

TOWNSHIP OF BONNECHERE VALLEY ASSET MANAGEMENT PLAN

December 2021

Prepared for:

TOWNSHIP OF BONNECHERE VALLEY

49 Bonnechere Street East P.O. Box 100 Eganville, Ontario K0J 1T0

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1.0 EXECUTIVE SUMMARY

1.1 **Problem and Opportunity**

To properly allocate the resources required to achieve various acceptable levels of municipal servicing, municipal managers, Councils and ratepayers need access up-to-date and accurate information. This information is typically provided within an Asset Management Plan. Asset management is essentially an information tool intended to allow Municipalities to make informed decisions with the objective of optimizing the useful life expectancy of their municipal assets and achieving good overall value.

The Ontario Ministry of Infrastructure's "Building Together: Guide for Municipal Asset Management Plans" has been utilized as a template in developing the Township of Bonnechere Valley Asset Management Plan (AMP). This AMP meets the requirements of Ontario Regulation 588/17. The Township's Strategic Plan has also been considered within the Asset Management Plan. This Asset Management Plan covers a ten (10) year period and has been structured as a "living document" that can be updated as required. The scope of this AMP includes the following municipal asset categories:

- Water System
- Wastewater System
- Stormwater System
- Roads
- Bridges and Culverts
- Facilities
- Fleet
- Parks and Recreation
- Solid Waste

It should be noted that the Township's original AMP was developed in December 2013 and has been subsequently updated with additional and new information. It is recommended that the AMP continue to be revisited, re-evaluated and updated on an "as required" basis and as information and conditions inevitably change over time.

1.2 Local Infrastructure Big Picture

Current replacement valuation of the Township's water, wastewater, stormwater, roads, bridges and culverts, facilities, fleet, parks and recreation and solid waste is approximately \$179 Million. The current value of this infrastructure is estimated at approximately \$30 Million. Presently, the Township maintains an <u>average level of service</u> for these major asset categories.

Currently, much of the Township's infrastructure is approximately <u>halfway</u> through its ideal useful life. To date, the Township has been proactive in completing condition assessments and planning management strategies to ensure that budget allowances are known well in advance of repairs, rehabilitation and eventual replacement and renewal of these assets.

As these assets age, <u>preventative maintenance</u> will extend their useful life. Annual maintenance costs will; however, gradually increase over time as these assets approach their end-of-life cycle. The Township must be diligent in monitoring these annual maintenance costs so that staff and Council can make informed decisions with respect to the timing of various inevitable capital projects for needed rehabilitation or replacement of infrastructure.

1.3 Asset Condition and Rating

In general, the Township has a good understanding of the <u>condition of their assets and how</u> <u>they are performing</u>. All management decisions regarding maintenance, rehabilitation and renewal revolve around these two key indicators.

Asset condition reflects the <u>physical</u> state of the asset, which may or may not necessarily affect its performance. The performance of the asset is the ability to provide the desired level of service to customers. Generally, this can be measured in terms of reliability, availability, capacity, and meeting customer demands and needs. All of this is critical information for determining the remaining useful life of an asset, and more importantly, the timing for possible intervention steps to bring levels of service back to the desired standard.

Aside from the physical condition of an asset, there are other "intangible" factors that also need to be considered to determine overall condition and remaining useful life. These factors might include:

- Technical advances that might make the asset obsolete.
- Compliance to what extent does the asset meet design and operational requirements?
- Functionality does the asset have the ability/capacity to meet community expectations/growth/service levels?
- Economic life the cost of continuing to operate/maintain/repair/rehabilitate the asset versus its full replacement.

A widely recognized approach for condition assessments focuses on collecting performance data in order to manage the risks associated with critical assets. Once an asset's baseline performance data has been established, it is monitored to determine how that asset is operating. Condition grading standards can be adopted using this approach.

The Township is committed to collecting asset performance data as part of annual operations and maintenance or as part of special investigation and condition assessment projects. Staff has adopted a practical holistic Asset Condition Rating System for the AMP which includes <u>Poor, Fair, Average, Good and Excellent</u> condition ratings.

1.4	Township of Bonnechere Val	ley Infrastructure Report Card

Asset Category	% of Total Replacement Valuation (\$188 M)	Priority	Condition Rating 2020	0 Comments	
Water System					
Watermains	3%	Normal	Fair		
Hydrants	0.2%	Normal	Average	Water treatment and distribution system assets are being maintained	
Meters	Π.7%	Normal	Fair	buried, under pressure and difficult to access. These pipes are	
Values	0.1%	Normal	Fair	generally in Poor condition, however, significant increases in asset	
vaives	0.2 %	NUIMAI	Fair	as these underground assets age. Building reserve funds for	-
Water Services	0.1%	Increased	Poor	renewal/rehabilitation over the next 10-20 years should be a priority.	
Water Treatment Plant	6%	Normal	Fair	end of 2022.	
Water Tower	1%	Normal	Fair		
Wastewater Systems					
Sanitary Sewer Collection Pipes	3%	Normal	Fair	Wastewater system assets are being maintained at an appropriate	
Sewer Services	0.2%	Normal	Fair	level of service. Overall, the wastewater system is in Fair condition. The condition of underground trunks and sewer collection pipes should to be closely monitored including the Pumping Stations,	
Pumping Stations	1%	Normal	Average	forcemains and pipes made of asbestos concrete. The condition of the forcemains are unknown. The Pumping Stations are in Average condition. The Township is focused on significant improvements to	۲
Sanitary Manholes	1%	Normal	Fair	improve operational concerns, reliability, reduce risks, renew aging components and address code and legislative requirements. Building reserve funds for renewal/rehabilitation of the Townships	
Wastewater Treatment Plant	5%	Normal	Average	collection pipes over the next 10-20 years should be a priority.	
Stormwater System					
Eganville Storm Sewers	2%	Normal	Fair		175
Egonuille Catabhaoine	10/	Normal	Foir		1 📥 🗆
Eganville Storm Manholes	0%	Normal	Average	Storm sewer system assets are being maintained at an appropriate level of service. Overall, the Eganville stormwater system is in Fair condition while the Europount stormwater system is in Borr	1
Formount Storm Sewers	Π%	Normal	Poor	condition. The condition of underground storm sewer collection pipes	
Formarunt Catable asing	0%	Nemel		"should to be closely monitored.	-
	U 76	Normai	PODI		
Foymount Storm Manholes	0%	Normal	Poor		
Roads					
Pavement Component - Base	7%	Normal	Average		
Low Class Bituminous (LCB) Roads	14%	Increased	Poor		
High Class Dituminous (HCD) Roads	5%	Normai	Fair	ownship road assets are being maintained at an appropriate level of service. Overall, the roads are in Fair condition. Road renewal investments should be directed towards roads posing the higher risk.	
Sidewalks	1%	Normal	Average		
Traffic Lights	0.3%	Normal	Average	to service.	
Lights Fixtures	0.2%	Normal	Average		
Bridges & Culverts					
Bridges	2%	Increased	Average	The Township's only bridge is being maintained at an appropriate level of service. The bridge is nearing it's 4th quarter of Ideal Useful Life. A program of routine maintenance and inspections should be ongoing to minimize the potential for premature deterioration of structural elements. Building reserve funds for renewal/rehabilitation of the bridge over the next 10-20 years should be a priorty.	٠
Building & Facilities		200 0			4
Building & Facilities	12%	Normal	Average	Facilities are being maintained at an appropriate level of service.	-
Fire - Vehicles	0.5%	Increased	Fair		
Public Works - Vehicles	0.2%	Normal	Fair		
Public Works - Heavy Equipment	3.5%	Normal	Average	*	
Parks & Recreation - Vehicles	0.1%	Increased	Poor	The Terrorbin's float and being an intrinsical at an environment of the last	-
Parks & Recreation - Light Equipment	0.1%	Normal	Fair	service. Overall the fleet is in poor condition, with most of the	-
Animal Control - Vehicles	0.1%	Increased	Poor	vehicles at or past the 4th quarter of their Ideal Useful Life. A	
Solid Waste - Vehicle	0.2%	Normal	Fair	for all vehicles to minimize the potential for premature deterioration.	
Building Inspector - Vehicle	0.0%	Increased	Poor		
Municipal Office - Equipment (Generators)	0.0%	Normal	Average		
Parks & Recreation					
Pedestrian Bridges	0.4%	Normal	Excellent	Parks & Recreation are being maintained at an appropriate level of service. Pedestrian Bridges are in average condition and should be	۱
Parks Structures and Equipment	0.2%	Normal	Fair	inspected in accordance with OSIM. In general, Township recreational equipment is in fair condition.	1
Solid Waste		No. 1	-		
Langill Sites Transfer Stations	14%	Normal	Good		1
Environmental Services	0.5%	Normal	Good	Suila vvaste is being maintained at a minimal level of service.	7

1.5 Funding Report Card

During the Township's annual budget process, each component of financing, user fees, grants, levies, and appropriation of, or contributions to, reserves are reviewed and set according to Council direction and operational requirements. While the Township's Ten (10) Year Capital Plan identifies projects that will be required, funding is not necessarily determined or finalized until the current budget year. In 2019 Council adopted a plan to ensure that there is a consistent contribution to reserves to be utilized for tangible capital assets in the future and although this program does not fully fund the Ten (10) Year Capital Plan it moves the Township in the right direction. As a result, funding is currently still reliant on user fees, tax levies, grants and debt. The Township's current debt level is well below the Provincial Annual Repayment Limit (ARL).

It has been determined that to fully pay for the infrastructure life cycle costs through water and sewer user fees is beyond the economic ability of the current users of the system. Funding will continue to be the most significant challenge in reaching sustainable core infrastructure services.

A conscious effort is made annually during budget preparation to limit or prevent sharp increases to user fees and tax levies. This requires a strategic approach to maintenance and capital replacement planning. A closer look at reserve levels and the possibility of building them to aid in long term funding of large capital replacements is recommended.

The implications of aging infrastructure are becoming apparent and, as a result, long term financing strategies become more important through an effective Asset Management Plan.

1.6 Concluding Statement

The asset management plan framework presented in this AMP is meant to guide Council, department heads, managers and staff so that they can efficiently identify, manage and address infrastructure needs, while taking into consideration key asset management and financial planning principles. Asset management promotes the coordination of infrastructure repair and rehabilitation activities, allowing the Township to make informed and cost-effective decisions. Economic benefits apply to a diversity of stakeholders including the Township, its residents, businesses and industries. Sustainable infrastructure also promotes economic development by creating a place where people want to live, work and do business.

In order to achieve optimal results, it is imperative that support by Council and staff for the asset management planning process be maintained for the long term. This document is meant to be revisited, refined and updated over time as the priorities and needs of the Township change and as new asset information emerges.

2.0 INTRODUCTION

2.1 What Is Asset Management?

An Asset Management Plan (AMP) is a strategy developed for the management of a municipality's infrastructure assets, including technical and financial management techniques, over the life cycle of these assets. AMPs are used to optimize benefits, reduce risks and provide satisfactory levels of service to the community in a sustainable and cost-effective manner.



Each asset of an AMP has a different life cycle which results in the need for ongoing technical and financial review to determine the priority and timing for replacement or rehabilitation, based on the condition of each asset. An AMP also includes a municipality's preventative maintenance and risk management program to mitigate the risk of failure. Preventative maintenance ensures that the day-to-day "wear and tear" on each asset is dealt with to ensure that its expected life cycle can be optimized. Risk management ensures that staff and Council manage the risk through due diligence.

The following is an excerpt from the Ontario Ministry of Infrastructure "Building Together: Guide for Municipal Asset Management Plans":

"Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. The objective is to maximize benefits, manage risk, and provide satisfactory levels of service to the public in a sustainable manner. Asset management requires a thorough understanding of the characteristics and condition of assets, as well as the service levels expected from them. It also involves setting strategic priorities to optimize decision-making about when and how to proceed with investments. Finally, it requires the development of a financial plan, which is the most critical step in putting the plan into action."

Each municipality and its assets are unique and the AMP needs to be customized to fit its size, priorities, composition of assets, geographic setting, current and projected asset condition and performance, and anticipated service levels.

2.2 Why Do We Need an Asset Management Plan?

For many municipalities similar to the Township of Bonnechere Valley, assets were initially built and installed in the 1950s, 60s and 70s and have passed their mid-life expectancy. As with any aging infrastructure, the Township can expect an increase in maintenance and operating costs, and ultimately new capital costs for renewal and replacement at some point in the future.



A key issue facing many local governments is the management of aging infrastructure assets that provide needed and desired services to the community. In addition, the Public has an increased expectation of service levels and is less tolerant of issues such as water supply interruptions, sewer backups and poor road conditions. The public presumes that local government will be accountable and adopt a business-like approach in managing their assets.

In order to properly allocate the resources required to meet service levels, municipal managers, staff and Council need a summary document which identifies the technical and financial needs of assets. This information is appropriately described within an AMP. Asset management is essentially a decision support tool intended to provide the information municipalities need to make good decisions at appropriate times to optimize the useful life expectancy of each asset in order to achieve good overall value.

An AMP is intended to provide information well in advance of major asset renewal, rehabilitation or replacement and it enhances the budgeting and planning process by modeling future capital costs over a short, medium and long term horizon. This information will aid the Township in understanding future budget pressures and assist in providing options on closing any infrastructure gaps.

Specific benefits associated with an AMP include:

- Allows for better decision-making regarding resource allocation;
- Provides further guidance to elected officials on asset renewal and sustainable fiscal management;
- Leads to more effective communication with ratepayers, elected officials and regulatory agencies;
- Provides consistent levels of service to the Public;
- Reduces assets life cycle cost;
- Improves management of risk to the municipality;
- Allows for more effective financial planning;
- Results in more efficient data management (e.g., eliminates departmental silos).

2.3 What Is Included in an Asset Management Plan?

There are numerous practices and principles that can make up an AMP. The 2011 edition of the International Infrastructure Management Manual (IIMM) outlines the following seven (7) key components:

- <u>Life Cycle Approach</u> Plan using the full life cycle costs of infrastructure assets (capital costs, operating and maintenance, rehabilitation, disposal, etc.).
- <u>Cost-Effective Management Strategies</u> Plan for doing the right things at the right time in terms of maintenance, rehabilitation and renewal of infrastructure to minimize ongoing costs (proactive vs. reactive maintenance).



- <u>Defined Levels of Service</u> Define the current levels of service, and possibly the optimal level of service, that is or should be provided to the community. This should include indications of how infrastructure performance is measured.
- <u>Demand Management</u> Recognize that future changes are anticipated within the municipality and how these might impact the services you provide (e.g., population, demographic or regulation changes, etc.).
- <u>Risk Management</u> Plan for managing the risks associated with providing services, including those that can result from failure of key critical infrastructure.
- <u>Sustainable Use of Physical Resources</u> Plan to ensure services can be provided into the future in a sustainable and affordable way.
- <u>Continuous Improvement</u> Understand that asset management is ever-changing and all plans and documents need to be kept current and accurate to support decision-making. Ongoing review and improvement are a critical part of asset management planning.

It is important to note that the Township of Bonnechere Valley has adopted some of these asset management best practices. A key benefit of completing an AMP is to summarize these principles in one comprehensive guiding framework document and identify any areas which require improvement or monitoring.

2.4 Link to Strategic Plan

Asset management is an important piece of the municipal management structure. An AMP that has ties to municipal governance and administration practices can help strengthen the development and operation of municipal infrastructure and the services they provide to the community. This is clearly evident in the language contained in the Township of Bonnechere Valley Community Strategic Plan (CSP).

In 2004, the Township of Bonnechere Valley (Township) adopted a Strategic Plan which is intended to be a "living" document for guiding the Township into the future, provide a "road map" for employees, a reference document for taxpayers and community volunteers, and a decision-making template for Council. The Mission of the Township of Bonnechere Valley is:

"To make our community an affordable, efficient place where people choose to live, work, visit and participate in a culture that fosters communication, rural lifestyle, personal growth, and healthy commerce."

As a matter of policy, the Strategic Plan also notes that:

"All services offered (directly or contracted out) address necessary aspects of the everyday life of taxpayers, and are characterized by Council's responsibility for dependability, reliability, responsiveness and efficiency. Responsibility for all customer service remains with Council"

These statements include core services which relate to the Township's vision contained in the Strategic Plan. Many of these services depend on and are delivered via municipally-owned assets and infrastructure. These "everyday" services include but are not limited to roads, water

and sewer services, fire protection, parks and recreation, sidewalks and waste management. Many of these services are further supported by municipal facilities and fleet vehicles (i.e., municipal office, roads, fire department, arena/hall, water and sewage treatment plants).

Although the Strategic Plan notes that one of the Township's strengths is in providing basic municipal services, it also identifies a number of issues which are a threat to achieving its vision. These threats include:

- old and deteriorating infrastructure;
- increasing infrastructure costs across the board;
- levels of service decreasing due to lack of funding from Provincial and Federal sources;
- higher taxes.

Subsequent to this, the Strategic Plan identifies opportunities which include:

- extending existing communal services to new development areas (particularly in the Village of Eganville);
- maintaining a good road system to encourage economic growth and tourism;
- working with the Provincial and Federal governments to maximize funding in order to keep the current services and improve infrastructure to required standards;
- long range planning.

With these factors in mind, the Strategic Plan identifies a series of seventeen (17) overarching goals, which once implemented, will result in Achievement of the Vision. Each goal is further assigned to one of six (6) municipal departments or in some cases assigned to multiple municipal departments. No less than seven (7) of these goals relate directly to infrastructure and asset management. The following seven (7) goals have been assigned to Public Works, Sewage and Water, Waste Management or a combination of these three (3) departments:

- "Excellence in quality customer service is our business."
- "We know and manage our assets effectively and efficiently."
- "We meet or exceed the applicable Provincial standards for performance under current legislation."
- "We regularly evaluate services against objective standards, and how they are delivered."
- "We serve the Public's need for quality of life."
- "We recognize that what we do has a direct effect on health and safety of the public and Township staff."

The final component of the Strategic Plan is a series of appendices which list the Critical Success Factors that each of the Township's six (6) departments must achieve in order to meet all goals listed and realize the Township's Vision. Without reiterating these detailed Critical Success Factors, it is understood that they are asset management oriented to a large degree.

Based on the information presented, it is clear that asset management is clearly linked to Council's strategic objectives and fundamental to the success of the goals described in the Strategic Plan.

2.5 How Does the Asset Management Plan Support the Capital and Operating Financial Plan?

The Township maintains a Ten (10) Year Capital Plan budget that identifies the timing for priority asset renewal, rehabilitation or replacement and the cost to

construct these assets. These priority projects may be amended annually based on asset management information gathered by staff. The Capital Plan includes many asset categories such as water, wastewater, stormwater, roads, bridges, culverts, facilities, fleet, parks and recreation, and solid waste. This medium-term infrastructure planning process has regard for asset data stored in the Township's Cartegraph Operations Management System as well as known operational problems or issues gathered by municipal



staff. Some current infrastructure information maintained by the Township includes:

- Location;
- Age, material and size (diameter, length, width, height, depth);
- Growth and demand projections;
- Planned expansion areas;
- Critical infrastructure and locations;
- History of replacement and maintenance;
- Condition assessment data and reports;
- Other.

For the Ten (10) Year Capital Plan, infrastructure projects and budgets are identified as either *Capital Replacement* or *Operations and Maintenance*. These two critical budgets are prepared annually by each Municipal department to maintain current service levels. The criteria for prioritizing capital expenditures must have regard for operational need, sustainability objectives, asset life cycle, ability to pay and cost benefit analysis. This is fundamental to the asset management planning process.

2.6 Township of Bonnechere Valley Asset Management Plan

This AMP is intended to act as a guiding framework document which has been structured so that new information and other asset types can be easily incorporated in the future. The initial scope of this AMP, in December 2013, included Water, Wastewater and Stormwater Assets as well as one municipal building – the Eganville Arena and Community Centre (Eagles Nest). The Township also retained a separate firm in 2013 to assist in the completion of a Roads AMP which did not form part of this document. In 2021, the AMP was updated, expanded and combined into a single document to include other Township assets, including Roads, Bridges and Culverts, Municipal Facilities, Fleet, Sidewalks, Street Lights, Traffic Signals, Parks and Recreation.

The Financial Strategy section of this AMP was prepared by the Township and reviewed by Chartered Accountants who were contracted directly by the Township.

In preparing the AMP, numerous other published municipal AMPs, Best Practice documents and fundamental asset management principles have been reviewed. Some of this information

has been adopted and incorporated into this AMP. Refer to Section 9.0 for a comprehensive list of these reference material documents.

The Ontario Ministry of Infrastructure's "Building Together: Guide for Municipal Asset Management Plans" (Guide) has been utilized as a template in developing the AMP. On December 13, 2017 the Province of Ontario approved Ontario Regulation 558/17 (O.Reg.): Asset Management Planning for Municipal Infrastructure made under the Infrastructure for Jobs and Prosperities Act, 2015. This AMP meets the requirements of the Guide and O.Reg. 588/17 and has been structured based on Section 3 of the Guide.

In 2019 the Township prepared a Strategic Asset Management Policy to clearly state Council's commitment to sustainable stewardship of assets and provide a clear statement to guide staff in carrying out the Township's business strategies, plans and activities. Refer to Appendix 'A' for the Townships Strategic Asset Management Policy By-Law 2019-054 and Schedule 'A'.

The Township's AMP covers a ten (10) year period and has been designed as a "living document". The Township's AMP is intended to be revisited, re-evaluated and updated on an annual basis as part of the municipal budgeting process.

The following is a list of background information provided by the Township in developing the AMP:

- Township of Bonnechere Valley Roads Needs Study, prepared by McIntosh Perry dated July 2017;
- Detailed Condition Survey Report Highway 41 Connecting Link Bridge Bonnechere River Bridge, prepared by Bridge Check Canada Ltd., dated September 8, 2020;
- Township of Bonnechere Valley Strategic Plan 2004, prepared by the Delfi Group;
- County of Renfrew Official Plan, approved June 16, 2003, Updated with OPA No.11 (July 10, 2019), OPA No. 25 (March 26, 2020), and OPA No. 31 (August 19 2021);
- Village of Eganville Water and Sewage Systems Infrastructure Management Strategy 2010 Update, prepared by J.L. Richards & Associates Limited;
- Township of Bonnechere Valley Water & Sewage Department Financial Plan Summary 2021-2027;
- Township of Bonnechere Valley Public Sector Accounting Board Policies and Tangible Capital Assets;
- Township of Bonnechere Valley Municipal Geographic Information System (GIS);
- Township of Bonnechere Valley Cartegraph Operations Management System.

