ASSET MANAGEMENT
MUNICIPAL ACTION PLAN

Township of Limerick
Incorporated 1887

HEMSON Consulting Ltd.
30 Saint Patrick Street, Suite 1000
Toronto, ON, M5T 3A3

September 2019

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MUNICIPAL ACTION PLAN EXECUTIVE SUMMARY

The MFOA Amp It Up program provides expert asset management consulting services to municipalities in Ontario with populations under 25,000. To date, over 90 municipalities across Ontario have participated. The program has now expanded to include all municipalities with populations under 5,000, with the goal of including all municipalities in the future. This project has been funded in co-operation with the Province of Ontario.

The Municipal Action Plan (MAP), provides the Township with guidance on how to update their existing Asset Management Plan and how to move forward with asset management strategies to optimize the Township's asset management framework. Furthermore, the MAP provides guidance on meeting the requirements of Ontario Regulation 588/17 (O. Reg. 588/17). The MAP is based on Hemson's analysis, consultation with Township staff and MFOA's Asset Management Self Assessment Tool.

A. KEY OBJECTIVES AND RECOMMENDATIONS

- Document all major assumptions and definitions, such as detailing data confidence and financial factors like inflation and interest rates.

- Create age profile analyses for all asset categories, and make use of a 5-tier condition assessment rating scale in order to provide more detail than the 3-tier scale. Present the condition assessments in graphs and tables. The state of infrastructure should be summarized in a table that gives a high level overview of replacement costs, remaining useful lives and condition assessments for each asset category.

- Build upon the customer level of service goals already included in the existing plan, and incorporate corporate goals as well. Levels of service should be documented in a level of service registry, tracked over the long term, and updated regularly.

- Take a risk based approach to asset management. Incorporate a risk matrix analysis by defining the risk of assets and the consequence of asset failure for all assets. This ensures that corporate risk is minimized.

- Incorporate risk ratings and future demand considerations into the asset management strategy. Ensure the strategy covers each type of planned action for every asset class.

- Detail the Township-wide infrastructure gap. Calculate the cumulative infrastructure deficit over the long-term and present the data in a graph or table.

- Develop a long-term financing strategy that considers both operating and capital budgeting, the use of debt, and alternative revenue solutions. Ensure that the financing strategy is realistic and achievable. Outline a 10-year capital program that considers all asset lifecycle costs in each of the planned action categories. Ensure that the long-term financing strategy accounts for costs associated to achieving desired levels of service.

I INTRODUCTION: POLICY AND PROCEDURE

A. WHAT IS ASSET MANAGEMENT?

In its most simplistic form, asset management is a process of managing assets in the most cost effective way. The key objective is to maximize benefits and manage risks while providing services to the public in the most sustainable way. It is important that the Asset Management Plan (AMP) clearly define asset management and the benefits of asset management to the Township. Some benefits of asset management include:

- Township can make informed and traceable decisions;
- Risks are managed over the long-term so the Township has the opportunity to co-ordinate accordingly in advance of capital needs in the future;
- Potential for higher resident satisfaction;
- Documents a funding plan and strategy to manage infrastructure; and
- Demonstrates compliance with regulation and legislation.

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 aims to provide a more standardized framework to facilitate asset management planning for Ontario municipalities. The regulation requires municipalities to develop a Strategic Asset Management Policy to document the relationship between the Asset Management Plan and existing policies and practices as well as provide guidance for capital investment decisions.

The regulation also contains specific requirements on the analyses municipal asset management plans should include, so that asset management plans are more consistent

across the Province. Table 1 provides a summary of the key regulatory timelines as outlined by *O.Reg. 588/17* and where the Township stands in the timeline.

Table 1
O. Reg. 588/17 Timeline

Regulation Timeline	Requirement	Progress
July 1, 2019	• Municipalities shall prepare their first strategic asset management policy. • Municipalities shall review, and if necessary, update the policy every 5 years.	• The Township approved its policy in 2019. • The next review is expected in 2024.
July 1, 2021	• Every Township 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.	• The Township already has existing asset management plans for transportation, water and wastewater assets. • The Township is expecting to develop the level of service measures for core assets as required by the regulation (see Appendix B).
July 1, 2023	• Every Township 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	• The Township is expecting to add all other asset categories to the corporate asset management plan. • The Township is expecting to develop level of service measures for non-core assets (see Appendix B).
July 1, 2024	• 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.	• The Township 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 the AMP.

Note: A simplified summary of O. Reg. 588/17 is provided in Appendix A.

C. LINKAGE TO OTHER DOCUMENTS AND STRATEGIES

It is important to identify how the AMP incorporates municipal responsibility and strategies. O. Reg. 588/17 includes a requirement to develop a Strategic Asset Management Policy (SAMP). The purpose of the SAMP is to document asset management policies and procedures and how they relate to other existing municipal processes. The SAMP is expected to be in place by July 1st, 2019 as per O. Reg. 588/17. The policy has several key goals which are outlined in MFOA's *Strategic Asset Management Policy Toolkit*:

- Affirming organizational commitment to asset management principles and philosophies;
- Aligning and integrating asset management into an organization's strategic planning process, as well as other key plans and policies;
- Guiding the asset management planning process, and embedding asset management principles into ongoing capital, operations, and maintenance activities;
- Defining asset management responsibilities and accountabilities for Council, leadership, management, and staff; and
- Supporting the formation of a culture that values asset management and makes it a priority.

D. ALL ASSETS TO BE INCLUDED IN AMP BY 2023

O. Reg. 588/17 requires municipal asset management plans to include all assets by July 1, 2023. It is important that the plan outlines which assets are included to ensure they are consistent with other key municipal documents such as the Financial Information Return and Gas Tax Funding Agreement. In the case of the Gas Tax Funding Agreement, communities are able to use the Federal Gas Tax funds towards a wide range of projects that are related to: **public transit, wastewater infrastructure, drinking water, solid waste management, community energy systems, local roads and bridges, capacity building, highways, local and regional airports, short-line rail, short-sea shipping, disaster mitigation, broadband and connectivity, brownfield redevelopment, culture, tourism, sport and recreation**. The Township has to include all applicable assets in the asset management plan to satisfy future grant funding applications.

E. ASSET INVENTORY, DATA ALIGNMENT AND POLICY

Asset management is a data driven process. It is important to recognize that without reliable data on municipal assets and their associated services, management of these assets will be difficult. As part of the overall asset management strategy, there should

be a complementary data management strategy since the foundation of the AMP is a robust asset inventory.

The data management strategy relates to the methods for the acquisition, storage and analysis of asset data. Knowledge and decision making on asset management is a function of the reliability of the data. A data management strategy can be a standalone policy or part of the SAMP and should include guidelines on:

- Maintaining a central asset inventory;
- Attributes required in the asset register for each asset category. For example, when a new asset is entered into the database a replacement cost, year of service and useful life must be entered;
- Frequency of asset inventory updates should be established;
- Person(s) responsible for updates and management of the data, a data "champion"; and
- The roles of other departments in collecting and managing data.

It is important that a central asset inventory be maintained and should contain all assets the Township owns and manages. The asset inventory can help facilitate updating the asset management plan, working towards meeting the gas tax funding requirements and analysis of the municipal funding gap. At a minimum, an asset inventory should contain the pieces of information outlined in Table 2.

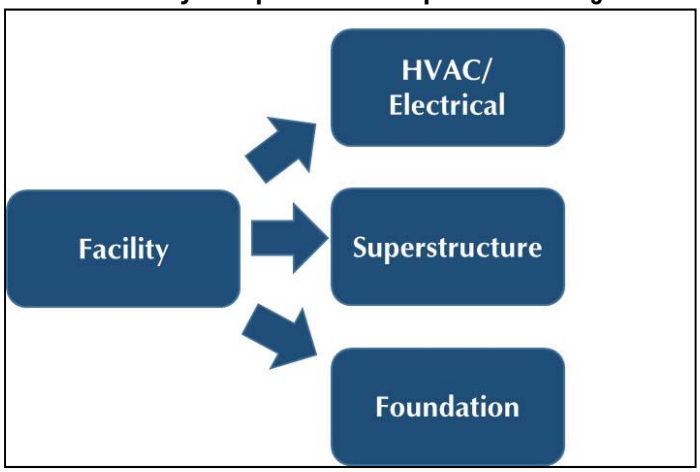
Table 2
Information Needed in the Asset Inventory

Parameter	Description
Asset Unique ID	• A unique ID number helps maintain the asset data in an organized way. • Helps identify assets and asset components quickly within the asset inventory. • Important wherever a large number of unique assets are captured in the inventory. • Easier to consolidate assets that may be kept in separate inventories.
Name and Description	• A description helps visualize and identify assets in more detail beyond a unique ID. • For example: o For vehicles, the model or VIN number can be used. o For buildings, the name or address of the building can be used. o For roads, the name of the road and the segment can be used.
Useful Life (In Years)	• The engineered useful life should be included in the inventory and should be consistent with tangible capital asset policies (if available).
Replacement Cost	• The replacement cost of assets should be included in current year dollars and should be updated on a regular basis.

Table 2 Information Needed in the Asset Inventory	
Parameter	**Description**
Detailed Asset Attributes	• Other detailed attributes are important to include in the asset inventory as they help inform other data in the inventory. Some examples include: o Diameter, material type and length in metres for pipes. o Road type such as gravel/HCB/ICB/LCB and length of road segment in kilometres. o For assets that can be broken down into components, such as buildings, include the components (exp. Structural, HVAC, plumbing, electrical, etc.). o Wherever engineered condition assessments are available, they should be included in the asset inventory.

In addition to these data attributes, each asset should be broken down into components wherever possible. This ensures that asset condition is tracked for components that may require more frequent repairs or replacements. For example, a building can be broken down into its superstructure, foundation, roof and other components such as HVAC and electrical systems as shown in Figure 1. The repair and maintenance requirements of all these components vary widely and cost efficiencies are possible by tracking these repairs separately.

Figure 1
Assets by Component - Example for Buildings



A typical strategy to break down complex assets would involve separating assets that have different useful lives. In the example below, the structure has a useful life of 40 years, while the HVAC system has a useful life of 25 years. If the building was not broken down we would assume the useful life of the building, and all of its components, was 40 years. This results in not being able to account for the HVAC system or other individual components properly when calculating the required provisions for replacement of the building and its components. The Township's current AMP does not break down complex assets into components; any subsequent updates should strive to do so. Table 3 below provides a breakdown of a general facility by asset type.

Table 3 Sample Inventory - Building by Asset Component			
Asset Name	**Acquisition Year**	**Useful Life**	**Replacement Cost**
Example Facility	2009		
Structure & Site	2009	40	$535,000
Shingle Roofing	2009	30	$66,700
HVAC System	2009	25	$149,000
Plumbing	2009	25	$40,700
Electrical	2009	25	$147,000
Tile Flooring	2009	20	$63,700
Total			**$1,002,100**

The asset inventory is an integral part of the data management strategy and should also play a complementary role informing other databases the Township maintains. It is advantageous that the asset register be spatially mapped using a GIS software solution. The unique asset ID should be used to create a connection between the asset register and any spatially mapped assets for database consistency.

F. DATA ALIGNMENT AND POLICY

The frequency of updates of the asset inventory is extremely important. As assets age and more are added over time, the reliability of the data depends on how frequently the asset inventory is updated. The asset inventory should be updated when there are new asset purchases, upgrades and replacements, as well as asset condition ratings and information on useful life. These types of updates may be required several times per year; however, the reliability of the data will become apparent as updates occur.

