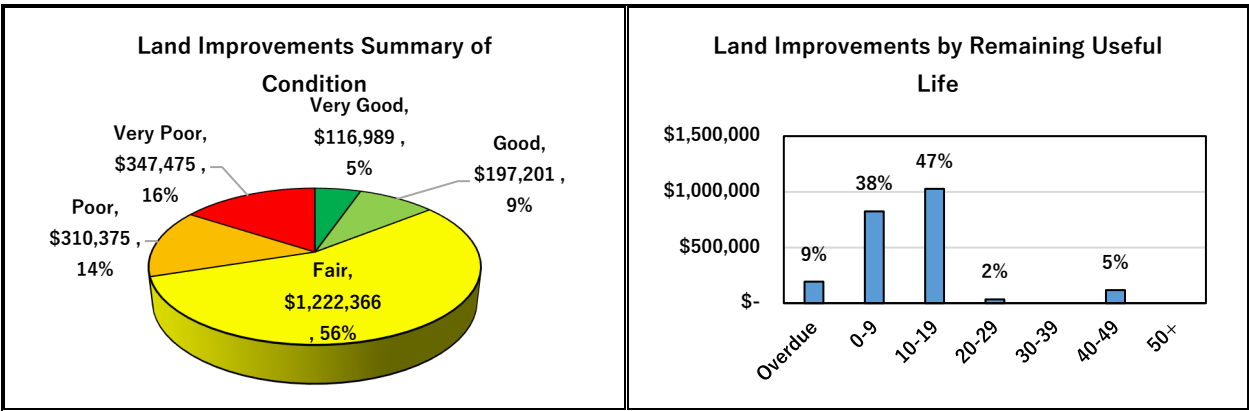
Data Confidence and Reliability: Level 4 (Reliable)
Dataset is complete and estimated to be accurate +/- 10%.



B.4 Land Improvements Fair

Summary of Inventory				
Components	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Land Improvements	Pooled	\$2,194,406	Inflation/Recent Costing	10-50
Total		\$2,194,406		

The Municipality maintains a pooled set of land improvement assets with a replacement value of \$2.2 million. The inventory includes assets such as pavilions, lighting, fencing, tennis courts, play structures, playgrounds and rinks. The assets have an assumed engineered useful life of 10-50 years.



The Municipality's land improvements have been categorized by remaining useful life and several assets will require replacement over the coming years. Approximately \$1.2 million (54%) of the land improvement assets have a remaining useful life over 10 years. About \$824,000 (38%) of the Municipality's land improvements have a useful life of 0-9 years and about 9% (\$193,000) are considered to be overdue for replacement.

Nearly 56% (or \$1.2 million) of the Municipality's land improvement assets are in Fair condition while 14% (or \$314,000) are in Good or Very Good condition. The balance of the assets, 30% (or \$658,000) are considered to be in Poor to Very Poor condition. The asset conditions are based on a combination of remaining useful life and assessments from municipal staff using the 5-tier condition system.

Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.

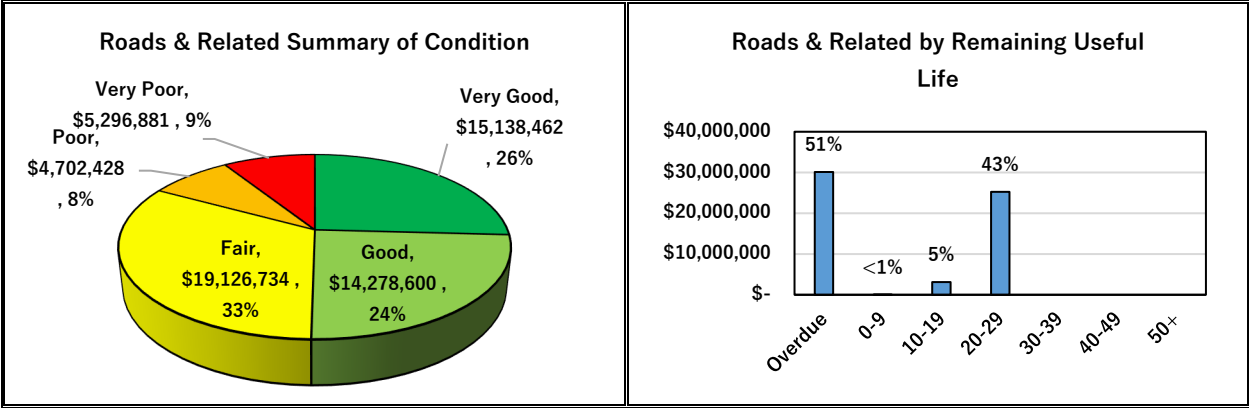


B.5 Roads and Related

Fair

Summary of Inventory				
Components	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Paved Roads (km)	25.1	\$57,805,300	Recent Costing	30
Light Standards	Pooled	\$242,768	Inflation	25
Hydro Pole	Pooled	\$326,075	Inflation	25
Other	Pooled	\$168,962	Inflation	25
Total		\$58,543,105		

The Municipality owns approximately 25.1 km of roads with a total replacement cost of \$57.8 million. The average replacement cost of roads per kilometre in Casselman is based on average costs for similar municipalities and the development charges background study. In addition to roads, the Municipality owns a variety of road related assets (light standards, hydro poles, etc.), which amount to \$738,000.



Over 50% of the roads and related assets are overdue for replacement and may require replacement in the short-term. About 43% of the assets have a useful life of 20-29 years and the remaining 6% have a useful life of 19 years or less.

Approximately \$29.4 million (50%) of the Municipality's roads assets are considered to be in Good or Very Good condition. About \$10.0 million (17%) are in Poor or Very Poor condition and the remaining \$19.1 million (33%) are considered to be in Fair condition. Road condition assessments are based on the condition ratings developed through the 2014 asset management plan.

Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.

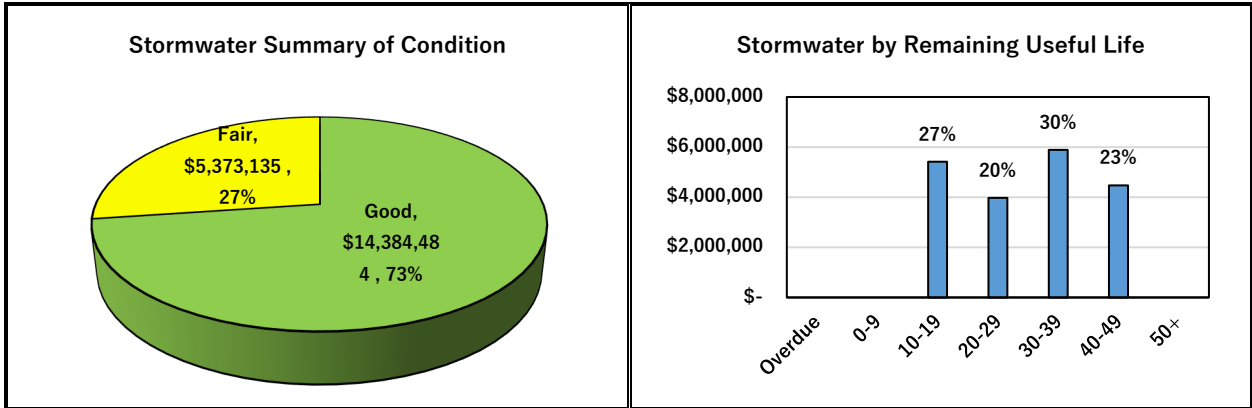


B.6 Stormwater

Good

Summary of Inventory				
Components	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Storm Linear by Pipe Size (m)				
150	244.6	\$51,564	Inflation	60
200	1,163.6	\$408,877	Inflation	60
250	890.2	\$454,044	Inflation	60
254	60.3	\$31,465	Inflation	60
300	2,411.1	\$1,666,481	Inflation	60
375	1,615.9	\$1,419,966	Inflation	60
381	217.3	\$194,726	Inflation	60
425	115.9	\$118,092	Inflation	60
450	1,109.3	\$1,001,172	Inflation	60
525	1,284.4	\$1,160,145	Inflation	60
575	84.0	\$121,991	Inflation	60
600	1,013.9	\$1,128,233	Inflation	60
675	733.2	\$1,271,470	Inflation	60
750	91.3	\$177,660	Inflation	60
900	132.4	\$313,391	Inflation	60
1050	285.3	\$563,341	Inflation	60
1200	105.8	\$340,736	Inflation	60
1350	318.7	\$1,179,773	Inflation	60
855x1345	125.4	\$171,119	Inflation	60
975x1535	148.7	\$202,925	Inflation	60
Other	10,952.0	\$3,849,541	Inflation	60
Subtotal	23,103.3	\$15,826,712		
Storm Other Assets (units)				
Manholes	191	\$1,812,664	Inflation	60
Catch Basins	617	\$1,662,704	Inflation	60
Catch Basis Manholes	48	\$455,539	Inflation	60
Subtotal	856	\$3,930,907		
Total		\$19,757,619		

The Municipality maintains about 23,000 meters of linear storm pipes with a replacement cost of \$15.8 million. There is a total of 856 storm system components maintained by the Municipality, which includes manholes and catch basins with a replacement cost of \$3.9 million. In total, the system is valued at approximately \$19.8 million. The engineered useful life for storm system components is assumed to be 60 years.



The majority of the Municipality's stormwater system (73% or \$14.3 million) has a remaining useful life of 20 years or more. The remaining 27% (\$5.4 million) have a remaining useful life of 10-19 years. There are no stormwater assets that are currently overdue for replacement.

Approximately \$14.4 million (73%) of the Municipality's storm system assets are considered to be in Good condition. Roughly \$5.3 million (27%) are in Fair condition. Note that the conditions of the components of the stormwater system are based on condition assessments performed as part of the 2014 AMP.

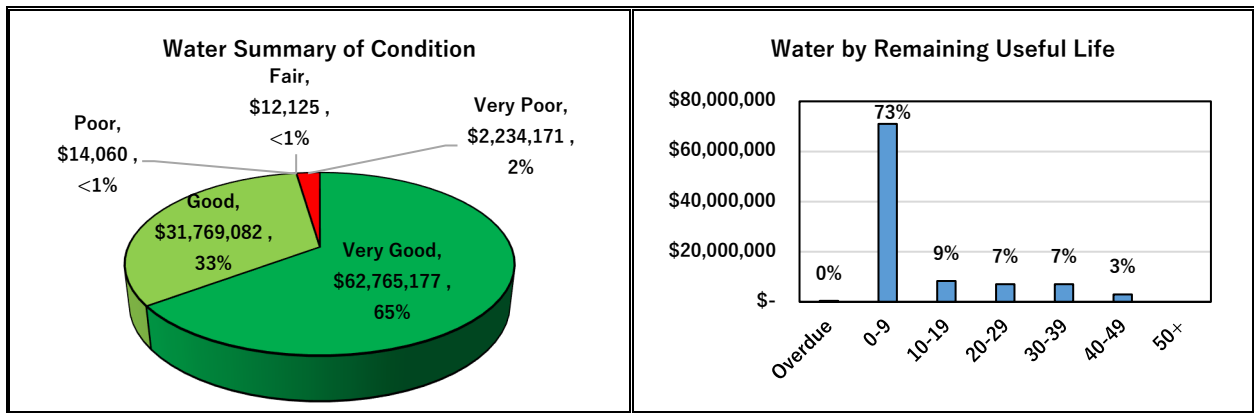
Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.



B.7 Water Very Good

Summary of Inventory				
Components	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Water Linear by Pipe Size (m)				
100	286.5	\$189,090	Recent Costing	60
150	10,816.1	\$7,138,626	Recent Costing	60
200	11,397.6	\$9,118,080	Recent Costing	60
250	849.4	\$679,520	Recent Costing	60
Hydrant Leads	1,159.0	\$764,940	Recent Costing	60
Sub-Total	24,508.6	\$17,890,256		
Water Other Linear (units)				
Hydrants	149	\$698,318	Inflation	60
Isolation Valves	81	\$170,829	Inflation	40
Valve Boxes	151	\$406,925	Inflation	40
Sub-Total	381	\$1,276,072		
Water Treatment	Pooled	\$64,259,318	Inflation	25-50
Water Equipment	Pooled	\$13,368,969	Inflation	5-40
Total		\$96,794,615		

The Municipality maintains a water system with a replacement cost of \$96.8 million. Replacement costs have been determined based on inflation from historical values as well as benchmark costs per metre of pipe for the linear components. The assumed useful life has been derived on a component by component basis ranging from 5-60 years.