3.0 STATE OF LOCAL INFRASTRUCTURE – ASSET INVENTORY

3.1 Background

Based on current replacement value, the Township owns and operates approximately \$179 Million in water, wastewater, stormwater, roads, bridges and culverts, facilities, fleet, parks and recreation, and solid waste assets that support ratepayer and Public services to the Village of Eganville and Foymount area. Currently, the Township maintains an overall average level of service for these infrastructure categories. In general, many of these assets are approximately midway through their life cycle. The Township recognizes this and has been proactive in completing preventative maintenance, condition assessments and planning management strategies to ensure that budget allowances are known well in advance of repairs, rehabilitation and eventual replacement and renewal of these assets. This strategy is essential to building reserve funds, examining funding sources, minimizing the financial burden on the Township's taxpayers and maximizing its overall investment in core "quality of life" infrastructure.



Figure 3.1: Current Replacement Value of Township Infrastructure – \$M

The asset inventory information contained in this AMP has been developed based on background information and reports provided by the Township, interviews with Public Works staff and data extracted from the Township's Geographic Information System (GIS), and Cartegraph Operations Management System (OMS).

3.2 Water System

The Township of Bonnechere Valley provides municipal water to all residents of the Village of Eganville. The Township is dedicated to supplying a clean, safe and reliable drinking water supply while remaining compliant with all regulatory requirements. In general, major components of the distribution system are on average approximately 43 years old. There is minimal service disruption and service levels meet current and anticipated consumption, and fire protection. Annual operating, maintenance and renewal of the water system infrastructure is funded through consumption-based user fees, flat rate user fees, transfers from the Eganville Generation Corporation, Provincial/Federal Assistance Programs, new debt and transfers from reserve funds.



An overview of the Eganville water system is presented in Figure 3-2

with major components summarized in Table 3-1. The system generally consists of a surface Water Treatment Plant (WTP), an underground network of distribution piping and a potable water storage steel standpipe. The distribution system consists of approximately 13.2 km of underground piping as well as 719 valves, 67 hydrants and 574 service laterals to individual properties. The WTP treats raw water from the Bonnechere River and conveys it into the distribution system which generally consists of pipes ranging in diameter from 150 mm (6") to 200 mm (8"), with a few pipes that are 250 mm (10") diameter. Pipes are made from a variety of material including, PVC, Ductile Iron and Asbestos Concrete. The majority of the water distribution system piping is of the mid-1960's and 1970's vintage with the exception of some recent replacements particularly the Bridge Street Watermain crossing and watermain extensions along Wellington St. South.

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Watermains	13.2 km	71	43	39%
Hydrants	67	75	40	47%
Meters	551	15	10	33%
Valves	719	75	46	39%
Water Services	574	60	47	22%
Water Tower	1	75	48	50%**
Water Treatment Plant	1	75	30	60%

Table 3.1 - V	Water System	Summary
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**Based on recent rehabilitation project and regular preventative maintenance suggested by Township



Figure 3.2 - Water System

Township of Bonnechere Valley - Water Network

There is also a 16 m high x 10.4 m diameter water standpipe included in the distribution system and located at a relatively high elevation. The standpipe provides pressure equalization and fire water storage within the distribution system. The system is also fed from the tank when the high lift pumps at the WTP are cycled off. The standpipe was constructed in the mid to late 1970s along with the majority of the system. It also includes a small underground concrete chamber that houses some valving for the fill and drain pipes.

The WTP was constructed in 1990 and includes an approximate 800 m², one-storey building which houses all of the mechanical and process treatment equipment used to treat the raw water to acceptable Provincial standards. The WTP and its major supporting infrastructure have been treated as one entity in this AMP.

3.3 Wastewater System

The Township is responsible for the collection and treatment of wastewater generated within Eganville. In addition to maintaining the collection and treatment system, the Township must ensure that the wastewater treatment plant is operated within all government regulations. The communal wastewater system is fundamental in maintaining public health and safety and protection of the environment. Annual operating, maintenance and renewal of



the wastewater system infrastructure is generally funded through consumption-based user fees,

flat rate user fees, Canada Community Building Fund, Provincial/Federal Assistance Programs and new debt.

An overview of the Eganville wastewater system is presented in Figure 3-3 with major components summarized in Table 3.2. The system generally consists of approximately 12 km of wastewater collection piping, four (4) sub-area pump stations and one Sewage Treatment Plant (STP). The wastewater collection system generally consists of underground pipe, ranging in diameter from 200 mm (8") to 400 mm (16"). Pipes are generally either PVC or Asbestos Concrete. The sub-area pump stations collect the gravity fed sewage from one particular area and convey it to another maintenance hole at a higher elevation in the collection system so that it is all ultimately conveyed to the STP. Pump stations are referred to as the North Side Pump Station; the South Side Pump Station; the Queen Street Pump Station and the Mill Street Pump Station.

Figure 3.3 – Wastewater System

Township of Bonnechere Valley - Sewer Network



Table 3.2 – Wastewater	System	Summary
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Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Sanitary Sewer Collection Pipes	12.2 km	75	45	40%
Sanitary Service Connections	626	75	49	35%
Pumping Stations	4	75	15	80%
Sanitary Maintenance Holes	186	75	45	40%
Wastewater Treatment Plant (includes Chemical Systems Building and Biosolids Dewatering Facility)	1	75	37	51%

The STP is an extended aeration treatment system and generally consists of a grit removal channel, manual bar screen; two in-ground circular package treatment units; chemical feed systems; geotube sludge dewatering facility, and administrative, equipment and chemical buildings. The original plant was constructed in the 1960s, with a major expansion in the mid-1990s, and the sludge dewatering facility was constructed most recently in 2008.

Annual operating, maintenance and renewal of the sewage system infrastructure is funded through consumption-based user fees, flat rate user fees, transfers from the Eganville Generation Corporation, Provincial/Federal Assistance Programs, new debt and transfers from reserve funds.

3.4 Stormwater System

The Township provides stormwater management within the Village of Eganville and to a smaller extent in the Foymount area. The stormwater system generally consists of a network of underground piping, structures and ditches that carry stormwater to either the Bonnechere River or a nearby ditch. The stormwater drainage system is designed to control the quantity, timing and distribution of rainfall runoff and snowmelt to control potential flooding. Annual operating, maintenance and renewal of the stormwater system is funded through transfers from tax rates, Canada Community Building Fund, Provincial/Federal Assistance Programs, new debt and transfers from reserve funds.

An overview of the Eganville and Foymount storm drainage systems major components are summarized in Table 3.3. The system generally consists of approximately 13.7 km of underground pipe, ranging in diameter from 150 mm (6") to 900 mm (36"). Pipes are generally either Smooth Wall Plastic, Concrete, or Metal. Related appurtenances include maintenance holes, catch basins and culverts.

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining				
Eganville Stormwater								
Storm Sewers	11.7 km	75	43	43%				
Storm Maintenance Holes	55	75	36	52%				
Catchbasins	475	60	41	32%				
Foymount Stormwater								
Storm Sewers	2.0 km	75	62	17%				
Storm Maintenance Holes	28	75	56	25%				
Catchbasins	46	60	58	3%				

Table 3.3 – Stormwater Summary

3.5 Roads

The Township owns and maintains a significant paved road network. as well as streetlights sidewalks. and traffic signals, for residents and the general public. All road assets are operated and maintained with the intention of being safe and accessible in accordance and with applicable regulations. Road assets allow movement of goods and people within and Township of around the



Bonnechere Valley and are one of the most visible infrastructure assets to the general public. The Public Works Department manages the road network as a series of Arterial, Collector and Local roads. Annual operating, maintenance and renewal of the road system are funded through tax rates, Canada Community Building Fund, Provincial/Federal Assistance Programs and new debt. Refer to Appendix 'E' for a 10-year capital maintenance plan for rural roads. It should be noted that the scope of this AMP does not include road signs.

An overview of the Township's road network major components is summarized in Table 3.4. There are approximately 245.7 km of roads operated and maintained by the Township. The roads department regularly evaluates the overall pavement condition and ride comfort rating. The Township also owns and maintains 1 Traffic Signal which consists of lights and controllers. In total, the Township has approximately 307 light standards.

The Main routes serving the Township include Highway 60 and Highway 41. Highway 60 runs in an east-west direction and connects Eganville to Renfrew and Highway 17. Highway 41 connects Eganville to Pemboke (north) and Napanee/Highway 401 (south).

Asset Component	Quantity (km/ea)	Average Ideal Service Life (Years)	Average Age (Years)	Estimate % of Service Life Remaining
Pavement Component – Base	245.7	60	25	58%
Low Class Bituminous (LCB) Roads	96.5	10	14	0%
High Class Bituminous (HCB) Roads	33.5	20	17	15%
Gravel Surface Road	115.7	n/a	n/a	n/a
Earth Surface Road	37.0	n/a	n/a	n/a
Sidewalks	5.5	29	11	62%
Traffic Signals	1	20	7	65%
Light Standards – Luminaires	307	20	5	75%

Table 3.4 – Roads Sum	mary
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3.6 Bridges and Culverts

The Township owns, operates and maintains one (1) bridge structure which forms a critical provincial connecting link within the community as Highway 41. Annual operating, maintenance and renewal of the Township owned bridge is funded through tax rates, Provincial/Federal Assistance Programs and new debt.

The structure is visually inspected on a biannual basis in accordance with Ministry of Transportation (MTO) guidelines to determine its overall structural condition and potential need for a more detailed investigation and rehabilitation or renewal. The Bridge Condition



Index (rating system) used by the Township is based on MTO's Municipal Bridge Inspection Forms.

The John Street bridge is maintained by Renfrew County. Culverts which are larger than 3.0 m in diameter and are classified as structures by the Ministry of Transportation (MTO). Renfrew County maintains these culverts within the Township.

The Townships pedestrian bridge is included within Parks and Recreation section of this AMP.

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Bridges	1	75	55	50%**

Table 3.5 – Bridge Summary

**Based on input from Township and the 2020 Detailed Condition Survey Report

3.7 Facilities

The Township owns, operates and maintains a number of major facilities that all require annual maintenance. These include administrative, community, cultural and historical buildings, and strategic and emergency response facilities. Table 3.6 presents a comprehensive summary of all Township owned facilities.



Facility	Location	Year Constructed	Area (square meters)	Average Ideal Service Life (Years)	Estimated % of Service Life Remaining
Municipal Office/ Eganville Fire Hall	49 Bonnechere Street East	1995	571	75	67%
Sebastopol Fire Hall and Public Works Garage (Foymont)	122 Janet Road	1982	156	75	49%
Eganville Arena	178 Jane Street	1966	1789	75	60%***
Eganville Community Centre	178 Jane Street	1966	1300	75	50%***
Eganville Curling Club	8 Foran Street	1980	557	75	47%
Library & Medical Building	75 Wallace Street	1969	412	75	50%***
Bonnechere Museum	85 Bonnechere Street	1977	220	75	43%
Tourism Booth	46 Bonnechere Street West	1990	45	75	60%
Animal Shelter	3376 Highway 41	2007	75	75	35%***
Public Works Office and Garage	294 Highway 512	1975*	464	75	55%***
Storage Building/Foodbank	165 John Street	1979	152	75	55%
Youth Centre/Ballfield Building	8 Foran Street	1993	155	75	64%
Change room/Maintenance Building/Canteen	John Street	1990	56	75	60%
Rotary Building - Legion Field	Foran Street	1980	67	75	47%
Change Room	Jane Street	1984	36	75	52%
Arena Storage Building	Jane Street	2010	Not Available	75	87%
McCrae Park Washroom	Grist Mill Road	2020	Not Available	75	100%
Shed 2 (Office, Garage, Shed)	Foymount Road	2018	418	75	97%
Shed	John Street	1972	334	75	36%
Sand Shed	Foymount	1980	250**	75	47%
Sand Shed	Highway 41	1987	163	75	56%
Steel Salt Shed	Highway 41	2001	250**	75	75%
Steel Culvert Shed	Highway 41	1987	250**	75	56%
Storage Container-Trailer	Highway 41	2006	Not Available	75	81%
40' Storage Container	Spring Creek	2011	Not Available	75	88%
Sand Shed	Highway 41	1987	250**	75	56%
Sand Dome	John Street	1992	250**	75	63%

Table 3.6 – Facilities Summary

*Estimated Year of Construction **Estimated building size ***Based on visual inspection from Township

A Type II Condition Audit Report of the Eganville Arena and Community Centre was completed in July, 2013. A summary table, broken down by the various supporting building systems, is provided in Appendix 'B'. It is the intent of the Township to update this Condition Audit Report prior to 2026.

3.8 Fleet & Equipment

Each Department is responsible for maintenance and monitoring of their own fleet of vehicles and operational equipment.

The Township is dedicated to keeping their vehicles in safe operating condition. Most vehicles in the fleet are past the mid-way point of their ideal service life. Table 3.7 summarizes the Township's fleet inventory.

Asset Component	Quantity (ea)	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Fire – Vehicles (Rescue Vans & Pumper Trucks)	5	16	15	30%**
Public Works – Vehicles	5	10	7	30%
Public Works – Heavy Equipment	20	20	12	40%
Public Works – Light Equipment	25	20	13	35%
Parks & Recreation – Vehicles	2	10	12	0%
Parks & Recreation – Light Equipment	7	18	7	61%
Animal Control – Vehicles	2	10	15	0%
Solid Waste – Vehicle	1	20	13	35%
Building Inspector – Vehicles	1	10	8	20%
Municipal Office – Equipment (Generators)	2	10	5	50%

 Table 3.7 – Fleet Summary

**Based on regular preventative maintenance suggested by Township

3.9 Parks and Recreation

The Township's Recreation Department is responsible for the general maintenance of the parkland, and athletic fields. The Town offers the following recreational facilities:

- An Indoor Community Centre and Arena
- A Public Beach
- Baseball and Soccer facilities
- An outdoor rink at Centennial Park

- A Curling Rink and Tennis courts
- More than 100 kilometers of Snowmobile Trails
- A Splash Pad

The following table summarizes the parks and recreation assets.

 Table 3.8 – Parks and Recreation Summary

Asset Component	Quantity (ea)	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Pedestrian Bridge	1	75	30	90%**
Park Structures and Equipment	12	38	18	53%

**Based on rehabilitation maintenance suggested by Township

3.10 Solid Waste

The Township owns and operates 4 transfer stations, and 2 landfill sites. The Roads Department oversees waste management operations, including curbside pickup in the Village of Eganville. Residents are welcome to dispose of waste or recycle materials at any of the transfer stations. The Township encourages all residents to recycle and compost as much as possible.

Table 3.9 summarizes the Township's solid waste assets.

nary

Asset Component	Quantity (ea.)	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Landfill Sites	2	100	85	15%
Transfer Stations	4	75	20	73%
Environmental Services Buildings/Storage/Sheds	10	75	18	76%

3.11 Eganville Generation Corporation

The Eganville Generation Corporation (EGC) currently operates one hydraulic generation plant located on the Bonnechere River in the Town of Eganville.

The square footage of the powerhouse which is comprised of two buildings combined into one. The old powerhouse building is approximately 52ft x 22ft (1,144sq. ft.) which is a two-storey building. Interior walls are wood with a tin roof. Outside walls are also tin. The new building is 27ft x 41ft. (1,107sq. ft.) it also is two-storey building which was built in 2002. Interior walls are concrete with a tin roof. Outside walls are concrete.

The dam is 174ft long and stretches from the edge of the powerhouse to the opposite shore of the Bonnechere river. The dam has 6 sluice gains each approximately 21 feet long. Three of the

sluice gains have 9 logs each installed. Two of the sluice gains have 15 logs each installed; located in the middle of the river. The remaining gain has a 10-foot steel galvanized gate installed that is operated remotely. Most of the logs are 21ft long Douglas fir 12in high x 12in. wide. There are also 15 steel galvanized logs 21ft long by 12in. high x 12in. wide.

There are three Tatung generators that were manufactured in 2002. One is a double regulated unit; the output is rated at 290Kw. The other two are single regulated units. The Output rating for these generators is 290Kw each.

Refer to Appendix 'C' for additional EGC condition assessment information and estimated annual expenditures 2021-2040.

Table 3.10 summarizes the Eganville Generation Corporation's major assets.

Asset Component	Quantity (ea.)	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Original Powerhouse	1	75	60	20%
New Powerhouse	1	75	18	76%
Dam	1	75	60	20%
Generators	3	50	18	64%

Table 3.10 – Eganville Generation Corporation Summary

4.0 STATE OF LOCAL INFRASTRUCTURE – ASSET CONDITION

4.1 Asset Life Cycle

Asset management is a structured program intended to reduce the <u>life cycle costs</u> of asset ownership while maintaining required service levels by sustaining the infrastructure. The principle of *Life Cycle Costing* is expressed in financial terms to include the <u>total cost</u> of an asset throughout its entire life. This should encompass all the activities associated with acquisition, installation, operation, maintenance, periodic refurbishments, and disposal of that asset as shown in the figure below.





In this AMP, supporting tables reference the column headings "Ideal Service Life" and "Percentage of Service Life Remaining". Ideal Service Life is a reference to the assets' ideal life cycle assuming regular maintenance and monitoring is completed over the life span of the asset.

It is noted that Ideal Service Life is based on the Canadian Infrastructure Report Card (2012) where infrastructure service lives were adapted from the City of Hamilton Life Cycle State of the Infrastructure (SOTI) Report (2005). As indicated in the SOTI Report, "It is recognized that asset life is influenced by many variables such as material, physical setting, uneven manufacturing quality, installation practices, local weather conditions, etc." For these reasons, both of the above-referenced Reports summarize a range of Typical Useful Life in years for each asset.

In the interest of establishing a conservative condition assessment, the lower bound service life for each asset was selected as its "Ideal Service Life" and used in the supporting summary tables which form part of this AMP. <u>"Average Age" is an approximation and has been determined based on the average age of the overall asset/system.</u> Generally, the "Percentage of Service Life Remaining" has simply been calculated by subtracting the assets "Average Age"

from "Ideal Service Life" and showing the "Service Life Remaining" as a percentage of the "Ideal Service Life". For certain assets the "Percentage of Service Life Remaining" was adjusted based on visual inspections, preventative maintenance, and general input/knowledge from the Township.



Exhibit 2 – Asset Management Extends Service Life and Reduces Maintenance Costs

4.1.1 Major Township Infrastructure - Average Age and Ideal Service Life

Currently, much of the Township's infrastructure is approximately halfway through its ideal service life. As these assets age, *preventative* maintenance will extend their useful life. Annual maintenance costs will, however, gradually increase over time as these assets approach their end-of-life cycle. The Township must be proactive in monitoring these annual maintenance costs so that staff and Council can make informed decisions with respect to the timing of various inevitable capital projects for rehabilitation or replacement of problem infrastructure.

Figure 4.2 below illustrates the Township's Assets Average Age versus Ideal Service Life.





4.2 Asset Condition

As part of its maintenance program, the Township regularly collects asset condition data on major asset classes to determine the need and timing for preventative or remedial action to prevent loss or interruption of service or economic loss.

Asset condition reflects the <u>physical</u> state of the asset, which may or may not affect its performance. The performance of the asset is the ability to provide the required level of service to customers. Generally, this can be measured in terms of reliability, availability, capacity, and meeting customer demands and needs. All of this is critical information for determining the remaining service life of an asset, and more importantly, the timing for possible intervention to bring levels of service back to the desired standard.



Aside from the physical condition of an asset, there are other "intangible" factors that also need to be considered to determine overall condition and remaining service life. These factors could include:

- Technical advances that might make the asset obsolete.
- Compliance to what extent does the asset meet design and operational requirements?
- Functionality does the asset have the ability/capacity to meet community expectations/ growth/service levels?
- Economic life the cost of continuing to operate/maintain/repair/rehabilitate the asset versus its full replacement.

In general, the Township has a good understanding of the <u>condition of their assets and how</u> <u>they are performing</u>. All management decisions regarding maintenance, rehabilitation and renewal revolve around these two key indicators.

4.2.1 Asset Condition Rating System

A best practice approach for condition assessments focuses on collecting performance data in order to manage risks associated with critical assets. Once an asset's baseline performance data has been established, it is periodically monitored to determine how that asset is operating. Using this approach, condition grading standards can be relatively simple (e.g., excellent, good, average, fair, poor). The Township has chosen to adopt a similar holistic Asset Condition Rating System which applies to all assets and is straightforward in its interpretation for municipal staff and Council.

The Township's AMP uses a rating system that includes both *physical* condition and *intangible* factors. The Asset Condition Rating System also incorporates any existing condition assessment reports that are based on standard engineering practices and recognized rating systems (e.g., Pavement Condition Index (PCI), Bridge Inspection Reports (OSIM) and Sewer System CCTV Inspections (WRc). Refer to Table 4.1 for an overview of the Township's Asset Condition Rating System.

Average Rating	Condition	Description
9-10	Excellent	Asset is new or relatively new. Asset is physically and structurally sound and performing its function at a high level. Required maintenance costs are minimal to non-existent. No improvements are required at this time. The asset is at the beginning of its expected useful life.
7-8	Good	Asset is physically and structurally sound, performing its function as originally intended. Required maintenance costs are within standards. Some small local improvements may be needed. Asset is relatively new or recently rehabilitated and in the early stage of its expected useful life.
5-6	Average	Asset is physically and structurally sound, performing its function as originally intended. Required maintenance costs are currently within standards but increasing. Some continued improvement will be needed. Asset has been used for some time but within the mid-stage of its expected useful life.
3-4	Fair	Asset is showing signs of deterioration, performing at a lower level than originally intended. Some components are becoming physically deficient and substantial improvement is needed. Maintenance costs are approaching maximum acceptable standards. Asset has been in service for a long time and is within the later stage of its expected useful life.
1-2	Poor	Asset is showing signs of significant deterioration, performing to a much lower level than originally intended. A major portion of the asset is physically deficient. Maintenance costs significantly exceed acceptable standards. Asset is approaching or at the end of its life expectancy and there is a high probability of failure.

Table 4.1 – Asset Condition Rating System

4.2.2 Infrastructure Report Card

An analysis of the Township's water, wastewater and stormwater systems, roads, bridges and culverts, facilities, fleet, parks and recreation has been completed based on the asset "Condition Estimate", "Percentage of Service Life Remaining" data, and various intangible factors discussed in Section 4.2. What follows are a series of individual "report cards" for the major assets reported in this AMP.