To facilitate updating the asset inventory, it is recommended that a data "champion" be designated. The data champion is intended to be the person who maintains and regulates the quality of the asset inventory. Identifying a champion may be challenging however there are some characteristics that may help in identifying one, including:

- Knowledgeable about asset management and the Township's current practices;
- Well-connected within the Township;
- Interested in contributing to the process; and
- Strong communication skills.

Tips to identify a data champion include:

- First opportunity to identify a data champion may occur during initial AMP concept meetings – staff members that relate most strongly to the objectives/process may emerge at this time.
- Can also assign "leadership groups" to distribute responsibilities – staff members or small groups of staff may be assigned specific responsibilities (e.g. project management, data collection, data integrity, etc.).

A data champion does not and should not be alone in the data management process. It is important that all other departments contribute to the process to ensure that reliable data is available. For example, as new assets are acquired for recreation services, it is required that recreation staff provide the information to the data champion to update the asset inventory. This ensures that the inventory is up to date and that there is no data loss.

To ensure buy-in and co-operation from all departments, department representatives and the data champion should meet frequently to identify and address any gaps or challenges that may arise throughout the process. This creates an internal network which facilitates communication between departments. As challenges are addressed, the inventory may be adapted to incorporate changes that will facilitate buy-in from all departments. Communication between municipal departments is key to the success of the data management strategy.

G. DOCUMENTING MAJOR ASSUMPTIONS AND DEFINITIONS

A good plan should have major assumptions and definitions documented that are clear and transparent as to the process and use of information. The Township's current plan documents the method of condition assessment for some asset classes. Subsequent plan updates should also document major assumption and limitations of the plan. Some other examples of documentation include:

- an overview of how replacement costs were calculated for each type of asset.
- a data confidence section that outlines the reliability of the information used to inform the plan.
- a definitions section – outline all terminology used throughout the plan.
- key financial drivers: inflation and investment rates for example.

II STATE OF LOCAL INFRASTRUCTURE

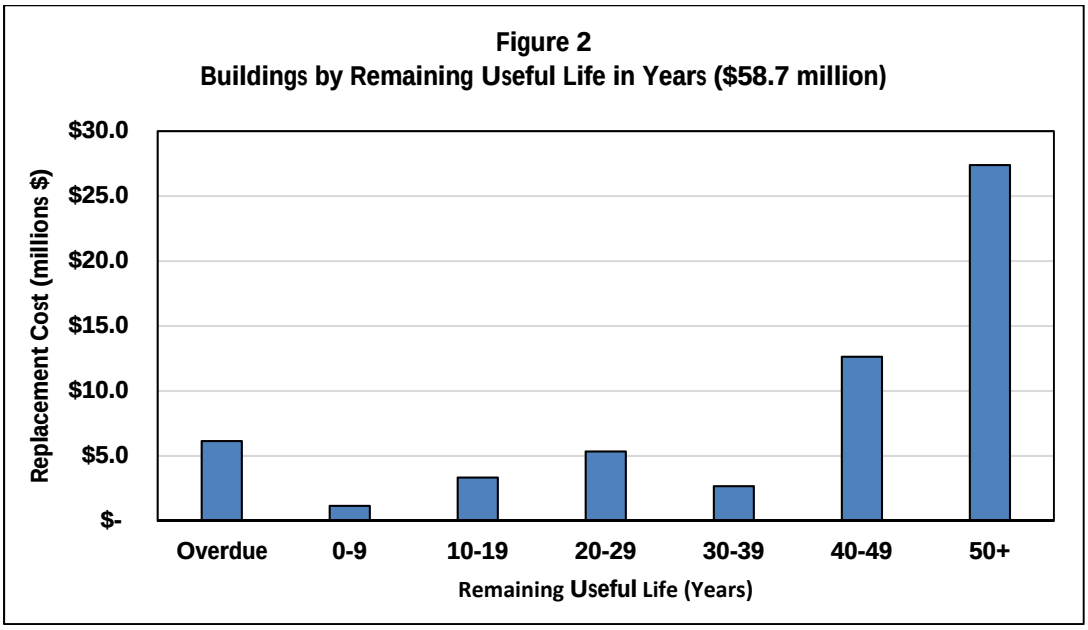
A. ASSET DESCRIPTIONS: WHAT INFORMATION SHOULD BE INCLUDED

The State of Local Infrastructure section of the plan is about documenting what the Township owns; both in a quantitative and qualitative aspect. Table 4 provides a sample of how the Township can summarize the inventory in the AMP. The table is a good summary of the number of assets and their replacement value. The summary goes further and indicates the number of components recorded for each building, the method used to determine replacement costs and the useful life assumptions.

Table 4
Sample Summary of Inventory - Buildings

Asset Type	Components	Quantity	Replacement Cost 2019	Replacement Cost Method	Useful Life (Years)
Buildings	Roof	18	$1,700,000	Recent Costing	10/15/30/40
	Mechanical & Electrical	18	$426,000	Recent Costing	15/25
	Windows & Doors	18	$453,000	Recent Costing	20
	Exterior Cladding	18	$530,000	Recent Costing	20/60
	Structure	31	$55,591,000	Recent Costing	50/100
Total		**103**	**$58,700,000**		

An age profile analysis which details asset age to useful life across all different asset classes is a helpful way to illustrate the remaining useful life of municipal assets by category or holistically. Figure 2 provides an example of an age profile analysis which can be included as part of the plan or communicated to Council. The Township's existing AMP does not contain age profile analysis for any asset classes. Note that the age profile analysis illustrates assets either by their age or their remaining useful life based on standard assumed engineered useful lives. It does not necessarily reflect the condition of assets, as many assets are used well beyond their engineered useful lives and may still be in good working condition. Figure 2 shows an example for buildings categorized by their remaining useful life (expressed in dollars of replacement value).



B. REPLACEMENT COSTS

A comprehensive asset management plan's key outputs and capital replacement requirements can only be as good as the inputs into the plan. In order for the Township to properly plan for future capital requirements, having reliable replacement costs identified is a key to success. There can be several methodologies to calculate the replacement cost of infrastructure assets, they include:

- Recent tenders in the Township and surrounding areas – cost to construct certain buildings, the acquisition cost of a new fire truck, vehicle or heavy equipment, cost to rehabilitate/replace roads and bridges.
- Local price indices, if available. Similar capital projects in neighbouring municipalities can also be used as a benchmark.
- Insurance values, although often low, are a good benchmark or reasonability test.
- Historical cost inflated to current dollars. This approach is best used for assets recently acquired or for low value assets which represent a small share of the Township's total replacement value. The Township should look to move away from this approach and generate replacement cost based on the other two more credible methodologies.

The Township's current AMP uses replacement costs sourced from equipment suppliers and accepted industry references. The Township should develop and

implement a policy to update and refine costs. This policy can be included as part of the SAMP or a standalone document. The policy should address the following:

- When the Township issues a new tender for the construction and/or acquisition of an asset – look at revising costs.
- Close contact with surrounding municipalities on upcoming work – policy to interact every six months.
- What costs should replacement costs include? For example, the replacement cost of a road should include costs such as: excavation/removal, materials, engineering/design, construction and contingency.

C. CONDITION ASSESSMENTS

The most effective way to assess the condition of assets and identify repair and replacement needs is through condition assessments. Typically, condition assessments are performed on higher value assets or assets that have regulatory or safety regulations such as roads, buildings, bridges or fire equipment and vehicles. The Township's current plan uses engineered condition assessments for bridges and roads, and relies on staff judgement for building conditions. Moving forward, the Township should perform condition assessments based on recognized and generally accepted good engineering practices where appropriate.

To ensure repeatable and consistent approach of condition ratings, a general 5-tier condition rating system which is backed by other major organizations and associations can be used. The *Building Together Guide* specifies assets to be conditioned on a 3-tier approach at minimum, as "Good", "Fair" or "Poor". The Township's existing AMP uses a 3-tier approach for roads (based on when improvements are needed) and bridges, and a five-tier approach for buildings. The 5-tier rating approach adds additional details to the 3-tier categories. The ideal method to identify asset conditions are:

1) Condition rating systems based on engineered metrics and standards: Pavement Quality Index, Facility Condition Index, Bridge Condition Index, Ride Comfort Rating and CCTV inspections, etc. These metrics can then be translated into a 5-tier rating system.
2) Estimates based on age and the remaining useful life of the asset.
3) Estimate based on expert staff opinion. This approach is important where there is low confidence that age and useful life properly represents a particular asset.

O. Reg. 588/17 requires that the asset management plan documents and describes the methods used for condition assessments for each asset category wherever it is applicable.

Table 5 provides some general parameters using the 5-tier rating system. In this example, if engineered conditions for buildings were performed based on a 100-point scale, parameters can be defined to consolidate those conditions into the 5-tier scale. For buildings where condition assessments are unavailable, the remaining useful life can be used as a proxy. It should be noted that the parameters of what constitutes asset condition may change from place to place.

Table 5
Example of Condition Assessment Parameters

Rating	Condition	Definition (Township Specific)	Definition (Based on Building Condition out of 100)	Definition (Based on Remaining Useful Life)
1	**Very Good**	Well maintained, good condition, new or recently rehabilitated.	Greater than 80	Greater than 80% of Asset Useful Life remaining.
2	**Good**	Good condition, few elements exhibit existing deficiencies.	70 - 80	60% - 80% of Asset Useful Life remaining.
3	**Fair**	Some elements exhibit significant deficiencies. Asset requires attention.	60 - 70	40% - 60% of Asset Useful Life remaining.
4	**Poor**	A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.	50 - 60	20% - 40% of Asset Useful Life remaining.
5	**Very Poor**	Widespread signs of deterioration, some assets may be unusable. Service is affected.	Less than 50	Less than 20% of Asset Useful Life remaining.

Figure 3 provides an example of a summary of condition ratings for buildings expressed in dollars of replacement value. The example shows about 37% of assets are in poor or very poor condition and may require replacement or rehabilitation soon, while 25% are in good or very good condition. Assets in fair condition require special attention, as these assets may transition into the poor or very poor categories in the short-term. These assets make up about 38% of the building assets.

Figure 3
Buildings by Condition Rating ($58.7 million)

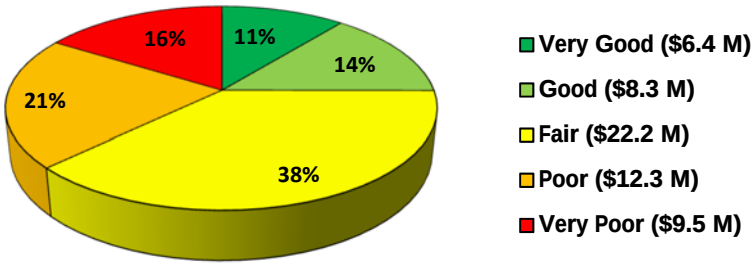


Table 6 includes a sample summary of assets that include replacement cost, weighted average remaining useful life and weighted average condition. The Township can utilize a summary similar to the one below which can be used to provide reports to Council and the public. Table 6 also summarizes the overall condition of assets and is a good summary to get a holistic picture of the current condition of the Township's assets. In the example below the overall condition is considered as fair. This rating is driven by the high value assets of roads, buildings and bridges.