The majority of the Municipality's water system (73% or \$71.0 million) has a remaining useful life of 0-9 years. This amount is largely related to the water treatment plant, however the treatment plant continues to be maintained in proper operating condition in line with municipal and provincial standards and therefore the age is not a good indicator of its condition. The remainder of the system has a useful life of 10 or more years, which include linear assets and water equipment.

Conditions of the water assets are based on condition assessments developed through the 2014 AMP. About \$94.5 million (98%) of water assets are considered to be in Good or Very Good condition. Roughly \$2.3 million (2%) are considered to be in Poor or Very Poor condition. Finally, <1% (\$57.6 million) are in Fair Condition. The Fair condition category is made up of the replacement cost of the water treatment plant valued at about \$64.3 million.

Data Confidence and Reliability: Level 4 (Reliable)
Dataset is complete and estimated to be accurate +/- 10%.

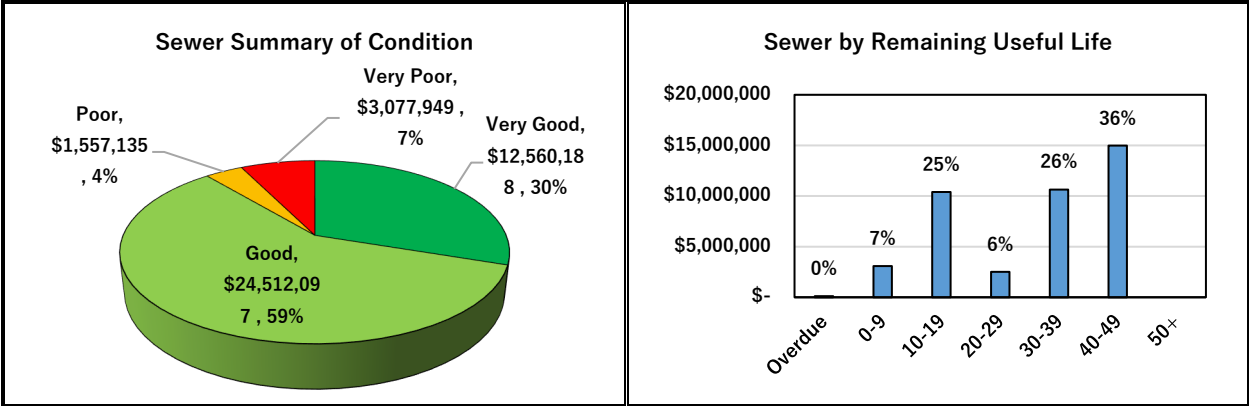


B.8 Sewer

Good

Summary of Inventory				
Components	Quantity	Replacement Cost 2021	Replacement Cost Method	Useful Life (Years)
Sewer Linear by Pipe Size (m)				
100	75.2	\$10,562	Recent Costing	60
150	358.2	\$75,538	Recent Costing	60
200	9,252.0	\$3,248,844	Recent Costing	60
250	4,908.7	\$2,559,367	Recent Costing	60
300	1,790.8	\$1,237,896	Recent Costing	60
350	500.1	\$404,226	Recent Costing	60
375	388.6	\$341,549	Recent Costing	60
400	1,902.9	\$1,783,718	Recent Costing	60
450	819.9	\$893,282	Recent Costing	60
500	1,690.6	\$2,079,806	Recent Costing	60
525	649.5	\$844,768	Recent Costing	60
600	582.5	\$887,250	Recent Costing	60
825	31.3	\$67,510	Recent Costing	60
Sub-Total	22,950.3	\$14,434,316		
Sewer Other Linear (units)				
Manholes	331	\$2,249,351	Inflation	60
Vehicles	1	\$104,851	Inflation	7
Sewer Treatment	Pooled	\$24,918,851	Inflation	50
Total		\$41,707,369		

The Municipality maintains a sewer network with a replacement cost of \$41.7 million. Replacement costs have been determined based on recent benchmarks for the linear system with the exception of manholes and sewer treatment components, which have been determined based on inflation. The assumed useful life has been derived on a component by component basis ranging from 50-60 years, with one vehicle assumed to have a 7 year useful life.



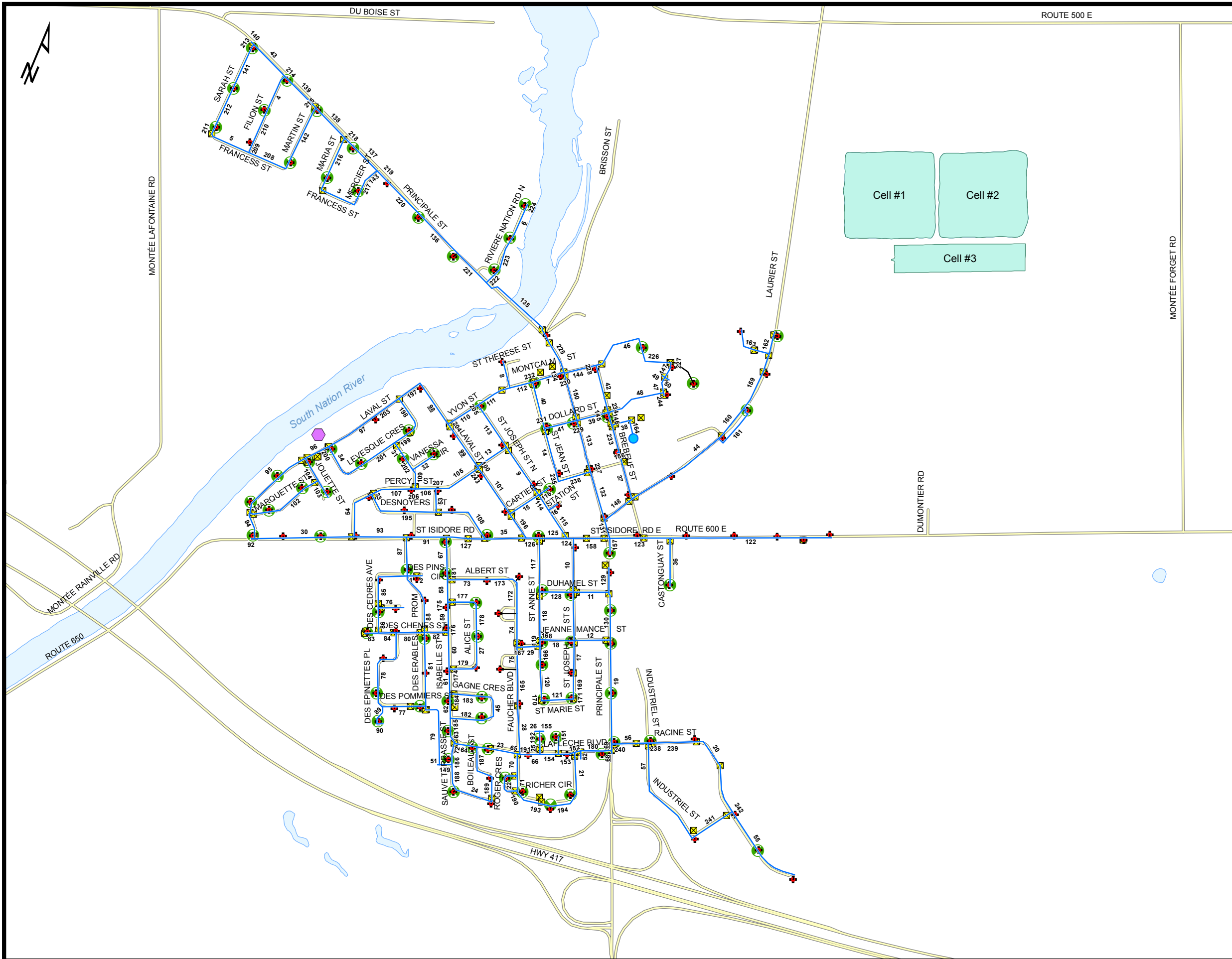
The majority of the Municipality's sewer components have a remaining useful life of 40+ years and accounts for \$15.0 million (36%) with no sewer assets considered overdue. However, about \$3.1 million (7%) have a useful life of 9 years or less. These assets should be monitored closely as they will become overdue in the short-term.

The conditions of the sewer assets have been determined based on the condition assessments developed through the 2014 AMP. Approximately \$37.1 million (89%) are considered to be in Good to Very Good condition, while \$4.6 million (11%) are considered to be in Poor to Very Poor condition.

Data Confidence and Reliability: Level 4 (Reliable)
 Dataset is complete and estimated to be accurate +/- 10%.

APPENDIX C

SUPPLEMENTARY LEVEL OF SERVICE MAPS



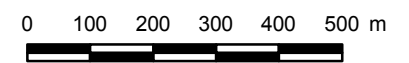
Legend

-  Water Treatment Plant
-  Elevated Tank
-  Fire Hydrant
-  Valve Box
-  Isolation Valve
-  Watermain
-  Hydrant Lead
-  Road
-  Lagoon
-  Waterbody



Project No. 131-19700-00

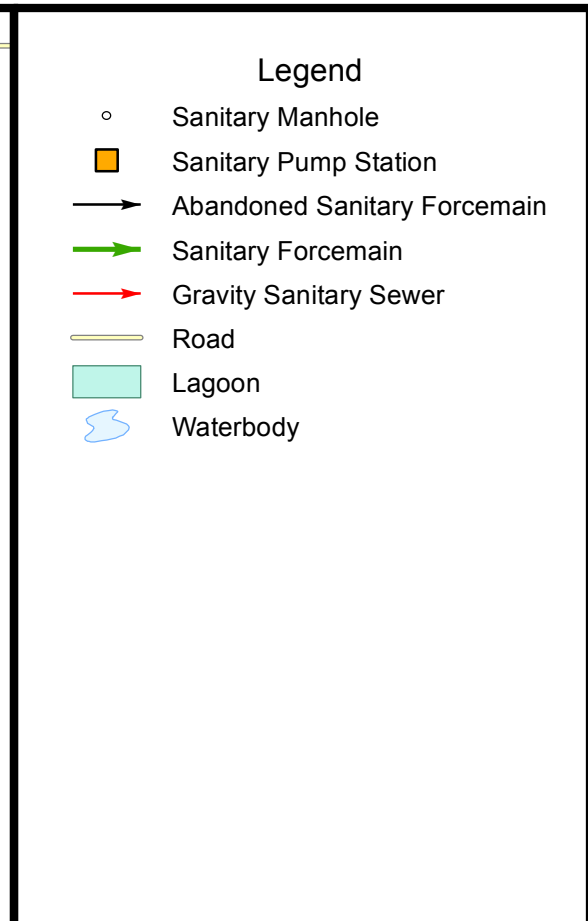
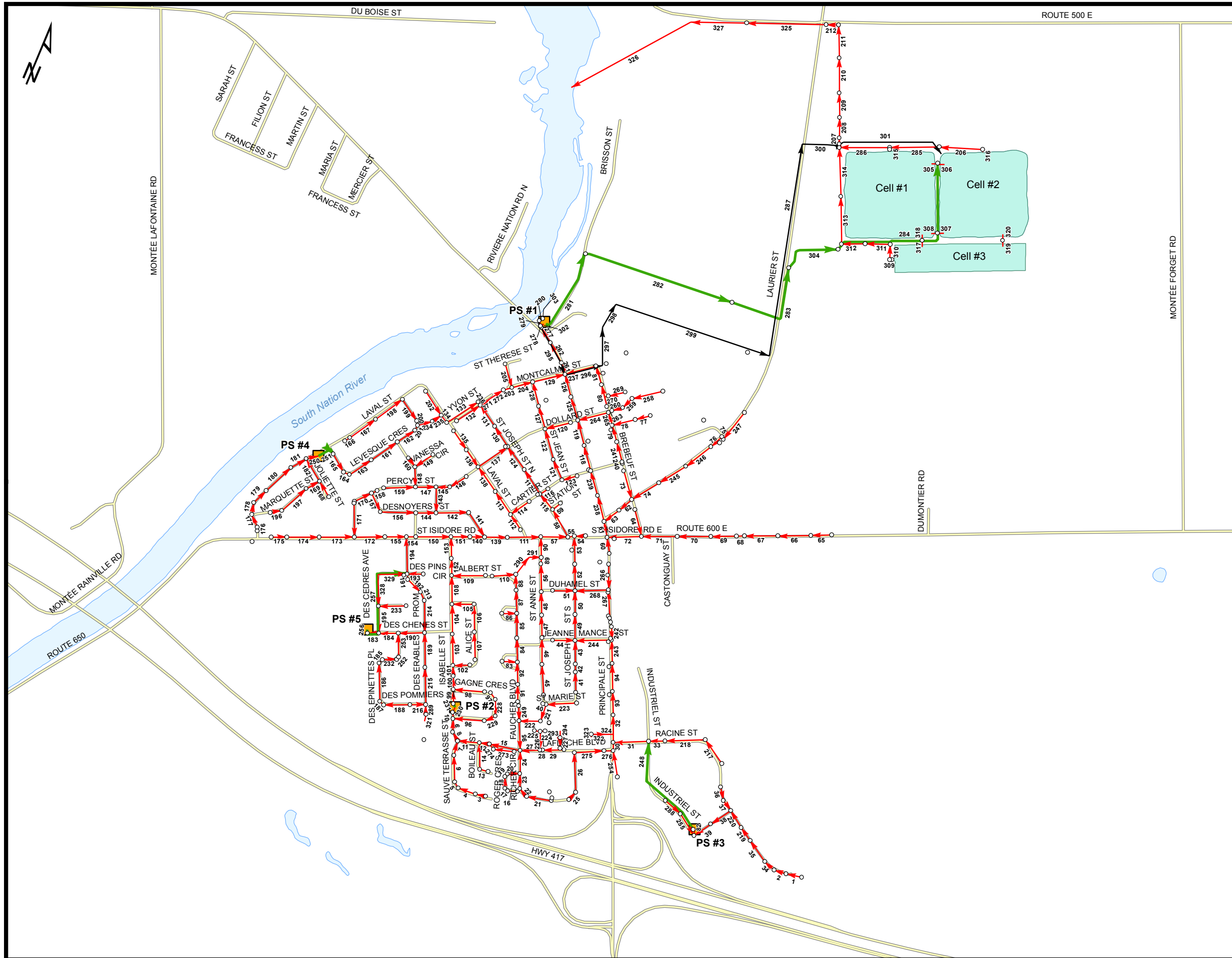
**Casselman
Asset Management Plan**