Current and Replacement Valuations for each system's infrastructure are included as well as the Average Annual Maintenance Budget. Assumptions related to Current and Replacement Valuations and Average Annual Maintenance Budget can be found in Section 4.2.4. This information in turn, has been incorporated in Section 7.0 – Financing Strategy.

4.2.3 Data Verification and Condition Assessment Policy

The Township does not have an "official" data verification and condition assessment policy. The adopted approach to data verification is simply to update and populate the Cartegraph OMS and Municipal GIS as required. These updates occur in the form of maintenance records, site observed conditions gathered through repairs and planned condition assessments and special

projects. The updating and verification process is shared by municipal staff and its engineering and GIS consultant. Reference Section 6.4 - Maintenance Activities for additional information regarding the Township's preventative maintenance programs.

The Township has been using Cartegraph to gather, store and analyze its assets since 2010. It is envisioned as a key asset management tool for staff moving forward as inventory and condition assessment data is added, updated and revised. A combination of specialized management software and experienced municipal staff demonstrates the Township's commitment to continuously improving its asset information through data verification, planned condition assessments and meeting or exceeding provincial legislation requirements.

4.2.4 Limitations and Assumptions

The information and tables developed for Section 3.0 of the AMP are based on discussions and interviews with municipal staff, GIS and Cartegraph OMS data and a review of available documentation (e.g., drawings, manuals, past reports, financial records, etc.), as well as previous experience with these assets and other similar related facilities and infrastructure. No condition assessment, testing or specialty inspections were carried out as part of the investigative work related to preparation of this AMP.





In developing the AMP, and specifically the State of

Local Infrastructure tables, a number of data fields require a description of their limitations and assumptions. These fields include references to financial valuation, condition estimate, overall performance, ideal service life and remaining service life.

Development of the data contained in these fields can be somewhat subjective (i.e., Exhibit 4, Asset Condition Rating System) due to the number of combinations and permutations of systems, factors, unit costs and probabilities involved and the requirement that the "bottom line" information be presented in a readable and useable format. Some of the specific assumptions that have been made are noted below:

- The estimated life expectancy of an individual system and its components are based, in general, on materials, the manufacturer's published data and perceived industry standards. This accounts for wear and tear, deterioration, average life expectancy, obsolescence, etc., and does not preclude that systems can remain functional for longer periods of time. Soil conditions have not been factored into estimated life expectancy for underground piped infrastructure and can have a bearing on actual service life.
- The assessment of the remaining life of a system or components is not exact. It is based on limited information and, in many instances, influenced by factors that may occur at some future date. Even the urgency of replacement may be determined by factors that

cannot be predicted. For example, retroactive rulings by regulatory agencies may necessitate unanticipated replacement or updating of equipment within a short time frame. By contrast, items such as painting and miscellaneous interior finishes might be delayed for an extended period of time, at the discretion of the Township subject to financial and other considerations. The actual year of replacement will be dictated by the physical condition of the system at the time of replacement. Also, certain replacements may be advanced or deferred by the Township, subject to other conditions (e.g., financial, coordination with related work, incorporation of wider scope upgrades, etc.).

- Items identified as N/A in the various supporting tables and appendices indicate that this information was either <u>not available</u> or <u>not applicable</u> at the time that this AMP was prepared.
- Current Valuation and Replacement Valuation costs noted for the various assets are <u>order of magnitude only</u> and are based on Tangible Capital Asset data. Unit costs used to generate Replacement Valuation include the cost of construction and are based on current prices in the construction industry and/or experience.
- Current and Replacement Valuation costs are expressed in 2020 dollars, therefore, if these costs are to be used for long-range cash flow projections, the implications for potential future trends of inflation and interest must be applied accordingly. It is recommended that the AMP be reviewed annually in order that information presented, including financial data, be kept current and relevant.
- It has been assumed that existing Asbestos Concrete, ductile iron and steel pipes will be replaced with PVC pipe, therefore, replacement costs for Asbestos Concrete pipe has been based on unit rates for PVC pipe.
- Current MECP design guidelines indicate that the minimum diameter for sewers is 200 mm. therefore, any existing sewer less than 200 mm in diameter are assumed to be replaced with a 200 mm diameter sewer. As such, these unit rates have been applied to calculate replacement value.
- Unless this information has been provided, maintenance holes are assumed to be 1200 mm in diameter.
- Unless this information has been provided, driveway culverts are assumed to be 300 mm in diameter
- Unless this information has been provided, rural culverts are assumed to be 450-500 mm in diameter.

4.3 Water System Report

	Table 4.2 – W	later System	Condition and	Estimated Valuati	ion
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Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Replacement Valuation
Watermains	4	Fair	\$1,077,315	\$5,753,979
Hydrants	5	Average	\$48,504	\$281,431
Meters	3	Fair	\$127,432	\$426,170
Valves	4	Fair	\$127,156	\$1,225,039
Water Services	2	Poor	\$107,847	\$302,727
Water Tower	5	Average	\$353,169	\$1,300,000
Water Treatment Plant	6	Average	\$2,648,329	\$10,761,396
		Total	\$4,489,751	\$20,050,742

Figure 4.3 – Percentage of Installed Pipe by Size and Material





- On average, the Water System is past the <u>mid-point</u> of its Ideal Service Life.
- The Watermains, valves, and meter are all in <u>Fair</u> condition. Although the water meters are listed in fair condition based on an age-based condition assessment, the Township has reported most meters have been failing prior to their ideal service life. The Township has initiated a meter replacement program that is expected to be complete by end of 2022, contingent on a successful funding application.
- The WTP and Hydrants are in <u>Average</u> condition.
- The Water services are in <u>Poor</u> condition.
- Approximately 66% (9 km) of the watermains are made of Asbestos Cement. These pipes were installed primarily before 1980. They have an Ideal Service Life of between 70 years.
- Major maintenance, condition assessment and related rehabilitation/renewal activities and costs for water system assets will continue to increase as this infrastructure approaches the third quarter of its Ideal Service Life.

Recommendations

Condition assessment of in-service watermains can be costly and difficult at best. To supplement its watermain condition assessment program, the Township should continue to review the history of watermain breaks and compile/document new records of watermain breaks and any operational problems. This data should be entered into the Cartegraph database so that it can be analyzed for break patterns. The Township's GIS will greatly assist in this type of spatial analysis. Break records should include the location, time of year, pipe size, pipe material, observed soil conditions and cause of failure. Careful examination of these records will allow staff to make informed decisions with respect to watermain renewal or replacement activities. Trenchless technologies for watermain rehabilitation may also be investigated as opposed to
more expensive open cut watermain replacement. Opportunities to coordinate watermain rehabilitation with road reconstruction and other related capital projects should continue to be examined.

4.4 Wastewater System Report

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Replacement Valuation
Sanitary Sewer Collection Pipes	4	Fair	\$494,000	\$5,018,739
Sewer Service Connections	4	Fair	\$108,668	\$313,000
Pumping Stations	6	Average	\$822,356	\$2,336,760
Sanitary Maintenance Holes	4	Fair	\$118,065	\$979,623
Wastewater Treatment Plant (includes Chemical Systems Building and Biosolids Dewatering Facility)	5	Average	\$916,239	\$9,716,004
		Total	\$2,459,328	\$18,364,125

Table 4.3 – Wastewater System Condition, and Estimated Valuation



Figure 4.4 – Percentage of Installed Wastewater Pipe Material

• On average, the Wastewater System is at the <u>mid-point</u> of its Ideal Service Life.

- The Wastewater sewer collection pipes, sanitary maintenance holes, and sanitary services are all in <u>Fair</u> condition.
- The Sewage Pumping Stations are in <u>Good</u> condition.
- Approximately 89% (11 km) of the sanitary sewer collection pipes were installed prior to 1980.
- Approximately 86% of the Township's sanitary sewer collection pipes are made of Asbestos Cement and were installed between 1970 and 1980.

Recommendations

The Township should continue with its Closed Circuit Television (CCTV) condition assessment program to confirm the actual physical conditions of wastewater piping. Annual planning for the CCTV program should consider examining asbestos concrete and vitrified clay sanitary sewers as a higher priority. In general, asbestos cement pipes have an Ideal Service Life of approximately 70 years; however, asbestos concrete pipes have been known to fail earlier as compared to other industry standard materials such as PVC.

Tracking history of breaks, blockages and interviews with Wastewater staff to determine maintenance and operational issues should also be a component of this exercise. History of breaks, blockages and maintenance/operational issues should be entered into the Cartegraph database so that it can be used as a decision support tool for capital planning. The Townships GIS will greatly assist in this type of spatial analysis tracking. Break and blockage records should include the location, time of year, pipe size, pipe material, observed soil conditions and cause of failure or blockage. Trenchless technologies for wastewater trunks and sanitary sewer rehabilitation may also be investigated as opposed to more expensive open cut sewer replacement. Opportunities to coordinate sanitary sewer rehabilitation with road reconstruction and other related capital projects should continue to be examined. Replacement of Maintenance Holes and service connections should coincide, where possible, with sanitary sewer rehabilitation.

4.5 Stormwater System Report

Table 4.4 – Stormwater System Condition, and Estimated Valuation
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Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Replacement Valuation		
Eganville Stormwater						
Storm Sewers	4	Fair	\$389,633	\$4,632,700		
Storm Maintenance Holes	5	Average	\$60,162	\$214,877		
Catchbasins	3	Fair	\$236,174	\$1,229,219		
Foymount Storm Sewers						
Storm Sewers	2	Poor	Not Available	\$800,653		
Storm Maintenance Holes	2	Poor	Not Available	\$109,392		
Catchbasins	1	Poor	Not Available	\$119,040		
		Total	\$685,969	\$7,105,881		



Figure 4.5 – Percentage of Installed Storm Sewer Pipe Material

- On average, the Stormwater System has approximately <u>one-third</u> of its Ideal Service Life remaining.
- Eganville Stormwater assets are in Fair to Average condition.

- Foymount Stormwater assets are in <u>Poor</u> condition.
- Approximately 71% (9.7 km) of the storm sewers were installed prior to 1980.
- Approximately 57% (7.8 km) of the storm sewers were installed prior to 1970.

Recommendations

The Township should use a Closed Circuit Television (CCTV) condition assessment program to confirm the actual physical conditions of storm sewers.

Tracking history of breaks and interviews with Public Works staff to determine operational issues should also be a component of this exercise. History of breaks and operational issues should be entered into the Cartegraph database so that it can be used as a decision support tool for capital planning. A GIS would greatly assist in this type of spatial analysis. Break records should include the location, time of year, pipe size, pipe material, observed soil conditions and cause of failure. Trenchless technologies for storm sewer rehabilitation may also be investigated as opposed to more expensive open cut sewer replacement. Opportunities to coordinate storm sewer rehabilitation with road reconstruction and other related capital projects should continue to be examined. Replacement of Maintenance Holes and catch basins should coincide, where possible, with storm sewer rehabilitation.

4.6 Roads Report

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Pavement Component – Base	6	Average	\$13,180,821	\$13,791,079
Low Class Bituminous (LCB) Roads	1	Poor	\$1,276,489	\$26,241,910
High Class Bituminous (HCB) Roads	4	Fair	\$4,212,979	\$9,150,863
Gravel Surface Road	Not Applicable			
Earth Surface Road		Not	Applicable	
Sidewalks	6	Average	\$1,340,443	\$1,395,644
Traffic Signals	7	Average	\$278,166	\$500,000
Light Standards – Luminaires	7	Average	\$179,113	\$460,500
		Total	\$20,468,011	\$51,539,996

Table 4.5 – Roads - Condition, and Estimate Valuation

- Township roads (including related assets) are generally in Fair condition overall.
- There is approximately 245 km of roads in the Township. Approximately 50% is LCB, 13% is HCB and the remaining 37% is either gravel or earth roads.
- There is approximately 2.6 km of sidewalk. Typical surface type is concrete.

- The Township has developed an ongoing road maintenance program that includes pothole repair, localized asphalt repairs, routing and sealing of road surface cracks and milling and replacement of asphalt surfaces.
- The Township regularly upgrade it traffic signal controllers to keep up-to-date with the advancements in technology
- All Township luminaires were recently upgraded.

Recommendations

Detailed asset information for roads infrastructure is maintained in spreadsheets. The Cartegraph software should be used to <u>centralize</u> roads data with water, wastewater, storm sewer and bridge information. This centralized asset management database will facilitate a smooth transition to the Township's Geographic Information System (GIS) program and minimize or eliminate duplication of information and data silos in Township Departments. Key staff should be given limited access to Cartegraph to manage their respective datasets.

The Township's road maintenance program is critical in extending the life cycle of roads and should continue. New methods of extending the life cycle of roads should be implemented when warranted. Opportunities to coordinate road reconstruction with watermain and sewer replacement and other related capital projects should continue to be examined.

4.7 Bridge Report

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Bridge	5	Average	Not Available	\$4,500,000
		Total	Not Available	\$4,500,000

 Table 4.6 – Bridge - Condition, and Estimated Valuation

• The Township's only bridge, along Bridge Street, is generally in <u>Average</u> condition overall and has approximately 50% service life remaining.

Recommendations

As part of the Township's overall bridge management strategy, a program of routine maintenance should be ongoing for the bridge in accordance with the Ontario Structure Inspection Manual (OSIM). Maintaining this program will assist in minimizing the potential for premature deterioration of structural elements. When combined with a program of bridge rehabilitation, this approach will assist in maximizing the useful service life of the bridge.

4.8 **Facilities Report**

Facility	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation		
Municipal Office/Eganville Fire Hall	7	Good	\$102,702	\$1,513,150		
Sebastopol Fire Hall and Public Works Garage (Foymont)	5	Average	\$15,059	\$421,200		
Eganville Arena	6	Average	Not Available	\$4,830,300		
Eganville Community Centre	5	Average	Not Available	\$4,160,000		
Eganville Curling Club	5	Average	\$33,615	\$1,392,500		
Library & Medical Building	5	Average	Not Available	\$1,318,400		
Bonnechere Museum	4	Fair	\$2,307	\$1,122,000		
Tourism Booth	6	Average	\$10,567	\$90,000		
Animal Shelter	3	Fair	\$31,427	\$187,500		
Public Works Office and Garage	6	Average	Not Available	\$1,206,400		
Storage Building/Foodbank	6	Average	\$9,207	\$380,000		
Youth Centre/Ballfield Building	6	Average	\$83,607	\$387,500		
Change room/Maintenance Building/Canteen	6	Average	\$15,873	\$112,000		
Rotary Building - Legion Field	5	Average	\$8,536	\$134,000		
Change Room	5	Average	\$9,982	\$72,000		
Arena Storage Building	9	Excellent	\$15,327	\$60,000		
McCrae Park Washroom	10	Excellent	Not Available	\$72,000		
Shed 2 (Office, Garage, Shed)	10	Excellent	\$16,996	\$1,086,800		
Shed	4	Fair	\$1,561	\$835,000		
Sand Shed Foymount	5	Average	\$10,760	\$625,000		
Sand Shed	6	Average	\$57,486	\$407,500		
Steel Salt Shed	7	Good	\$11,368	\$625,000		
Steel Culvert Shed	6	Average	\$37,758	\$625,000		
Storage Container-Trailer	8	Good	\$2,638	\$15,000		

Table 4.7 – Facilities - Condition, and Estimated Valuation

Township facilities are generally in Average condition overall. •

40' Storage Container

Sand Shed

Sand Dome

9

6

6

Excellent

Average

Average

Total

\$4,422

Not

Available

\$220,532

\$719,095

\$15,000

\$625,000

\$625,000

\$22,943,250

Recommendations

A maintenance program is critical to keeping the facilities operating efficiently, extending the life cycle. New methods of extending the life cycle should be implemented when warranted. Opportunities to coordinate with other related capital projects should continue to be examined. Specialize and focused engineering/architectural condition assessments should be undertaken for facilities as required in order to plan required upgrades and renewals.

4.9 Fleet & Equipment Report

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Fire – Vehicles (Rescue Vans & Pumper Trucks)	3	Fair	\$194,614	\$900,000
Public Works – Vehicles	4	Fair	\$64,652	\$300,000
Public Works – Heavy Equipment	5	Average	\$767,993	\$6,600,000
Public Works – Light Equipment	4	Fair	\$145,385	\$822,000
Parks & Recreation – Vehicles	0	Poor	\$0	\$100,000
Parks & Recreation – Light Equipment	4	Fair	\$47,915	\$155,000
Animal Control – Vehicles	0	Poor	\$0	\$100,000
Solid Waste – Vehicle	4	Fair	\$0	\$350,000
Building Inspector – Vehicle**	2	Poor	\$0	\$50,000
Municipal Office – Equipment (Generators)	5	Average	\$11,923	\$20,000
		Total	\$1,232,512	\$9,397,000

Table 4.8 – Fleet & Equipment - Condition, and Estimated Valuation

**In 2021 the Township will be selling the building inspector vehicle and replacing with paid mileage.

- The Township's fleet is generally in <u>Fair to Poor</u> condition overall.
- The Township is committed to ensuring the Township's Fleet is kept in safe operating condition.
- The Township has developed an ongoing maintenance and replacement program.

Recommendations

The Township's maintenance and replacement program is critical to keeping the Township's Fleet operating safely, extending the life cycle, and should continue. New methods of extending the life cycle should be implemented when warranted. Opportunities to coordinate with other related capital projects should continue to be examined. The Township should consider a new pumper truck as well as a more robust rescue vehicle.

In support of environmental sustainability and reducing the Township's carbon footprint, the Township should consider using biodiesel, purchasing hybrid or electric vehicles when replacing cars or light trucks, and downsizing vehicle weight or engine size when possible.

4.10 Parks and Recreation Report

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Pedestrian Bridge	9	Excellent	n/a	\$700,000
Park Structures and Equipment	6	Average	\$151,188	\$366,000
		Total	\$151,188	\$1,066,000

- The Township's Pedestrian Bridge is generally in <u>Excellent</u> condition. The Township recently completed extensive repairs.
- The Township's Parks and Recreation equipment is generally in <u>Average</u> condition.
- On average, the Parks & Recreation assets are nearing the <u>mid-point</u> of their Ideal Service Life.
- The Township is committed to ensuring that equipment is safe to use.

Recommendations

A program of routine inspection and maintenance should be ongoing for the pedestrian bridge; similar to the Township's bridge management strategy and OSIM.

The Township's maintenance and replacement program is critical to keeping the Township's recreational equipment safe to use and should continue. New methods of extending the life cycle should be implemented when warranted. Opportunities to coordinate with other related capital projects should continue to be examined.

4.11 Solid Waste Management Report

Table 4.10 – Solid Waste Management - C	Condition, and Estimated Valuation
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Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Landfill Sites	2	Poor	Not Available	\$26,880,000
Transfer Stations	7	Good	Not Available	\$25,525,631
Environmental Services Buildings/Storage/Sheds	8	Good	\$62,673	\$1,000,000
		Total	\$62,673	\$53,405,631

• The Township owns two landfills and 4 Transfer Stations.

Recommendations

It is recommended that the Township continue to comply with its landfill closure agreement, maintain the leachate collection system, and continue to operate its waste transfer stations.

4.12 Eganville Generation Corporation Report

Table 4.11 – Eganville Generation Corporation - Condition, and Estimated Valuation

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Original Powerhouse	2	Poor	Not Available	Not Available
New Powerhouse	8	Good	Not Available	Not Available
Dam	2	Poor	Not Available	Not Available
Generators	6	Average	Not Available	Not Available
		Total	-	-

Recommendations

The Township's maintenance and replacement program is critical to keeping the Powerhouse, Dam and Generators safe to operate and should continue. New methods of extending the life cycle should be implemented when warranted. Opportunities to coordinate with other related capital projects should continue to be examined.

5.0 DESIRED LEVELS OF SERVICE

5.1 Levels of Service - General

Levels of service (LOS) are fundamental to asset management and can cover a number of parameters. Levels of Service parameters may include safety, customer satisfaction, quality, quantity, capacity, efficiency, sustainability, reliability, responsiveness and environmental compliance and acceptability. Some of these parameters have a greater influence than others on strategic objectives and have a greater correlation to costs.

The choice of the level of a particular service is influenced by affordability as well as community needs and desires. With reference to the Township's Strategic Plan and mission, levels of service are a reflection of guiding principles, vision, values, corporate and community goals. These levels of service have been established based on the direction provided by municipal administration and Council, the needs and wants of the community as well as legislative and regulatory requirements.



There is almost always a financial burden associated with levels of service which needs to be balanced against the benefit provided. In many instances, levels of service are also dictated by user's willingness to pay. The exception to this rule would be a regulatory requirement that legally obligates the community to provide a certain minimum level of service (i.e., specific minimum water and wastewater treatment standards).

5.2 What Is the Status Quo?

The goal of an asset manager should be to move away from reactive and "worst first" planning and move towards maintenance of assets in a "state of good repair". This is the most long-term economical way to maintain or provide higher levels of service.

Discussing, communicating, consulting and defining levels of service can be a rigorous and exhaustive process depending on the Municipality's desire to record and measure this information. LOS is directly linked to customer expectations and willingness and/or ability to pay. These specific relationships have not been analyzed in depth as part of this AMP, but could be further evaluated through additional study, if deemed beneficial.

In the interim, the Township has chosen a more practical holistic approach to defining service levels. What are the current "status quo" service levels being delivered by the Township? In the Strategic Plan, some of these service commitments are identified as "overarching goals". They include:

- To meet or exceed the applicable provincial standards for performance under current legislation;
- To maintain, in good working order, all Township owned assets;
- To make our community an affordable, efficient place where people choose to live, work, visit and participate in a culture that fosters communication, rural lifestyle, personal growth, and healthy commerce;
- To know and manage our assets effectively and efficiently;
- To deliver excellence in quality customer service;
- To regularly evaluate services and how they are delivered;
- To maintain effective communication among all departments, Council and the Public;
- To recognize that we serve a community with a variety of ages and abilities.
- To recognize that we are the first line of contact with the Public;
- To recognize that what we do has a direct effect on health and safety of the Public and Township staff; and
- To serve the Public's need for quality of life.

Council has endorsed the levels of service described as being within its financial capability and aligned with the strategic vision of the Township.