Table 6
Sample Summary State of Local Infrastructure

Asset Type	Replacement Cost (2019)	Useful Life (Years)	Remaining Useful Life (Weighted Average)	Condition (Weighted Average)	
Buildings	$58,705,000	10/15/20/25/30 /40/50/60/100	43	Fair	2.9
Vehicles & Machinery	$8,541,000	10/15	2	Fair	2.5
Land Improvements	$6,834,000	10/15/20/30	1	Poor	2.4
Stormwater Infrastructure	$3,560,000	75	57	Good	4.3
Equipment & Furnishings	$2,301,000	5/7/8/10/15/30	Overdue	Fair	2.9
Sidewalks & Pathways	$449,000	25/30	16	Fair	3.5
Bridges & Culverts	$42,852,000	60	9	Fair	3.5
Roads	$212,020,000	40	22	Fair	3.0
Total	**$335,262,000**		**23**	**Fair**	**3.0**

III LEVELS OF SERVICE

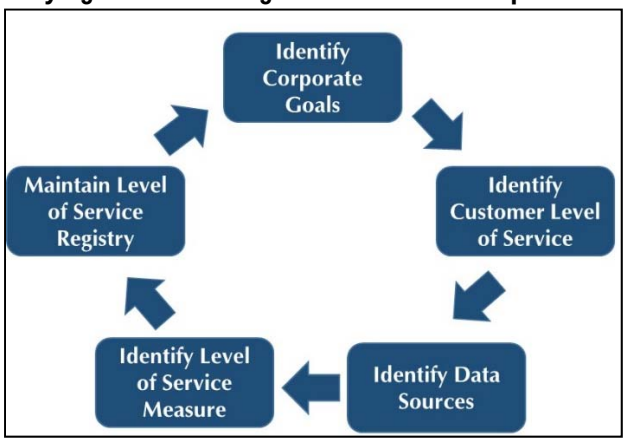
A. IDENTIFYING CORPORATE GOALS

The Township's existing AMP contains an identification of community and operational levels of service for each asset class, but does not identify high-level corporate goals. Corporate goals are general and provide a high level expectation as to what should be achieved by the service. For example, corporate service goals may focus on safety, reliability and accessibility. Some corporate goals may be directly defined by legislation, such as local water services, which are governed by strict safety and reliability regulations. Other corporate goals may be less restrictive such as those for recreation which depend on the types of recreation programs offered and demand for those programs.

It is important that corporate goals for each service category are well defined, easy to understand and realistic. Typically, corporate goals can be identified through other existing documents such as strategic plans, official plans or other policies. Linking corporate goals as part of the asset management process ensures that the Township is committed to meeting those goals.

Tracking the performance of corporate goals over time is a cycle, this process is summarized in Figure 4 below. It is important to recognize that level of service tracking and management is a fluid process and should be refined over time as lessons are learned and the Township changes. The following sections provide some examples of services and their associated corporate service goals.

Figure 4
Identifying and Measuring Performance of Corporate Goals



B. IDENTIFYING CUSTOMER LEVELS OF SERVICES AND HOW THEY CAN BE MEASURED

For each corporate goal, there should also be key customer level of service descriptions which define what the municipal service performance will be measured on and be specific to the type of service. For example, road related corporate goals may be measured on safety while fire related corporate goals may focus on quick response times to emergencies. The Township's current AMP contains robust community levels of service for each asset class; for each level of service there is an objective, a performance measure, and a benchmark level of service target. The Township should continue this practice.

To measure the performance of each service category and whether the associated corporate goals are being met, we must establish performance indicators or level of service measures. Level of service measures vary widely across services and municipalities. Where information to establish level of service measures is available for one service, it may be difficult to obtain for another. However, there are many sources of information that are readily available and these are discussed in the following section. Table 7 shows examples of corporate goals, levels of service and their associated level of service measures.

Table 7
Example Levels of Service and Associated Level of Service Performance Indicator

Service Area	Corporate Goal	Level of Service	Level of Service Performance Indicator
Roads	To maintain safe roadways and roadsides enabling safe and efficient travel in a cost effective way.	Maintain road infrastructure in state of good repair.	Number of paved land kilometres where the condition is rated as good to very good.
Fire	Protect municipal health and safety efforts through fire preventions and protection services.	Fire services that meet fire master plan priorities.	Number of locations that do not meet fire master plan strategic priorities.
Outdoor Recreation	Provide safe, clean parks and open space systems through proactive property management in a cost effective way.	Provide sufficient park, trails and open spaces for residents.	Square metres of outdoor recreation facility space per 1,000 persons (municipally owned).
Indoor Recreation	Provide accessible and enjoyable indoor community space to all residents.	Infrastructure should comply with the *Accessibility for Ontarians with Disabilities Act.*	Number of facilities in the Township that do not comply with the Act.

O. Reg. 588/17 requires municipalities to determine their current levels of service for core assets by 2021. Appendix B contains the measures required by the regulation. For non-core assets, the regulation requires municipalities to determine current level of

service measures defined by the Township by 2023, examples of which are also provided in Appendix B.

C. DATA ACCESSIBILITY

Most municipalities track levels of service and the performance of assets, but there is often a disconnect in documenting progress over time. Data limitations, data understanding and limited resources are common challenges faced by municipalities in documenting their levels of service. Fortunately, there is a wealth of resources that can be used to obtain level of service data and track it over time. Municipalities can look to some of the following sources to get input:

- Municipal FIR statements;
- Engineering documents and master plans; and
- Industry standards, common practices, regulatory requirements and staff.

D. TARGET LEVELS OF SERVICE

Target levels of service are the main benchmark to measure whether a Township has met a particular corporate goal. Target levels of service are mainly a function of the demand for services from the public. By July 1 2024, O. Reg. 588/17 requires municipalities to establish desired or target levels of service and outline the costs and actions needed to achieve those targets. The Township already has target levels of service defined for each asset class.

Public perception and opinion can be established in several ways including through common municipal practices such as:

- Local public surveys;
- Local committees and stakeholder consultation; and
- Council meetings.

Local perception of current services and actual public demand for services are complementary to Council engagement. It is important that Council understands what realistic and reasonable targets are for local services. Establishment of any service level target should be done through consultation with Council.

Finally, level of service targets should be well defined and realistic. Some level of service targets will be mandated through legislation such as those for drinking water services. Targets for engineering services such as roads, for example, can be defined by using industry standards and municipal benchmarks (such as those provided in the FIR). Target levels of service may not be achievable immediately and it is advantageous for short and long term goals to be distinguished.

E. TRACKING LEVELS OF SERVICE

Levels of service should be tracked over time. Level of service performance measures should be tracked and illustrated over a 5-year time frame. This helps gauge whether corporate goals and desired targets have been met. For example, if there has been a corporate decision to increase funding for road repairs and rehabilitation, the % of roads in good to very good condition should be shown to increase from year to year.

To complement the data management process, a level of service registry should be established. This registry should include historical levels of service for all services the Township provides for at least a 5-year time frame. The registry can be used to complement asset management discussions and budget deliberations with Council and the public. It also has the advantage of being a central database that staff can reference when needed. A sample template that can be used to track level of service measures over time is provided in Table 8. Appendix B also provides additional level of service measures the Township may consider as well as an example of a current level of service tracker the Township can use for reporting.

Table 8
Sample Level of Service Tracker

Indicator	2015	2016	2017	2018	2019	5-Year Average	Qualitative Measure	Target
Percentage of roads at or above "Good" or "Very Good" condition	42%	43%	43%	43%	56%	45%	↑	xx
Unaccounted water (water loss after distribution)	31%	29%	29%	30%	30%	30%	—	xx
Average Condition of Assets (Based on 5-tier condition)	Fair	Fair	Fair	Good	Good	Fair	↑	xx

F. SERVICE CAPACITY

Well-documented set of service levels are used to drive asset management activities as they relate to the capacity of infrastructure. One of the most common initiatives is to encourage growth and development in already built-up areas as a means of utilizing existing capacity within infrastructure as opposed to creating additional capacity in various neighbourhoods. The Township should promote intensification and infill where sufficient capacity is available or can be made available, to support the resulting growth.

IV ASSET MANAGEMENT STRATEGY

A. SET OF PLANNED ACTIONS TO PROVIDE DESIRED LEVEL OF SERVICE

The Township should strive to document asset management strategies it currently uses and those it hopes to adopt in the future. Asset management strategies are simple defined as the set of planned actions taken to maintain assets in state of good repair. These planned actions can be segmented into 6 categories: non-infrastructure solutions, maintenance, renewal/rehabilitation, replacement, disposal and expansion activities. The Township's current AMP includes all planned actions, ranging from asset monitoring, planned and reactive maintenance, and asset disposal. These sections are relatively high level, and could provide more detail of planned actions for each asset class. Table 9 provides a description of each category and some examples of the planned actions that can be documented in the AMP.

Table 9
Planned Actions

Category	Description	Examples
Non-infrastructure Solutions	• Actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and land use planning, insurance, demand management, process optimization, managed failures, etc.).	• Work is not carried out on roads which are planned to have either sewer work in the next 5 years or are part of a larger project in the 5-year Capital Program. • Public consultation and communication to conserve water. • Service level adjustments. • Constructing a new facility or major rehabilitation usually involves a complete business plan and involvement of key staff, council and sometimes stakeholders.
Maintenance Activities	• 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.	• Bridge washing program. • Perform regular bridge inspections as mandated by the Province. • Maintenance activity/programs spearheaded by public through general use/observation. • Street sweeping occurs in spring after the snow melts.
Renewal/ Rehabilitation Activities	• 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 it designed useful life.	• Sidewalk spot repair program. • Catch basin inspection and repair annually. • Gravel road resurfacing to have 100 + mm of new gravel applied on an as needed basis.

Table 9 Planned Actions		
Category	**Description**	**Examples**
Replacement Activities	• 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.	• Asset replacement is common for heavily deteriorated linear infrastructure. • Facilities components are replaced based on inspection reports.
Disposal Activities	• 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.	• Asset disposal is carried out to avoid cost recovery. • Sell of underutilized facilities. • Land is reused or sold.
Expansion Activities	• Planned activities required to extend or expand municipal services to accommodate the demands of growth.	• Identify needs through traffic counts and environmental assessment reports. • Assumption of capital assets through development agreements. • Service improvements made where possible (traffic calming equipment, etc.).

B. RISK ASSESSMENTS ASSOCIATED WITH PLAN AND STRATEGY

A good asset management plan should recognize the risk associated with the Township's ability to deliver the plan and any actions which could occur outside the planned scope. An AMP should look to identify possible risks and the mitigating actions to ensure that the objectives of the plan are met. The Township's AMP only identifies one risk, associated with one project, and should employ a fuller risk assessment framework in the next plan. Table 10 illustrates an example of risks and mitigating actions that can be documented in the asset management plan.

Table 10 Risks and Mitigating Impacts of the AMP		
Identified Risk	**Potential Impact**	**Mitigating Action**
Failed Infrastructure	• Delivery of service • Asset and equipment damage	• Repair and rehabilitate as necessary • Increase investment • Non-infrastructure solutions
Inadequate Funding	• Delivery of service • Increased risk of failure • Shorten asset life • Defer funding to future generations	• Reductions of service • Find additional revenue sources
Regulatory Requirements	• Non-compliance • Mandatory investments • Increased costs	• Find additional revenue sources • Lobby actions

Table 10 Risks and Mitigating Impacts of the AMP		
Identified Risk	**Potential Impact**	**Mitigating Action**
Plan Not Followed	• Shorten asset life • Inefficient investments • Prioritization process failure • Failure to deliver service	• Monitor and review • Create asset management network • Implement processes

C. RISK MATRIX – ASSESSED BY ASSET

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 Township has already identified to be in Very Poor or 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:

(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. An asset in Very Poor condition is considered to be almost certain to fail in the short term. 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 Very Good condition. Table 11 below outlines the definition of probability of failure used for the Township's assets.

Table 11 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 Township if an asset were to fail. The consequence of failure has been determined separately for each asset category, as the impact to the Township 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. Table 12 outlines a definition of consequence of failure.