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Figure 1

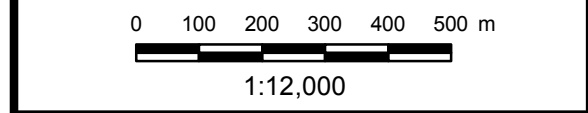
Water System



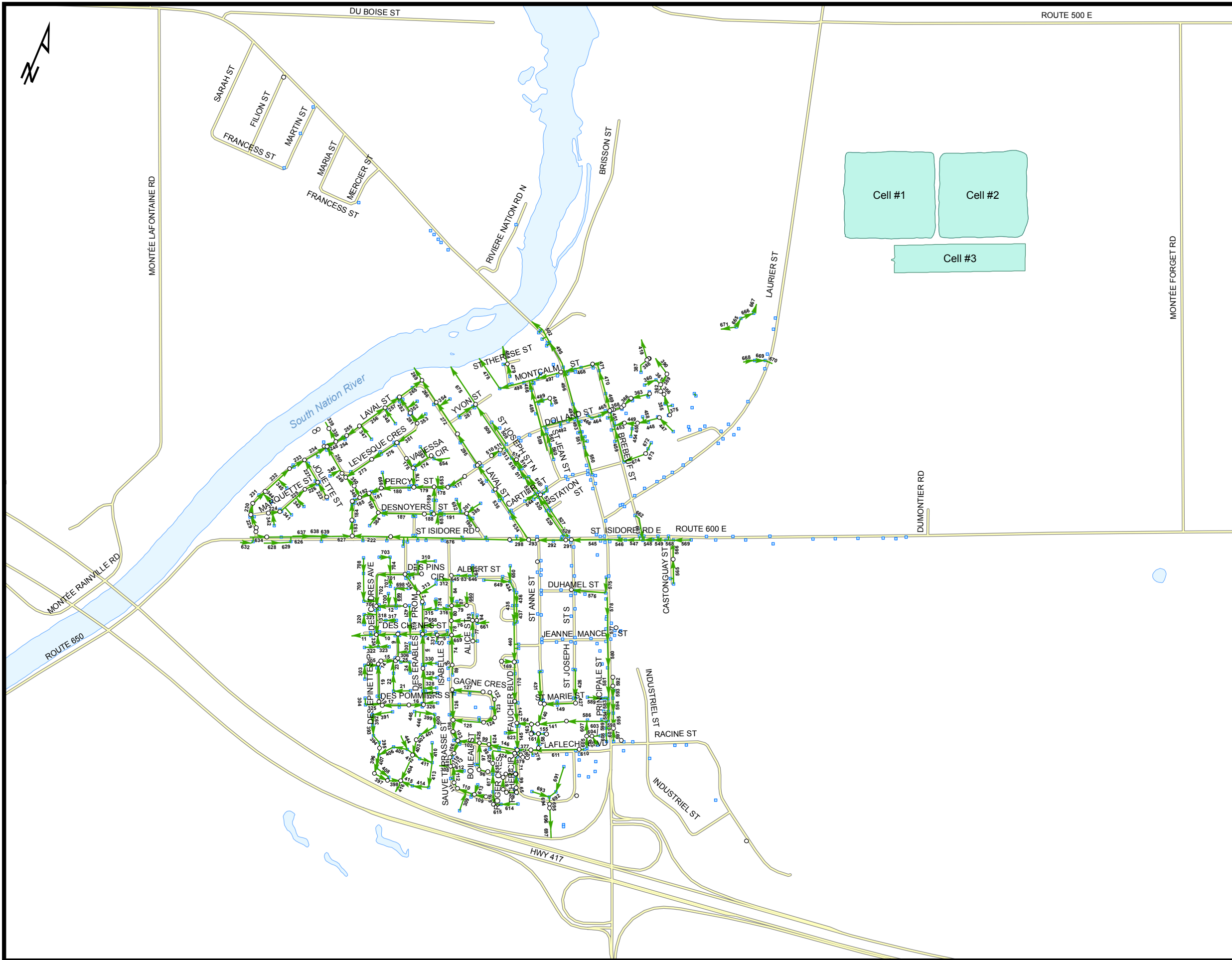
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**Figure 2
Sanitary Sewer System**



Legend

- Catchbasin
- Storm Manhole
- Storm Sewer
- Road
- Lagoon
- ☾ Waterbody



Project No. 131-19700-00

**Casselman
Asset Management Plan**

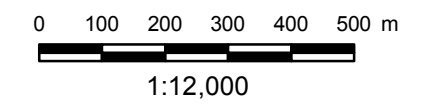


Figure 3

Storm Sewer System

APPENDIX D

ASSET MANAGEMENT STRATEGY

APPENDIX D – ASSET MANAGEMENT STRATEGY

Equipment

Equipment assets include small equipment and tools as well as large road equipment such as graders and trailers. Table 1 summarizes general actions that can be taken to ensure that assets are maintained in a state of good repair.

Table 1 Planned Actions: Equipment	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Regularly scheduling of repair work orders. ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Annually provide the necessary departments with related information when new and additional units are acquired. ▪ Training for staff to ensure safe and efficient operation of equipment.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for all Municipality equipment. ▪ Regular inspection of all Municipality equipment. ▪ Annual inspection, service and certification performed on all applicable machinery vehicles in accordance with MTO requirements. ▪ Regular safety inspections of all vehicles before and after use to ensure safety standards are maintained.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections. ▪ Mid-life component replacements are usually common for larger equipment and can be scheduled accordingly (engine/transmission rebuilds).
Replacement	<ul style="list-style-type: none"> ▪ Equipment replacement based on inspections. ▪ Equipment replacement forecast reviewed annually.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.).

Vehicles

Vehicles are considered for all service areas including Fire, Roads and other general government vehicles. Actions related to maintaining the fleet are unique to each type of vehicle unit. Table 2 summarizes general actions that can be taken to ensure that fleet vehicles are maintained in a state of good repair.

Table 2	
Planned Actions: Vehicles	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Regularly scheduling of repair work orders. ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Annually provide the necessary departments with related information when new and additional units are acquired. ▪ Training for staff to ensure safe and efficient operation of vehicles.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for all Municipality vehicles. ▪ Regular inspection of all Municipality vehicles. Emergency vehicles should be inspected in accordance with industry and regulatory guidelines. ▪ Annual inspection, service and certification performed on all applicable vehicles in accordance with MTO requirements. ▪ Regular safety inspections of all vehicles before and after use to ensure safety standards are maintained.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections. ▪ Mid-life component replacements are usually common for larger vehicles and can be scheduled accordingly (engine/transmission rebuilds).
Replacement	<ul style="list-style-type: none"> ▪ Vehicle replacement based on inspections. ▪ Vehicle replacement forecast reviewed annually.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.). In particular the recommendations in the Corporate Energy Management Plan 2014

Buildings

There are a variety of buildings in the Municipality that are utilized for various purposes. Usually, customized maintenance plans are required for each facility depending on their purpose. Table 3 summarizes general actions that can be employed to ensure that Municipality facilities are maintained in a state of good repair.

Table 3 Planned Actions: Buildings	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by condition assessments and regular inspections as needed. ▪ Business cases, special studies and consultation with stakeholders should be done when constructing a new facility or modifying an existing facility. ▪ Review of the design and layout of buildings and properties to minimize maintenance costs through design efficiencies over the lifecycle of buildings. ▪ Adjust service levels if necessary.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Buildings and facilities inspected regularly in accordance with occupational health and safety regulations ▪ HVAC and heating systems inspected regularly. ▪ Plumbing inspected regularly. ▪ Maintain electrical systems to Electrical Safety Authority standards. ▪ Fire alarms, fire extinguishers and emergency lights inspected regularly.
Renewal/ Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Component replacement based on inspections.
Disposal	<ul style="list-style-type: none"> ▪ Selling or demolishing facilities that are no longer in use or underutilized. ▪ Re-use or sell land not in use.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Assumptions on required facility space through development agreements if necessary.

Land Improvements

Table 4 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 4	
Planned Actions: Land Improvements	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by regular inspections as needed. ▪ Update policies and procedures regarding the accounting and reporting of the Municipality’s tangible capital assets. ▪ Develop a Recreational Master Plan to identify needs and goals for local recreational facilities provided by the Municipality
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for all Municipality land improvements. ▪ Pool safety and maintenance to industry and legislative standards ▪ Inspection of assets on a regular basis to ensure safety
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Component replacement based on inspection.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Continue to track future needs based on the Parks and Recreation Services Master Plan

Roads & Related

The roads and related category, includes all Municipality roads and related infrastructure. Regular maintenance and inspections are required to maintain safety and operational standards for roads. Table 5 summarizes general actions that can be taken to ensure that roads are maintained in a state of good repair.

Table 5	
Planned Actions: Roads & Related	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Regularly scheduling of repair work orders. ▪ Annually provide the necessary departments with related information when new and additional equipment is acquired. ▪ Continue to conduct road inspections and maintain an up-to-date database (ie. Inventory of roads in Casselman).
Maintenance Activities	<ul style="list-style-type: none"> ▪ Regular maintenance including, road sweeping, snow removal, dust control, roadside vegetation management, and roadside ditch cleanout and clearing. ▪ Continued maintenance of roads in line with O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways. ▪ Continue to monitor road restrictions based on Municipality policy, in particular for load restrictions in effect during the spring months ▪ Maintain roads in the winter based on the Snow Clearing Policy minimum standards.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Resurfacing of poor conditioned paved roads. ▪ Regular grading and application of gravel for gravel roads. ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Road reconstruction based on condition assessments.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition. ▪ Convert low traffic roads to less costly gravel if necessary.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. Ensure assumed roads are tracked through the asset management plan. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.).

Stormwater

Table 6 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 6	
Planned Actions: Stormwater	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Regularly scheduling of repair work orders. ▪ Annually provide the necessary departments with related information when works are completed.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for components of the stormwater system. ▪ Regular safety inspections.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Components replaced based on needs.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.).

Water

Table 7 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 7 Planned Actions: Water	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Regularly scheduling of repair work orders. ▪ Annually provide the necessary departments with related information when works are completed. ▪ Continue investing capital and operational funds to provide upgrades and rehabilitations to treatment and distribution systems. ▪ Establish and upgrade current practices and policies. ▪ Continue to provide Water Treatment Plan Annual Reports, as per Ministry of the Environment requirements. ▪ Liaise with the sewer and water operator to ensure continued maintenance of sanitary sewage and water systems.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for components of the water system. ▪ Regular safety inspections. ▪ CCTV camera inspections performed as identified and needed.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Components replaced based on needs.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.).

Sewer

Table 8 summarizes general actions that can be taken to ensure that these assets are maintained in a state of good repair.