Based on this commitment, Appendix "D", Strategic and Operational Levels of Service has been developed to clearly define levels of service, including performance measures, targets, time frames and hierarchy. *This information is not intended to be an exhaustive or prescriptive list but rather a documented guide for maintaining the "status quo" service levels into the future.* The overarching concept is that levels of service reflect the unique nature of each municipality and the specific outcomes that the Township is seeking to achieve.

5.3 Cost of Service

Cost of Service is the annual expenditure required to continue to provide the service at the current level. Cost of service is an accumulation of all elements of the asset life cycle, including operations, maintenance, depreciation and overhead. Costs of current services are well understood by the Township and reviewed on an annual basis.

Costs associated with municipal service delivery are increasing due to inflation, legislative requirements and public expectations. Trends clearly indicate that historic and traditional methods of funding municipal infrastructure are inadequate. As infrastructure costs increase in the future, it is essential that the public not only be consulted, but also be educated and ultimately make choices with respect to the service levels that they wish to pay for.

When the Township makes decisions about improving or adding new levels of service, they should carefully consider the long-term viability of providing a service at that level. If the Township adds services or provides a service at a higher level, the costs to provide the service increases and so does the price that the Township will have to charge its ratepayers. Careful

and informed consideration for the ratepayers and public's ability to pay for upgraded service levels needs to be examined before decisions are made. All capital decisions need to consider long-term costs.

Generally, service levels are highly influenced by public expectations, which should be realistic and ultimately tied to a level of service and a cost. These relationships are illustrated below in Figure 5.1.





5.4 Risk Assessment and Levels of Service

It is important to identify and monitor the costs required to deliver a specific level of service. In some instances, the financial resources needed to meet expected levels of service may not be available. Even small shortfalls in funding may represent large dollar amounts over the long term. Risk tolerance is community/municipality dependent and needs to be understood when decisions on Levels of Service are made. Finances or the lack of funding may require a compromise that could affect or defer improvements or maintenance on certain services such as



potable water systems, treatment facilities, transportation systems and community/recreational facilities. Lack of action or advanced planning (reserve funds) may expose the Township to increased risk and potential legal liabilities. Reducing a specific level of service is a legitimate but often overlooked solution to an identified funding shortfall or imbalance; however, reducing a service level may also introduce increased risk such as safety, quality of life, health and increased future asset rehabilitation costs. It is essential that the inherent risks associated with decreasing levels of service or deferring maintenance be fully understood by Council, municipal staff and the Public. The Township must be aware of this exposure to risk and determine its level of comfort and willingness to accept that risk.

5.5 **Performance Measurement and Monitoring**

Regularly measuring and evaluating an asset's performance is key to strategic asset management. The *performance* of an asset is the ability to provide the required level of service to customers. An asset can be considered to have "failed" when it no longer achieves the required level of service or when it is no longer providing the most cost-effective means of providing that service (i.e., it is more cost-effective to replace than to continue to maintain).

Performance of the Township's assets should be monitored regularly and adjustments made at the appropriate stage in their asset life cycle to achieve an acceptable balance between cost, LOS (i.e., performance) and risk. A performance measurement program should include agreed upon performance indicators and a commitment to measure, compare and report on the results of a monitoring program. Performance indicators commonly relate to technical and non-technical measurements, including safety, responsiveness, cost, comfort, condition, reliability, availability, efficiency, capacity, environmental protection and customer satisfaction.

Best Practices by the National Guide to Sustainable Municipal Infrastructure (InfraGuide) identify three types of indicators that should be developed as part of an effective performance measurement and monitoring program. They include:

<u>Strategic Indicators</u> are the highest and most abstract type of indicators. They are set and reviewed by the highest level of municipal decision-makers. Examples include a measurement of a municipality's quality of life or meeting an annual infrastructure budget.

<u>Functional Indicators</u> result from analyzing different but related operational indicators to obtain an overview of an asset's condition. A functional indicator provides managerial-level municipal decision makers (e.g., Township Engineer, Public Works Manager) with an overview of an infrastructure asset's condition, state or value (i.e., Roads operational indicators, such as number and types of cracks, smoothness, etc., are combined to produce an overall Pavement Condition Index (PCI)).

<u>Operational Indicators</u> are generally raw data collected about an infrastructure asset by work crews while performing their duties or as part of an asset inventory process. Operational indicators are often expressed by municipalities as survey results or scorecards. Some indicators can also be a dollar value, expressed as the cost of an individual asset repair (e.g., CCTV inspections of sewers, number of breaks per kilometer of water pipeline, average time to repair the break, etc.).





Monitoring asset performance involves data collection to establish a baseline monitoring assessment against which future monitoring results can be evaluated. Typical performance questions to be considered when preparing a monitoring process are:

- What service levels have been set for the asset type?
- What technical performance indicators will be used to manage asset performance?
- Is the asset performing and meeting user requirements?
- What limitations (if any) exist with regard to safety, capacity, and the regulatory and environmental requirements?
- What is the ranking of its condition assessment?
- What is the asset's current capacity compared with service demands?

The Township should also be tracking technical performance indicators with information on:

- The types of asset failures ✓
- The number of breaks (watermains, sanitary and storm sewer pipes) ✓
- The number of customers affected ✓
- The number of customer complaints \checkmark
- The duration of the service interruption ✓

- The response time by municipal staff ✓
- The severity of the asset failure ✓

The Township of Bonnechere Valley is participating in a basic performance measurement program. For example, reporting related to provincial regulations and legislation for both the Water and Sewage Treatment Plants are definite performance indicators. In addition, the Township has completed hydraulic capacity models of both the water and sanitary sewer systems. This exercise is also a measurement of an important facet of each system's performance. Similarly, the Condition Rating System described in Section 4.2.1 of this AMP, which has been applied to the various asset types, is an indication of an asset's overall performance.

An analysis of trends in performance indicators over several years will allow the Township to determine whether its asset performance is improving, maintaining the status quo or decreasing. This, in turn, should provide the following asset management benefits to the Township:

- Assist in strategic decision-making;
- Improve asset management practices overall;
- Help ensure consistent, ongoing success in terms of asset finances and sustainability;
- Assess the effectiveness of the operational, maintenance and capital works program;
- Allow for the review and refinement of maintenance and rehabilitation strategies and standards

Perhaps the most important overall consideration for performance measurement is keeping good records and reporting. Although Appendix 'D' Levels of Service - Strategic and Operational Levels of Service includes a "measurement" column, it is recommended that the Township reexamine its current performance measurement program and update this table to have consideration for the points discussed.

5.6 External Trends

Aside from existing funding issues, the Township is facing new pressures and an increased complexity of decision-making as a result of various trends over the last decade or more.

In some instances, the Township is bound to provide levels of service which are beyond its control. For example, the Township is legally obligated to meet a certain minimum level of service with respect to the WTP, distribution system and associated works based on provincial legislation and regulatory requirements. Some of these external trends are:

- Concern for aging populations and ease of access to services;
- Concern for aging infrastructure

- Delegation of responsibility for several services formerly managed by provincial authorities to municipalities, while funding support has not increased in proportion to infrastructure needs;
- Increased public awareness of Public Health and Safety issues; with specific emphasis on potable water and emergency services;
- Concern for the natural environment; and
- Concern for climate change mitigation measures and adaptation needs.

These trends reinforce the importance of asset management best practices, strategic planning, annual user fee reviews and the building of reserve funds. One of these best practices should include the exploration of all available avenues with respect to alternative funding mechanisms. Other potential infrastructure funding sources for the Township might include:

- Special Levies;
- Development Fees/Charges;
- Utility Models;
- Private or Corporate Sponsorship;
- Local Government Service Partnerships;
- Funding Partnerships;
- Community Based Volunteer Fundraising; and
- Strategic Budget Allocations.

6.0 ASSET MANAGEMENT STRATEGY

6.1 Background

The Township's Asset Management Plan is a comprehensive process that follows best practices, not the least of which is the National Guide to Sustainable Municipal Infrastructure. The Township's chosen asset management planning framework highlights a top down (strategic) approach, and a bottom up (operational) approach to effectively manage assets over the short, medium and long term. The graphic below depicts the key elements of the Township's Asset Management Strategy.



Bonnechere Valley Asset Management Framework

6.2 Asset Management Planning Framework

Strategic Planning

The intent of the County of Renfrew Official Plan is to promote orderly and efficient development in a manner which is consistent with the desired lifestyle and needs for growth and prosperity, as envisioned by the local communities and Councils. This includes the desired goals and guidelines for development within the Township of Bonnechere Valley and the community of Eganville.

As described in Section 2.4, the Township of Bonnechere Valley completed a Strategic Plan in 2004. Council has distilled key strengths and opportunities into one statement which, when used as a day-to day reference point, will always guide the way to good decision making. The Mission Statement of the Township of Bonnechere Valley is:

Mission Statement

"To make our community an affordable, efficient place where people choose to live, work, visit and participate in a culture that fosters communication, rural lifestyle, personal growth, and healthy commerce."

Through the use of Critical Success Factors (CSF's) and overarching goals defined in the Strategic Plan, the Township has established levels of service. These levels of service cover all departments, including administration, public works, recreation and culture, sewage and water, waste management and the fire department.

The Township is also considering the need to supplement these strategic documents with a Water & Wastewater Master Servicing Plan for the Village of Eganville. This item is in the early stages of discussion with no clear timeline for approval or implementation; however, it has been budgeted for in this AMP.

Asset Management Strategic Policy

As part of the Ontario Regulation 588/17, every municipality must prepare a strategic asset management policy that articulates a Council's commitment to sustainable stewardship of assets and provides a clear statement to guide staff in carrying out the Township's business strategies, plans and activities. A Strategic Asset Management Policy is considered a best practice for asset management. In 2019 the Township developed its first Strategic Asset Management Policy (AMP-001), included in this AMP as Appendix 'A'. As directed by the O.Reg. 588/17 the Township shall review and update (if necessary) their Strategic Asset Management Policy every five years.

Medium Range Financial Plan

A critical component of this AMP is the analysis of funding needs for asset renewal over a ten (10) year period. This "medium term" Ten (10) year Capital Plan has been developed for all Township owned tangible assets. To fully understand the funding requirements for asset renewal over a ten-year horizon it is important to review the following information found in Appendix 'H' and in Section 7.0 – Financial Strategy:

- Water and Sewage Department Financial Plan 2021-2027;
- 20 Year Capital Projects Listing;

Information contained in Section 7.0 – Financial Strategy will provide Council and staff with the information necessary to adopt effective strategies for sustainable funding for asset renewal.

Asset Management Plan - Updating

The research and development of this AMP has resulted in the creation of significant new derived asset information. This new data will allow the Township to improve its asset management practices and "fine tune" its short, medium and long-range infrastructure renewal models for each asset class.

Actual timing and costs of renewal can vary due to many factors. Some of these factors include; early failure of an asset, current condition assessment information that may indicate that an asset can provide service beyond the initial useful life estimate, inflation and other considerations. It is intended that the AMP be reviewed and updated on a regular basis to incorporate condition assessment data, annual financial budget numbers and actual maintenance/rehabilitation/renewal costs from the previous year. This "constant improvement" approach will allow the Township to develop more precise timing and costs of ongoing and projected infrastructure renewal.

Based on the O.Reg. 588/117 every municipality must review and update their asset management plan every five years with data from the previous two years. In addition, every municipality must annually review its asset management progress on or before July 1st.

Knowledge Management

Knowledge management is perhaps one of the most important non-infrastructure solutions which the Township should embrace in order to improve integrated infrastructure planning. The Township's asset information is maintained in a variety of ways including:

- Municipal Geographic Information System (GIS);
- Operations Management System (Cartegraph);
- Financial system (Vadim);
- Departmental maintained documents;
- Consultant reports; and
- Knowledgeable staff

The GIS, Vadim and Cartegraph OMS should be linked and share information across departments. Succession planning is a topic which needs to be addressed given that there are a number of key staff members who are nearing retirement. Their wealth of knowledge needs to be captured and transferred; especially with respect to existing buried infrastructure. The Vadim and Cartegraph systems are maintained and updated by municipal staff. The GIS has been traditionally updated by a consultant; however, it has not been updated in some time. It is recommended that a more structured GIS updating progress be developed by the Township. This GIS updating process should occur semi-annually and be aligned with the Cartegraph OMS updating process to ensure both data sets are the same. Ideally, both the GIS and Cartegraph OMS should be accessing the same asset database.

Succession planning is a process which should be ongoing at the Township given that staff members will eventually retire and/or could leave under unforeseen circumstances. Their ongoing knowledge needs to be captured and transferred into Worktech or other maintenance management software; especially with respect to existing buried infrastructure.

6.3 Planned Actions

The Township has adopted a proactive strategic approach to planned operations and management of its assets so that they fully comprehend budgetary implications for delivery of these essential services. The detailed Ten (10) Year Capital Plan is a clear example of this "planned action" approach to asset management. The plan includes:

- Mandated and Committed Projects;
- Health, Safety and Environmental Projects;
- Strategic Projects;
- Services;
- Waterfront Development;
- Managed Replacement Funds;
- Asphalt, Roads and Sidewalk Reconstruction;
- Minor Capital Projects;
- Other Projects and Financial Considerations.

This information is reviewed and updated annually to reflect:

- Inflation;
- Projects completed;
- Collected condition assessment data;
- Revised priority items based on collected condition assessment data;
- Planned activities;
- New unplanned activities; and
- Wish items.

At this time, there are no planned actions related to Disposal Activities – the activities associated with disposing of an asset once it has reached the end of its useful life.

The Township is considering the need to supplement its strategic planning documents with a Water & Wastewater Master Servicing Plan for the Village of Eganville. The purpose of this exercise would be to examine how increased growth and development in the Village of Eganville would impact available service capacity of the existing water and wastewater system. An important component of this infrastructure master planning exercise would include a policy gap analysis in consultation with the Township to determine key policies that might be affected by the findings of a Master Plan. A properly executed Infrastructure/Servicing Master Plan would be prepared to ensure sustainability of the water and wastewater networks over the short and long terms.

Reference Appendix "E", for a summary of planned actions for the water and sewage systems. These planned actions include Inventory, Condition Assessment, Capacity Assessment,

Operations, Maintenance, Documentation Control and Special Projects categories and cover a 10-year horizon from 2021 through 2031.

6.4 Maintenance Activities

An excerpt from the 2005 City of Hamilton State of the Infrastructure Report (SOTI) states that *"most municipal infrastructure has four major steps in its life cycle:*

- In the first quarter of its life, the asset requires only Minor Maintenance;
- In the second quarter of its life, the asset requires Major Maintenance;
- In the third quarter of its life, the asset typically requires Renewal/Rehabilitation;
- In the final quarter of its life, the asset ultimately requires Replacement.

Whether it is shorter life assets (i.e., electrical, instrumentation, mechanical components) or longer life assets such as buried pipes, this approach is acceptable for desktop financial planning purposes."

Figure 6.1 shows maintenance, rehabilitation or replacement activities and related ratios which are typically part of an operating and capital budget.



Figure 6.1 – Operating/Capital Budget

"Asset deterioration is dynamic, and the number of different maintenance interventions on an annual basis will vary significantly over time and is not typically a straight line projection."

Figure 6.1 suggests that relative costs will rise exponentially as an asset ages, in terms of the 1:4:50:200 ratios shown. *"Therefore, for every dollar spent on minor maintenance, \$4 will be spent on major maintenance, \$50 on renewal/rehabilitation and \$200 on reconstruction. These ratios can vary significantly depending on the asset, proposed rehabilitation technology and the impact to its overall useful life."*

The Township has considered this type of projection as a desktop budgeting exercise; however, future maintenance and condition assessment data will be required to develop greater financial projection accuracy over time.



Figure 6.2 – Asset Management Extends Service Life and Reduces Maintenance Costs

6.5 Options/Risk Analysis and Renewal Planning

Risk assessment and analysis is embedded throughout the Township's asset management process; however, it is important to understand and identify assets which are more critical to the continuity of service and operations than others. The Township has completed a high level qualitative analysis of significant potential risk analysis events. This information has been developed based on interviews with Township staff, review of historical inspection and maintenance records, emergency procedures in place and existing infrastructure management strategies and reports. Township Risk Analysis Events which have scored the highest (9 or 10 out of a possible 15 points) include:

- Forcemain/Watermain Break;
- Sanitary Sewer Break;
- Sanitary Sewer Forcemain Break;
- Storm Sewer Main Break;
- Arena/Community Centre Roof System Collapse (partial or catastrophic);
- Bridge Collapse.

Please reference Appendix "F" – Township of Bonnechere Valley Risk Analysis Matrix and supporting – Risk Analysis Rating System.

Combined with the risk analysis completed, the following abstract format breakdown is an overview of the interconnection between the renewal planning and options/risk analysis process for strategic asset management. The asset management strategy described is similar to most municipalities but has been tailored to the Township of Bonnechere Valley. Opportunities to save resources by coordinating solutions to multiple problems must also be explored. As a whole, this information is key to the decision-making process when planning for repair, renewal/rehabilitation or replacement of infrastructure assets and building reserve funds.

ASSET:	WATER SYSTEM
Inventory:	One (1) Water Treatment Plant, one (1) Water Standpipe, 13.2 km of watermain, 67 hydrants, 719 valves, 551 water meters, 574 water services
Ideal Service Life:	Life cycles can vary from 15-75 years. Water Treatment Plant from 30-60 years. Water standpipe and underground chamber is estimated at 60 years. Watermains have a service life of approximately 75 years depending on material and soil conditions. Valves and hydrants also have a life cycle of approximately 75 years. Water laterals are estimated to have a life cycle of 60 years. Lifecycle of a water meter is estimated at 15 years. These life cycles assume regular maintenance is performed throughout the course of the asset's life.
Integrated:	May be integrated with road resurfacing, road construction work and other utilities such as wastewater, hydro, telephone and cable. May also be a standalone replacement/repair. WTP works are typically standalone in nature; however, opportunities to consolidate/coordinate plant upgrade projects should be explored to achieve cost savings.
Rehabilitation & Replacement Criteria:	Preliminary assessment criteria for prioritizing rehab/replacement is history of breaks, age of pipe, pipe material, size of pipe, soil conditions, impaired water quality, reduced hydraulic capacity, hydrant spacing and high leakage rates. These symptoms may require a more detailed investigation. The Township's GIS should be populated with condition assessment data, history of breaks, etc., as it is collected so that it may be used as an analysis and decision support tool for establishing priorities and reviewing areas of concern. A road rehab project may bump up the rehab/replacement of a pipe segment(s) if replacement is scheduled in the near future. Studying history of breaks and failure trends can determine when maintenance costs are increasing at a rate such that rehab/replacement makes the most sense economically. WTP upgrade projects are generally dictated by provincial regulations/reporting and aging infrastructure.
Rehabilitation & Replacement Strategies:	Watermain rehab/replacement is based on current condition; however, watermains are buried and it can be difficult and cost prohibitive to complete detailed investigations (even using new and emerging technologies). For this reason, rehab/replacement strategies rely mainly on break history, age, size, material and hydraulic requirements. There are numerous methods for rehabilitation of watermains, including replacement, cleaning and relining, Cured- In-Place-Pipe (CIPP), horizontal drilling and pipe bursting. Cathodic Protection can help to prolong life expectancy of the pipe. There are limitations to each of these technologies. Consideration for the project appropriate technology is assumed.
Life Cycle Consequences/Risk Assessment:	Pipe failure is typically catastrophic occurring at undetermined and unexpected times. Some pipe materials with a theoretical 70-100 year life cycle may require replacement much sooner (30+ years), whereas some of these pipes can simply be maintained or rehabilitated to gain many additional years of service life. WTP failures have far reaching consequences including quality, quantity, operational and risk to Public health.
Integrated Asset Priorities:	A deteriorated watermain is either rehabilitated or replaced based on a number of factors associated with priorities, cost and risk – Township's willingness to accept various risk factors in prioritizing asset management is a reality. Some problem areas may be less of a risk and disruption of service is tolerable. Replacement is a higher priority where fire protection, water quality and disrupted service can result in water loss and collateral damage. Other utilities such as wastewater, hydro, telephone and cable may be integrated into the work plan. Road rehab projects may assist in accelerating the project priority.

Corporate/Consulting	Village of Eganville Water & Sewage Systems Infrastructure Management
Reports:	Strategy, Village of Eganville Water & Sewage Systems Infrastructure Condition
	Assessment, Road Needs Study.

Table 0.2 – Wastewater Treatment and Conection System

ASSET:	WASTEWATER TREATMENT AND COLLECTION SYSTEM
Inventory:	One (1) Wastewater Treatment Plant, one (1) Chemical System Building, one (1) Biosolids Dewatering Facility, four (4) Pumping Stations, 12.2 km sanitary sewers, 186 sanitary maintenance holes, 626 sanitary service connections
Ideal Service Life:	Life cycles can vary from 15-100 years. Sewage Treatment Plant, Chemical System Building and pumping stations from 30-60 years. Sewage Treatment Plant machinery & equipment, pumps, treatment trains, instrumentation & controls, etc., from 15-60 years. maintenance hole life cycles are estimated at 75 years, sanitary service laterals are estimated at 60 years and sanitary sewers and forcemains have a life cycle of between 50-100 years. These ideal service life cycles assume regular maintenance is provided throughout the course of the asset's life.
Integrated:	May be integrated with road resurfacing, road construction work and other utilities such as wastewater, hydro, telephone and cable. May also be a standalone replacement/repair. STP works are typically standalone in nature; however, opportunities to consolidate/coordinate plant upgrade projects should be explored to achieve cost savings.
Rehabilitation & Replacement Criteria:	Criterion for prioritizing a rehab/replacement/renewal schedule for sanitary sewers is based on a condition assessment through a CCTV inspection. The camera work and associated standardized rating system (typically WRc) will allow staff/consultants to rate the condition of the infrastructure. Other factors affecting the criteria will include localized collapses, material type, upsizing requirements, new development as well as coordination with the roads replacement and improvement program. Additional condition evaluation programs may include flow monitoring, and Inflow & Infiltration (I&I) source identification. The Township's GIS should be populated with condition assessment data as it is collected so that it may be used as an analysis and decision support tool for establishing priorities and reviewing areas of concern. STP upgrade projects are generally dictated by provincial regulations/reporting and aging infrastructure.
Rehabilitation & Replacement Strategies:	Sanitary sewer rehab/replacement will be based on the condition rating of the infrastructure. In most cases, once the pipe has been inspected and assigned a condition rating, staff can determine the best method for rehabilitation. Replacement will be the most common method for collapsed or heavily deteriorated pipe. Other methods include re-lining, Cured-In-Place-Pipe (CIPP), spot repairs and joint sealing. Trenchless technologies should be explored as valid pipe rehabilitation alternatives as opposed to traditional open cut methods.
Life Cycle Consequences/Risk Assessment:	Structural deterioration can result in infiltration of groundwater into the sewer that results in a loss of pipe bedding which promotes further deterioration. It can also result in the accumulation of debris and sediment at sag points in the sewer, calcite build-up at the cracks and joints which promotes root migration into the sewer. These factors lessen the amount of wastewater that can flow unimpeded and can further deteriorate the sewer resulting in potential basement flooding. Groundwater infiltration can also add additional volume of sewage to be treated at the Sewage Treatment Plant which results in extra cost. Preventative maintenance (i.e., flushing and CCTV) and rehabilitation is key to maximizing the piped networks life cycle. These programs are currently budgeted for. STP

	failures may have significant consequences including environmental and Public health risks.
Integrated Asset Priorities:	A deteriorated sanitary sewer is replaced or rehabilitated based on the condition. Timing and coordination of associated works such as curb, gutter, sidewalks, road trench cuts or pavement should be evaluated if sewer replacement or rehabilitation is planned to maximize "economies of scale". Other utilities such as telephone, hydro and cable may be integrated into the work plan as well. Road rehabilitation projects may help dictate project priority.
Corporate/Consulting Reports:	Village of Eganville Water & Sewage Systems Infrastructure Management Strategy, Village of Eganville Water & Sewage Systems Infrastructure Condition Assessment, Road Needs Study.