Table 12
Consequence of Failure

Replacement Cost	Consequence of Failure	Description
Very High	1	Insignificant
High	2	Minor
Moderate	3	Moderate
Low	4	Major
Very Low	5	Significant

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

- **Risk Rating:** categorizes assets based on the level of risk to the Township. 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, Table 13 below provides a summary of the risk matrix.

Table 13
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 14 presents an example of the findings of a risk analysis. Assets in the high risk category are expected to be prioritized sooner relative to assets in the low risk category. The timing or replacement or rehabilitation work is therefore a function of the risk assessment. It is important to note, that the Township 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 Township.

Table 14 Example Summary of Risk Assessment			
Asset Category	**Replacement Cost (2019)**	**Risk (Weighted Average)**	
Buildings	$58,705,000	**Moderate**	9
Vehicles & Machinery	$8,541,000	**High**	11
Land Improvements	$6,834,000	**Low**	7
Stormwater Infrastructure	$3,560,000	**Low**	4
Equipment & Furnishings	$2,301,000	**Low**	7
Sidewalks & Pathways	$449,000	**High**	10
Bridges & Culverts	$42,852,000	**Moderate**	8
Roads	$212,020,000	**Moderate**	8
Total	**$335,262,000**	**Moderate**	**9**

D. RISK MATRIX APPROACH TO PRIORITIZATION

The purpose of the risk matrix is to develop a more standard method to determine which assets should be prioritized for replacement or repair/rehabilitation. Assets with a higher risk rating should be prioritized as those assets may be in poorer condition or have a higher consequence of failure (or both). The simplest approach is to prioritize assets simply based on the risk rating from 1 to 25. However, this approach can be taken one step further to account for the approximate timing of replacement or repair/rehabilitation of assets using the risk matrix. Table 15 provides parameters that can be used to develop a revised replacement schedule based on risk rating.

Example – An asset was acquired in 2005 and has a 10 year useful life. Therefore, the asset is overdue for replacement based on the useful life alone (assuming current year is 2019). However the asset has been assigned a risk rating of 8. Based on Table 13 and 15, 30% of the useful life is 3 years. Therefore a revised timeline for replacement is calculated 3 years from now (2022).

Table 15 Percentage Revised Remaining Useful Life Based on Risk Matrix							
Evaluation Rating		Consequence of failure					Color Code
		1	2	3	4	5	
Probability of Failure	1	100%	80%	60%	40%	20%	Very Low Risk
	2	80%	65%	50%	30%	16%	Low Risk
	3	60%	50%	35%	25%	10%	Moderate Risk
	4	40%	30%	25%	15%	2%	High Risk
	5	20%	16%	10%	2%	0%	Very High Risk

Note: Municipalities will need to calibrate the parameters in the matrix over time to be in line with expectations of staff and Council. The matrix is a tool to help inform the capital budget process and the example above is one method that can be used.

E. FUTURE DEMAND

Future demand and the impact on the delivery of services in the community is an important component of the AMP. This component assesses the type of growth which is anticipated in the community. Even if growth is limited this does not directly translate into a reduction or sustained capital investment. The Township has to be responsive to new capital investments and operating and maintenance required to address changing demographics and demands. The assets requiring attention to service demands will be different based on how the change takes places (existing area vs. greenfield areas).

F. COST REDUCTION STRATEGIES

The *Guide for Municipal Asset Management Plans (Guide)* states that 'to ensure the most efficient allocation of resources, best practice is for a number of delivery mechanisms to be considered — such as working with other municipalities to pool projects and resources, or considering an AFP model.' The design-build-finance-maintain AFP (Alternate Financing and Procurement) model takes a lifecycle perspective and builds effective asset management directly into the contract. The *Guide* also states that municipalities should have procurement by-laws in place to serve as the basis for considering various delivery mechanisms. The Township's AMP does reference the Township's procurement by-law in the asset management strategy.

V FINANCING STRATEGY

A. IDENTIFY AVAILABLE FUNDING TOOLS

A broad range of funding tools are available to the Township in order to fund infrastructure repair and replacement activities, although property taxes and utility rates are the most common own source revenues. The Township's existing AMP does not examine available funding tools. It should discuss the extent to which each funding tool is used, which helps to demonstrate that the Township is exercising all available funding options.

Table 16
Funding Tools Available

• Grants – Federal and Provincial	• Public Private partnerships
• Development Charges	• Local Improvement Charges
• Utility Rates	• Developer Contributions
• Property Taxes	• Debt (as a financing tool)
• User Fees	• Reserve and Reserve Funds

B. LONG-TERM OUTLOOK

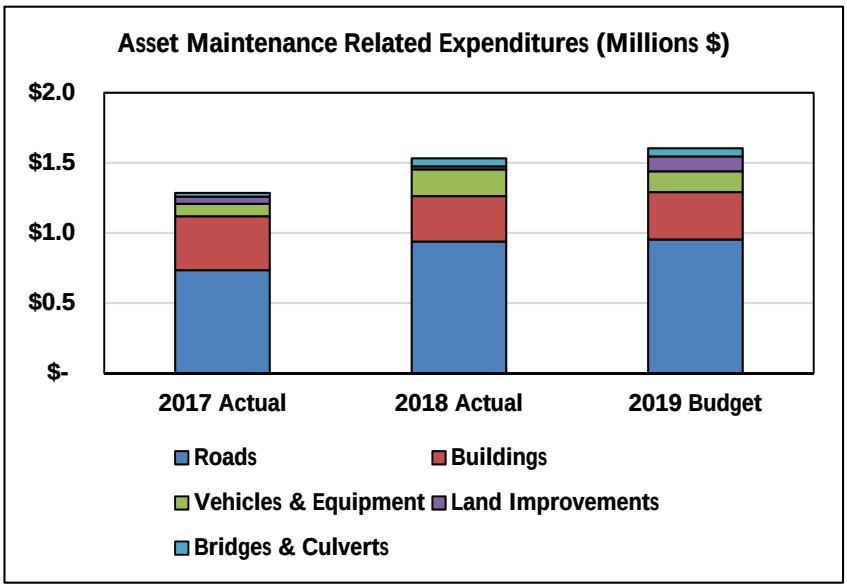
The Township's long-term budgetary outlook should be observed from two perspectives:

a. **Operating Costs** – The Township should look at operating costs holistically, as a significant component of costs is related to maintaining infrastructure in a state of good repair. This is also true as often the general maintenance and repair costs are undertaken by municipal staff, or contracted services, costs that are captured in the operating budget. These maintenance expenses ensure that the assets continue to provide service at existing levels.

b. **Capital Requirements** – Future capital requirements should be calculated to reflect in-year requirements and the replacement of assets outside of the AMP planning period. It is important to show the capital requirements delineated by maintenance, growth and non-infrastructure expenses.

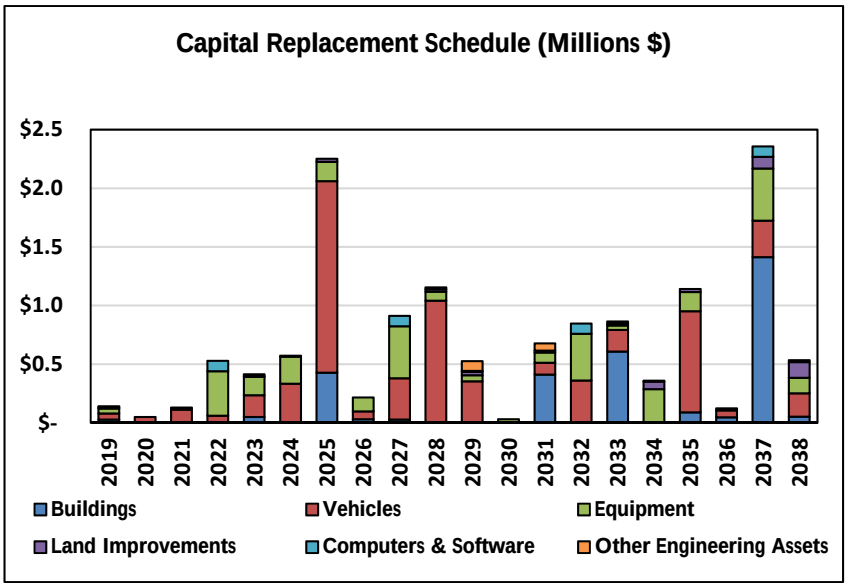
The sections that follow illustrate a methodology to develop and long-term financing strategy specific to the Township. The methodology ensures that different scenarios can be tested so that a strategy that is realistic and achievable can be developed for the Township.

Table 17
Budget Operating Expenditures



- Identify the operating costs associated with maintaining assets based on historical expenditures.
- How are operating and maintenance costs going to change in the next few years?
- Are there increased costs associated with enhanced repair programs?
- Future operating needs should be considered within the AMP.

Table 18
Capital Replacement Schedule

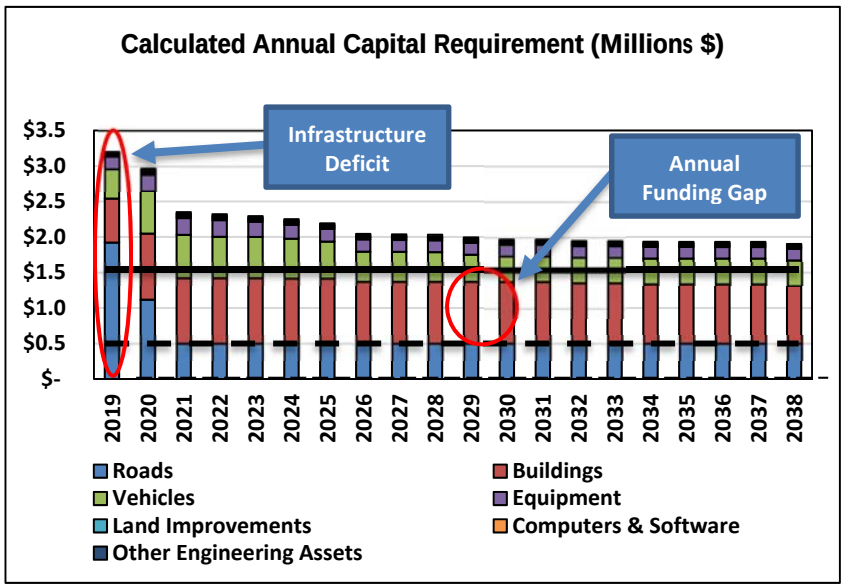


- Identifying capital costs and timing, as well as replacement or major rehabilitation of assets, is important and can be done through a replacement schedule.
- This simply looks at capital replacement costs and timing of existing assets.
- Identifies annual in-year capital requirements by asset category and areas of pressure (for example vehicle replacements in 2025 and building replacement in 2037).
- Replacement schedule should be based on condition assessment, risk matrix and prioritization.

C. IDENTIFY INFRASTRUCTURE GAP

It is important to recognize what current capital expenditures are versus calculated requirements. The required annual capital contribution reflects the required capital contributions if the replacement schedule shown in Table 18 was followed. Table 19 shows a "smoothed" capital expenditure schedule. The difference between current capital expenditures and the calculated requirement is considered to be the funding shortfall (i.e. infrastructure gap/deficit). The Township's existing AMP does not quantify the existing infrastructure gap or present strategies to close the funding gap.

Table 19
Calculated Annual Capital Requirement



- Represents a "smoothed" approach to capital expenditures.
- The difference between current expenditures and required capital contributions is the funding shortfall.
- Analysis takes into account how much is required to fund in-year capital requirements *plus* savings for long-term replacements.
- Roads and buildings largely dominate the capital requirements.