Table 8 Planned Actions: Sewer	
Areas	Planned Actions
Non-Infrastructure Solutions	<ul style="list-style-type: none"> ▪ Operating budgets should be informed by regular inspections as needed. ▪ Adjust service levels if necessary. ▪ Regularly scheduling of repair work orders. ▪ Annually provide the necessary departments with related information when works are completed. ▪ Liaise with the sewer and water operator to ensure continued maintenance of sanitary sewage and water systems.
Maintenance Activities	<ul style="list-style-type: none"> ▪ Preventative maintenance program for the sewer system. ▪ CCTV camera inspections performed as identified and needed.
Renewal/Rehabilitation	<ul style="list-style-type: none"> ▪ Regular component repairs based on inspections.
Replacement	<ul style="list-style-type: none"> ▪ Components replaced based on needs.
Disposal	<ul style="list-style-type: none"> ▪ Dispose or sell assets that are no longer in use or are in poor condition.
Expansion	<ul style="list-style-type: none"> ▪ Identify needs through regular capital planning. ▪ Service improvements made where possible (new technologies, environmental impacts, etc.).

APPENDIX E

DETAILED FINANCING STRATEGY TABLES

Table 1a
Municipality of Casselman
2021 Asset Management Plan
Close Cumulative Infrastructure Deficit by 2060 (Tax Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Taxation (Including Transfers to Reserves)	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 6,407,022	\$ 558,735			\$ 112,525	\$ 298,018	\$ 969,278	\$ 5,437,744	\$ 5,437,744
2022	\$ 6,830,266	\$ 743,022	\$ 184,287	33.0%	\$ 112,525		\$ 855,547	\$ 5,974,719	\$ 11,412,464
2023	\$ 6,794,582	\$ 927,309	\$ 184,287	24.8%	\$ 117,418		\$ 1,044,727	\$ 5,749,855	\$ 17,162,319
2024	\$ 6,758,438	\$ 1,111,596	\$ 184,287	19.9%	\$ 117,418		\$ 1,229,014	\$ 5,529,425	\$ 22,691,744
2025	\$ 6,013,557	\$ 1,295,883	\$ 184,287	16.6%	\$ 117,418		\$ 1,413,301	\$ 4,600,257	\$ 27,292,000
2026	\$ 5,934,198	\$ 1,480,170	\$ 184,287	14.2%	\$ 117,418		\$ 1,597,588	\$ 4,336,610	\$ 31,628,611
2027	\$ 5,860,687	\$ 1,664,457	\$ 184,287	12.5%	\$ 117,418		\$ 1,781,875	\$ 4,078,812	\$ 35,707,422
2028	\$ 5,631,942	\$ 1,848,744	\$ 184,287	11.1%	\$ 117,418		\$ 1,966,162	\$ 3,665,780	\$ 39,373,202
2029	\$ 5,464,242	\$ 2,033,031	\$ 184,287	10.0%	\$ 117,418		\$ 2,150,449	\$ 3,313,792	\$ 42,686,995
2030	\$ 5,425,570	\$ 2,217,318	\$ 184,287	9.1%	\$ 117,418		\$ 2,334,736	\$ 3,090,834	\$ 45,777,829
2031	\$ 5,348,706	\$ 2,401,605	\$ 184,287	8.3%	\$ 117,418		\$ 2,519,023	\$ 2,829,683	\$ 48,607,512
2032	\$ 5,157,516	\$ 2,585,892	\$ 184,287	7.7%	\$ 117,418		\$ 2,703,310	\$ 2,454,206	\$ 51,061,717
2033	\$ 4,667,410	\$ 2,770,180	\$ 184,287	7.1%	\$ 117,418		\$ 2,887,598	\$ 1,779,812	\$ 52,841,529
2034	\$ 4,530,482	\$ 2,954,467	\$ 184,287	6.7%	\$ 117,418		\$ 3,071,885	\$ 1,458,597	\$ 54,300,127
2035	\$ 4,289,852	\$ 3,138,754	\$ 184,287	6.2%	\$ 117,418		\$ 3,256,172	\$ 1,033,680	\$ 55,333,807
2036	\$ 4,289,852	\$ 3,323,041	\$ 184,287	5.9%	\$ 117,418		\$ 3,440,459	\$ 849,393	\$ 56,183,200
2037	\$ 3,903,741	\$ 3,507,328	\$ 184,287	5.5%	\$ 117,418		\$ 3,624,746	\$ 278,995	\$ 56,462,195
2038	\$ 3,895,161	\$ 3,691,615	\$ 184,287	5.3%	\$ 117,418		\$ 3,809,033	\$ 86,128	\$ 56,548,323
2039	\$ 3,895,161	\$ 3,875,902	\$ 184,287	5.0%	\$ 117,418		\$ 3,993,320	\$ (98,159)	\$ 56,450,163
2040	\$ 3,614,335	\$ 4,060,189	\$ 184,287	4.8%	\$ 117,418		\$ 4,177,607	\$ (563,272)	\$ 55,886,891
2041	\$ 3,614,335	\$ 4,244,476	\$ 184,287	4.5%	\$ 117,418		\$ 4,361,894	\$ (747,559)	\$ 55,139,332
2042	\$ 3,587,801	\$ 4,428,763	\$ 184,287	4.3%	\$ 117,418		\$ 4,546,181	\$ (958,380)	\$ 54,180,952
2043	\$ 3,461,987	\$ 4,613,050	\$ 184,287	4.2%	\$ 117,418		\$ 4,730,468	\$ (1,268,481)	\$ 52,912,471
2044	\$ 3,461,987	\$ 4,797,337	\$ 184,287	4.0%	\$ 117,418		\$ 4,914,755	\$ (1,452,768)	\$ 51,459,703
2045	\$ 3,461,987	\$ 4,981,625	\$ 184,287	3.8%	\$ 117,418		\$ 5,099,043	\$ (1,637,055)	\$ 49,822,648
2046	\$ 3,405,180	\$ 5,165,912	\$ 184,287	3.7%	\$ 117,418		\$ 5,283,330	\$ (1,878,149)	\$ 47,944,498
2047	\$ 3,379,689	\$ 5,350,199	\$ 184,287	3.6%	\$ 117,418		\$ 5,467,617	\$ (2,087,928)	\$ 45,856,571
2048	\$ 3,379,689	\$ 5,534,486	\$ 184,287	3.4%	\$ 117,418		\$ 5,651,904	\$ (2,272,215)	\$ 43,584,356
2049	\$ 3,379,689	\$ 5,718,773	\$ 184,287	3.3%	\$ 117,418		\$ 5,836,191	\$ (2,456,502)	\$ 41,127,854
2050	\$ 3,379,689	\$ 5,903,060	\$ 184,287	3.2%	\$ 117,418		\$ 6,020,478	\$ (2,640,789)	\$ 38,487,065
2051	\$ 3,379,689	\$ 6,087,347	\$ 184,287	3.1%	\$ 117,418		\$ 6,204,765	\$ (2,825,076)	\$ 35,661,989
2052	\$ 3,173,813	\$ 6,271,634	\$ 184,287	3.0%	\$ 117,418		\$ 6,389,052	\$ (3,215,239)	\$ 32,446,750
2053	\$ 3,173,813	\$ 6,455,921	\$ 184,287	2.9%	\$ 117,418		\$ 6,573,339	\$ (3,399,526)	\$ 29,047,224
2054	\$ 3,173,813	\$ 6,640,208	\$ 184,287	2.9%	\$ 117,418		\$ 6,757,626	\$ (3,583,813)	\$ 25,463,410
2055	\$ 3,159,934	\$ 6,824,495	\$ 184,287	2.8%	\$ 117,418		\$ 6,941,913	\$ (3,781,979)	\$ 21,681,431
2056	\$ 3,159,934	\$ 7,008,782	\$ 184,287	2.7%	\$ 117,418		\$ 7,126,200	\$ (3,966,266)	\$ 17,715,165
2057	\$ 3,159,934	\$ 7,193,070	\$ 184,287	2.6%	\$ 117,418		\$ 7,310,488	\$ (4,150,553)	\$ 13,564,612
2058	\$ 3,157,524	\$ 7,377,357	\$ 184,287	2.6%	\$ 117,418		\$ 7,494,775	\$ (4,337,250)	\$ 9,227,362
2059	\$ 3,157,524	\$ 7,561,644	\$ 184,287	2.5%	\$ 117,418		\$ 7,679,062	\$ (4,521,537)	\$ 4,705,824
2060	\$ 3,157,524	\$ 7,745,931	\$ 184,287	2.4%	\$ 117,418		\$ 7,863,349	\$ (4,705,824)	\$ (0)
40-Year Infrastructure Deficit									

Total Tax Funding	\$ 166,093,306
2021 Total Tax Levy	\$ 3,221,180
Inc. as % of Tax Levy	5.72%