Table 6.3 – Stormwater System

ASSET:	STORMWATER SYSTEM
Inventory:	13.7 km of storm sewers, 110 storm maintenance holes, 506 catch basins
Ideal Service Life:	Life cycles can vary from 60-75 years.
Integrated:	May be integrated with road resurfacing, sanitary and watermain replacement, road reconstruction and other utilities such as hydro, telephone and cable. It may also be a standalone replacement.
Rehabilitation & Replacement Criteria:	The criteria for prioritizing the replacement schedule for storm sewers are based on a condition assessment through a CCTV inspection. The camera work and associated standardized rating system (typically WRc) will allow staff/consultants to rate the condition of the infrastructure. Other factors affecting the criteria will include localized collapses, surcharging records, flooding records, material type, upsizing requirements as well as coordination with a roads improvement program.
Rehabilitation & Replacement Strategies:	Storm sewer rehabilitation will be based on the condition rating of the infrastructure. In most cases, once pipes have been inspected and assigned a condition rating, staff/consultants can determine the best rehabilitation method. Replacement will be the most common method for collapsed or heavily deteriorated pipes. Other methods include re-lining, Cured-In-Place-Pipe (CIPP), spot repairs and joint sealing. Trenchless technologies should be explored as valid pipe rehabilitation alternatives as opposed to traditional open cut methods.
Life Cycle Consequences/Risk Assessment:	Storm sewers will deteriorate in much the same manner as sanitary sewers although consequences of failure for storm sewers are not usually as significant as those of sanitary sewers. Structural deterioration can result in infiltration of groundwater into the sewer which results in a loss of pipe bedding which promotes further deterioration. It can also result in the accumulation of debris and sediment at sag points in the sewer, calcite build-up at the cracks and joints which promotes root migration into the sewer. These factors lessen the amount of wastewater that can flow unimpeded, thereby promoting additional build-up in the pipe. Preventative maintenance (i.e., flushing and CCTV) and rehabilitation is key to maximizing the piped networks life cycle. These programs are currently budgeted for as part of this AMP.
Integrated Asset Priorities:	A deteriorated storm sewer and associated maintenance holes, etc. is replaced or rehabilitated depending on the condition. Timing and coordination of associated works such as curb, gutter, sidewalks, road trench cuts or pavement should be evaluated if sewer replacement or rehabilitation is planned to maximize

	"economies of scale". Other utilities such as telephone, hydro and cable may be integrated into the work plan as well. Road rehabilitation projects may help dictate project priority.
Corporate/Consulting Reports:	Village of Eganville Water & Sewage Systems Infrastructure Management Strategy, Village of Eganville Water & Sewage Systems Infrastructure Condition
	Assessment, Road Needs Study.

Table 6.4 – Roads

ASSET	ROADS
Inventory	32 km of HCB road, 96.5 km of LCB road, 116 km of gravel road, 37 km of earth road, 5.5 km of sidewalk. 1 set of traffic lights and controllers, and 307 luminaries and arms
Ideal Service Life	Pavement life of a newly constructed road is affected by design, traffic volumes and loads, construction quality and climate but generally the end of its useful life is as follows: HCB Roads – 20 years, LCB Roads – 10 years, Luminaires - 20 years, Poles - 25-40 years, Traffic Signals 10-20 years.
Integrated	May be integrated with other buried assets located in the utility corridor, such as hydro, natural gas, cable, telephone, water, sanitary sewers and storm sewers. May also affect street lighting, traffic signals and sidewalks.
Rehabilitation and Replacement Criteria	Pavement Condition Index (PCI) is a provincially recognized pavement condition rating between 0 and 100 that measures defects in pavement. The Township should consider using the PCI index to monitor their road conditions.
Rehabilitation and Replacement Strategies	Based on the asphalt condition, road classification (arterial, collector, local) and cost/benefit ratio, one of the following rehabilitation strategies is selected: Total reconstruction of pavement with 80 mm to 120 mm of hot mix asphalt. Mill and resurface pavement with 50 mm to 75 mm of hot mix asphalt. Pulverize and remix with 50 mm to 75 mm of hot mix asphalt. Mill and resurface patches of pavement with 50 mm of hot mix asphalt. Mill and resurface patches of pavement with 50 mm of hot mix asphalt. Nill and resurface patches of pavement with 50 mm of hot mix asphalt. Nill and resurface patches of pavement with 50 mm of hot mix asphalt. Routing and crack sealing pavements.
Life Cycle Consequences/Risk Assessment	Under funding pavement rehabilitation results in more pavement falling below acceptable driving conditions and results in escalating construction costs. Poor pavement condition affects levels of service and increases risk and liabilities for the Township.
Integrated Asset Priorities	Pavement rehabilitation forecasts are compared to underground utility forecasts. The integration of projects occurs internally within the Operations Department and externally with hydro, natural gas and telephone utilities. In general a pavement rehabilitation project drives the replacement of underground water and sewer infrastructure if the infrastructure is near the end of its life cycle.

Table 6.5 – Bridges and Culverts

ASSET	BRIDGES AND CULVERTS
Inventory	1 bridge and 0 large culverts (over a 3 m span).
Ideal Service Life	Bridges consist of various components incorporating different construction practices and materials. As such, bridges and culverts can have varying assumed service lives. The life cycle can also be affected by traffic volumes and loads, climate and salt exposure. On average, the Townships only bridge has an approximate Ideal Service Life of 75 years.
Integrated	May be integrated with road resurfacing or road widening projects; however, generally not integrated with other Township owned infrastructure.
Rehabilitation and	Criteria for prioritizing include level of service and traffic volumes, safety and to

Replacement Criteria	preserve infrastructure. Bi-annual visual inspections of bridges are completed and detailed. Bridge construction surveys are completed every 2 years. Bridge components are evaluated and tested providing severity and extent of deterioration and overall condition.
Rehabilitation and Replacement Strategies	Bridge rehabilitation or replacement is based on bridge component age and assumed life spans and the results of condition surveys: Asphalt deck resurfacing – approximately 20 years, joint replacement – approximately 35 years, patch concrete deck, and waterproofing - approximately 30 years.
Life Cycle Consequences/Risk Assessment	Bridge cycles will be reduced, level of service is lowered, and safety is compromised.
Integrated Asset Priorities	N/A

Table 6.6 – Facilities

ASSET	FACILITIES
Inventory	12 facilities ranging in size from 75 sq.m. to approx. 1,800 sq.m.
Ideal Service Life	Service life can vary from 10 to 75 years. A hot water tank service life would be in the 10 year range, a roof in the 15 to 20 year range, HVAC in the 15 to 25 year range and a building structure in the 50 to 75 year range. Facilities consist of various components incorporating different construction practices and materials. As such, facilities can have varying assumed service lives. Ideal service life assumes adequate annual maintenance is being performed through the components service life.
Integrated	Individual components are reviewed, but projects should be combined to minimize the disruption of operations.
Rehabilitation and	Facility Condition Index (FCI) is a standard ratio recognized throughout North
Replacement Criteria	America. FCI is the cost of maintenance, repair and replacement deficiencies of the facility(s) / current replacement value of the facility(s).
Rehabilitation and	Facilities rehabilitation/replacement will be based on a comprehensive asset
Replacement	condition report. In most cases, once the facility has been inspected and assigned
Strategies	a condition rating, staff can determine the best method for maintenance and rehabilitation.
Life Cycle	Under-funding facility maintenance will lead to increased deterioration of facilities,
Consequences/Risk Assessment	health and safety issues, inefficient operation, higher operating costs, and accelerated depreciation.
Integrated Asset Priorities	N/A

Table 6.7 – Fleet & Equipment

ASSET	FLEET
Inventory	Fire – Vehicles (Rescue Vans & Pumper Trucks)
-	Public Works – Vehicles
	Public Works – Heavy Equipment
	Public Works – Light Equipment
	Parks & Recreation – Vehicles
	Parks & Recreation – Light Equipment
	Animal Control – Vehicle
	Solid Waste – Vehicle
	Building Inspector – Vehicle

	Municipal Office – Equipment (Generators)
Ideal Service Life	Service life can vary based on the vehicle type (e.g., car or light truck 10 years,
	fire truck 10 to 20 years).
Integrated	With the developments in technology and the environmental guidelines.
Rehabilitation and	Analysis for vehicle/equipment replacement considers depreciation, maintenance
Replacement Criteria	time and costs.
Rehabilitation and	Review individual components usage and asset category as a whole.
Replacement	
Strategies	
Life Cycle	Maintenance time and costs will increase as will operations costs. Level of service
Consequences/Risk	is lowered and safety is compromised.
Assessment	
Integrated Asset	N/A
Priorities	

Table 6.8 – Parks and Recreation

ASSET	PARKS AND RECREATION
Inventory	Pedestrian Bridge – 1
	Park Structures & Equipment
Ideal Service Life	Service life varies depending on equipment type.
Integrated	Individual components are reviewed, but projects should be combined to minimize
	the disruption of operations.
Rehabilitation and	Analysis for the pedestrian bridge and park equipment replacement considers
Replacement Criteria	depreciation, maintenance time and costs.
Rehabilitation and	Review individual components usage and asset category as a whole.
Replacement	
Strategies	
Life Cycle	Maintenance time and costs will increase as will operations costs. Level of service
Consequences/Risk	is lowered and safety is compromised.
Assessment	
Integrated Asset	N/A
Priorities	

Table 6.9 – Solid Waste

ASSET	SOLID WASTE		
Inventory	2 Landfills,		
-	4 Transfer Stations		
Ideal Service Life	Service life varies from 75 to 100 years depending on asset component.		
Integrated	Integration with solid waste collection, source separated organics, recycling		
	programs, and Environmental guidelines.		
Rehabilitation and	N/A		
Replacement Criteria			
Rehabilitation and	N/A		
Replacement			
Strategies			
Life Cycle	Continued maintenance of Leachate collection systems to mitigate ground water		
Consequences/Risk	contamination. Solid waste management plan to ensure responsible use of		
Assessment	remaining landfill capacity and future stagey to maintain solid waste and recycling		
	collection.		

ASSET	SOLID WASTE
Integrated Asset	N/A
Priorities	

6.6 Public Input, Accountability and Feedback

Township residents and the Public at large enjoy a wealth of infrastructure services, each providing a specific service level. These service levels are discussed in the AMP and Strategic Plan and for the most part have remained unchanged in recent history. A key step in an asset management program is a public engagement process to involve Council, staff, citizen groups, ratepayers and the public at large. Although Council can set service levels without public input, they may want to consider re-visiting user expectations for different Township services. Given the Townships diverse and growing population, Council may choose to engage the public to educate them on strategic asset management and solicit their input regarding service level expectations and overall satisfaction.

Public input can be acquired via mail-out or telephone questionnaires, on-line surveys, public meetings, focus groups, social media, etc. Results of this Public engagement process will allow Council and staff to quickly gain insight into what the public deems is important and what needs improvement. It is recommended that Council and staff hold a public meeting to discuss the AMP and educate ratepayers regarding current levels of service, strategic asset management and funding required.

Section 5.5 of the AMP discusses the importance of monitoring and measuring an assets performance. Out of this best practice comes AMP accountability and feedback. Accountability includes following through with developed plans. If not currently practiced, the Township should prepare an annual report on the delivery of services and progress made in achieving the AMP's targets. This report will provide the necessary feedback for staff, Council and the Public and identify whether or not services have been delivered on time, on budget or at a level which meets user expectations. A succinct service delivery report, utilizing the same annual performance measures, will provide meaningful feedback should there be a problem which requires staff or Council to make adjustments to corporate policies, service delivery or select alternate technical, financial or funding alternatives.

6.7 Procurement

"It is unwise to pay too much. But it is worse to pay too little. When you pay too little, you sometimes lose everything because the thing you bought was incapable of doing the thing you bought it to do"

John Ruskin (1819-1900)

In 2019, the Council of the Township of Bonnechere Valley passed By-law No. 2019-060 which is a by-law to provide the purchasing policies, practices, and procedures of goods and services by the Township. This by-law allows for the consideration of various delivery mechanisms, is reviewed periodically (Refer to Appendix "G").

The procurement of goods and services in the municipal sector is most often obtained through a public tendering process. The product or service is described in detail (i.e., building construction

with detailed engineering plans) in a Tender Document and sealed bids are invited. The lowest bid normally receives the contract. On a project specific basis, the Township utilizes a number of procurement methods, including, but not limited to, Low Value Procurement, Written Quotations, Short Form Tender, Public Tender, Qualifications-based Selection (QBS), Request for Qualifications/Expression of Interest (RFQ), Request for Proposals (RFP), Two-Envelope Method, Sole Sourcing, Standing Offer, etc.

It is important that the Township regularly evaluate consultant/contractor performance. A consultant's/contractor's past performance is a good predictor of future performance and provides valuable insight into how they undertake their responsibilities, quality of workmanship and response to client needs.

7.0 FINANCING STRATEGY

7.1 Background

The Township of Bonnechere Valley utilizes both a short term and medium-term financial strategy through the yearly operating and capital budgets, the ten (10) year capital plan and a Water and Sewer Financial Plan.

Department Heads are responsible to reference the asset management plan for their area in order to:

- Confirm spending needs identified in the plan;
- Verify progress made on the plan to identify potential gaps;
- Prioritize spending needs, across the gap identified in the plan and recent developments, for the years to be budgeted for.

The budgets prepared by each department will then be processed in accordance with the broader municipal budgeting process.

The CAO/Clerk/Treasurer will be involved in asset management planning to facilitate the bridge between:

- The 10 year capital plans;
- The annual budget submissions of each department; and
- The financial strategy developed in the asset management plan;

Each year the maintenance and capital replacement projects are prioritized and the financing is balanced between expected rate increases, reserve levels and the level of annual debt repayment. Maintenance is primarily financed directly through the user fees and general tax levy. This asset management plan is based on existing infrastructure and not expansion.

7.2 Yearly Maintenance

On an annual basis, the Township of Bonnechere Valley staff clearly identify infrastructure priorities which drive investment decisions. The Asset Management Plan promotes lifecycle and risk management of all municipal infrastructure assets, with the goal of achieving the lowest total cost of ownership while meeting the Township's desired levels of service.

Based on recommendations from staff, Council gives direction on the level of increase which operational budgets may incur. Maintenance projects are assessed and prioritized to fit within Council guidelines.

Table 7.1 shows that the Township spends approximately \$6.3 Million annually on maintenance of its major asset categories. This number is an average based on historical total maintenance costs incurred between 2016 and 2020 as shown in Figure 7.1.

Asset Category	2016	2017	2018	2019	2020	Average Annual Maintenance Budget
Roads	\$ 720,325	\$ 810,595	\$ 747,679	\$ 887,603	\$ 847,117	\$ 802, 664
Vehicles	\$ 4,846	\$ 8,975	\$ 4,213	\$ 2,871	\$ 1,845	\$ 4,550
Equipment	\$ 228,287	\$ 206,303	\$ 232,455	\$ 153,738	\$ 255,085	\$ 215,174
Facilities	\$ 107,875	\$ 1,220,700	\$ 70,661	\$ 40,230	\$ 30,278	\$ 293, 949
Water	\$ 520,276	\$ 86,352	\$ 38,235	\$ 62,957	\$ 54,173	\$ 152,399
Sewer	\$ 6,523	\$ 40,009	\$ 11,669	\$ 10,881	\$ 19,240	\$ 17,664
Storm Water	\$ 15,272	\$ 36,412	\$ 52,873	\$ 59,480	\$ 108,186	\$ 54,445
Arena/ Ice Plant	\$ 109,756	\$ 60,355	\$ 101,949	\$ 85,024	\$ 82,486	\$ 87,914
Parks	\$ 11,604	\$ 14,527	\$ 20,918	\$ 14,428	\$ 28,230	\$ 17,914
Waste	\$ 0	\$ 0	\$ O	\$ O	\$ 3,463	\$ 693
Other	\$ 426,611	\$ 332,366	\$ 439,033	\$ 1,317,212	\$ 720,575	\$ 647,159
Total	\$ 2,151,376	\$ 2,816,594	\$ 1,649,024	\$ 1,348,536	\$ 2,150,678	\$ 2,023,242

Table 7.1 – Average	Annual Maintenance	Costs 2016-2020
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Each year maintenance projects are prioritized based on asset management information gathered by staff. Maintenance costs are divided between the general operating budgets for Water, Wastewater, the General Tax Levy and the Capital Program. Maintenance costs that are included in the operational budgets are usually the normal maintenance programs that occur regularly (i.e., annually). Maintenance costs that are provided for in the Capital Program are usually larger maintenance jobs that might occur once every 2 to 5 years and are higher in value. This is done to avoid large swings in the user fees and tax rates. These maintenance costs are originally budgeted in a Ten (10) Year Capital Plan and are included within the maintenance costs outlined in this asset management plan. According to the Public Sector Accounting Board (PSAB), all maintenance costs are reported in operating expenses on the financial statements.



Figure 7.1 – Total Maintenance Costs Incurred between 2016 and 2020

7.3 **Capital Replacement**

As shown in Figure 7.2, the Capital Replacement Program for 2016-2020 totaled \$11,258,298. As shown on Figure 7.3 below, these projects were funded 16% by federal grants, 28% by provincial grants, 29% debt financing, 22% taxation/user fees and 4% from reserves.



Figure 7.2 – Capital Replacement Costs 2016 – 2020



Figure 7.3 – Capital Replacement Funding 2016 – 2020

7.4 Ten (10) Year Capital Plan

The Ten (10) Year Capital Plan is reviewed each year and updated according to project priorities and the approved level of spending. The main focus of the Ten (10) Year Capital Plan is identifying and prioritizing capital replacement and large maintenance projects. Funding is only finalized one year at a time, except for approved multi-year projects. If a project spans more than one year, the funding is set in place at the start of the project. A comprehensive copy of the Township of Bonnechere Valley Ten (10) Year Capital Plan – Capital Projects can be found in Appendix "H".

Funding of the Capital Plan through the general tax levy and water and wastewater rates is set each year according to the current year priorities and funding pressures. The Township minimizes wide fluctuations in the general tax levy by controlling the level of cash contributions between the capital plan and the level of cash contributions to fund the current year capital projects while at the same time taking into consideration the required debt payments for the year.

Based on the next 10 years, the Capital Plan requires the following minimum annual investment.
Asset Category	Amount
Roads	\$680,000
Vehicles	\$200,000
Heavy Equipment	\$100,000
Facilities (10)	\$100,000
Water	\$150,000
Wastewater	\$85,000
Storm	\$10,000
Arena/Eagles Nest	\$15,000
Ice Plant	\$50,000
Parks	\$5,000
Waste Sites	\$5,000
Other Assets	\$20,000
(Street Lights, Signs, IT, etc.)	
Total	\$1,420,000

Table 7.2	Minimum	Annual	Investment	(2021-2030)	
		/		(

Of the \$1.42 Million in required annual funding for the 10-year Capital Plan, \$420,000 will be from taxation and user fees, \$116,000 from federal funding, \$267,000 from provincial funding, \$300,000 from loans, and \$317,000 from reserves.

Of the Federal and Provincial funding programs available only two are considered permanent, the Ontario Community Infrastructure Fund and the Federal Gas Tax program for local infrastructure projects, which in 2021, is being renamed to the Canada Community Building Fund. The funding program will keep the same objectives and requirements as the Federal Gas Tax Fund.

The Ontario Community Infrastructure Fund (OCIF) was launched in 2014 to provide funding for small, rural and northern communities to develop and renew their infrastructure. OCIF uses a formula-based funding approach that recognizes that municipalities have different infrastructure needs and economic conditions. In 2020 Ontario distributed approximately \$200 million to 424 communities. In 2020, the Township of Bonnechere Valley received \$267,000. It is expected that the OCIF will be doubling the funding to approximately \$400 million in 2022. Assuming that the formula remains the same the Township should expect approximately \$500,000 in funding annually moving forward.

The Canada Community-Building Fund (CCBF) provides all municipalities across the country with a permanent, stable and indexed source of infrastructure funding. It was made permanent in 2011 at \$2 billion per year, and is indexed at 2 per cent per year, starting in 2014-15, with increases to be applied in \$100-million increments from 2014-15 to 2023-24. This represents \$21.8 billion in flexible, long term funding for municipal infrastructure. The CCBF is allocated on a per-capita basis. The current allocation for the Township of Bonnechere Valley is \$116,000 and can be split between the general fund, water and wastewater. The CCBF program can be used for:

- 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;
- Recreation.

Maintenance funding sources over a ten year period are shown in Figure 7.4.