D. IMPLEMENTING A STRATEGY TO TACKLE THE FUNDING SHORTFALL

The Township must identify how to manage the funding shortfall. The financing strategy determines how much your capital spending needs to increase in order to close the infrastructure gap. It is important to recognize that once the in-year gap is closed, the cumulative infrastructure deficit will need to be addressed. The relationship between increased capital contribution requirements and the impact on the tax levy will need to be calculated. A good plan will take a long-term perspective and outline the key revenue sources which will be used to sustain infrastructure investments. The Township's existing AMP does not have a detailed table analyzing the financing strategy to achieve sustainability. Table 20 and Figure 8 provide an example of how to

look at achieving financial sustainability over the long-term. Table 20 provides an explanation of the methodology.

Table 20
Example of a Capital Financing Strategy

Legend	A	B	C	D	E	F	G
Year	Projected Annual Capital Requirement (A)	Annual Capital Contributions (Tax Supported)	% Annual Increase in Capital Contributions	Other Sources of Funding (Gas Tax)	Total Capital Funding = (B+D)	Annual Funding Gap = (A-E)	Cumulative Infrastructure Deficit = (sum of F)
2019	$ 3,200,000	$ 923,612	4.2%	$ 357,000	$ 1,280,612	$ 1,919,388	$ 1,919,388
2020	$ 3,000,000	$ 962,404	4.2%	$ 357,000	$ 1,319,404	$ 1,680,596	$ 3,599,985
2021	$ 2,400,000	$ 1,002,825	4.2%	$ 357,000	$ 1,359,825	$ 1,040,175	$ 4,640,160
2022	$ 2,300,000	$ 1,044,943	4.2%	$ 357,000	$ 1,401,943	$ 898,057	$ 5,538,217
2023	$ 2,300,000	$ 1,088,831	4.2%	$ 357,000	$ 1,445,831	$ 854,169	$ 6,392,386
2024	$ 2,300,000	$ 1,134,562	4.2%	$ 357,000	$ 1,491,562	$ 808,438	$ 7,200,825
2025	$ 2,200,000	$ 1,182,213	4.2%	$ 357,000	$ 1,539,213	$ 660,787	$ 7,861,611
2026	$ 2,000,000	$ 1,231,866	4.2%	$ 357,000	$ 1,588,866	$ 411,134	$ 8,272,745
2027	$ 2,000,000	$ 1,283,605	4.2%	$ 357,000	$ 1,640,605	$ 359,395	$ 8,632,141
2028	$ 2,000,000	$ 1,337,516	4.2%	$ 357,000	$ 1,694,516	$ 305,484	$ 8,937,625
2029	$ 2,000,000	$ 1,393,692	4.2%	$ 357,000	$ 1,750,692	$ 249,308	$ 9,186,933
2030	$ 2,000,000	$ 1,452,227	4.2%	$ 357,000	$ 1,809,227	$ 190,773	$ 9,377,706
2031	$ 2,000,000	$ 1,513,220	4.2%	$ 357,000	$ 1,870,220	$ 129,780	$ 9,507,486
2032	$ 2,000,000	$ 1,576,775	4.2%	$ 357,000	$ 1,933,775	$ 66,225	$ 9,573,711
2033	$ 2,000,000	$ 1,643,000	4.2%	$ 357,000	$ 2,000,000	$ -	$ 9,573,711
2034	$ 1,900,000	$ 1,712,006	4.2%	$ 357,000	$ 2,069,006	$ (169,006)	$ 9,404,705
2035	$ 1,900,000	$ 1,783,910	4.2%	$ 357,000	$ 2,140,910	$ (240,910)	$ 9,163,795
2036	$ 1,900,000	$ 1,858,834	4.2%	$ 357,000	$ 2,215,834	$ (315,834)	$ 8,847,960
2037	$ 1,900,000	$ 1,936,906	4.2%	$ 357,000	$ 2,293,906	$ (393,906)	$ 8,454,055
2038	$ 1,900,000	$ 2,018,256	4.2%	$ 357,000	$ 2,375,256	$ (475,256)	$ 7,978,799
Total Infrastructure Deficit						**$ 7,978,799**	

Figure 8
Projected Annual Capital Requirements vs. Cumulative Infrastructure Deficit
(Millions $)

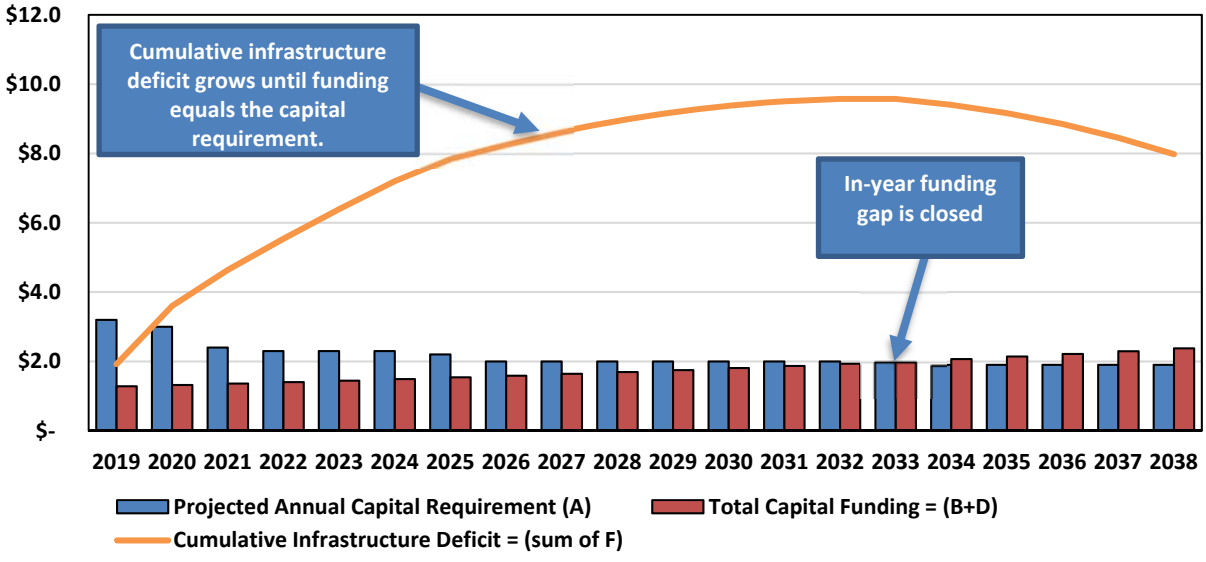


Table 21 Guide to Components of the Infrastructure Deficit Analysis	
Column	**Explanation**
A	The required in-year annual contribution for capital repair/replacement.
B	The planned tax supported annual capital contribution required to close the in-year funding gap by 2033 (see column F). This includes in-year funding of capital and transfers to reserves.
C	The calculated annual contribution % increase required to close the in-year funding gap by 2033. This percentage increase is used in column B.
D	Other sources of funding, such as gas tax funding as shown in the example above.
E	Total planned capital funding to close the in-year funding gap by 2033. The sum of B+D.
F	The in-year funding gap. The difference between the required in-year capital contribution, and the planned capital contribution. Column A-E.
G	The cumulative infrastructure deficit. Notice that we begin to fund the backlog by 2033, however the infrastructure deficit is not eliminated.

The above example looks solely at increased capital spending to close the infrastructure gap. Additional tests and variations should be explored which consider the use of debt to fund infrastructure or alternative revenue solutions. Each scenario can be included in a single graph to compare the long-term cumulative infrastructure deficit at different funding levels.

The Township also has the ability to manage the funding shortfall through the creation of additional policy:

- Review underutilized infrastructure which may not warrant repair/replacement;
- Co-ordinate assets into specific hubs to create operating and capital repair/maintenance efficiencies where possible. Example: Sport fields into centralized areas;
- Leverage growth related works with asset repair and replacement activities. Example: watermain upsizing in conjunction with road resurfacing projects; and
- Explore major building rehabilitation vs. complete replacement.

E. 10-YEAR CAPITAL PROGRAM

Table 22 outlines an example of a 10-year capital program template that can be used by the Township for long-range financial planning. The capital program outlines the asset management related expenditures for a period of 10-years needed to maintain

current levels of service. The expenditures are categorized based on the asset management strategy planned actions outlined in Section 6. A long-term outlook can help the Township plan for future infrastructure and calculate the impact to tax payers of maintaining infrastructure. The Township's current AMP does not display the 10-year capital plan; it should outline the planned expenses by year and by category of planned action.

Table 22
10-Year Expenditure Forecast

Expenditures	2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast
Non-Infrastructure Solutions	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Maintenance Activities	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Renewal/Rehabilitation Activities	$ 100,000	$ 100,000	$ 200,000	$ 100,000	$ 150,000
Replacement Activities	$ 500,000	$ 50,000	$ 100,000	$ 15,000	$ 1,000,000
Disposal Activities	$ 100,000	$ 100,000	$ 25,000	$ -	$ -
Expansion Activities	$ -	$ -	$ 250,000	$ -	$ -
Total	**$ 855,000**	**$ 405,000**	**$ 730,000**	**$ 270,000**	**$ 1,305,000**
Level of Service Adjustments	*$ -*	*$ -*	*$ -*	*$ -*	*$ 100,000*
Grand Total Lifecycle Costs	**$ 855,000**	**$ 405,000**	**$ 730,000**	**$ 270,000**	**$ 1,405,000**

Expenditures	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast
Non-Infrastructure Solutions	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Maintenance Activities	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Renewal/Rehabilitation Activities	$ 100,000	$ 100,000	$ 100,000	$ 350,000	$ 350,000
Replacement Activities	$ 150,000	$ 150,000	$ 250,000	$ 350,000	$ 1,500,000
Disposal Activities	$ -	$ -		$ 100,000	$ 100,000
Expansion Activities	$ -	$ -	$ 250,000	$ 250,000	$ -
Total	**$ 405,000**	**$ 405,000**	**$ 755,000**	**$ 1,205,000**	**$ 2,105,000**
Level of Service Adjustments	*$ 100,000*	*$ 100,000*	*$ 100,000*	*$ 100,000*	*$ 100,000*
Grand Total Lifecycle Costs	**$ 505,000**	**$ 505,000**	**$ 855,000**	**$ 1,305,000**	**$ 2,205,000**

VI MAKING ASSET MANAGEMENT OPERATIONAL

A. CREATING ASSET MANAGEMENT INTERNAL NETWORK

Operationalizing an asset management plan starts with involving staff in the Township. An internal network needs to be created and each member has to be informed about asset management and the effects of good practice on the Township. An Asset Management Committee can be developed to discuss, identify and address gaps in the asset management practices of the Township. The Committee can be made up of representatives from all departments.

B. LINKAGE TO CAPITAL

1) The Township should adopt multi-year capital budgets and forecasts for all services based on a minimum 10-year forecast horizon. The long-term capital forecast should incorporate the prioritized capital projects as a result of risk assessment and condition analysis. Table 22 in the previous section provides an example.

2) Capital budgets and forecasts should identify and evaluate each capital project in terms of the following:

    a. gross and net project costs;
    b. timing and phasing;
    c. funding sources;
    d. growth-related components;
    e. potential financing and debt servicing costs;
    f. long-term costs, including operations, maintenance, and asset rehabilitation costs;
    g. capacity to deliver; and
    h. alternative service delivery and procurement options.

3) Utilize risk matrix and capital prioritization to assist in capital budget decision making. An example of a list of priority capital projects is provided in Appendix C.

C. RELATE MUNICIPAL PRACTICES TO THE AMP

1) Endorse Financing Strategy – In order to operationalize a plan, a financing strategy needs to be adopted. The financial plan is the most critical step in putting

the plan into action and ultimately the only avenue to ensure your assets continue to meet service levels.