Table 2a
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 1: Close In-Year Funding Gap by 2040 (Tax Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Taxation (Including Transfers to Reserves)	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 6,407,022	\$ 558,735			\$ 112,525	\$ 298,018	\$ 969,278	\$ 5,437,744	\$ 5,437,744
2022	\$ 6,830,266	\$ 713,376	\$ 154,641	27.7%	\$ 112,525	\$ -	\$ 825,901	\$ 6,004,365	\$ 11,442,110
2023	\$ 6,794,582	\$ 868,017	\$ 154,641	21.7%	\$ 117,418	\$ -	\$ 985,435	\$ 5,809,147	\$ 17,251,257
2024	\$ 6,758,438	\$ 1,022,658	\$ 154,641	17.8%	\$ 117,418	\$ -	\$ 1,140,076	\$ 5,618,362	\$ 22,869,619
2025	\$ 6,013,557	\$ 1,177,299	\$ 154,641	15.1%	\$ 117,418	\$ -	\$ 1,294,717	\$ 4,718,840	\$ 27,588,459
2026	\$ 5,934,198	\$ 1,331,940	\$ 154,641	13.1%	\$ 117,418	\$ -	\$ 1,449,358	\$ 4,484,840	\$ 32,073,299
2027	\$ 5,860,687	\$ 1,486,582	\$ 154,641	11.6%	\$ 117,418	\$ -	\$ 1,604,000	\$ 4,256,687	\$ 36,329,986
2028	\$ 5,631,942	\$ 1,641,223	\$ 154,641	10.4%	\$ 117,418	\$ -	\$ 1,758,641	\$ 3,873,301	\$ 40,203,288
2029	\$ 5,464,242	\$ 1,795,864	\$ 154,641	9.4%	\$ 117,418	\$ -	\$ 1,913,282	\$ 3,550,960	\$ 43,754,247
2030	\$ 5,425,570	\$ 1,950,505	\$ 154,641	8.6%	\$ 117,418	\$ -	\$ 2,067,923	\$ 3,357,647	\$ 47,111,894
2031	\$ 5,348,706	\$ 2,105,146	\$ 154,641	7.9%	\$ 117,418	\$ -	\$ 2,222,564	\$ 3,126,142	\$ 50,238,036
2032	\$ 5,157,516	\$ 2,259,788	\$ 154,641	7.3%	\$ 117,418	\$ -	\$ 2,377,206	\$ 2,780,311	\$ 53,018,347
2033	\$ 4,667,410	\$ 2,414,429	\$ 154,641	6.8%	\$ 117,418	\$ -	\$ 2,531,847	\$ 2,135,563	\$ 55,153,910
2034	\$ 4,530,482	\$ 2,569,070	\$ 154,641	6.4%	\$ 117,418	\$ -	\$ 2,686,488	\$ 1,843,994	\$ 56,997,904
2035	\$ 4,289,852	\$ 2,723,711	\$ 154,641	6.0%	\$ 117,418	\$ -	\$ 2,841,129	\$ 1,448,723	\$ 58,446,626
2036	\$ 4,289,852	\$ 2,878,352	\$ 154,641	5.7%	\$ 117,418	\$ -	\$ 2,995,770	\$ 1,294,081	\$ 59,740,708
2037	\$ 3,903,741	\$ 3,032,993	\$ 154,641	5.4%	\$ 117,418	\$ -	\$ 3,150,411	\$ 753,329	\$ 60,494,037
2038	\$ 3,895,161	\$ 3,187,635	\$ 154,641	5.1%	\$ 117,418	\$ -	\$ 3,305,053	\$ 590,108	\$ 61,084,145
2039	\$ 3,895,161	\$ 3,342,276	\$ 154,641	4.9%	\$ 117,418	\$ -	\$ 3,459,694	\$ 435,467	\$ 61,519,612
2040	\$ 3,614,335	\$ 3,496,917	\$ 154,641	4.6%	\$ 117,418	\$ -	\$ 3,614,335	\$ -	\$ 61,519,612
2041	\$ 3,614,335	\$ 3,651,558	\$ 154,641	4.4%	\$ 117,418	\$ -	\$ 3,768,976	\$ (154,641)	\$ 61,364,971
2042	\$ 3,587,801	\$ 3,806,199	\$ 154,641	4.2%	\$ 117,418	\$ -	\$ 3,923,617	\$ (335,817)	\$ 61,029,154
2043	\$ 3,461,987	\$ 3,960,841	\$ 154,641	4.1%	\$ 117,418	\$ -	\$ 4,078,259	\$ (616,271)	\$ 60,412,883
2044	\$ 3,461,987	\$ 4,115,482	\$ 154,641	3.9%	\$ 117,418	\$ -	\$ 4,232,900	\$ (770,912)	\$ 59,641,971
2045	\$ 3,461,987	\$ 4,270,123	\$ 154,641	3.8%	\$ 117,418	\$ -	\$ 4,387,541	\$ (925,553)	\$ 58,716,418
2046	\$ 3,405,180	\$ 4,424,764	\$ 154,641	3.6%	\$ 117,418	\$ -	\$ 4,542,182	\$ (1,137,002)	\$ 57,579,416
2047	\$ 3,379,689	\$ 4,579,405	\$ 154,641	3.5%	\$ 117,418	\$ -	\$ 4,696,823	\$ (1,317,134)	\$ 56,262,281
2048	\$ 3,379,689	\$ 4,734,046	\$ 154,641	3.4%	\$ 117,418	\$ -	\$ 4,851,464	\$ (1,471,775)	\$ 54,790,506
2049	\$ 3,379,689	\$ 4,888,688	\$ 154,641	3.3%	\$ 117,418	\$ -	\$ 5,006,106	\$ (1,626,417)	\$ 53,164,089
2050	\$ 3,379,689	\$ 5,043,329	\$ 154,641	3.2%	\$ 117,418	\$ -	\$ 5,160,747	\$ (1,781,058)	\$ 51,383,031
2051	\$ 3,379,689	\$ 5,197,970	\$ 154,641	3.1%	\$ 117,418	\$ -	\$ 5,315,388	\$ (1,935,699)	\$ 49,447,332
2052	\$ 3,173,813	\$ 5,352,611	\$ 154,641	3.0%	\$ 117,418	\$ -	\$ 5,470,029	\$ (2,296,216)	\$ 47,151,116
2053	\$ 3,173,813	\$ 5,507,252	\$ 154,641	2.9%	\$ 117,418	\$ -	\$ 5,624,670	\$ (2,450,858)	\$ 44,700,258
2054	\$ 3,173,813	\$ 5,661,894	\$ 154,641	2.8%	\$ 117,418	\$ -	\$ 5,779,312	\$ (2,605,499)	\$ 42,094,760
2055	\$ 3,159,934	\$ 5,816,535	\$ 154,641	2.7%	\$ 117,418	\$ -	\$ 5,933,953	\$ (2,774,018)	\$ 39,320,741
2056	\$ 3,159,934	\$ 5,971,176	\$ 154,641	2.7%	\$ 117,418	\$ -	\$ 6,088,594	\$ (2,928,660)	\$ 36,392,082
2057	\$ 3,159,934	\$ 6,125,817	\$ 154,641	2.6%	\$ 117,418	\$ -	\$ 6,243,235	\$ (3,083,301)	\$ 33,308,781
2058	\$ 3,157,524	\$ 6,280,458	\$ 154,641	2.5%	\$ 117,418	\$ -	\$ 6,397,876	\$ (3,240,352)	\$ 30,068,429
2059	\$ 3,157,524	\$ 6,435,100	\$ 154,641	2.5%	\$ 117,418	\$ -	\$ 6,552,518	\$ (3,394,993)	\$ 26,673,436
2060	\$ 3,157,524	\$ 6,589,741	\$ 154,641	2.4%	\$ 117,418	\$ -	\$ 6,707,159	\$ (3,549,634)	\$ 23,123,801
40-Year Infrastructure Deficit									

Total Tax Funding	\$ 142,969,504
2021 Total Tax Levy	\$ 3,221,180
Inc. as % of Tax Levy	4.80%



Table 3a
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 2: Close In-Year Funding Gap by 2050 (Tax Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Taxation (Including Transfers to Reserves)	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 6,407,022	\$ 558,735			\$ 112,525	\$ 298,018	\$ 969,278	\$ 5,437,744	\$ 5,437,744
2022	\$ 6,830,266	\$ 651,960	\$ 93,225	16.7%	\$ 112,525	\$ -	\$ 764,485	\$ 6,065,781	\$ 11,503,526
2023	\$ 6,794,582	\$ 745,185	\$ 93,225	14.3%	\$ 117,418	\$ -	\$ 862,603	\$ 5,931,979	\$ 17,435,504
2024	\$ 6,758,438	\$ 838,411	\$ 93,225	12.5%	\$ 117,418	\$ -	\$ 955,829	\$ 5,802,610	\$ 23,238,114
2025	\$ 6,013,557	\$ 931,636	\$ 93,225	11.1%	\$ 117,418	\$ -	\$ 1,049,054	\$ 4,964,503	\$ 28,202,617
2026	\$ 5,934,198	\$ 1,024,862	\$ 93,225	10.0%	\$ 117,418	\$ -	\$ 1,142,280	\$ 4,791,919	\$ 32,994,536
2027	\$ 5,860,687	\$ 1,118,087	\$ 93,225	9.1%	\$ 117,418	\$ -	\$ 1,235,505	\$ 4,625,182	\$ 37,619,718
2028	\$ 5,631,942	\$ 1,211,312	\$ 93,225	8.3%	\$ 117,418	\$ -	\$ 1,328,730	\$ 4,303,212	\$ 41,922,930
2029	\$ 5,464,242	\$ 1,304,538	\$ 93,225	7.7%	\$ 117,418	\$ -	\$ 1,421,956	\$ 4,042,286	\$ 45,965,216
2030	\$ 5,425,570	\$ 1,397,763	\$ 93,225	7.1%	\$ 117,418	\$ -	\$ 1,515,181	\$ 3,910,389	\$ 49,875,605
2031	\$ 5,348,706	\$ 1,490,988	\$ 93,225	6.7%	\$ 117,418	\$ -	\$ 1,608,406	\$ 3,740,300	\$ 53,615,904
2032	\$ 5,157,516	\$ 1,584,214	\$ 93,225	6.3%	\$ 117,418	\$ -	\$ 1,701,632	\$ 3,455,884	\$ 57,071,789
2033	\$ 4,667,410	\$ 1,677,439	\$ 93,225	5.9%	\$ 117,418	\$ -	\$ 1,794,857	\$ 2,872,552	\$ 59,944,341
2034	\$ 4,530,482	\$ 1,770,665	\$ 93,225	5.6%	\$ 117,418	\$ -	\$ 1,888,083	\$ 2,642,399	\$ 62,586,740
2035	\$ 4,289,852	\$ 1,863,890	\$ 93,225	5.3%	\$ 117,418	\$ -	\$ 1,981,308	\$ 2,308,544	\$ 64,895,284
2036	\$ 4,289,852	\$ 1,957,115	\$ 93,225	5.0%	\$ 117,418	\$ -	\$ 2,074,533	\$ 2,215,318	\$ 67,110,602
2037	\$ 3,903,741	\$ 2,050,341	\$ 93,225	4.8%	\$ 117,418	\$ -	\$ 2,167,759	\$ 1,735,982	\$ 68,846,584
2038	\$ 3,895,161	\$ 2,143,566	\$ 93,225	4.5%	\$ 117,418	\$ -	\$ 2,260,984	\$ 1,634,177	\$ 70,480,761
2039	\$ 3,895,161	\$ 2,236,792	\$ 93,225	4.3%	\$ 117,418	\$ -	\$ 2,354,210	\$ 1,540,951	\$ 72,021,712
2040	\$ 3,614,335	\$ 2,330,017	\$ 93,225	4.2%	\$ 117,418	\$ -	\$ 2,447,435	\$ 1,166,900	\$ 73,188,612
2041	\$ 3,614,335	\$ 2,423,242	\$ 93,225	4.0%	\$ 117,418	\$ -	\$ 2,540,660	\$ 1,073,675	\$ 74,262,286
2042	\$ 3,587,801	\$ 2,516,468	\$ 93,225	3.8%	\$ 117,418	\$ -	\$ 2,633,886	\$ 953,915	\$ 75,216,201
2043	\$ 3,461,987	\$ 2,609,693	\$ 93,225	3.7%	\$ 117,418	\$ -	\$ 2,727,111	\$ 734,876	\$ 75,951,077
2044	\$ 3,461,987	\$ 2,702,919	\$ 93,225	3.6%	\$ 117,418	\$ -	\$ 2,820,337	\$ 641,651	\$ 76,592,728
2045	\$ 3,461,987	\$ 2,796,144	\$ 93,225	3.4%	\$ 117,418	\$ -	\$ 2,913,562	\$ 548,425	\$ 77,141,154
2046	\$ 3,405,180	\$ 2,889,369	\$ 93,225	3.3%	\$ 117,418	\$ -	\$ 3,006,787	\$ 398,393	\$ 77,539,546
2047	\$ 3,379,689	\$ 2,982,595	\$ 93,225	3.2%	\$ 117,418	\$ -	\$ 3,100,013	\$ 279,676	\$ 77,819,223
2048	\$ 3,379,689	\$ 3,075,820	\$ 93,225	3.1%	\$ 117,418	\$ -	\$ 3,193,238	\$ 186,451	\$ 78,005,673
2049	\$ 3,379,689	\$ 3,169,046	\$ 93,225	3.0%	\$ 117,418	\$ -	\$ 3,286,464	\$ 93,225	\$ 78,098,899
2050	\$ 3,379,689	\$ 3,262,271	\$ 93,225	2.9%	\$ 117,418	\$ -	\$ 3,379,689	\$ -	\$ 78,098,899
2051	\$ 3,379,689	\$ 3,355,496	\$ 93,225	2.9%	\$ 117,418	\$ -	\$ 3,472,914	\$ (93,225)	\$ 78,005,673
2052	\$ 3,173,813	\$ 3,448,722	\$ 93,225	2.8%	\$ 117,418	\$ -	\$ 3,566,140	\$ (392,327)	\$ 77,613,346
2053	\$ 3,173,813	\$ 3,541,947	\$ 93,225	2.7%	\$ 117,418	\$ -	\$ 3,659,365	\$ (485,552)	\$ 77,127,794
2054	\$ 3,173,813	\$ 3,635,173	\$ 93,225	2.6%	\$ 117,418	\$ -	\$ 3,752,591	\$ (578,778)	\$ 76,549,016
2055	\$ 3,159,934	\$ 3,728,398	\$ 93,225	2.6%	\$ 117,418	\$ -	\$ 3,845,816	\$ (685,882)	\$ 75,863,135
2056	\$ 3,159,934	\$ 3,821,623	\$ 93,225	2.5%	\$ 117,418	\$ -	\$ 3,939,041	\$ (779,107)	\$ 75,084,028
2057	\$ 3,159,934	\$ 3,914,849	\$ 93,225	2.4%	\$ 117,418	\$ -	\$ 4,032,267	\$ (872,332)	\$ 74,211,695
2058	\$ 3,157,524	\$ 4,008,074	\$ 93,225	2.4%	\$ 117,418	\$ -	\$ 4,125,492	\$ (967,968)	\$ 73,243,727
2059	\$ 3,157,524	\$ 4,101,300	\$ 93,225	2.3%	\$ 117,418	\$ -	\$ 4,218,718	\$ (1,061,193)	\$ 72,182,534
2060	\$ 3,157,524	\$ 4,194,525	\$ 93,225	2.3%	\$ 117,418	\$ -	\$ 4,311,943	\$ (1,154,419)	\$ 71,028,115
40-Year Infrastructure Deficit									

Total Tax Funding	\$ 95,065,190
2021 Total Tax Levy	\$ 3,221,180
Inc. as % of Tax Levy	2.89%