Figure 7.4 – Ten Year Capital Replacement Funding Sources



Figure 7.5 – Ten Year Capital Investment Required



Figure 7.6 – Ten Year Capital Funding and Investments

7.5 Reserves and Reserve Funds

In 2019 Council adopted a plan to ensure that there is a consistent contribution to reserves to be utilized for tangible capital assets in the future and although this program does not fully fund the Ten (10) year Capital Plan it moves the Township in the right direction. In order to fund the transfer of reserves required annually over the next 10 years, in addition to the below Council also agreed to allocate any surplus to capital reserves. The average annual surplus is \$180,000. The annual reserves required to fund the Ten (10) year capital plan is \$317,000. This leaves a funding gap of \$137,000. Using the Surplus and the below table which allocates a 1% Levy increase to capital reserves each year, the Township will continue to deplete its reserves for the next years however if the 1% levy allocation is continued until 2030 those reserves will be rebuilt and the 1% levy increase can be eliminated so long as ongoing contributions remain stable.

Table 7.3 – Contribution Schedule

2023	\$ 35,000.00	\$ 36,057.00	\$ 71,057.00
2024	\$ 71,057.00	\$ 37,145.92	\$ 108,202.92
2025	\$108,202.92	\$ 38,267.73	\$ 146,470.65
2026	\$146,470.65	\$ 39,423.41	\$ 185,894.06
2027	\$185,894.06	\$ 40,614.00	\$ 226,508.06
2028	\$226,508.06	\$ 41,840.54	\$ 268,348.61
2029	\$268,348.61	\$ 42,258.40	\$ 310,607.01
2030	\$310,607.01	\$ 42,680.98	\$ 353,287.99

Contribution Schedule

Current Reserves

Table 7.4 – Current Reserves

Current Reserves	2019	2020	2021
Working Funds (includes Efficiency Monies)	\$667,124.00	\$708,124.00	\$351,124.00
Protective Services	\$47,827.00	\$70,744.50	\$70,744.50
Roadways	\$64,657.00	\$146,310.00	\$50,110.00
Administration	\$10,000.00	\$20,000.00	\$20,000.00
Water and Sewer	\$712,429.00	\$777,429.00	\$627,429.00
Recreation	\$19,046.00	\$49,046.00	\$49,046.00
Total	\$1,521,083.00	\$1,771,653.50	\$1,168,453.50



Figure 7.7 – Current Reserves

Long Term Reserve Policy

Гable 7.5 – Long	Term F	Reserve	Policy
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Year	Allocated to Capital Investment	Annual Contribution	Balance	Surplus Allocation	Balance with Surplus
2022	\$317,000.00	\$35,000.00	\$886,453.50	\$180,000.00	\$1,066,453.50
2023	\$317,000.00	\$71,057.00	\$820,510.50	\$180,000.00	\$1,000,510.50
2024	\$317,000.00	\$108,202.00	\$791,712.50	\$180,000.00	\$971,712.50
2025	\$317,000.00	\$146,470.00	\$801,182.50	\$180,000.00	\$981,182.50
2026	\$317,000.00	\$185,894.00	\$850,076.50	\$180,000.00	\$1,030,076.50
2027	\$317,000.00	\$226,508.00	\$939,584.50	\$180,000.00	\$1,119,584.50
2028	\$317,000.00	\$268,348.00	\$1,070,932.50	\$180,000.00	\$1,250,932.50
2029	\$317,000.00	\$310,607.00	\$1,244,539.50	\$180,000.00	\$1,424,539.50
2030	\$317,000.00	\$353,287.00	\$1,460,826.50	\$180,000.00	\$1,640,826.50

7.6 Debt

Debt levels are reviewed each year during the budget process and specifically in the funding requirements of approved capital projects. The Township's current debt level is well below the Provincial Annual Repayment Limit (ARL). The debt levels will continue to decrease even with the addition of \$300,000 in average annual loans as set out in the schedule below.

	Principal	Interest	Total
2021	\$407,583	\$90,130	\$497,713
2022	\$312,567	\$77,754	\$390,321
2023	\$259,429	\$67,945	\$327,374
2024	\$258,000	\$59,079	\$317,079
2025	\$206,209	\$50,919	\$257,128
2026-2030	\$778,872	\$166,669	\$945,541
2031 onward	\$483,798	\$54,092	\$537,890
Total	\$2,706,458	\$566,588	\$3,273,046

Table 7.6 – Debt Levels 2021-2031 Onward

Total charges for the year for net long term liabilities are as follows:

		2020	2019				
Principal Interest	\$	441,380 97,771	\$	391,906 107,542			
	\$ <u></u>	539,151	\$	499,448			

These payments are within the annual debt repayment limit as prescribed by the Ministry of Municipal Affairs and Housing under Ontario Regulation 403/02.

8.0 SUMMARY OF RECOMMENDATIONS

The following is a summary of recommendations contained in this Asset Management Plan.

- This AMP is a living document and should be reviewed and updated annually prior to the Township's annual budgeting process in order that information presented, including financial data, is current and relevant.
- The Township should hold a Public Meeting to present and discuss this AMP including current and desired levels of service, strategic asset management and funding required.
- The Township should post the AMP on its website for Public access.
- The Township should be annually reviewing its history of watermain breaks and continuing to compile new records of watermain breaks and any operational problems. This data should be entered into Cartegraph and the Municipal GIS so that it can be analyzed for break patterns. Break records should include the location, time of year, pipe size, pipe material, observed soil conditions and failure cause. Careful examination of these records will allow Township staff to make better informed decisions with respect to watermain renewal or replacement activities. Trenchless technologies for watermain rehabilitation may also be investigated as opposed to more expensive open cut watermain replacement. Opportunities to coordinate watermain rehabilitation with road reconstruction and other related capital projects should be examined.
- The Township should implement a Closed Circuit Television (CCTV) condition assessment program for its entire sanitary and storm sewer system to validate pipe condition. This work program should be completed over a 5-year period beginning in 2022. Maintenance holes should be included in this assignment as it proceeds. Collection of this data will allow staff to make correct decisions with respect to priority replacement or rehabilitation of sanitary sewers. History of breaks and interviews with Public Works staff to determine operational issues should also constitute a component of this exercise. History of breaks and operational issues should be entered into the Municipal GIS so that it can be used as a decision support tool for capital planning. Break records should include the location, time of year, pipe size, pipe material, observed soil conditions and failure cause. Trenchless technologies for sanitary sewer rehabilitation may also be investigated as opposed to more expensive open cut watermain replacement. Opportunities to coordinate sanitary sewer rehabilitation with road reconstruction and other related capital projects should be examined.
- It is recommended that the Township re-examine and update its current performance measurement program based on the contents of this AMP.
- It is recommended that a more structured GIS updating progress be developed by the Township. This GIS updating process should occur semi-annually and be aligned with the Cartegraph OMS updating process to ensure both data sets are the same. Ideally, both the GIS and Cartegraph OMS should be accessing the same asset database.

- If not currently practiced, the Township should prepare an annual report on the delivery of services and progress made in achieving the AMP's targets. This report would provide the necessary feedback for staff, Council and the Public and identify whether or not services are delivered on time, on budget or at a level which meets user expectations.
- It is imperative that the Township be ready to move forward with specific detailed project requirements in order to satisfy the terms and conditions of possible funding opportunities.

9.0 SOURCE OF MATERIAL STATEMENT

In preparing this Asset Management Plan, the following background information provided by the Township, various publications, reports and best practice guides for asset management, has been referenced:

- > Cartegraph Operations Management System
- > Township of Bonnechere Valley Strategic Plan 2004 The Delfi Group
- Ontario Good Roads Association A Guide for Road and Bridge Asset Management Plan Development, June 2011
- > Canadian Infrastructure Report Card 2019
- Asset Management Centre 2011, FRAME Fundamental Resources for Asset Management Excellence
- An Asset Management Governance Framework for Canada 2009 National Asset Management Working Group (NAMWG)
- Levels of Service Guidelines for Asset Management Planning, February 2012 Tertiary Education Commission
- Developing Levels of Service A Best Practice by the National Guide to Sustainable Municipal Infrastructure, April 2003
- Alternative Funding Mechanisms A Best Practice by the National Guide to Sustainable Municipal Infrastructure, April 2003
- Selecting a Professional Consultant A Best Practice by the National Guide to Sustainable Municipal Infrastructure, June 2006
- Deterioration and Inspection of Water Distribution Systems A Best Practice by the National Guide to Sustainable Municipal Infrastructure, April 2003
- Selection of Technologies for the Rehabilitation or Replacement of Sections of a Water Distribution System - A Best Practice by the National Guide to Sustainable Municipal Infrastructure, March 2003
- Assessment and Evaluation of Storm and Wastewater Collection Systems A Best Practice by the National Guide to Sustainable Municipal Infrastructure, July 2004
- > City of Hamilton State of the Infrastructure (SOTI) Report 2005
- > MFOA/OGRA Asset Management Webinar Series 2013
- > Ontario Municipal Benchmarking Initiative 2011 Performance Measurement Report

10.0 ACRONYMS

The following is a list of acronyms referenced in this Asset Management Plan.

- AMP Asset Management Plan
- Guide "Building Together: Guide for Municipal Asset Management Plans"
- O.Reg. 588/17 Ontario Regulation 588/17
- JLR J.L. Richards & Associates Limited
- GIS Geographic Information System
- OMS Operations Management System
- WTP Water Treatment Plant
- STP Sewage Treatment Plant
- PVC Polyvinyl Chloride
- MOE Ministry of the Environment
- SOTI State of the Infrastructure
- PCI Pavement Condition Index
- CCTV Closed Circuit Television
- WRc Water Research Centre
- N/A Either Not Available or Not Applicable
- A.C. Asbestos Concrete
- TCA Tangible Capital Assets
- PTTW Permit to Take Water
- DWQMS Drinking Water Quality Management Standard
- DWWP Drinking Water works Permit
- EPA Environmental Protection Act
- OWRA Ontario Water Resources Act
- ECA Environmental Compliance Approval
- WSER Wastewater Systems Effluent Regulations
- MOE Ministry of the Environment
- CSF Critical Success Factors
- QBS Qualifications-based Selection
- RFQ Request for Qualifications
- RFP Request for Proposals

APPENDIX "A"

Township of Bonnechere Valley Asset Management Strategic Policy

THE CORPORATION OF THE TOWNSHIP OF BONNECHERE VALLEY

BY-LAW NO. 2019-054

BEING A BY-LAW TO ADOPT AN ASSET MANAGEMENT STRATEGIC POLICY FOR THE TOWNSHIP OF BONNECHERE VALLEY

WHEREAS Section 3(1) of Provincial Regulation 588/17 states that every municipality shall prepare a strategic asset management policy by July 1, 2019 under the Infrastructure for Jobs and Prosperity Act, 2015;

AND WHEREAS Council wishes to adopt an Asset Management Strategic policy for the Township;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF BONNECHERE VALLEY ENACTS AS FOLLOWS:

- 1. That the "Asset Management Strategic Policy" attached hereto as Schedule "A", be and is hereby adopted.
- 2. That Schedule "A" is deemed to form part of this by-law.
- 3. That this by-law shall come into force and take effect upon the passing thereof.

READ A FIRST & SECOND TIME THIS 24TH DAY OF SEPTEMBER 2019

READ A THIRD TIME AND PASSED THIS 24TH DAY OF SEPTEMBER 2019

Jennifer Murphy, Mayor

Sandra Barr, Acting CAO

The Township of Bonnechere Valley Policy and Procedures											
SECTION: A	Asset Management		POLICY #:								
			AMP-01								
POLICY:											
Asset Manag	ement Strategic I	Policy									
DATE:	REV. DATE:	COVERAGE:	PAGE #:								
		All Departments	1 of 4								

VISION:

Our vision to maintain an affordable (a safe) community with orderly and efficient development (sustainable growth), requires the coordination (alignment) of the many initiatives underway in our organization at any given time in order for it to be achieved. This coordination (alignment) is necessary to properly consider whether the level of service provided by our existing and planned assets is congruent and supports our vision.

GOVERNANCE AND CONTINUOUS IMPROVEMENT:

The Council of the Corporation of the Township of Bonnechere Valley is entrusted with the responsibility of overseeing a large range of services provided through a diverse portfolio of assets. Council, having stewardship responsibility, is the final decision maker on all matters related to Asset Management. This approval of the asset management process and plan ensures the asset management directly aligns with the corporate strategic direction. The Council, Clerk-Treasurer, Public Works Superintendent, Water and Sewer Manager and Fire Chief are committed to the success of asset management planning.

Provincial Regulation (O.Reg. 588/17 – Asset Management Planning for Municipal Infrastructure) requires the Township of Bonnechere Valley to prepare, and Council to approve a Strategic Asset Management Policy by July 1, 2019 under the *Infrastructure for Jobs and Prosperity Act, 2015, S.O. 2015, c. 15.* This regulation requires that the Township of Bonnechere Valley review this policy every five years thereafter.

Within asset management planning, Council is responsible for:

• Approving by resolution the asset management plan and its updates every five years;

• Conducting annual reviews of the asset management plan implementation progress on or before July 1 of every year; and

• Supporting ongoing efforts to improve and implement the asset management plan.

The Clerk-Treasurer is ultimately responsible for asset management planning across the Township of Bonnechere Valley and maintaining compliance with the regulation. Department Heads are responsible for asset management planning activities that fall within their service area and in support of others.

The budget process is the basis of the Township's approach for continually improving its methods and adopting appropriate practices. The annual review will be completed in consultation with the Township's Operations, Public Works, Water & Sewer, Fire and Finance and Administration Committees and it will include:

• Progress on ongoing efforts to implement the asset management plan;

• Consideration of the asset management policy;

• Any factors affecting the ability of the Township of Bonnechere Valley to implement its asset management plan;

- Consultation with Department Heads; and
- A strategy to address these factors including the adoption of appropriate practices.

STRATEGIC ALIGNMENT:

Asset management planning will not occur in isolation from other Township of Bonnechere Valley goals, plans, and policies. An integrated approach will be followed to successfully develop practical asset management plans that align with the overarching accountabilities and aspirations of our community. The elements of our asset management planning approach keep us mindful of the goals described in our Strategic Plan, Official Plan, and Procurement Policy, as they influence our Asset Management Plan and 10 year Capital Plan.

GUIDING PRINCIPLES:

The *Infrastructure for Jobs and Prosperity Act, 2015* sets out key guiding principles for infrastructure priority setting, planning, and investment of the asset management policy and the Township of Bonnechere Valley will strive to incorporate the following principles whenever possible:

Forward Looking: The Township of Bonnechere Valley will make the appropriate decisions and provisions to better enable its assets to meet future challenges, including changing demographics and populations, council adopted service levels, legislative requirements, technological and environmental factors.

Budgeting and Planning: The Township of Bonnechere Valley shall take into account any applicable budgets or fiscal plans, such as fiscal plans released under the following: 1. *Fiscal Transparency and Accountability Act, 2004*; and

2. Budgets adopted under Part VII of the *Municipal Act, 2001*.

Prioritizing: The Township of Bonnechere Valley shall clearly identify infrastructure priorities which will drive investment decisions. The Township of Bonnechere Valley Asset Management Plan promotes lifecycle and risk management of all municipal infrastructure assets, with the goal of achieving the lowest total cost of ownership while meeting the Township's desired levels of service.

Economic Development: The Township of Bonnechere Valley shall promote economic competitiveness, productivity, job creation, and training opportunities as identified in the Economic Development Action Plan.

Transparency: Asset management decisions shall be evidence-based and transparent. Additionally, subject to any prohibitions under an Act or otherwise by law on the collection, use, or disclosure of information, the Township of Bonnechere Valley shall: 1. Make decisions with respect to infrastructure based on information that is publicly available or made available to the public; and

2. Share information with implications on infrastructure and investment decisions with the Government and broader public sector entities.

Consistency: The Township of Bonnechere Valley shall ensure the continued provision of public services within our community.

Environmentally Conscious: The Township of Bonnechere Valley shall minimize the impact of infrastructure on the environment by:

- 1. Respecting and helping maintain ecological and biological diversity;
- 2. Augmenting resilience to the effects of climate change; and
- 3. Endeavouring to make use of acceptable recycled aggregates.

Health and Safety: The Township of Bonnechere Valley shall ensure that the health and safety of workers involved in the construction and maintenance of infrastructure assets is protected.

Community Focused: The Township of Bonnechere Valley shall promote community benefits, being the supplementary social and economic benefits arising from an infrastructure project that are intended to improve the well-being of a community affected by the project, such as:

1. Local job creation and training opportunities (including for apprentices, within the meaning of section 9 of the Infrastructure for *Jobs and Prosperity Act, 2015*);

2. Improvement of public space within the community; and

3. In co-operation with the Township of Bonnechere Valley's Accessibility Advisory Committee, promote accessibility for persons with disabilities.

Innovation: The Township of Bonnechere Valley shall create opportunities to make use of innovative technologies, services, and practices, particularly where doing so would utilize technology, techniques, and practices developed in Ontario.

Integration: The Township of Bonnechere Valley shall where relevant and appropriate, be mindful and consider the principles and content of non-binding provincial or municipal plans and strategies established under an Act or otherwise, in planning and making decisions surrounding the infrastructure that supports them.

CAPITALIZATION THRESHOLDS:

The capitalization threshold policy (TCA-04 - Tangible Capital Assets – Thresholds) developed for financial reporting will be the initial guide in selecting the assets covered by asset management planning processes. However, there are some larger assets that have many sub components that do not, on their own, qualify for capitalization based on a dollar threshold. The service-focus intent of this policy differentiates its requirements for identifying assets from the capitalization thresholds which are developed for the purposes of financial reporting. Therefore, additional items may be managed by this policy that are not also on the financial asset listings.

BUDGETING:

The asset management plans and progress made on the plans, will be considered annually in the creation of the Township of Bonnechere Valley's 10 year capital plans, capital budgets and operating budgets. Department Heads are responsible to reference the asset management plan for their area in order to:

- Confirm spending needs identified in the plan;
- Verify progress made on the plan to identify potential gaps; and

• Prioritize spending needs, across the gap identified in the plan and recent developments, for the years to be budgeted for.

The budgets prepared by each department will then be processed in accordance with the broader municipal budgeting process.

The Clerk-Treasurer will be involved in asset management planning to facilitate the bridge between:

- The 10 year capital plans;
- The annual budget submissions of each department; and
- The financial strategy developed in the asset management plan(s);

COMMUNITY PLANNING:

The Township of Bonnechere Valley will align asset management planning with the Province of Ontario's land use planning framework, including any relevant policy statements issued under section 3(1) of the *Planning Act*; shall conform with the provincial plans that are in effect on that date; and shall be consistent with the Township of Bonnechere Valley's Official Plan.

CLIMATE CHANGE:

Climate change will be considered as part of the Township of Bonnechere Valley's risk management approach embedded in local asset management planning methods. This approach will balance the potential cost of vulnerabilities to climate change impacts and other risks with the cost of reducing these vulnerabilities. The balance will be struck in the levels of service delivered through operations, maintenance schedules, emergency response plans, contingency funding, and capital investments. The Township of Bonnechere Valley's contribution to climate change through greenhouse gas emissions will be mitigated in accordance with its local reduction targets, financial capacity, and stakeholder support.

STAKEHOLDER ENGAGEMENT:

The Township of Bonnechere Valley will coordinate planning for interrelated municipal capital infrastructure assets and projects by pursuing collaborative opportunities with neighbouring and local municipalities and regulated utilities wherever viable and beneficial.