2) Public Review and Comment – Although the AMP is intended to aid municipal 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 Township post this plan as well as the strategic policy on the website and provide a copy to members of the public upon request.

3) Plan Monitoring – Implementation of the AMP should be monitored. It is important to ensure that successes and failures are documented to ensure that any challenges in implementing the plan are addressed on an ongoing basis. The Township can monitor the following key factors:

   a. Compliance with legislative requirements – Are we meeting all legislated mandates?

   b. Service Delivery –100% compliance with service targets or targets exceeded.

   c. Capital project delivery outputs delivered to schedule (or better) and on budget (or better).

   d. Operational and maintenance budgets met (or better).

   e. Risk Management—No events occurring outside the risk profile. How have projects with high risk been handled?

   f. Benchmarking with comparable jurisdiction — Maintain performance.

4) Keep it a living document – ongoing updates and refinements are encouraged. Table 23 outlines when such updates and reviews should take place and can help guide future plans.

Table 23
Timelines for Review

Asset Management Framework	Timeframe
Asset Management Policy	5 Years
Asset Management Plan	5 Years
Capital Budget	Annually
Asset Register and Data	Semi-Annually or Annually
Condition Assessment Reviews and Revisions	Semi-Annually

APPENDIX A

MUNICIPAL ACTION PLAN AND

REGULATION SUMMARY

(see MS Excel File)

Appendix A - Table 1
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation
3. Strategic asset management policy		
(1)	Every municipality shall prepare a strategic asset management policy that includes the following:	
1.	Any of the municipality's goals, policies or plans that are supported by its asset management plan.	*Include a list of municipal goals, policies, and plans that are directly linked to the AMP. These can be found in strategic plans, official plans,economic development studies, budget documents, etc.*
2.	The process by which the asset management plan is to be considered in the development of the municipality's budget or of any long-term financial plans of the municipality that take into account municipal infrastructure assets.	*Outline the ways the AMP is used in the yearly budgetting process. This can include recommendations from the AMP that were adopted, prioritized project lists or yearly reporting on asset management key indicators. Any application of the AMP in yearly budgeting should be outlined.*
3.	The municipality's approach to continuous improvement and adoption of appropriate practises regarding asset management planning.	*This can include methods on how the municipality continues to improve asset management. Examples include: staff attendance in asset management training, acquisition of asset management software, asset management committee, etc.*
4.	The principles to be followed by the municipality in its asset management planning, which must include the principles set out in section 3 of the Act.	*The municipality should document any principles used in the asset management decision making process. These principles can be taken from municipal strategic plans. Section 3 of the Infrastructure for Jobs and Prosperity Act includes 14 principles which must be followed, in addition to any others the municipality has.*

Appendix A - Table 1
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation
5.	The municipality's commitment to consider, as part of its asset management planning,	
i.	the actions that may be required to address the vulnerabilities that may be caused by climate change to the municipality's infrastructure assets, in respect	*This section requires an analysis on what the municipality is doing or planning to do, to mitigate the effects of climate change on infrastruture. This can included references to the Fire Master Plan, Emergency Management Studies, Environmental Assessments and others. This section may be more strongly related to stormwater infrastructure.*
A.	operations, such as increased maintenance schedules,	
B.	levels of service, and	
C.	lifecycle management,	
ii.	the anticipated costs that could arise from the vulnerabilities described	
iii.	adaptation opportunities that may be undertaken to manage the vulnerabilities described in subparagraph i,	
iv.	mitigation approaches to climate change, such as greenhouse gas emission reduction goals and targets, and	
v.	disaster planning and contingency funding.	
6.	A process to ensure that the municipality's asset management planning is aligned with any of the following financial plans:	
i.	Financial plans related to the municipality's water assets including any financial plans prepared under the *Safe Drinking Water Act, 2002* .	*The asset management funding requirements are usually included in municipal water and wastewater financial plans. AMP funding needs should be included in future financial plans.*
ii.	Financial plans related to the municipality's wastewater assets.	
7.	A process to ensure that the municipality's asset management planning is aligned with Ontario's land-use planning framework, including any relevant policy statements issued under subsection 3 (1) of the *Planning Act* , any provincial plans as defined in the *Planning Act* and the municipality's official plan.	*An explanation on how related planning policies are reflected in the AMP. This section is moreso important for growth related infrastructure that the municipality plans to build in the future.*
8.	An explanation of the capitalization thresholds used to determine which assets are to be included in the municipality's asset management plan and how the thresholds compare to those in the municipality's tangible capital asset policy, if it has one.	*The municipality should include the minimum dollar value requirement for assets to be included in the AMP. Typically, assets with value greater than $5,000 should be included, but this varies across municipalities. The municipality's TCA policies should be referenced.*

Appendix A - Table 1
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation
9.	The municipality's commitment to coordinate planning for asset management, where municipal infrastructure assets connect or are interrelated with those of its upper-tier municipality, neighbouring municipalities or jointly-owned municipal bodies.	*Include a section that oulines the process for co-ordinating asset maintenace, repair or replacement for assets that are shared or are connected. For example co-ordination of water pipe replacements owned by a municipality that may be under an upper tier owned road.*
10.	The persons responsible for the municipality's asset management planning, including the executive lead.	*Include the position in charge of asset management planning for the municipality.*
11.	An explanation of the municipal council's involvement in the municipality's asset management planning.	*Discuss the role of Council in developing the AMP and decision making on asset management matters.*
12.	The municipality's commitment to provide opportunities for municipal residents and other interested parties to provide input into the municipality's asset management planning.	*Allow citizens and other stakeholders to provide their input on the findings of the AMP. This can include public surveys or public Council meetings where the AMP is presented for Council approval. Include the a description of the public consultation process.*
(2)	For the purposes of this section, "capitalization threshold" is the value of a municipal infrastructure asset at or above which a municipality will capitalize the value of it and below which it will expense the value of it. ("seuil de capitalisation")	
4. Update of asset management policy		
	Every municipality shall prepare its first strategic asset management policy by July 1, 2019 and shall review and, if necessary, update it at least every five years.	*The strategic asset management policy will need to be completed by this date. This can be included as an addition to the existing AMP.*

Appendix A - Table 2
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
5. Asset management plans, current level of service				**Township of Limerick**	**Timeline to Complete**
(1)	Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2021, and in respect of all of its other municipal infrastructure assets by July 1, 2023.	*This requirement establishes timelines for core and non-core municipal assets to be included in the asset management plan in relation to current levels of service*		• Include all assets in the asset management plan by 2023. The current plan contains roads, bridges and culverts and buildings. Current levels of service will need to be determined for all assets by 2023 as well.	Q1 2023
(2)	A municipality's asset management plan must include the following:				
1.	For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan:	*This section outlines reporting requirements for existing levels of service. Historical data should be at least 2 years old.*	Section 3 Levels of Service	• Start tracking your service levels over a number of years (minimum 5-years). The data used to determine the current levels of service should be updated at least every 2 years. • Establish a level of service centralized registry that includes all current services.	Q2 2020
i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	*Include the community and technical levels of service from Table 4 in this appendix in the AMP for roads, water, wastewater and stormwater infrastructure.*	Section 3 Levels of Service	• Continue to track the level of service measures outlined in Table 1 of Appendix B. Appendix B - Table 1 provides the level of service measures that will need to be reported on as per O.Reg 588/17 for the relevant asset classes (i.e. roads and bridges & culverts).	Q1 2021
ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	*Include the qualitative and quantitative descriptors outlined by the municipality for assets such as facilities, vehicles, equipment, land improvements, etc. These will have to be defined by the municipality.*	Section 3 Levels of Service	• Continue to track level of service measures for all other assets (non-core infrastructure). Build off the existing measures contained in the AMP.	Q1 2023
2.	The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan.	*Include the performance of each asset category which is measured using data less than 2 years old as outlined by the municipality. Performance measures will vary by asset category.*	Section 3 Levels of Service	• Develop and track performance measures that are feasible and relevant to the municipality. The existing plan already includes level of service measures.	Q2 2020

Appendix A - Table 2
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
5. Asset management plans, current level of service				**Township of Limerick**	**Timeline to Complete**
3.	For each asset category,				
i.	a summary of the assets in the category,	*A summary describing the assets in each category. For assets that are broken down into components, a summary can be developed by component.*	Section 2 State of Local Infrastructure	• A summary table of the description of assets can be developed based on the asset inventory. The table should include a description of assets, replacement cost, weighted average age or remaining useful life, weighted average condition, and useful life assumptions. An example is provided in Section 2. • Develop a centralized asset inventory for all assets. Include all relevant information, including unique asset ID, age, useful life, location, condition, and other factors. Break complex assets into their components. Include as an Appendix to the AMP.	Q4 2020
ii.	the replacement cost of the assets in the category,	*Include total replacement cost of all assets in each category.*		• Continue to base replacement costs on manufacturer costs and benchmark costs that reflect the full cost of replacing an asset, including disposal costs, materials, labour, contingency, design, etc. Look to recent tenders for further information.	Q1 2021
iii.	the average age of the assets in the category, determined by assessing the average age of the components of the assets,	*Include the weighted average age of all assets in each category weighted relative to their replacement cost.*		• Include the average age of asset categories for all assets. Weighted average age of assets can be calculated relative to the replacement cost of each asset. Develop an age profile of all assets.	Q1 2021
iv.	the information available on the condition of the assets in the category, and	*Where available, include the weighted condition rating of assets in each category weighted relative to their replacement cost.*	Section 2 State of Local Infrastructure	• Use condition assessment information based on staff or engineered inspections. Regularly update the pavement condition indices and bridge ratings that are in the current AMP, and regularly perform visual/staff assessments of other assets. • Map out all “Very Poor” to “Poor” assets. Assets also identified in “Fair” condition are extremely important to recognize, as this category of assets will continue to deteriorate and transition into the “Poor” category in the near term. These assets are likely to pose the greatest risk to the organization. Employ a 5-tier scale for roads and bridges, as opposed to the 3-tier scale. The existing plan identifies assets in "Poor" and "Very Poor" condition on a 5-tier scale or 3-tier scale.	Q2 2021
v.	a description of the municipality’s approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.	*Include the engineering methods used to assess condition rating of all assets in each category. This can include staff visual inspections, remote sensors, etc.*		• Document the methods used to perform condition assessments for each asset category and include in the AMP. The current AMP contains high level articulation of the methodology that could use more detail, especially for roads, building and bridge assessments.	Q2 2021

Appendix A - Table 2
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
5. Asset management plans, current level of service				**Township of Limerick**	**Timeline to Complete**
4.	For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service as described in paragraph 1 for each of the 10 years following the year for which the current levels of service under paragraph 1 are determined and the costs of providing those activities based on an assessment of the following:	*Include all maintenance activites required to maintain current service levels for at least a 10 year period. For example, for buildings this can include frequency of inspections, maintenance schedules, maintenace procedures, etc.*	Section 4 Asset Management Strategy	• For each asset category outline the planned actions needed to maintain assets in state of good repair and maintain current levels of service. Planned actions can be categorized by: non-infrastructure solutions, maintenance activities, repair/rehabilitation, replacement and disposal. • Provide the costs of performing each of these activities. Typically municipal budgets capture maintenance activites through operating budgets and repair/rehabilitation/replacement through capital budgets. Incorporate future demand considerations in the analysis. • Incorporate a risk assessment table associated with the asset management strategy which outlines any actions that will be taken in response to the potential impacts.	Q2 2021
i.	The full lifecycle of the assets.	*The activities listed should be relevant to the useful life of the asset.*	Section 5 Financing Strategy	• The existing AMP does not identify the current infrastructure gap. Calculate the gap and update this analysis on an ongoing basis, and calculate the long-term cumulative infrastructure gap as it changes over time. This can be presented in a table or graph for easy presentation. • Identify what the tax/utility rate implications would be in order to carry out the required capital contributions – test various funding options, including scenarios with the strategic use of debt. For instance, calculate the impact of closing the infrastructure gap on the tax rate. • Contributed assets – identify how much (in $) is contributed each year. The Township assumes responsibility for future repair and replacement. • Identify policies to manage funding shortfall. • Identify costs to maintain current levels of service and classify as non-infrastructure solutions, maintenance activities, repair/rehabilitation, replacement and disposal. • Use a risk based approach to asset management. A risk matrix analysis can be developed based on the approach in Section 4 and 5.	Q2 2021
ii.	The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.	*Discuss alternative options that can be undertaken to maintain current service levels and what options work best.*			
iii.	The risks associated with the options referred to in subparagraph ii.	*Discuss the risks involved with the options in sub-section 4.ii.Risks include discussion of consequences of not undertaking such maintenance activities.*			
iv.	The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.	*Discuss the lowest cost options that can be undertaken to maintain current service levels.*			