Table 4a
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 3: Close In-Year Funding Gap by 2060 (Tax Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Taxation (Including Transfers to Reserves)	Yearly Increase in Tax Funding (\$)	Yearly Increase in Tax Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 6,407,022	\$ 558,735			\$ 112,525	\$ 298,018	\$ 969,278	\$ 5,437,744	\$ 5,437,744
2022	\$ 6,830,266	\$ 622,359	\$ 63,625	11.4%	\$ 112,525	\$ -	\$ 734,884	\$ 6,095,382	\$ 11,533,126
2023	\$ 6,794,582	\$ 685,984	\$ 63,625	10.2%	\$ 117,418	\$ -	\$ 803,402	\$ 5,991,180	\$ 17,524,306
2024	\$ 6,758,438	\$ 749,609	\$ 63,625	9.3%	\$ 117,418	\$ -	\$ 867,027	\$ 5,891,411	\$ 23,415,717
2025	\$ 6,013,557	\$ 813,234	\$ 63,625	8.5%	\$ 117,418	\$ -	\$ 930,652	\$ 5,082,905	\$ 28,498,622
2026	\$ 5,934,198	\$ 876,859	\$ 63,625	7.8%	\$ 117,418	\$ -	\$ 994,277	\$ 4,939,921	\$ 33,438,543
2027	\$ 5,860,687	\$ 940,484	\$ 63,625	7.3%	\$ 117,418	\$ -	\$ 1,057,902	\$ 4,802,785	\$ 38,241,328
2028	\$ 5,631,942	\$ 1,004,109	\$ 63,625	6.8%	\$ 117,418	\$ -	\$ 1,121,527	\$ 4,510,415	\$ 42,751,743
2029	\$ 5,464,242	\$ 1,067,734	\$ 63,625	6.3%	\$ 117,418	\$ -	\$ 1,185,152	\$ 4,279,090	\$ 47,030,833
2030	\$ 5,425,570	\$ 1,131,359	\$ 63,625	6.0%	\$ 117,418	\$ -	\$ 1,248,777	\$ 4,176,793	\$ 51,207,626
2031	\$ 5,348,706	\$ 1,194,984	\$ 63,625	5.6%	\$ 117,418	\$ -	\$ 1,312,402	\$ 4,036,304	\$ 55,243,931
2032	\$ 5,157,516	\$ 1,258,609	\$ 63,625	5.3%	\$ 117,418	\$ -	\$ 1,376,027	\$ 3,781,490	\$ 59,025,420
2033	\$ 4,667,410	\$ 1,322,234	\$ 63,625	5.1%	\$ 117,418	\$ -	\$ 1,439,652	\$ 3,227,758	\$ 62,253,178
2034	\$ 4,530,482	\$ 1,385,858	\$ 63,625	4.8%	\$ 117,418	\$ -	\$ 1,503,276	\$ 3,027,205	\$ 65,280,384
2035	\$ 4,289,852	\$ 1,449,483	\$ 63,625	4.6%	\$ 117,418	\$ -	\$ 1,566,901	\$ 2,722,950	\$ 68,003,334
2036	\$ 4,289,852	\$ 1,513,108	\$ 63,625	4.4%	\$ 117,418	\$ -	\$ 1,630,526	\$ 2,659,326	\$ 70,662,660
2037	\$ 3,903,741	\$ 1,576,733	\$ 63,625	4.2%	\$ 117,418	\$ -	\$ 1,694,151	\$ 2,209,589	\$ 72,872,249
2038	\$ 3,895,161	\$ 1,640,358	\$ 63,625	4.0%	\$ 117,418	\$ -	\$ 1,757,776	\$ 2,137,385	\$ 75,009,634
2039	\$ 3,895,161	\$ 1,703,983	\$ 63,625	3.9%	\$ 117,418	\$ -	\$ 1,821,401	\$ 2,073,760	\$ 77,083,394
2040	\$ 3,614,335	\$ 1,767,608	\$ 63,625	3.7%	\$ 117,418	\$ -	\$ 1,885,026	\$ 1,729,309	\$ 78,812,703
2041	\$ 3,614,335	\$ 1,831,233	\$ 63,625	3.6%	\$ 117,418	\$ -	\$ 1,948,651	\$ 1,665,684	\$ 80,478,387
2042	\$ 3,587,801	\$ 1,894,858	\$ 63,625	3.5%	\$ 117,418	\$ -	\$ 2,012,276	\$ 1,575,525	\$ 82,053,912
2043	\$ 3,461,987	\$ 1,958,483	\$ 63,625	3.4%	\$ 117,418	\$ -	\$ 2,075,901	\$ 1,386,087	\$ 83,439,999
2044	\$ 3,461,987	\$ 2,022,108	\$ 63,625	3.2%	\$ 117,418	\$ -	\$ 2,139,526	\$ 1,322,462	\$ 84,762,461
2045	\$ 3,461,987	\$ 2,085,733	\$ 63,625	3.1%	\$ 117,418	\$ -	\$ 2,203,151	\$ 1,258,837	\$ 86,021,298
2046	\$ 3,405,180	\$ 2,149,357	\$ 63,625	3.1%	\$ 117,418	\$ -	\$ 2,266,775	\$ 1,138,405	\$ 87,159,702
2047	\$ 3,379,689	\$ 2,212,982	\$ 63,625	3.0%	\$ 117,418	\$ -	\$ 2,330,400	\$ 1,049,289	\$ 88,208,991
2048	\$ 3,379,689	\$ 2,276,607	\$ 63,625	2.9%	\$ 117,418	\$ -	\$ 2,394,025	\$ 985,664	\$ 89,194,655
2049	\$ 3,379,689	\$ 2,340,232	\$ 63,625	2.8%	\$ 117,418	\$ -	\$ 2,457,650	\$ 922,039	\$ 90,116,694
2050	\$ 3,379,689	\$ 2,403,857	\$ 63,625	2.7%	\$ 117,418	\$ -	\$ 2,521,275	\$ 858,414	\$ 90,975,108
2051	\$ 3,379,689	\$ 2,467,482	\$ 63,625	2.6%	\$ 117,418	\$ -	\$ 2,584,900	\$ 794,789	\$ 91,769,897
2052	\$ 3,173,813	\$ 2,531,107	\$ 63,625	2.6%	\$ 117,418	\$ -	\$ 2,648,525	\$ 525,288	\$ 92,295,185
2053	\$ 3,173,813	\$ 2,594,732	\$ 63,625	2.5%	\$ 117,418	\$ -	\$ 2,712,150	\$ 461,663	\$ 92,756,848
2054	\$ 3,173,813	\$ 2,658,357	\$ 63,625	2.5%	\$ 117,418	\$ -	\$ 2,775,775	\$ 398,038	\$ 93,154,886
2055	\$ 3,159,934	\$ 2,721,982	\$ 63,625	2.4%	\$ 117,418	\$ -	\$ 2,839,400	\$ 320,535	\$ 93,475,420
2056	\$ 3,159,934	\$ 2,785,607	\$ 63,625	2.3%	\$ 117,418	\$ -	\$ 2,903,025	\$ 256,910	\$ 93,732,330
2057	\$ 3,159,934	\$ 2,849,232	\$ 63,625	2.3%	\$ 117,418	\$ -	\$ 2,966,650	\$ 193,285	\$ 93,925,615
2058	\$ 3,157,524	\$ 2,912,856	\$ 63,625	2.2%	\$ 117,418	\$ -	\$ 3,030,274	\$ 127,250	\$ 94,052,865
2059	\$ 3,157,524	\$ 2,976,481	\$ 63,625	2.2%	\$ 117,418	\$ -	\$ 3,093,899	\$ 63,625	\$ 94,116,490
2060	\$ 3,157,524	\$ 3,040,106	\$ 63,625	2.1%	\$ 117,418	\$ -	\$ 3,157,524	\$ -	\$ 94,116,490
40-Year Infrastructure Deficit									

Total Tax Funding	\$	71,976,816
2021 Total Tax Levy	\$	3,221,180
Inc. as % of Tax Levy		1.98%



Table 1b
Municipality of Casselman
2021 Asset Management Plan
Close Cumulative Infrastructure Deficit by 2058 (Rate Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Rates (Including Transfers to Reserves)	Yearly Increase in Rate Funding (\$)	Yearly Increase in Rate Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 8,689,281	\$ 328,457					\$ 328,457	\$ 8,360,823	\$ 8,360,823
2022	\$ 10,815,937	\$ 573,786	\$ 245,329	74.7%			\$ 573,786	\$ 10,242,151	\$ 18,602,975
2023	\$ 9,338,522	\$ 819,115	\$ 245,329	42.8%			\$ 819,115	\$ 8,519,407	\$ 27,122,382
2024	\$ 9,338,522	\$ 1,064,444	\$ 245,329	30.0%			\$ 1,064,444	\$ 8,274,078	\$ 35,396,460
2025	\$ 9,333,488	\$ 1,309,772	\$ 245,329	23.0%			\$ 1,309,772	\$ 8,023,716	\$ 43,420,176
2026	\$ 9,326,284	\$ 1,555,101	\$ 245,329	18.7%			\$ 1,555,101	\$ 7,771,183	\$ 51,191,359
2027	\$ 8,992,047	\$ 1,800,430	\$ 245,329	15.8%			\$ 1,800,430	\$ 7,191,617	\$ 58,382,976
2028	\$ 8,991,553	\$ 2,045,759	\$ 245,329	13.6%			\$ 2,045,759	\$ 6,945,794	\$ 65,328,770
2029	\$ 8,991,553	\$ 2,291,087	\$ 245,329	12.0%			\$ 2,291,087	\$ 6,700,466	\$ 72,029,236
2030	\$ 8,984,463	\$ 2,536,416	\$ 245,329	10.7%			\$ 2,536,416	\$ 6,448,047	\$ 78,477,283
2031	\$ 8,984,241	\$ 2,781,745	\$ 245,329	9.7%			\$ 2,781,745	\$ 6,202,496	\$ 84,679,779
2032	\$ 4,229,224	\$ 3,027,074	\$ 245,329	8.8%			\$ 3,027,074	\$ 1,202,150	\$ 85,881,929
2033	\$ 4,229,224	\$ 3,272,402	\$ 245,329	8.1%			\$ 3,272,402	\$ 956,822	\$ 86,838,751
2034	\$ 4,229,224	\$ 3,517,731	\$ 245,329	7.5%			\$ 3,517,731	\$ 711,493	\$ 87,550,244
2035	\$ 4,148,870	\$ 3,763,060	\$ 245,329	7.0%			\$ 3,763,060	\$ 385,810	\$ 87,936,054
2036	\$ 4,148,870	\$ 4,008,389	\$ 245,329	6.5%			\$ 4,008,389	\$ 140,481	\$ 88,076,535
2037	\$ 3,993,066	\$ 4,253,717	\$ 245,329	6.1%			\$ 4,253,717	\$ (260,651)	\$ 87,815,884
2038	\$ 3,993,066	\$ 4,499,046	\$ 245,329	5.8%			\$ 4,499,046	\$ (505,980)	\$ 87,309,904
2039	\$ 3,993,066	\$ 4,744,375	\$ 245,329	5.5%			\$ 4,744,375	\$ (751,309)	\$ 86,558,595
2040	\$ 3,734,824	\$ 4,989,703	\$ 245,329	5.2%			\$ 4,989,703	\$ (1,254,880)	\$ 85,303,716
2041	\$ 3,734,824	\$ 5,235,032	\$ 245,329	4.9%			\$ 5,235,032	\$ (1,500,208)	\$ 83,803,507
2042	\$ 3,492,123	\$ 5,480,361	\$ 245,329	4.7%			\$ 5,480,361	\$ (1,988,238)	\$ 81,815,269
2043	\$ 3,462,189	\$ 5,725,690	\$ 245,329	4.5%			\$ 5,725,690	\$ (2,263,500)	\$ 79,551,769
2044	\$ 3,462,189	\$ 5,971,018	\$ 245,329	4.3%			\$ 5,971,018	\$ (2,508,829)	\$ 77,042,940
2045	\$ 3,462,189	\$ 6,216,347	\$ 245,329	4.1%			\$ 6,216,347	\$ (2,754,158)	\$ 74,288,782
2046	\$ 3,460,448	\$ 6,461,676	\$ 245,329	3.9%			\$ 6,461,676	\$ (3,001,228)	\$ 71,287,554
2047	\$ 3,363,062	\$ 6,707,005	\$ 245,329	3.8%			\$ 6,707,005	\$ (3,343,942)	\$ 67,943,612
2048	\$ 3,363,062	\$ 6,952,333	\$ 245,329	3.7%			\$ 6,952,333	\$ (3,589,271)	\$ 64,354,341
2049	\$ 3,363,062	\$ 7,197,662	\$ 245,329	3.5%			\$ 7,197,662	\$ (3,834,600)	\$ 60,519,741
2050	\$ 3,363,062	\$ 7,442,991	\$ 245,329	3.4%			\$ 7,442,991	\$ (4,079,929)	\$ 56,439,812
2051	\$ 3,363,062	\$ 7,688,320	\$ 245,329	3.3%			\$ 7,688,320	\$ (4,325,257)	\$ 52,114,555
2052	\$ 3,126,840	\$ 7,933,648	\$ 245,329	3.2%			\$ 7,933,648	\$ (4,806,808)	\$ 47,307,747
2053	\$ 3,126,840	\$ 8,178,977	\$ 245,329	3.1%			\$ 8,178,977	\$ (5,052,137)	\$ 42,255,610
2054	\$ 3,123,776	\$ 8,424,306	\$ 245,329	3.0%			\$ 8,424,306	\$ (5,300,529)	\$ 36,955,080
2055	\$ 3,123,776	\$ 8,669,635	\$ 245,329	2.9%			\$ 8,669,635	\$ (5,545,858)	\$ 31,409,222
2056	\$ 3,123,776	\$ 8,914,963	\$ 245,329	2.8%			\$ 8,914,963	\$ (5,791,187)	\$ 25,618,035
2057	\$ 3,123,776	\$ 9,160,292	\$ 245,329	2.8%			\$ 9,160,292	\$ (6,036,516)	\$ 19,581,520
2058	\$ 3,123,776	\$ 9,405,621	\$ 245,329	2.7%			\$ 9,405,621	\$ (6,281,844)	\$ 13,299,675
2059	\$ 3,123,776	\$ 9,650,950	\$ 245,329	2.6%			\$ 9,650,950	\$ (6,527,173)	\$ 6,772,502
2060	\$ 3,123,776	\$ 9,896,278	\$ 245,329	2.5%			\$ 9,896,278	\$ (6,772,502)	\$ 0
40-Year Infrastructure Deficit									