RELATED DOCUMENTS:

Asset Management is multi-faceted and impacts all areas of the organization. The following policies, frameworks and plans are impacted by, or impact, the Policy:

- Strategic Plan
- Official Plan
- Asset Management Plan
- 10 Year Capital Plan
- Emergency Response Plan
- Energy Management Plan
- Procurement of Goods and Services
- TCA-01 Tangible Capital Assets Definitions
- TCA-02 Tangible Capital Assets Asset Valuation
- TCA-03 Tangible Capital Assets Asset Categories
- TCA-04 Tangible Capital Assets Thresholds
- TCA-05 Tangible Capital Assets Valuation Techniques
- TCA-06 Tangible Capital Assets Amortization
- TCA-07 Tangible Capital Assets Whole Asset Component Approach
- *Safe Drinking Water Act, 2002* BV Financial Plan
- Annual Capital and Operating Budgets

APPENDIX "B"

2013 State of Local Infrastructure Summary for Arena and Community Centre

State of Local Infrastructure

Arena Community Centre

ASSET	Quantity	Class Type	Part of Building	Constructed	Significant Renovations	Overall Condition Estimate	Code Compliance	Description	Current Valuation	Replacement Valuation	Priority Repairs in 2013/2014	Expenditures Over Next 5 Years	Expenditures Over Next 10 Years	Expenditures Over Next 20 Years
ARENA AND EAGLE'S NEST COMMUNI	TY CENTRE						•							•
Mechanical Systems														
Fire Protection	Various	Machinery & Equipment	Whole Facility	1977	1985	Good	N/A	See JLR BCA Report 2013	\$451	\$5,000	Nil	Nil	Nil	
Refrigerant Plant	Various	Machinery & Equipment	Arena	1966	1984	Average/Fair	N/A	See JLR BCA Report 2013	\$55,122	\$575,000	Nil	\$92,000	\$237,000	\$489,700
HVAC	Various	Machinery & Equipment	Whole Facility	1977	1985	Average/Fair	Not Compliant	See JLR BCA Report 2013	\$39,869	\$250,000	\$25,000	\$44,100	\$49,100	\$64,100
Plumbing System	Various	Machinery & Equipment	Whole Facility	1977	1985	Average/Fair	Compliant	See JLR BCA Report 2013	\$7,548	\$100,000	\$8,000	\$28,000	\$41,500	\$41,500
Ice Service Piping and Concrete Slab	Various	Machinery & Equipment	Arena	1977	1985	Fair	N/A	See JLR BCA Report 2013	\$18,471	\$500,000	Nil	\$400,000	\$400,000	\$400,000
Electrical Systems														
800A/120/240V Single Phase Service	1	Machinery & Equipment	Whole Facility	1977	1985	Fair	TBD	See JLR BCA Report 2013	\$0	\$75,000	Nil	\$37,000	\$37,000	\$37,000
400A/600V Three Phase Service	1	Machinery & Equipment	Whole Facility	1977	1985	Poor	Not Compliant	See JLR BCA Report 2013	\$0	\$25,000	\$22,000	\$22,000	\$22,000	\$22,000
Fire Alarm System	1	Machinery & Equipment	Whole Facility	1977	1985	Fair/Poor	TBD	See JLR BCA Report 2013	\$0	\$35,000	Nil	\$6,000	\$6,000	\$6,000
Interior Lighting - Arena	32	Machinery & Equipment	Arena	1977	2008	Good	N/A	See JLR BCA Report 2013	\$7,337	\$55,000	Nil	Nil	Nil	Nil
Interior Lighting - Other	Various	Machinery & Equipment	CC/Service Area	1977	1985	Average/Fair	N/A	See JLR BCA Report 2013	\$0	\$65,000	\$1,100	\$1,100	\$1,100	\$1,100
Exterior Lighting	Various	Machinery & Equipment	Whole Facility	1977	1985	Good/Average	N/A	See JLR BCA Report 2013	\$0	\$15,000	Nil	Nil	Nil	Nil
Emergency Lighting	Various	Machinery & Equipment	Whole Facility	1977	1985	Fair	Not Compliant	See JLR BCA Report 2013	\$0	\$15,000	\$3,000	\$4,000	\$4,000	\$4,000
Exit Lights	13	Machinery & Equipment	Whole Facility	1977	1985	Average	N/A	See JLR BCA Report 2013	\$0	\$15,000	Nil	Nil	Nil	Nil
Electric Heaters	Various	Machinery & Equipment	CC/Service Areas	1977	1985	Fair	N/A	See JLR BCA Report 2013	\$0	\$20,000	Nil	\$5,000	\$5,000	\$5,000
Structural Systems														
												·		
Slab-on-Grade	1	Building	Whole Facility	1977	1985	Average/Poor	N/A	See JLR BCA Report 2013	\$28,153	\$60,000	\$10,000	\$10,000	\$10,000	\$10,000
Sub-structure (Roof Framing)	1	Building	Whole Facility	1977	1985	Average	N/A	See JLR BCA Report 2013	\$28,153	\$425,000	\$5,000	\$5,000	\$5,000	\$5,000
Exposed Exterior Masonry Foundation Walls	1	Building	Whole Facility	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$40,000	\$10,000	\$10,000	\$10,000	\$10,000
Other Various Structural Elements	1	Building	Whole Facility	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$250,000	\$1,000	\$5,000	\$6,000	\$6,000
Architectural Systems														
Building/Superstructure	1	Building	Whole Facility	1977	1985	Average	N/A	See JLR BCA Report 2013	\$23,909	\$1,300,000	Nil	Nil	Nil	Nil
Roof Membrane System	1	Building	Whole Facility	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Exterior Cladding - Community Centre	1	Building	CC		1985	Fair	N/A	See JLR BCA Report 2013	\$56,306	\$150,000	Nil	\$500	\$500	\$500
Exterior Cladding - Arena	1	Building	Arena/Service Area	1977		Poor	N/A	See JLR BCA Report 2013	\$0	\$450,000	\$7,750	\$307,750	\$307,750	\$307,750
Exterior Sealant	Various	Building	Whole Facility	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$25,000	\$750	\$750	\$750	\$750
Arena Boards	Various	Building	Arena	1977	1985	Average/Fair	N/A	See JLR BCA Report 2013	\$29,376	\$200,000	\$3,000	\$14,500	\$17,000	\$17,000
Exterior Windows	7	Building	CC/Service Area	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$14,000	\$800	\$2,300	\$2,300	\$2,300
Exterior Doors	Various	Building	Arena/CC	1977	Various	Average/Fair	N/A	See JLR BCA Report 2013	\$15,916	\$45,000	\$1,750	\$1,750	\$3,750	\$3,750
Overhead Doors	3	Building	Arena/Service Area	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$30,000	\$750	\$1,250	\$2,250	\$2,250
Interior Walls	Various	Building	Whole Facility	1977	1985	Fair/Poor	TBD	See JLR BCA Report 2013	\$0	\$100,000	\$3,000	\$5,300	\$5,300	\$5,300
Interior Doors and Hardware	Various	Building	Whole Facility	1977	1985	Fair/Poor	Not Compliant	See JLR BCA Report 2013	\$0	\$40,000	\$17,500	\$27,000	\$27,000	\$27,000
Flooring	Various	Building	Whole Facility	1977	1985	Average/Fair	TBD	See JLR BCA Report 2013	\$16,078	\$50,000	\$1,800	\$31,800	\$56,150	\$56,150
Ceilings	Various	Building	CC/Service Area	1977	1985	Average/Fair	N/A	See JLR BCA Report 2013	\$13,617	\$120,000	\$550	\$1,500	\$3,000	\$3,000
Stairwells	4	Building	Arena/CC	1977	1985	Poor	Not Compliant	See JLR BCA Report 2013	\$0	\$100,000	\$8,000	\$8,000	\$8,000	\$8,000
Millwork	Various	Building	CC/Service Area	1977	1985	Poor	N/A	See JLR BCA Report 2013	\$0	\$50,000	Nil	\$8,000	\$18,000	\$18,000
Toilet Partitions	Various	Building	CC/Service Area	1977	1985	Poor	TBD	See JLR BCA Report 2013	\$0	\$30,000	\$12,000	\$12,000	\$12,000	\$12,000
Fitments (Lockers, Benches, etc.)	Various	Building	CC Service Area	1977	1985	Good/Fair	N/A	See JLR BCA Report 2013	\$25,549	\$60,000	Nil	\$750	\$3,250	\$3,250
Ontario Fire Code Review														
								l		ABBABBABBBBBBBBBBBBB		.	.	
Total Estimated Expenditures									\$365,855	\$5,789,000	\$642,750	\$1,592,350	\$1,800,700	\$2,068,400

APPENDIX "C" Eganville Generation Corporation

	BUILD	ING INFORMATIC	ON		ASSESSMENT												PRELIM	NARY COSTS	OTHER TOTAL COST OF			
BUILDING	ADDRESS		BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION CRIT		IMAGE	SERVICE LIFE	ACTUAL OI	BSERVED REMAI	INING RECO	OMMENDED		% OF QUANTITY	PROJECT	UNIT OF	UNIT RATE	NET COST	DESIGN/ENGINEERING FEE (10%)	S TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	A101001	Wall Foundations - Concrete	Original poured concrete foundation at Powerhouse building is predominantly concealed. Details of structure are not known. Estimated age is circa 1960.	The poured concrete foundation is in good condition based on performance and as viewed withir lower Electrical Room. Minor cracking with active water penetration was noted behind the main switchboard.	 Structural components to last life of building. Allow for repairs in the long term as needed to mitigate or otherwise eliminate the water entry. 	Good Life	ie Cycle		(Years) 75	(Years) 78 61	61 2	ears)	2023	1	SCHEDULED 100%	1	L-SUM	\$75,000	\$75,000	CONTINGENCY (10%) \$15,000	\$90,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	A101001	Wall Foundations - Concrete	Concrete intake and trash racks (3).	The components are in fair condition.	Structural components to last life of building. Allow for concrete repairs and replacement of the steel trash racks.	Fair Life	'e Cycle		75	61	61 14	4	2035	1	100%	1	L-SUM	\$12,000	\$12,000	\$2,400	\$14,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	A101001	Wall Foundations - Concrete	In 2002, the Power House was renovated and expanded. Design was by Harmer Podolak Engineering Consultants Inc. and is comprised of a 7.5-Mx12.24M extension constructed of poured, reinforced concrete. This includes the foundation walls, strip concrete footings, concrete draft tube encasement keyed into bedrock. The dam is 0/o by Eganville Generation Corporation with an installed capacity of 840 kW, nominal head of 5.5-M and maximum flow through power plant of 19.7 cms and represents 1 of 5 electrical generation facilities along the Bonnechere River. Original building is 1144 sf and the addition is 1,107 sf.	The poured concrete foundation components are in good condition based on performance and as viewed within the Generator Room.	Structural components to last life of building. No allowances carried.	Good Life	e Cycle		75	19	19 56	5	2077	1	100%	1	L-SUM	50	50	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	A101001	Wall Foundations - Concrete	Designed by McNeely Engineering & Structures Ltd., the dam is comprised of seven (7) reinforced concrete piers at 7.5-M on centre, 6-M opening, 5-M leading edge apron and 8-M wide dam along the Bonnechere River with span of 174'. Wood stop logs (9-300x292 and 6-400x292) are installed on five of the six sluice gains with a mechanical gate between pier 2 and 3. The apron is 4" thick with welded wire mesh installed on bedrock. The stepped dam footing is approximately 1-M thick with dowels drilled and grouted to the bedrock. The original dam structures are located to the west side of the dam with retaining wall and guard along the south embankment. Vertical control joints with waterstops are used at the embankment and the Power House building. Construction circa 1986.	The concrete dam structures are in good condition based on visual review from above the water line. No significant cracking or sectional loss was noted.	Structural components to last life of building. Repairs are not anticipated over the next 20 I years. Allow for future underwater assessment and reporting.	r	e Cycle		75	35	35 40)	2025	1	100%	1	L-SUM	\$6,000	\$6,000	\$0	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B101001	Structural Frame	The main floor of the Power House is constructed with reinforced poured concrete.	The flooring is in good condition with localized cracking.	Structural components to last the life of the building. No allowances carried.	Good Life	e Cycle		75	61	61 14	4	2035	1	0%	0	L-SUM	\$0	\$0	\$0	\$0

MCINTOSH PERRY

	BUILD	ING INFORMAT	ION		ASSESSMENT						PRELIMINARY COSTS									OTHER	-
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION CRITICA RATING RATIN	LITY IMAGE IG	SERVICE LIFE (Years)	ACTUAL AGE (Years)	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY S	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%) CONTINGENCY (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B101001	Structural Frame	The main floor of the Generator Room is constructed with 2" deep steel grating on W200X27 steel frame and HSS stub columns with pipe guardrail and kick plate.	Framing is in good condition overall.	Structural components to last the life of the building. No allowances carried.	Good		60	19	19	41	2062	1	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B101002	Structural Interior Walls	Exterior walls of the Generator Room is framed with CF150 channel girts, W200x46 steel columns and prefinished interior liner.	Framing is in good condition overall.	Structural components to last the life of the building. No allowances carried.	Good		60	19	19	41	2062	1	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B101002	Structural Interior Walls	Exterior walls of the Power House are framed with wood studs (2"x6"). Walls are presumed to be insulated.	Framing is in good condition overall.	Structural components to last the life of the building. No allowances carried.	Good		60	61	60	0	2021	1	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B102001	Structural Frame	Roof of the Power House is wood framed. Framing is concealed with gypsum board.	Framing is performing as intended.	Structural components to last the life of the building. No allowances carried.	Good		60	61	60	0	2021	1	0%	0	L-SUM	\$0	\$0	50	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B102001	Structural Frame	Roof at the addition is framed with 16" deep open web steel joists and 4" deep cold formed steel Z purlins at 24" o.c. and over purlin insulation blanket with vapour barrier.	Framing is in good condition overall.	Structural components to last the life of the building. No allowances carried.	Good		60	19	19	41	2062	1	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B201001	Exterior Closure - Metal Siding	Prefinished metal siding is installed on all elevations.	Metal siding is in good condition.	Replace in the long term.	Good Life Cy	cle	40	19	19	21	2042	900	100%	900	SF	\$9	\$8,100	\$1,620	\$9,720
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B201010	Exterior Coatings	Painted concrete foundation walls.	Painted surface is in fair condition	 Clean and repaint exposed foundation at west elevation along walkway. 	Fair Life Cy	cle	15	19	19	1	2022	1	100%	1	L-SUM	\$800	\$800	\$160	\$960
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B201008	Exterior Soffits	Prefinished aluminum soffits and fascia treatment are installed.	The soffits and fascia components are in good condition.	s Replace components in the long term.	Good Life Cy	cle	40	19	19	21	2042	1	100%	1	L-SUM	\$4,200	\$4,200	\$840	\$5,040
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B201011	Joint Sealant	Window and door sealants are installed throughout.	The sealants are in good condition overall.	Replace sealants in the longer term.	Good Life Cy	cle	15	5	5	10	2031	1	100%	1	L-SUM	\$750	\$750	\$150	\$900
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B202001	Windows	Vinyl framed windows are installed at the Power House. Installed in 2016.	The windows are in good condition.	Replace windows in the long term	I. Good Life Cy	cle	30	5	5	25	2046	1	100%	1	L-SUM	\$7,000	\$7,000	\$1,400	\$8,400

McINTOSH PERRY

	BUILD	ING INFORMAT	ION		1		ASSES	SMENT					-				PRELIM	INARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	RATING	IMAGE	SERVICE LIFE (Vears)	ACTUAL AGE (Vears)	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B203004	Overhead And Roll-Up Doors	A manually operated, wood sectional roll-up door is installed.	The door is in fair condition with notable wear.	Replace door and associated hardware in the short term.	Fair	Life Cycle		25	30	22	3	2024	1	100%	1	EA	\$4,000	\$4,000	\$800	\$4,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B203001	Solid Doors	Insulated metal entry doors are installed (2016).	Exterior metal doors are in good condition.	Replace doors and associated hardware in the long term.	Good	Life Cycle		25	5	5	20	2041	3	100%	3	EA	\$1,700	\$5,100	\$1,020	\$6,120
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B301001	High Slope Roof Coverings	Sloped galvanized steel panels are installed at the Power House.	The roofing is in fair condition with no signs of, or reporting, of water entry. Paint coating is in poor condition.	Replace the roof panels in the longer term and refurbish in short term.	Fair t	Life Cycle		40	38	35	5	2026	1800	100%	1800	SF	\$9	\$16,200	\$3,240	\$19,440
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B301001	High Slope Roof Coverings	Sloped prefinished metal panel roof over the Power House addition.	The roofing is in good condition with no signs of, or reporting, of water entry. Roof was replaced in recent years.	Replace the roof system in the longer term.	Good	Life Cycle		40	5	5	35	2056	1100	100%	1100	SF	\$12	\$13,200	\$2,640	\$15,840
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B301004	Flashings And Trim	Prefinished metal flashings are used at the upturns and eaves.	The flashings are in fair condition.	Allow to replace all flashings with replacement of flat roofing systems. Cost covered under roofing systems.	i Fair	Life Cycle		40	5	5	35	2056	0	100%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B301006	Roof Openings and Supports	Roof access hatch.	The steel hatch assembly is in fair condition.	Replace the roof hatch in longer term.	Fair	Life Cycle		30	19	19	11	2032	1	100%	1	L-SUM	\$4,100	\$4,100	\$820	\$4,920
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C1010	Partitions - General	Interior demising wall between original building and addition is constructed with reinforced poured concrete.	Interior partitions are in good condition.	No allowances carried.	Good	Life Cycle		75	61	61	14	2035	0	100%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C103009	Cabinets	Wood cabinets, metal lockers, and furnishings are installed at the main floor level.	I Cabinets, shelving and furnishings are in fair condition.	Replace millwork, casework and furnishings in the short term.	Fair	Recommer ded		25	30	23	2	2023	1	100%	1	L-SUM	\$4,000	\$4,000	\$800	\$4,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C201001	Interior Stair Construction	Steel framed stairs, guards and handrails at addition.	The components are in good condition. Replacement is not anticipated.	No allowances carried.	Good	Life Cycle		75	19	19	56	2077	0	100%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C201001	Interior Stair Construction	Original concrete stairs at main floor.	The stairs are in good condition. Replacement is not anticipated.	No allowances carried.	Good	Life Cycle		75	61	61	14	2035	0	100%	0	L-SUM	\$0	\$0	\$0	\$0

MCINTOSH PERRY

	BUILD	ING INFORMAT	ION				ASSESSMEN	NT									PRELIM	INARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION CRI RATING R	RITICALITY	IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C201001	Interior Stair Construction	Guard and handrail on main stair are constructed of tubular steel.	The components are in fair condition.	Allow for future replacement wit new raised guard and continuous handrail.	h Fair Lif	ife Cycle		60	61	58	2	2023	1	100%	1	L-SUM	\$2,900	\$2,900	\$580	\$3,480
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C201002	Exterior Stair Construction	Wood framed stair with handrails and guard are installed at the embankment.	The components are in fair condition but at end of service life	Allow for longer term replacements.	nt Fair Lif	ife Cycle		30	28	25	5	2026	1	100%	1	L-SUM	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C301003	Gypsum Wallboard Finishes	Gypsum board walls at main floor level are painted.	The surfaces are in poor condition with notable deterioration.	Allow for localized repairs in shor term.	t Fair Lif	ife Cycle		50	61	48	2	2023	1	100%	1	L-SUM	\$1,000	\$1,000	\$200	\$1,200
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C301005	Painting to Walls	Gypsum board ceiling and walls at main floor level are painted.	The painted surfaces are in poor condition with notable deterioration.	Allow for re-painting of the surfaces in the short term with repeated intervals.	Fair Lif	ife Cycle		12	15	10	2	2023	1	100%	1	L-SUM	\$2,500	\$2,500	\$500	\$3,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C302007	Painting And Staining Floors	Floors and stairs of main floor level are painted.	The painted finish is in poor condition.	Prepare and paint surfaces in short term.	Poor Lif	ife Cycle		15	25	13	2	2023	1	100%	1	L-SUM	\$2,300	\$2,300	\$460	\$2,760
Eganville Generation Plant	46 Bonnechere Street West, Eganville	C303003	Gypsum Wallboard Ceiling Finishes	The ceiling of the original building is finished with gypsum wallboard.	Gypsum board ceilings are in fair . condition.	Ceiling board replacement is not carried at this time.	Fair Lif	ife Cycle		50	61	50	0	2021	0	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D2010	Plumbing Fixtures	The building has no plumbing fixtures.		No allowances carried.	Poor Lif	ife Cycle		15	0	0	15	2036	0	100%	0	EA	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D2010	Plumbing Fixtures	3-Ton Trolley (m# CBTP) crane is installed at the main floor.	The crane is in good condition.	Replace in longer term.	Good Lif	ife Cycle		25	5	5	20	2041	1	100%	1	EA	\$7,500	\$7,500	\$1,500	\$9,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D2010	Plumbing Fixtures	3-Ton electric chain hoist (m# FA1- 35-O1) is installed at the generator floor.	 The crane is in good condition. r Original design indicated a 5-Ton crane. 	Replace in longer term with a 5- Ton crane.	Good Lif	ife Cycle		25	21	20	5	2026	1	100%	1	EA	\$9,000	\$9,000	\$1,800	\$10,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D202003	Domestic Water Equipment	The building is not equipped with domestic water service.		No allowances carried.	Fair Lif	ife Cycle		20	25	20	0	2021	0	100%	0	EA	\$4,500	\$0	\$0	\$0

MCINTOSH PERRY

	BUILD	ING INFORMAT	ION				ASSES	SMENT									PRELIM	INARY COSTS			OTHER	_
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	N CRITICALITY RATING	IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D204003	Rainwater Drainage Equipment	Two older sump pumps are installed at the draft tube pit.	Sump pump system is in good condition.	Refurbish sump pump system in the long term.	Good	Life Cycle		(Years) 15	(Years) 8	8	7	2028	1	100%	1	L-SUM	\$3,000	\$3,000	\$600	\$3,600
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D304007	Exhaust Systems	Canarm fractional horsepower wall exhaust fan is installed at the main floor level.	The fan is in fair condition.	Replace exhaust fan in the short term.	ter Fair	Recommen ded		25	40	22	3	2024	1	100%	1	EA	\$1,500	\$1,500	\$300	\$1,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D403001	Fire Extinguishing Devices	10lb ABC type fire extinguishers are installed throughout.	Fire extinguishers are in good condition. They are replaced as needed. The average age is estimate at 5 years.	Replace fire extinguishers in the long term.	Good	Life Cycle		15	5	5	10	2031	3	100%	3	EA	\$225	\$675	\$135	\$810
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D409099	Other Fire Protection Systems	There are no specialty suppression systems installed.	1	No allowances carried.	Fair			20	0	0	20	2041	1	0%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501003	Main Switchboards	The electrical service is fed underground to the 2000-A, 346/600-V, 3-P, 4-W Cutler- Hammer switchgear unit. A meter and 200-Amp disconnect are provided.	The three cell unit is in good condition.	Allow to replace the switchgear unit in the long term.	Good	Life Cycle		40	10	10	30	2051	1	100%	1	EA	\$27,000	\$27,000	\$5,400	\$32,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501004	Interior Distribution Transformers	1000-kVA, 4160-V to 600Y/346-V, 3-P transformer by Delta (model No. CMTC10002VA6XXBA) is located at the main floor of the Power House. Installed in 2001.	Transformer is in good condition.	. Replace transformer in the long term.	Good	Life Cycle		40	20	20	20	2041	1	100%	1	EA	\$140,000	\$140,000	\$28,000	\$168,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501004	Interior Distribution Transformers	30-kVA, 600-V to 208Y/120-V, 3-P transformer by Delta (model No. DA3030V) located at the main floor of the Power House. Installer in 2001.	Transformer is in good condition but undersized for application.	Replace transformer in the shor term.	t Good	Life Cycle		40	2	40	0	2021	1	100%	1	EA	\$9,000	\$9,000	\$1,800	\$10,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501002	Secondary	60-KVAR, 600-V, 3-P capacitors by Unipak; catalogue No. 6063HURF, Serial No. 1131015.	Capacitors are in good condition.	. Replace capacitors in the long term.	Good	Life Cycle		30	10	10	20	2041	9	100%	9	EA	\$2,200	\$19,800	\$3,960	\$23,760
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501002	Secondary	250-KVAR, 600-V, 3-P power capacitor bank by Cutler-Hammer Eaton.	Capacitor bank is in good condition.	Replace capacitor bank in the lo term.	ng Good	Life Cycle		30	6	6	24	2045	1	100%	1	EA	\$9,500	\$9,500	\$1,900	\$11,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	B501006	Enclosed Circuit Breakers	400-A, 600-V heavy duty safety switch by Cutler-Hammer Eaton.	The switch is in good condition.	Replace switch in the long term.	Good	Life Cycle		30	6	6	24	2045	1	100%	1	EA	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501005	Distribution Panels & Breakers	ABB generator contactor panels at Electrical Room. Includes ABB AF460 contactors and stop/start buttons.	The panels are in good condition.	. Replace contactor panels in the long term.	Good	Life Cycle		30	6	6	24	2045	3	100%	3	L-SUM	\$4,000	\$12,000	\$2,400	\$14,400