Appendix A - Table 2
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
5. Asset management plans, current level of service				**Township of Limerick**	**Timeline to Complete**
5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:		Section 6 Making Asset Management Operational		
i.	A description of assumptions regarding future changes in population or economic activity.	*This can include: population forecasts, development forecasts or economic reports.*		• Create a population and household growth graph to illustrate what the future looks like in the community.	Q1 2020
ii.	How the assumptions referred to in subparagraph i relate to the information required by paragraph 4.	*Discussion on the relationship of growth on maintenance activities. For example as population grows, further maintenance activites are required for roads as more roads experience larger traffic volumes.*		• Discuss how long-term needs for capital expenditures are expected to change with growth (or no growth) and how growth projections inform the development of operating and capital budgets.	Q1 2021
6.	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:		Not Applicable		
i.	With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.				
ii.	With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a				
iii.	With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.				
iv.	With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.				
v.	If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.	*If no population and employment forecasts are available, estimates are acceptable as long as the assumptions are stated in the AMP.*			

Appendix A - Table 2
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
5. Asset management plans, current level of service				**Township of Limerick**	**Timeline to Complete**
vi.	For each of the 10 years following the year for which the current levels of service under paragraph 1 are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.	*Include estimates of capital and operating costs for the maintenance of current service levels in order to accommodate increases in demand caused by growth.*	Not Applicable		
(3)	Every asset management plan must indicate how all background information and reports upon which the information required by paragraph 3 of subsection (2) is based will be made available to the public.	*Include the sources of the information and ensure that the information is available to the public.*	Section 6 Making Asset Management Operational	• The asset management plan document can be made available online through the website. Additional background information can be provided to the public upon request, this includes the asset inventory and any underlying assumptions.	Q2 2021
(4)	In this section, "2017 Growth Plan" means the Growth Plan for the Greater Golden Horseshoe, 2017 that was approved under subsection 7 (6) of the *Places to Grow Act, 2005* on May 16, 2017 and came into effect on July 1, 2017; ("Plan de				
	"Greater Golden Horseshoe growth plan area" means the area designated by section 2 of Ontario Regulation 416/05 (Growth Plan Areas) made under the *Places to Grow Act, 2005.* ("zone de croissance planifiée de la région élargie du				

Appendix A - Table 3
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
6. Asset management plans, proposed level of service				**Township of Limerick**	**Timeline to Complete**
(1)	Subject to subsection (2), by July 1, 2024, every asset management plan prepared under section 5 must include the following additional information:	*The regulations has additional requirements which must be included in the asset management plan by 2024.*			
1.	For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following the year in which all information required under section 5 and this section is included in the asset management plan, determined in accordance with the following qualitative descriptions and technical metrics:	*This section refers to the proposed or planned level of service for a minimum of 10 years.*	Section 3 Levels of Service	• Continue to update target levels of service expected for a minimum of 10-years. Target levels of service can be updated in consultation with the public and Council. • Level of service targets may be mandated by legislation, safety regulations or defined by the municipality.	Q2 2023
i.	With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.	*Include the community and technical levels of service from Table 4 in this appendix in the AMP for roads, water, wastewater and stormwater infrastructure.*	Section 3 Levels of Service	• Continue to track the level of service targets based on Table 1 of Appendix B. Table 1 provides the level of service measures that will need to be reported on as per O.Reg 588/17.	Q2 2023
ii.	With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.	*Include the qualitative and quantitative descriptors outlined by the municipality for assets such as facilities, vehicles, equipment, land improvements, etc. These will have to be defined by the municipality.*	Section 3 Levels of Service	The Township should continue to track target levels of service for non-core infrastructure going forward.	Q2 2023

Appendix A - Table 3
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
6. Asset management plans, proposed level of service				**Township of Limerick**	**Timeline to Complete**
2.	An explanation of why the proposed levels of service under paragraph 1 are appropriate for the municipality, based on an assessment of the following:	*An explanation on how levels of service targets have been determined will need to be outlined.*	Section 3 Levels of Service	• Describe why the target levels of service are appropriate; this should include the process that was used to establish the targets and how Council and the public was consulted.	Q2 2023
i.	The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.	*Options to achieve the proposed levels of service and all risks associated to not meeting the targets.*		• Ensure that target levels of service are based on measurable targets that can be tracked over time and maintained up to date. Discuss the risks of not achieving those targets.	Q2 2023
ii.	How the proposed levels of service differ from the current levels of service set out under paragraph 1 of subsection 5 (2).	*Include a description of how proposed service levels differ from current service levels. Include quantitative and qualitative differences. Identify which service measures are new.*		• Continue to document the target levels of service in relation to the current levels of service and document the differences over time. A sample level of service tracker can be found in Section 2.	Q2 2023
iii.	Whether the proposed levels of service are achievable.	*Discuss whether proposed service levels are attainable. Only feasible and realistic level of service targets should be included in any plan.*		• Continue to ensure that target levels of service are achievable, feasible and realistic. Targets should be developed in consultation with the public and Council. Ensure that the consultation process is documented.	Q2 2023
iv.	The municipality's ability to afford the proposed levels of service.	*Discuss whether proposed service levels are affordable. This will require a cost of analysis of work required to achieve the proposed targets.*		• Ensure that the target levels of service are sustainable over the long-term through the financing strategy outlined in Section 5. Identify what the tax rate implications would be in order to carry out the required capital contributions to meet targets – test various funding options, including scenarios with the strategic use of debt.	Q3 2023
3.	The proposed performance of each asset category for each year of the 10-year period referred to in paragraph 1, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.	*Include the planned performance levels established by the municipality. Performance measures will vary by asset category.*		• Continue to develop performance level targets based on measures that are feasible to track over time. Examples of performance measures are included in Section 2 and in the Township's existing AMP.	Q2 2023
4.	A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period referred to in paragraph 1:	*Lifecycle cost analysis for each asset category. Should be for at least a 10 year period.*	Section 4 Asset Management Strategy	• For each asset category outline the planned actions needed to maintain assets in state of good repair and meet level of service targets at the lowest possible cost. Planned actions can be categorized by: non-infrastructure solutions, maintenance activities, repair/rehabilitation, replacement and disposal. • Incorporate a risk assessment table associated with the asset management strategy which outlines any actions that will be taken in response to the potential impacts. • Include a discussion on the risks associated with not taking the planned actions as required. • Include the useful life of each asset in the lifecycle analysis. • Consider the cost of planned actions of lifecycle activities; identify the lowest cost options that can achieve target service levels.	Q1 2024
i.	An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:	*Identify the lifecycle activities that need to be performed to provide proposed service levels based on:*			
A.	The full lifecycle of the assets.	*The activities listed should be relevant to the useful life of the asset.*			
B.	The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.	*Discuss alternative options that can be undertaken to achieve proposed service levels and what options work best.*			
C.	The risks associated with the options referred to in sub-subparagraph B.	*Discuss the risks involved with the options to achieve proposed service levels. Risks include discussion of consequences of not undertaking such maintenance activities.*			
D.	The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.	*Discuss the lowest cost options that can be undertaken to achieve proposed service levels.*			

Appendix A - Table 3
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
6. Asset management plans, proposed level of service				**Township of Limerick**	**Timeline to Complete**
ii.	An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.	*Forecast of capital and operating costs associated to achieving the proposed levels of service. Forecast should be for at least a 10 year period.*	Section 5 Financing Strategy	• The existing AMP does not identify the current infrastructure gap. Calculate the gap and include an analysis of the cumulative infrastructure gap. Continue to update this analysis on an ongoing basis. • Identify what the tax rate implications would be in order to carry out the required capital contributions – test various funding options, including scenarios with the strategic use of debt. The current plan does not include a tax rate impact assessment or exploration of current revenue sources. • Contributed assets – identify how much (in $) is contributed each year. The Township assumes responsibility for future repair and replacement. • Identify policy to manage funding shortfall. • Identify costs to meet level of service targets and classify as non-infrastructure solutions, maintenance activities, repair/rehabilitation, replacement and disposal. • Use a risk based approach to asset management. A risk matrix analysis can be developed based on the approach in Section 4 and 5. • Identify all possible municipal funding sources. The largest funding sources for municipalities will be taxes. Can also identify other predictable sources of funding such as user fees or gas tax funding. Answer questions like: How much revenue was generated from the funding source in the latest year? What % of total revenues did that represent? What is the current % of the annual repayment limit? The current AMP does not discuss past revenue sources. • Develop an asset priority list to ensure that assets in need of immediate attention are identified and documented. Appendix C provides a sample priority projects list which can be included as an appendix in the AMP.	Q1 2024
iii.	An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.	*Identify funding options and forecast funding for a minimum of 10 years. Funding is associated to the lifecylce cost forecast above.*			
iv.	If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,	*Conditions if a funding shortfall is identified.*			
A.	an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and	*Identify lifecycle activities that the municipality will undertake.*			
B.	if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.	*Discussion on risk management activities associated to the funding shortfall.*			

Appendix A - Table 3
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
6. Asset management plans, proposed level of service				**Township of Limerick**	**Timeline to Complete**
5.	For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity, set out in subparagraph 5 i of subsection 5 (2), informed the preparation of the lifecycle management and financial strategy referred to in paragraph 4 of this subsection.	*For municipalities with a population less than 25,000, explain how population and economic forecasts assumptions tie into the lifecycle management and financial strategy for the municipal asset management plan.*	Section 6 Making Asset Management Operational	• Discuss how expected growth projections have been used to inform the financing strategy.	Q1 2024
6.	For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,		Not Applicable		
i.	the estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,	*For municipalities with a population greater than 25,000, include the estimated capital and operating costs to achieve proposed service levels in order to accommodate increases in demand due to growth.*			
ii.	the funding projected to be available, by source, as a result of increased population and economic activity, and	*For municipalities with a population greater than 25,000, include the funding and funding sources available as a result of increased population and economic activity.*			
iii.	an overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.	*For municipalities with a population greater than 25,000, include the risks associated with implementing the AMP and how to manage these risks.*			
7.	An explanation of any other key assumptions underlying the plan that have not previously been explained.	*All assumptions in the AMP should be clearly laid out.*		• Fully document the assumptions and definitions in the AMP; for instance how replacement costs are calculated and how condition assessments are defined.	Q2 2021
(2)	With respect to an asset management plan prepared under section 5 on or before July 1, 2021, if the additional information required under this section is not included before July 1, 2023, the municipality shall, before including the additional information, update the current levels of service set out under paragraph 1 of subsection 5 (2) and the current performance measures set out under paragraph 2 of subsection 5 (2) based on data from the two most recent calendar years.	*If planned service level analysis is not included in the AMP by July 1, 2023 then the municipality will need to update the current level of service analysis with the most recent 2 years of data.*	Section 3 Levels of Service		