Total Rate Funding	\$ 204,494,714
2021 Total Rate Levy	\$ 2,079,737
Inc. as % of Rate Levy	11.80%



Table 2b
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 1: Close In-Year Funding Gap by 2040 (Rate Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Rates (Including Transfers to Reserves)	Yearly Increase in Rate Funding (\$)	Yearly Increase in Rate Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 8,689,281	\$ 328,457			\$ -	\$ -	\$ 328,457	\$ 8,360,823	\$ 8,360,823
2022	\$ 10,815,937	\$ 507,740	\$ 179,282	54.6%	\$ -	\$ -	\$ 507,740	\$ 10,308,198	\$ 18,669,021
2023	\$ 9,338,522	\$ 687,022	\$ 179,282	35.3%	\$ -	\$ -	\$ 687,022	\$ 8,651,500	\$ 27,320,521
2024	\$ 9,338,522	\$ 866,305	\$ 179,282	26.1%	\$ -	\$ -	\$ 866,305	\$ 8,472,217	\$ 35,792,738
2025	\$ 9,333,488	\$ 1,045,587	\$ 179,282	20.7%	\$ -	\$ -	\$ 1,045,587	\$ 8,287,901	\$ 44,080,639
2026	\$ 9,326,284	\$ 1,224,870	\$ 179,282	17.1%	\$ -	\$ -	\$ 1,224,870	\$ 8,101,415	\$ 52,182,054
2027	\$ 8,992,047	\$ 1,404,152	\$ 179,282	14.6%	\$ -	\$ -	\$ 1,404,152	\$ 7,587,894	\$ 59,769,948
2028	\$ 8,991,553	\$ 1,583,434	\$ 179,282	12.8%	\$ -	\$ -	\$ 1,583,434	\$ 7,408,118	\$ 67,178,067
2029	\$ 8,991,553	\$ 1,762,717	\$ 179,282	11.3%	\$ -	\$ -	\$ 1,762,717	\$ 7,228,836	\$ 74,406,902
2030	\$ 8,984,463	\$ 1,941,999	\$ 179,282	10.2%	\$ -	\$ -	\$ 1,941,999	\$ 7,042,464	\$ 81,449,366
2031	\$ 8,984,241	\$ 2,121,282	\$ 179,282	9.2%	\$ -	\$ -	\$ 2,121,282	\$ 6,862,959	\$ 88,312,325
2032	\$ 4,229,224	\$ 2,300,564	\$ 179,282	8.5%	\$ -	\$ -	\$ 2,300,564	\$ 1,928,660	\$ 90,240,985
2033	\$ 4,229,224	\$ 2,479,847	\$ 179,282	7.8%	\$ -	\$ -	\$ 2,479,847	\$ 1,749,377	\$ 91,990,362
2034	\$ 4,229,224	\$ 2,659,129	\$ 179,282	7.2%	\$ -	\$ -	\$ 2,659,129	\$ 1,570,095	\$ 93,560,457
2035	\$ 4,148,870	\$ 2,838,412	\$ 179,282	6.7%	\$ -	\$ -	\$ 2,838,412	\$ 1,310,458	\$ 94,870,915
2036	\$ 4,148,870	\$ 3,017,694	\$ 179,282	6.3%	\$ -	\$ -	\$ 3,017,694	\$ 1,131,176	\$ 96,002,090
2037	\$ 3,993,066	\$ 3,196,977	\$ 179,282	5.9%	\$ -	\$ -	\$ 3,196,977	\$ 796,090	\$ 96,798,180
2038	\$ 3,993,066	\$ 3,376,259	\$ 179,282	5.6%	\$ -	\$ -	\$ 3,376,259	\$ 616,807	\$ 97,414,987
2039	\$ 3,993,066	\$ 3,555,541	\$ 179,282	5.3%	\$ -	\$ -	\$ 3,555,541	\$ 437,525	\$ 97,852,512
2040	\$ 3,734,824	\$ 3,734,824	\$ 179,282	5.0%	\$ -	\$ -	\$ 3,734,824	\$ -	\$ 97,852,512
2041	\$ 3,734,824	\$ 3,914,106	\$ 179,282	4.8%	\$ -	\$ -	\$ 3,914,106	\$ (179,282)	\$ 97,673,229
2042	\$ 3,492,123	\$ 4,093,389	\$ 179,282	4.6%	\$ -	\$ -	\$ 4,093,389	\$ (601,266)	\$ 97,071,963
2043	\$ 3,462,189	\$ 4,272,671	\$ 179,282	4.4%	\$ -	\$ -	\$ 4,272,671	\$ (810,482)	\$ 96,261,482
2044	\$ 3,462,189	\$ 4,451,954	\$ 179,282	4.2%	\$ -	\$ -	\$ 4,451,954	\$ (989,764)	\$ 95,271,717
2045	\$ 3,462,189	\$ 4,631,236	\$ 179,282	4.0%	\$ -	\$ -	\$ 4,631,236	\$ (1,169,047)	\$ 94,102,671
2046	\$ 3,460,448	\$ 4,810,519	\$ 179,282	3.9%	\$ -	\$ -	\$ 4,810,519	\$ (1,350,071)	\$ 92,752,600
2047	\$ 3,363,062	\$ 4,989,801	\$ 179,282	3.7%	\$ -	\$ -	\$ 4,989,801	\$ (1,626,739)	\$ 91,125,861
2048	\$ 3,363,062	\$ 5,169,083	\$ 179,282	3.6%	\$ -	\$ -	\$ 5,169,083	\$ (1,806,021)	\$ 89,319,840
2049	\$ 3,363,062	\$ 5,348,366	\$ 179,282	3.5%	\$ -	\$ -	\$ 5,348,366	\$ (1,985,304)	\$ 87,334,537
2050	\$ 3,363,062	\$ 5,527,648	\$ 179,282	3.4%	\$ -	\$ -	\$ 5,527,648	\$ (2,164,586)	\$ 85,169,951
2051	\$ 3,363,062	\$ 5,706,931	\$ 179,282	3.2%	\$ -	\$ -	\$ 5,706,931	\$ (2,343,868)	\$ 82,826,082
2052	\$ 3,126,840	\$ 5,886,213	\$ 179,282	3.1%	\$ -	\$ -	\$ 5,886,213	\$ (2,759,373)	\$ 80,066,709
2053	\$ 3,126,840	\$ 6,065,496	\$ 179,282	3.0%	\$ -	\$ -	\$ 6,065,496	\$ (2,938,655)	\$ 77,128,054
2054	\$ 3,123,776	\$ 6,244,778	\$ 179,282	3.0%	\$ -	\$ -	\$ 6,244,778	\$ (3,121,002)	\$ 74,007,052
2055	\$ 3,123,776	\$ 6,424,061	\$ 179,282	2.9%	\$ -	\$ -	\$ 6,424,061	\$ (3,300,284)	\$ 70,706,768
2056	\$ 3,123,776	\$ 6,603,343	\$ 179,282	2.8%	\$ -	\$ -	\$ 6,603,343	\$ (3,479,567)	\$ 67,227,201
2057	\$ 3,123,776	\$ 6,782,625	\$ 179,282	2.7%	\$ -	\$ -	\$ 6,782,625	\$ (3,658,849)	\$ 63,568,352
2058	\$ 3,123,776	\$ 6,961,908	\$ 179,282	2.6%	\$ -	\$ -	\$ 6,961,908	\$ (3,838,132)	\$ 59,730,220
2059	\$ 3,123,776	\$ 7,141,190	\$ 179,282	2.6%	\$ -	\$ -	\$ 7,141,190	\$ (4,017,414)	\$ 55,712,806
2060	\$ 3,123,776	\$ 7,320,473	\$ 179,282	2.5%	\$ -	\$ -	\$ 7,320,473	\$ (4,196,696)	\$ 51,516,110
40-Year Infrastructure Deficit									

Total Rate Funding	\$ 152,978,604
2021 Total Rate Levy	\$ 2,079,737
Inc. as % of Rate Levy	8.62%



Table 3b
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 2: Close In-Year Funding Gap by 2050 (Rate Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Rates (Including Transfers to Reserves)	Yearly Increase in Rate Funding (\$)	Yearly Increase in Rate Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 8,689,281	\$ 328,457			\$ -	\$ -	\$ 328,457	\$ 8,360,823	\$ 8,360,823
2022	\$ 10,815,937	\$ 433,099	\$ 104,642	31.9%	\$ -	\$ -	\$ 433,099	\$ 10,382,839	\$ 18,743,662
2023	\$ 9,338,522	\$ 537,740	\$ 104,642	24.2%	\$ -	\$ -	\$ 537,740	\$ 8,800,781	\$ 27,544,443
2024	\$ 9,338,522	\$ 642,382	\$ 104,642	19.5%	\$ -	\$ -	\$ 642,382	\$ 8,696,140	\$ 36,240,583
2025	\$ 9,333,488	\$ 747,024	\$ 104,642	16.3%	\$ -	\$ -	\$ 747,024	\$ 8,586,465	\$ 44,827,048
2026	\$ 9,326,284	\$ 851,665	\$ 104,642	14.0%	\$ -	\$ -	\$ 851,665	\$ 8,474,619	\$ 53,301,667
2027	\$ 8,992,047	\$ 956,307	\$ 104,642	12.3%	\$ -	\$ -	\$ 956,307	\$ 8,035,740	\$ 61,337,407
2028	\$ 8,991,553	\$ 1,060,948	\$ 104,642	10.9%	\$ -	\$ -	\$ 1,060,948	\$ 7,930,605	\$ 69,268,012
2029	\$ 8,991,553	\$ 1,165,590	\$ 104,642	9.9%	\$ -	\$ -	\$ 1,165,590	\$ 7,825,963	\$ 77,093,975
2030	\$ 8,984,463	\$ 1,270,231	\$ 104,642	9.0%	\$ -	\$ -	\$ 1,270,231	\$ 7,714,232	\$ 84,808,206
2031	\$ 8,984,241	\$ 1,374,873	\$ 104,642	8.2%	\$ -	\$ -	\$ 1,374,873	\$ 7,609,368	\$ 92,417,574
2032	\$ 4,229,224	\$ 1,479,514	\$ 104,642	7.6%	\$ -	\$ -	\$ 1,479,514	\$ 2,749,710	\$ 95,167,284
2033	\$ 4,229,224	\$ 1,584,156	\$ 104,642	7.1%	\$ -	\$ -	\$ 1,584,156	\$ 2,645,068	\$ 97,812,352
2034	\$ 4,229,224	\$ 1,688,798	\$ 104,642	6.6%	\$ -	\$ -	\$ 1,688,798	\$ 2,540,426	\$ 100,352,778
2035	\$ 4,148,870	\$ 1,793,439	\$ 104,642	6.2%	\$ -	\$ -	\$ 1,793,439	\$ 2,355,431	\$ 102,708,209
2036	\$ 4,148,870	\$ 1,898,081	\$ 104,642	5.8%	\$ -	\$ -	\$ 1,898,081	\$ 2,250,789	\$ 104,958,998
2037	\$ 3,993,066	\$ 2,002,722	\$ 104,642	5.5%	\$ -	\$ -	\$ 2,002,722	\$ 1,990,344	\$ 106,949,342
2038	\$ 3,993,066	\$ 2,107,364	\$ 104,642	5.2%	\$ -	\$ -	\$ 2,107,364	\$ 1,885,702	\$ 108,835,044
2039	\$ 3,993,066	\$ 2,212,005	\$ 104,642	5.0%	\$ -	\$ -	\$ 2,212,005	\$ 1,781,061	\$ 110,616,105
2040	\$ 3,734,824	\$ 2,316,647	\$ 104,642	4.7%	\$ -	\$ -	\$ 2,316,647	\$ 1,418,177	\$ 112,034,282
2041	\$ 3,734,824	\$ 2,421,288	\$ 104,642	4.5%	\$ -	\$ -	\$ 2,421,288	\$ 1,313,535	\$ 113,347,817
2042	\$ 3,492,123	\$ 2,525,930	\$ 104,642	4.3%	\$ -	\$ -	\$ 2,525,930	\$ 966,193	\$ 114,314,010
2043	\$ 3,462,189	\$ 2,630,572	\$ 104,642	4.1%	\$ -	\$ -	\$ 2,630,572	\$ 831,618	\$ 115,145,628
2044	\$ 3,462,189	\$ 2,735,213	\$ 104,642	4.0%	\$ -	\$ -	\$ 2,735,213	\$ 726,976	\$ 115,872,604
2045	\$ 3,462,189	\$ 2,839,855	\$ 104,642	3.8%	\$ -	\$ -	\$ 2,839,855	\$ 622,335	\$ 116,494,939
2046	\$ 3,460,448	\$ 2,944,496	\$ 104,642	3.7%	\$ -	\$ -	\$ 2,944,496	\$ 515,952	\$ 117,010,891
2047	\$ 3,363,062	\$ 3,049,138	\$ 104,642	3.6%	\$ -	\$ -	\$ 3,049,138	\$ 313,925	\$ 117,324,815
2048	\$ 3,363,062	\$ 3,153,779	\$ 104,642	3.4%	\$ -	\$ -	\$ 3,153,779	\$ 209,283	\$ 117,534,099
2049	\$ 3,363,062	\$ 3,258,421	\$ 104,642	3.3%	\$ -	\$ -	\$ 3,258,421	\$ 104,642	\$ 117,638,740
2050	\$ 3,363,062	\$ 3,363,062	\$ 104,642	3.2%	\$ -	\$ -	\$ 3,363,062	\$ -	\$ 117,638,740
2051	\$ 3,363,062	\$ 3,467,704	\$ 104,642	3.1%	\$ -	\$ -	\$ 3,467,704	\$ (104,642)	\$ 117,534,099
2052	\$ 3,126,840	\$ 3,572,345	\$ 104,642	3.0%	\$ -	\$ -	\$ 3,572,345	\$ (445,505)	\$ 117,088,593
2053	\$ 3,126,840	\$ 3,676,987	\$ 104,642	2.9%	\$ -	\$ -	\$ 3,676,987	\$ (550,147)	\$ 116,538,446
2054	\$ 3,123,776	\$ 3,781,629	\$ 104,642	2.8%	\$ -	\$ -	\$ 3,781,629	\$ (657,852)	\$ 115,880,594
2055	\$ 3,123,776	\$ 3,886,270	\$ 104,642	2.8%	\$ -	\$ -	\$ 3,886,270	\$ (762,494)	\$ 115,118,101
2056	\$ 3,123,776	\$ 3,990,912	\$ 104,642	2.7%	\$ -	\$ -	\$ 3,990,912	\$ (867,135)	\$ 114,250,965
2057	\$ 3,123,776	\$ 4,095,553	\$ 104,642	2.6%	\$ -	\$ -	\$ 4,095,553	\$ (971,777)	\$ 113,279,188
2058	\$ 3,123,776	\$ 4,200,195	\$ 104,642	2.6%	\$ -	\$ -	\$ 4,200,195	\$ (1,076,418)	\$ 112,202,770
2059	\$ 3,123,776	\$ 4,304,836	\$ 104,642	2.5%	\$ -	\$ -	\$ 4,304,836	\$ (1,181,060)	\$ 111,021,710
2060	\$ 3,123,776	\$ 4,409,478	\$ 104,642	2.4%	\$ -	\$ -	\$ 4,409,478	\$ (1,285,702)	\$ 109,736,009
40-Year Infrastructure Deficit									

Total Rate Funding	\$ 94,758,705
2021 Total Rate Levy	\$ 2,079,737
Inc. as % of Rate Levy	5.03%



Table 4b
Municipality of Casselman
2021 Asset Management Plan
Financing Strategy 3: Close In-Year Funding Gap by 2060 (Rate Funded Services)

Legend	1	2	3	4	5	6	7	8	9
Year	Total Projected Annual Capital Provision	Capital from Rates (Including Transfers to Reserves)	Yearly Increase in Rate Funding (\$)	Yearly Increase in Rate Funding (%)	Gas Tax	Other Grants	Total Capital Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2021	\$ 8,689,281	\$ 328,457			\$ -	\$ -	\$ 328,457	\$ 8,360,823	\$ 8,360,823
2022	\$ 10,815,937	\$ 400,132	\$ 71,675	21.8%	\$ -	\$ -	\$ 400,132	\$ 10,415,805	\$ 18,776,629
2023	\$ 9,338,522	\$ 471,807	\$ 71,675	17.9%	\$ -	\$ -	\$ 471,807	\$ 8,866,715	\$ 27,643,344
2024	\$ 9,338,522	\$ 543,482	\$ 71,675	15.2%	\$ -	\$ -	\$ 543,482	\$ 8,795,040	\$ 36,438,384
2025	\$ 9,333,488	\$ 615,157	\$ 71,675	13.2%	\$ -	\$ -	\$ 615,157	\$ 8,718,332	\$ 45,156,715
2026	\$ 9,326,284	\$ 686,832	\$ 71,675	11.7%	\$ -	\$ -	\$ 686,832	\$ 8,639,453	\$ 53,796,168
2027	\$ 8,992,047	\$ 758,506	\$ 71,675	10.4%	\$ -	\$ -	\$ 758,506	\$ 8,233,540	\$ 62,029,708
2028	\$ 8,991,553	\$ 830,181	\$ 71,675	9.4%	\$ -	\$ -	\$ 830,181	\$ 8,161,372	\$ 70,191,079
2029	\$ 8,991,553	\$ 901,856	\$ 71,675	8.6%	\$ -	\$ -	\$ 901,856	\$ 8,089,697	\$ 78,280,776
2030	\$ 8,984,463	\$ 973,531	\$ 71,675	7.9%	\$ -	\$ -	\$ 973,531	\$ 8,010,932	\$ 86,291,708
2031	\$ 8,984,241	\$ 1,045,206	\$ 71,675	7.4%	\$ -	\$ -	\$ 1,045,206	\$ 7,939,035	\$ 94,230,743
2032	\$ 4,229,224	\$ 1,116,881	\$ 71,675	6.9%	\$ -	\$ -	\$ 1,116,881	\$ 3,112,343	\$ 97,343,086
2033	\$ 4,229,224	\$ 1,188,556	\$ 71,675	6.4%	\$ -	\$ -	\$ 1,188,556	\$ 3,040,668	\$ 100,383,755
2034	\$ 4,229,224	\$ 1,260,230	\$ 71,675	6.0%	\$ -	\$ -	\$ 1,260,230	\$ 2,968,994	\$ 103,352,748
2035	\$ 4,148,870	\$ 1,331,905	\$ 71,675	5.7%	\$ -	\$ -	\$ 1,331,905	\$ 2,816,964	\$ 106,169,713
2036	\$ 4,148,870	\$ 1,403,580	\$ 71,675	5.4%	\$ -	\$ -	\$ 1,403,580	\$ 2,745,290	\$ 108,915,002
2037	\$ 3,993,066	\$ 1,475,255	\$ 71,675	5.1%	\$ -	\$ -	\$ 1,475,255	\$ 2,517,811	\$ 111,432,814
2038	\$ 3,993,066	\$ 1,546,930	\$ 71,675	4.9%	\$ -	\$ -	\$ 1,546,930	\$ 2,446,136	\$ 113,878,950
2039	\$ 3,993,066	\$ 1,618,605	\$ 71,675	4.6%	\$ -	\$ -	\$ 1,618,605	\$ 2,374,462	\$ 116,253,411
2040	\$ 3,734,824	\$ 1,690,279	\$ 71,675	4.4%	\$ -	\$ -	\$ 1,690,279	\$ 2,044,544	\$ 118,297,956
2041	\$ 3,734,824	\$ 1,761,954	\$ 71,675	4.2%	\$ -	\$ -	\$ 1,761,954	\$ 1,972,870	\$ 120,270,825
2042	\$ 3,492,123	\$ 1,833,629	\$ 71,675	4.1%	\$ -	\$ -	\$ 1,833,629	\$ 1,658,494	\$ 121,929,319
2043	\$ 3,462,189	\$ 1,905,304	\$ 71,675	3.9%	\$ -	\$ -	\$ 1,905,304	\$ 1,556,885	\$ 123,486,205
2044	\$ 3,462,189	\$ 1,976,979	\$ 71,675	3.8%	\$ -	\$ -	\$ 1,976,979	\$ 1,485,211	\$ 124,971,415
2045	\$ 3,462,189	\$ 2,048,654	\$ 71,675	3.6%	\$ -	\$ -	\$ 2,048,654	\$ 1,413,536	\$ 126,384,951
2046	\$ 3,460,448	\$ 2,120,329	\$ 71,675	3.5%	\$ -	\$ -	\$ 2,120,329	\$ 1,340,119	\$ 127,725,070
2047	\$ 3,363,062	\$ 2,192,003	\$ 71,675	3.4%	\$ -	\$ -	\$ 2,192,003	\$ 1,171,059	\$ 128,896,129
2048	\$ 3,363,062	\$ 2,263,678	\$ 71,675	3.3%	\$ -	\$ -	\$ 2,263,678	\$ 1,099,384	\$ 129,995,513
2049	\$ 3,363,062	\$ 2,335,353	\$ 71,675	3.2%	\$ -	\$ -	\$ 2,335,353	\$ 1,027,709	\$ 131,023,222
2050	\$ 3,363,062	\$ 2,407,028	\$ 71,675	3.1%	\$ -	\$ -	\$ 2,407,028	\$ 956,034	\$ 131,979,257
2051	\$ 3,363,062	\$ 2,478,703	\$ 71,675	3.0%	\$ -	\$ -	\$ 2,478,703	\$ 884,360	\$ 132,863,617
2052	\$ 3,126,840	\$ 2,550,378	\$ 71,675	2.9%	\$ -	\$ -	\$ 2,550,378	\$ 576,463	\$ 133,440,079
2053	\$ 3,126,840	\$ 2,622,052	\$ 71,675	2.8%	\$ -	\$ -	\$ 2,622,052	\$ 504,788	\$ 133,944,867
2054	\$ 3,123,776	\$ 2,693,727	\$ 71,675	2.7%	\$ -	\$ -	\$ 2,693,727	\$ 430,049	\$ 134,374,916
2055	\$ 3,123,776	\$ 2,765,402	\$ 71,675	2.7%	\$ -	\$ -	\$ 2,765,402	\$ 358,374	\$ 134,733,290
2056	\$ 3,123,776	\$ 2,837,077	\$ 71,675	2.6%	\$ -	\$ -	\$ 2,837,077	\$ 286,699	\$ 135,019,990
2057	\$ 3,123,776	\$ 2,908,752	\$ 71,675	2.5%	\$ -	\$ -	\$ 2,908,752	\$ 215,025	\$ 135,235,014
2058	\$ 3,123,776	\$ 2,980,427	\$ 71,675	2.5%	\$ -	\$ -	\$ 2,980,427	\$ 143,350	\$ 135,378,364
2059	\$ 3,123,776	\$ 3,052,102	\$ 71,675	2.4%	\$ -	\$ -	\$ 3,052,102	\$ 71,675	\$ 135,450,039
2060	\$ 3,123,776	\$ 3,123,776	\$ 71,675	2.3%	\$ -	\$ -	\$ 3,123,776	\$ -	\$ 135,450,039
40-Year Infrastructure Deficit									

Total Rate Funding	\$	69,044,675
2021 Total Rate Levy	\$	2,079,737
Inc. as % of Rate Levy		3.45%