Appendix A - Table 4
Township of Limerick
Asset Management Regulation (O.Reg. 588/17) and Municipal Action Plan Summary

Section	Regulation	Summary of Regulation	Relevant Section	Action Plan	
7. Update of asset management plans				**Township of Limerick**	**Timeline to Complete**
(1)	Every municipality shall review and update its asset management plan at least five years after the year in which the plan is completed under section 6 and at least every five years thereafter.	*The AMP should be updated every 5 years after July 1st 2024.*	Section 6 Making Asset Management Operational	• The asset management plan is a living document. The plan should be updated at least every 5 years. • The asset inventory should be up to date whenever the plan is to be updated, however best practice is to update the asset inventory whenever assets are replaced or new assets acquired.	Ongoing
(2)	The updated asset management plan must comply with the requirements set out under paragraphs 1, 2 and 3 and subparagraphs 5 i and 6 i, ii, iii, iv and v of subsection 5 (2), subsection 5 (3) and paragraphs 1 to 7 of subsection 6 (1).	*Any updates to the AMP should comply with the requirements of O.Reg 588/17 as well.*			
8. Endorsement and approval required					
	Every asset management plan prepared under section 5 or 6, or updated under section 7, must be,		Section 6 Making Asset Management Operational	• Establish an asset management committee. The committee can identify gaps in the asset management framework and propose potential solutions. The committee should be made up of key staff from all relevant departments, this ensures that key staff, such as the executive lead, are involved from the beginning. • Identify a data champion. A data champion is responsible for updating and maintaining the asset register as well as coordinating updates of the asset management plan. Key municipal staff should support the data champion as information will be needed from all departments to maintain asset management information up to date. • Ensure the asset management plan is endorsed by the executive lead and approved by Council. • This should also be detailed in the Strategic Policy	Q4 2020
(a)	endorsed by the executive lead of the municipality; and	*The AMP must be endorsed by the executive lead of the municipality.*			
(b)	approved by a resolution passed by the municipal council.	*The AMP must be approved by Council.*			
9. Annual review of asset management planning progress					
(1)	Every municipal council shall conduct an annual review of its asset management progress on or before July 1 in each year, starting the year after the municipality's asset management plan is completed under section 6.	*Review the AMP annually before or on July 1st of each year starting after all requirements of O.Reg 588/17 have been met.*	Section 6 Making Asset Management Operational	• Monitor asset management plan progress on an annual basis. • Progress can be measured using some of the monitoring options outlined in Section 6. • Develop standardized reports for Council for each asset category. The report should include asset condition, replacement cost, data quality and any other relevant information. Section 2 provides examples.	Q4 2020
(2)	The annual review must address,				
(a)	the municipality's progress in implementing its asset management plan;	*The annual review should discuss the progress made in implementing the AMP.*			
(b)	any factors impeding the municipality's ability to implement its asset management plan; and	*The annual review should discuss any factors that act as barriers, gaps or challenges in implementing the AMP.*			
(c)	a strategy to address the factors described in clause (b).	*The annual review should discuss a strategy to address any factors that act as barriers, gaps or challenges in implementing the AMP.*			
10. Public Availability					
	Every municipality shall post its current strategic asset management policy and asset management plan on a website that is available to the public, and shall provide a copy of the policy and plan to any person who requests it.	*Post the asset management policy and plan on the municipality's website so that the public can access it. Provide a copy of the asset management policy and plan to any person who requests it.*	Section 6 Making Asset Management Operational	• Ensure the asset management plan and strategic asset management policy are posted on the website and available upon request.	Q1 2020

APPENDIX B

SAMPLE LEVEL OF SERVICE TABLES

Sample Current Level of Service Tracker			
Asset Category	**Community Level of Service**	**Performance Measures (Current Level of Service)**	
	Note: Indicates level of service measures required by O.Reg. 588/17.		
Buildings	Includes all municipal buildings and facilities as well as minor buildings and structures. Buildings have been recorded by components wherever possible.	Average weighted condition assessment	Good
		Percentage of assets at or above "Good" or "Very Good" condition	30%
Vehicles & Machinery	Includes fleet vehicles including fire, parks and roads related. Also includes heavy machinery and all major equipment associated to the vehicles.	Average weighted condition assessment	Fair
		Percentage of assets at or above "Good" or "Very Good" condition	20%
Land Improvements	Includes equipment mostly on playgrounds and sportsfields such as fencing, lighting, skate ramps, etc. Also includes parking lots.	Average weighted condition assessment	Poor
		Percentage of assets at or above "Good" or "Very Good" condition	30%
Stormwater Infrastructure	All stormwater linear infrstructure and storm ponds are included in this category. Municipality maintains a GIS database of this asset class and is updated based on the Stormwater Master Plan.	1. Percentage of properties in municipality resilient to a 100-year storm (O. Reg. 588/17).	100% (Urban Area)
		2. Percentage of the municipal stormwater management system resilient to a 5-year storm (O. Reg. 588/17).	100% (Urban Area)
		Average weighted condition assessment	Good
		Percentage of assets at or above "Good" or "Very Good" condition	95%
Equipment & Furnishings	Equipment includes all mechanical and stationary equipment. Examples include furniture at facilites, fire bunker gear and library materials.	Average weighted condition assessment	Fair
		Percentage of assets at or above "Good" or "Very Good" condition	10%
Sidewalks	Includes all Township sidewalks, trails and pathways.	Average weighted condition assessment	Fair
		Percentage of assets at or above "Good" or "Very Good" condition	50%
Bridges and Culverts	Municipal bridges and culverts support regular vehicle traffic including transport trucks.There are weight restrictions in place for some bridges. This is done to ensure safety and reduce damage to bridges.	Percentage of bridges in the municipality with loading or dimensional restrictions (O. Reg. 588/17).	10%
	Inspections of bridges are completed under the *Public Transportation and Improvement Act,* specificially *O.Reg. 104/97 Standards for Bridges.* Visual inspections are performed and bridge conditions are assessed. Detailed information and images are provided through bridge assessment reports done every 2 years.	1. For bridges in the municipality, the average bridge condition index value (O. Reg. 588/17).	70%
	Inspections of culverts with span greater than 3 metres are completed under the *Public Transportation and Improvement Act,* specificially *O.Reg. 104/97 Standards for Bridges.* Visual inspections are performed and culvert conditions are assessed. Detailed information and images are provided through bridge assessment reports done every 2 years.	2. For structural culverts in the municipality, the average bridge condition index value (O. Reg. 588/17).	70%
		Average weighted condition assessment (All bridges & culverts)	Fair
		Percentage of assets at or above "Good" or "Very Good" condition (all bridges & culverts)	55%

Sample Current Level of Service Tracker			
Asset Category	**Community Level of Service**	**Performance Measures (Current Level of Service)**	
	Note: Indicates level of service measures required by O.Reg. 588/17.		
Roads	Maps of the road network and descriptions of the connectivity of roads is maintained in a GIS database and updated every 5 years based on the Road Needs Study.	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	0%
		Collector	55%
		Local	45%
	Maps of the road network that illustrate the conditions and works needed on all Township roads over the next 10 years is provided through the Road Needs Study which us updated avery 5 years.	1. For paved roads in the municipality, the average pavement condition index value (O. Reg. 588/17).	70%
		2. For unpaved roads in the municipality, the average surface condition (O. Reg. 588/17).	62%
		Average weighted condition assessment (All Roads)	Good
		Percentage of assets at or above "Good" or "Very Good" condition (All Roads)	60%
Water System	Maps of the water linear network (including fire flow and fire hydrants) are maintained in a GIS database and updated along with updates of the water/wastewater master plan.	1. Percentage of properties connected to the municipal water system (O. Reg. 588/17).	80%
		2. Percentage of properties where fire flow is available (O. Reg. 588/17).	80%
	Water boil advisories and interruptions are minimal, however if one does occur it is imeediately recorded and reported in accordance to Provincial regulations.	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).	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).	0%
		Average weighted condition assessment	Good
		Percentage of assets at or above "Good" or "Very Good" condition	50%
Sewer System	Maps of the wastewater linear network are maintained in a GIS database and updated along with updates of the water/wastewater master plan.	Percentage of properties connected to the municipal wastewater system (O. Reg. 588/17).	80%
	The water/wastewater master plan documents the following information: • overflow mechanism design, locations and details • effluent areas and descriptions • stormwater protections and future measures	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).	0%
		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).	0%
		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).	0%
		Average weighted condition assessment	Fair
		Percentage of assets at or above "Good" or "Very Good" condition	50%

APPENDIX C

SAMPLE PRIORITY CAPITAL

PROJECT LIST APPENDIX

HIGH PRIORITY WATER AND WASTEWATER CAPITAL WORKS

This section outlines a sample of priority projects that can be attached as an appendix to an asset management plan. The priority list appendix should be updated with the asset management plan as new information is available. Note that this is an example and any values presented are just placeholders.

Although some of the Municipality's water and wastewater infrastructure is not due to be replaced for some time by virtue of the assets engineered design life, the condition of some of the assets are considered to be poor or very poor and no longer perform to the proper standards to meet current levels of service. In consultation with municipal staff, the following table outlines a list of 10 key projects which have been identified as a high priority and require immediate attention.

High Priority Water and Wastewater Capital Projects - Examples				
Priority #	**Project Description**	**Estimated Cost**	**Condition**	**Risk**
1.	Sanitary Sewer Forcemain	$1,000,000	Very Poor	Very High – 25
2.	New Water/Sewer	$900,000	Very Poor	Very High – 25
3.	Water Tower/Standpipe	$1,500,000	Very Poor	Very High – 25
4.	New Watermain and Sewermain Extension 1	$800,000	Very Poor	Very High – 20
5.	New Watermain and Sewermain Extension 2	$800,000	Very Poor	Very High – 16
6.	New Watermain and Sewermain Extension 3	$800,000	Very Poor	High – 15
7.	Catchbasins 1	$190,000	Very Poor	High – 12
8.	Catchbasins 2	$190,000	Poor	High – 12
9.	Watermain Rehabilitation 1	$800,000	Poor	High – 12
10.	Watermain Rehabilitation 2	$800,000	Poor	High – 10
	Total	**$7,780,000**		

The Level of Risk can be identified by using the risk matrix as outlined Section IV of the Municipality's Municipal Action Plan.

The level of capital repair and replacement works required would necessitate the Municipality to seek funding from a variety of sources, in addition to utility rate based revenues, to fund all or part these works. The Municipality's utility rates will continue to be increased, which progressively over-time, moves the Municipality towards full cost recovery. However, in the short to medium term, the Municipality should look to secure grant funding to offset the capital costs of completing the noted projects.

The Municipality has always used internal control measures to prioritize capital related repair and replacement activities to align with available funds/resources to meet current levels of service. The Municipality will continue to utilize such measures to ensure capital works are carried out in a fiscally responsible manner. It is in this regard, the Municipality has identified the need to complete the sanitary sewer forcemain project (priority #1) and the new water/sewer works (priority #2) immediately, while the remaining high priority projects will be considered for completion in subsequent years beyond 2019. The Municipality's ability to undertake these projects is largely dependent on securing upper-level government grant funding, and therefore, the Municipality should exercise all available grant funding opportunities while continuing to move towards full cost recovery utility rates.

The financing strategies to be implemented by the Municipality detail the commitment to increase capital contributions over time to progressively move towards a self-sustaining water and wastewater system. It should be noted; annual capital budgeting exercises may reprioritize the capital works identified.