McINTOSH PERRY

	BUILD	ING INFORMAT	ION				ASSESS	SMENT									PRELIM	INARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	CRITICALITY	Y IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501005	Distribution Panels & Breakers	Cutler-Hammer 225-A, 120/208-V, 224-circuit panelboard at Electrica Room.	, The panel is in good condition.	Replace distribution panel in the long term.	Good	Life Cycle		40	10	10	30	2051	1	100%	1	L-SUM	\$4,000	\$4,000	\$800	\$4,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501005	Distribution Panels & Breakers	The emergency panelboard is a Square D NQOD442L225CU 225-A 240-V, 3-P, 4-W, 42-ciruit panel.	Panelboard is in good condition.	Replace panelboards in the long term.	; Good	Life Cycle		40	5	5	35	2056	1	100%	1	L-SUM	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501005	Distribution Panels & Breakers	Dam panelboard by Square D rated at 100-A, 120/240-V, 24- circuit.	The panel is in good condition.	Replace panelboard in the long term.	Good	Life Cycle		25	9	9	16	2037	1	100%	1	EA	\$3,500	\$3,500	\$700	\$4,200
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501099	Other Service And Distribution	2002 Tatung generator is a double regulated unit (m# WB4007DFH, s# 29000094) with output of 290- kW, 400-HP.	 The generator is in good condition. 	Replace generator in longer tern	n. Good	Life Cycle		30	19	19	11	2032	1	100%	1	L-SUM	\$1,500,000	\$1,500,000	\$300,000	\$1,800,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501099	Other Service And Distribution	2002 Tatung generators are single regulated units (m# WB4007DFH, s# 29000059 and 29000060) with output of 290-kW each.	The generators are in good condition.	Replace generators in longer ter	rm. Good	Life Cycle		30	19	19	11	2032	2	100%	2	EA	\$1,200,000	\$2,400,000	\$480,000	\$2,880,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501099	Other Service And Distribution	Generator refurbishment.	Generators were refurbished in 2019 at a cost of approximately \$112K.	Refurbish generators in longer term.	Good	Life Cycle		6	2	2	4	2025	1	100%	1	L-SUM	\$115,000	\$115,000	\$23,000	\$138,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D501099	Other Service And Distribution	Generator Protection Relay M- 3410 by Beckwith Electric Co. Inc.	The generator protection relay is in good condition.	Replace unit in the long term.	Good	Life Cycle		40	20	20	20	2041	1	100%	1	EA	\$95,000	\$95,000	\$19,000	\$114,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D502001	Branch Wiring	Conventional three-prong receptacles and toggle light switches are installed. Wiring is typically concealed in steel conduit. Includes coreflex cabling at main electrical components.	The wiring, receptacles, and switches are in fair condition. Grounding of receptacles in wet areas was not verified.	Replace localized wiring (NMSC) switches, and receptacles with moisture resistant type. Install GFCI receptacles where needed.), Fair	Necessary		25	35	23	2	2023	1	100%	1	L-SUM	\$1,500	\$1,500	\$300	\$1,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D502002	Lighting Equipment	T12 fluorescent light fixtures, dual lamp, are installed throughout.	LED light fixtures are in good condition.	Replace light fixtures in the shor term with LED type.	rt Good	Life Cycle		20	19	18	2	2023	28	100%	28	#	\$400	\$11,200	\$2,240	\$13,440
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D503008	Security Systems	The building is equipped with a security system including a digital keypad, Paradox controller and motion sensors.	Security system is in good condition.	Replace the security system in the long term including motion sensors and door contacts.	he Good	Life Cycle		15	4	4	11	2032	1	100%	1	L-SUM	\$3,500	\$3,500	\$700	\$4,200

McINTOSH PERRY

	BUILD	ING INFORMAT	ION				ASSES	SMENT									PRELIM	NARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITIO RATING	N CRITICALITY RATING	IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D503008	Security Systems	The building is equipped with a newer CCTV system complete with DVR back-up and six cameras.	Security system is in good condition.	Replace the security system in t long term including motion sensors and door contacts.	he Good	Life Cycle		(Years) 15	(Years) 2	2	13	2034	1	SCHEDULED 100%	1	L-SUM	\$7,500	\$7,500	CONTINGENCY (10%) \$1,500	\$9,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509006	Energy Management Control System	An automation system was installed in 2017 for the weir gate (by Innovative Hydro Controls Inc.). The generation protection and control upgrade, including modbus converter, terminal blocks, and tailrace level sensor, occurred in 2015 at a cost of approximately \$100K.	The system is in good condition.	Allow for longer term updates a hardware replacements.	nd Good	Life Cycle		15	4	4	11	2032	1	100%	1	L-SUM	\$50,000	\$50,000	\$10,000	\$60,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509002	Emergency Lighting & Power	Generac automatic transfer switcl for electrical panels, sump pumps and lighting is installed at the main level of the Power House.	The transfer panel is in good condition.	Replace transfer panel in the lor term.	ng Good	Life Cycle		25	5	5	20	2041	1	100%	1	L-SUM	\$5,500	\$5,500	\$1,100	\$6,600
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509002	Emergency Lighting & Power	22-kW Generac propane-fired back-up generator is located at the main entrance.	The generator is in good condition.	Replace emergency generator in the long term.	n Good	Life Cycle		25	5	5	20	2041	1	100%	1	L-SUM	\$15,000	\$15,000	\$3,000	\$18,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509002	Emergency Lighting & Power	Exit signs are installed above entry/exit doors.	The exit signs are in poor condition and not illuminated.	Replace exit signs in short term.	. Fair	Life Cycle	EXIT	25	24	24	1	2022	3	100%	3	EA	\$500	\$1,500	\$300	\$1,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509002	Emergency Lighting & Power	Battery powered emergency light fixtures are installed throughout.	Emergency light fixtures are in fa condition.	ir Replace emergency light fixture in the long term. Use integratec exit/emergency lights at all exit doorways.	s Fair I	Life Cycle		25	15	18	7	2028	6	100%	6	EA	\$950	\$5,700	\$1,140	\$6,840
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509002	Emergency Lighting & Power	UPS by C-Can (m# SCR125V/5A-1A M (EAG001), s# C090013) rated at 125-VDC, 5-A output. Installed in 2012.	- The UPS is in good condition.	Replace UPS in longer term.	Good	Life Cycle		25	9	9	16	2037	1	100%	1	EA	\$950	\$950	\$190	\$1,140
Eganville Generation Plant	46 Bonnechere Street West, Eganville	D509005	Electric Heating	7500-W suspended electric heaters with remote dial thermostats are installed.	Electric heaters are in good condition. The heaters are infrequently used due to the hea radiating from the generators.	Allow to replace heaters in the mid-term. t	Good	Life Cycle		25	19	19	6	2027	6	100%	6	EA	\$1,700	\$10,200	\$2,040	\$12,240
Eganville Generation Plant	46 Bonnechere Street West, Eganville	E201002	Window Treatments	Window treatments are not provided.		No allowances carried.	Fair	Life Cycle		20	8	8	12	2033	0	100%	0	L-SUM	\$2,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G2010	Roadways	Asphalt surfaced laneway to and from Bonnechere Street.	The asphalt surfacing is in fair condition with notable cracking and settlement.	Replace surfaces at end of servi life.	ce Fair	Life Cycle		25	35	35	3	2024	4800	100%	4800	SF	\$8	\$38,400	\$7,680	\$46,080

MCINTOSH PERRY

	BUILD	ING INFORMAT	ION				ASSESS	MENT				-					PRELIM	INARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	CRITICALITY RATING	IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G2020	Parking Lots	Asphalt surfaced parking area at north side of building.	The asphalt surfacing is in fair condition with notable cracking and settlement.	Replace surfaces at end of service life.	9 Fair	Life Cycle		(Years) 25	35	35	3	2024	3150	100%	3150	SF	\$8	\$25,200	\$5,040	\$30,240
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G202001	Bases and Subbases	Gravel surfaced storage area at east side of building.	Gravel surfaced storage area is in good condition.	Replace surfaces at end of service life.	e Fair	Life Cycle		25	8	8	17	2038	2200	100%	2200	SF	\$1	\$2,200	\$440	\$2,640
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G203099	Other Walks, Steps and Terraces	Poured concrete landings are installed at the north entrance	Concrete landings are in fair condition. Allow to replace concrete at entrance to building.	Allow to replace concrete at entrance to building.	Fair	Currently Critical		30	35	35	1	2022	1	100%	1	L-SUM	\$4,000	\$4,000	\$800	\$4,800
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G203099	Other Walks, Steps and Terraces	Poured concrete walkway at west side of Power House.	Concrete is in fair condition with notable spalling.	Allow to repair concrete.	Fair	Currently Critical		30	35	35	1	2022	1	100%	1	L-SUM	\$10,000	\$10,000	\$2,000	\$12,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G203099	Other Walks, Steps and Terraces	Tubular steel guard at west side of Power House. Installed in 2015 at approximately \$4K.	² The guard is in fair condition. Height is only 37" AFF.	Allow to refurbish guard to achieve required 42" AFF .	Fair	Currently Critical		30	6	6	1	2022	1	100%	1	L-SUM	\$3,000	\$3,000	\$600	\$3,600
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G204099	Other Site Improvements	Storage trailer is located at north side of site; manufactured in 2015	The trailer is in good condition.	No allowances carried.	Good	Life Cycle		40	6	6	34	2055	1	100%	1	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G204001	Fencing and Gates	6' high steel chain link fencing, with gates, is installed at the west and east sides of the building along the embankment.	The fencing is in good condition with minor damage.	Replace fencing in longer term.	Good	Life Cycle		40	35	27	13	2034	160	100%	160	LF	\$27	\$4,320	\$864	\$5,184
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G204001	Fencing and Gates	5' pressure treated fencing is installed at the east side of the building along the embankment.	The fencing is in fair condition with notable damage and unplumbed sections. The fencing does not provide a secured property.	Replace fencing with chain link type and extend to create a secured site.	Fair	Life Cycle		40	30	38	2	2023	1	100%	1	L-SUM	\$8,000	\$8,000	\$1,600	\$9,600
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G204001	Fencing and Gates	Site security along property line.	Site is not secured from local traffic.	Gated entries are recommended at both access points but this will impede barrier-free access along the street due to the narrow sidewalks along the roadway. Allow to devise solution.	Fair	Life Cycle		40	35	38	2	2023	1	100%	1	L-SUM	\$50,000	\$50,000	\$10,000	\$60,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G204005	Signage	Illuminated wall mounted metal sign at main entrance.	The sign is in good condition.	Replace the sign in the longer term.	Good	Life Cycle	ECANVILLE OCCUPTORIATION	20	9	9	11	2032	1	100%	1	L-SUM	\$3,500	\$3,500	\$700	\$4,200

MCINTOSH PERRY

	BUILD	DING INFORMAT	ION				ASSESS	MENT						1			PRELIMI	NARY COSTS			OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	CRITICALITY RATING	IMAGE	SERVICE LIFE	ACTUAL AGE	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G2050	Landscaping	Soft landscaping consists of sodded berms and overgrowth.	The soft landscaping is in poor condition.	Allow for short term refurbishment of the soft landscaping components.	Poor	Life Cycle		(Years) 25	(Years) 35	23	2	2023	1	100%	1	L-SUM	\$5,000	\$5,000	CONTINGENCY (10%) \$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	Tail race gates (3) including galvanized structural steel framing, motorized steel gates, 1- HP lift motors, guards and open grated walkway. Installed in 2020 at a cost of approximately \$210K.	The components are in good condition. Localized corrosion of bolts noted; O & M item.	Allow for longer term repairs and modifications.	Good	Life Cycle		25	1	1	24	2045	1	100%	1	L-SUM	\$40,000	\$40,000	\$8,000	\$48,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	15 galvanized structural steel stop logs (12"x12"x3/8" and 1'4") at sluice gain #4. Installed in 2019 at approximately \$60K.	The components are in good condition.	Allow for longer term replacement.	Good	Life Cycle		25	2	2	23	2044	1	100%	1	L-SUM	\$65,000	\$65,000	\$13,000	\$78,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	Gate and lifting device at sluice gain #5. Includes steel beam gate, lifting trolley, heater pumping system, manual hand crank, pneumatic wheel and jack. Installed in 2015 at a cost of \$200K.	The components are in good condition. Original design drawings are unavailable. Weir gate was automated in 2017 at a cost of approximately \$19K. Jack screw was also replaced in 2017 a cost of approximately \$24K.	Allow for longer term replacement.	Good	Life Cycle		25	2	2	23	2044	1	100%	1	L-SUM	\$65,000	\$65,000	\$13,000	\$78,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	Gate heating system comprised of glycol feed, two circulating pumps expansion tank, copper piping, inline filter, ball valves and two Wattco circulation heaters.	The components are in good condition. Original design drawings are unavailable.	Allow for longer term major repairs/replacement.	Good	Life Cycle		15	5	5	10	2031	1	100%	1	L-SUM	\$9,500	\$9,500	\$1,900	\$11,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	3 galvanized structural steel intake gates and gantry. Installed in 2016 at approximately \$45K.	The components are in good condition.	Allow for longer term replacement.	Good	Life Cycle		20	5	5	15	2036	1	100%	1	L-SUM	\$50,000	\$50,000	\$10,000	\$60,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	3 of the sluice gains are constructed with 9 Douglas fir logs measuring 21'x12"x12" and 2 of the sluice gains have 15 Douglas fir logs of similar dimensions.	The log components are in fair condition overall. Sluice gain 2 wa replaced in 2017 while the others are a combination of newer and older logs.	Allow for continual refurbishmen s of sluice gains.	t Good	Life Cycle		4	3	3	1	2022	1	100%	1	L-SUM	\$20,000	\$20,000	\$4,000	\$24,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	16 ductile iron wicket gates with stainless steel sleeves are installed. Work conducted in 2016 and 2018 at a cost of approximately \$20K.	The components are in good condition.	Allow for longer term refurbishment.	Good	Life Cycle		25	3	3	22	2043	1	100%	1	L-SUM	\$25,000	\$25,000	\$5,000	\$30,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	Pit covers are installed at main floor.	The pit covers are in fair condition with notable corrosion.	Allow to refurbish the pit covers i the short term.	n Good	Life Cycle		20	19	18	2	2023	1	100%	1	L-SUM	\$2,000	\$2,000	\$400	\$2,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G909099	Other Special Construction	Hydraulic turbines and draft tubes are installed.	The turbines and draft tubes are functioning well do to ongoing maintenance. Localized corrosion is present on the outer surfaces.	Allow to refurbish the draft tube surfaces and allow for future overhauls.	Good	Life Cycle		5	3	3	2	2023	1	100%	1	L-SUM	\$15,000	\$15,000	\$3,000	\$18,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G205007	Irrigation Systems	The building is not equipped with an irrigation system.		No allowances carried.				20	0	0	20	2041	0	100%	0	L-SUM	\$0	\$0	\$0	\$0

McINTOSH PERRY

	BUILDI	ING INFORMAT	ION		1		ASSES	SMENT									PRELIM	INARY COSTS			OTHER	
BUILDING		UNIFORMAT	BUILDING COMPONENT	DESCRIPTION	ORSERVATIONS	RECOMMENDATIONS	CONDITION	CRITICALITY	IMAGE	SERVICE	ACTUAL	OBSERVED	REMAINING	RECOMMENDED	TOTAL	% ΟΓ ΟΠΑΝΤΙΤΥ	PROJECT	UNIT OF	UNIT RATE	NET COST	DESIGN/ENGINEERING FEES (10%)	TOTAL COST OF PROJECT
NAME	ADDRESS	CODE	Bollbing comi onem	DESCRIPTION	Observations	RECOMMENDATIONS	RATING	RATING		(Years)	(Years)	AGE (Years)	LIFE (Years)	YEAR	QUANTITY	SCHEDULED	QUANTITY	MEASURE	(\$)	(\$)	CONTINGENCY (10%)	
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G301002	Potable Water Distribution	The building is not equipped with potable water supply.		No allowances carried.	Good	Life Cycle		50	35	35	15	2036	0	100%	0	L-SUM	\$5,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G302001	Sanitary Sewer Piping	Sanitary systems are not installed.		No allowances carried for site sanitary repairs/replacements.	Good	Life Cycle		50	35	35	15	2036	0	100%	0	L-SUM	\$10,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G306007	Gas Storage Tanks	Two 420-lb propane tanks are located externally. The system serves the emergency generator.	The tanks are in good condition.	Allow for longer term tank, piping and regulator refurbishments or replacements.	g Good	Life Cycle		30	15	15	15	2036	1	100%	1	L-SUM	\$3,500	\$3,500	\$700	\$4,200
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G303001	Storm Sewer Piping	Storm water from the drive lane is discharged to the river by a single catch basin and HDPE pipe.	The storm drainage system is functioning with no issues noted or reported.	Allow for repairs to the catch basin when re-paving the asphalt cost carried under the pavement item.	Good ;	Life Cycle		50	35	35	15	2036	0	100%	0	L-SUM	\$15,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G402006	Exterior Lighting Fixtures & Controls - Fixtures	40' wood utility pole with HID cobra head luminaire and mast are installed at the parking area.	The luminaire and pole are in goo condition.	d Replace lighting components in longer term. Utility pole is salvageable.	Good	Life Cycle		25	20	20	5	2026	1	100%	1	L-SUM	\$2,000	\$2,000	\$400	\$2,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G402006	Exterior Lighting Fixtures & Controls - Fixtures	12' steel light standards with newer LED lamps are installed along the dam. Lighting is controlled by photocell.	The luminaires and poles are in good condition.	Replace lighting components in longer term.	Good	Life Cycle		25	15	12	13	2034	3	100%	3	EA	\$2,400	\$7,200	\$1,440	\$8,640
Eganville Generation Plant	46 Bonnechere Street West, Eganville	G402006	Exterior Lighting Fixtures & Controls - Fixtures	Exterior building lighting is not provided.	Lighting at exterior of building requires improvement.	Allow to add exterior cabling and lighting fixtures.	Poor	Necessary		25	0	0	25	2046	1	100%	1	L-SUM	\$5,500	\$5,500	\$1,100	\$6,600
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010001	Report - BCA/RFS	No previous reporting conducted. MP reporting compiled October 2021.		Allow to provide future report.	Fair	Life Cycle		5	0	0	5	2026	1	100%	1	L-SUM	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010002	Report - Technical / Performance Audit	No designated substance survey or hazardous substance survey available for review.	Hazardous materials are likely to be present, e.g. silica, mercury.	Allow for DSS or HSS reporting prior to future restorations.	Fair	Recommen ded		5	3	3	2	2023	1	100%	1	L-SUM	\$2,500	\$2,500	\$500	\$3,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010003	Report - Balancing / Commissioning	No balancing or commissioning reports available for review.	No issues noted or reported to warrant balancing reporting at th	No allowances carried.	Fair	Life Cycle		10	9	9	1	2022	0	100%	0	L-SUM	\$3,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Fganville	H3010006	Report - Indoor Air Quality	Air balancing.	No issues noted or reported to warrant balancing reporting at th	No allowances carried. is	Fair	Life Cycle		8	9	7	1	2022	0	100%	0	L-SUM	\$3,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West,	H3010007	Report - Energy Audit	There is no Energy Audit Report available.		No allowances carried.	Fair	Life Cycle		8	8	6	2	2023	0	100%	0	L-SUM	\$7,000	\$0	\$0	\$0
Eganville Generation	46 Bonnechere Street West,	H3010008	Report - Destructive Testing	Intrusive testing.	No requirement at this time for intrusive investigations.	No allowances carried.	Good	Life Cycle		20	35	18	2	2023	0	100%	0	L-SUM	\$3,000	\$0	\$0	\$0
Eganville Generation	46 Bonnechere Street West,	H3010009	Report - Roof Inspection Report	Roof inspection/assessment reports are not provided.	No current issues warranting separate reporting.	No allowances carried at this time	e. Fair	Life Cycle		8	7	7	1	2022	0	100%	0	L-SUM	\$4,000	\$0	\$0	\$0
Eganville Generation	46 Bonnechere Street West,	H3010010	Design and Specification	Building drawings are limited and not as-built type.	The drawings require updating to show current conditions.	Allow for future drawing review and confirmation of as built	Fair	Recommen ded		20	35	18	2	2023	1	100%	1	L-SUM	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	Eganville 46 Bonnechere Street West, Eganville	H3010011	Report - Efficiencies	Hydrosys Consultants were retained in 2014 by EGC to provide report on Capacity Improvements	2	No allowances carried for further efficiency reviews.	Fair	Life Cycle		10	7	7	3	2024	0	100%	0	L-SUM	\$5,000	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010012	Retro-commissioning	Commissioning reports.	Commissioning reports are unavailable. There is no large HVAC equipment within building.	No allowances carried.	Fair	Necessary		20	35	19	1	2022	0	100%	0	L-SUM	\$0	\$0	\$0	\$0

McINTOSH PERRY

	BUILD	ING INFORMAT	ION		ASSESSMENT												PRELIMI	NARY COSTS	;		OTHER	
BUILDING NAME	ADDRESS	UNIFORMAT CODE	BUILDING COMPONENT	DESCRIPTION	OBSERVATIONS	RECOMMENDATIONS	CONDITION RATING	I CRITICALITY RATING	IMAGE	SERVICE LIFE (Years)	ACTUAL AGE (Years)	OBSERVED AGE (Years)	REMAINING LIFE (Years)	RECOMMENDED YEAR	TOTAL QUANTITY	% OF QUANTITY SCHEDULED	PROJECT QUANTITY	UNIT OF MEASURE	UNIT RATE (\$)	NET COST (\$)	DESIGN/ENGINEERING FEES (10%) CONTINGENCY (10%)	TOTAL COST OF PROJECT
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010013	Illumination Review	Emergency lighting is provided by the standard emergency battery pack fixtures.	Illumination levels are unknown but are considered to be adequate based on current location of fixtures. Operational testing is completed annually and fixtures are replaced as needed.	Allow for emergency lighting testing including illumination readings.	Fair	Necessary		7	37	6	1	2022	1	100%	1	L-SUM	\$2,000	\$2,000	\$400	\$2,400
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010014	Site Servicing Locates	Site services including storm, sanitary and electrical.	Locations, construction and conditions of subsurface services is unknown. No irregular service issues are reported. No sanitary system provided. Storm water from lane drive basin is discharged to river.	No allowances made for subsurface investigations at this time.	Fair	Life Cycle		15	35	13	2	2023	0	100%	0	L-SUM	\$0	\$0	\$0	\$0
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010014	Electrical Review	Predictive quality measurements (PQM).	No thermography or other PQM provided.	Allow to provide PQM in the short term including thermography.	Fair	Recommen ded		5	35	3	2	2023	1	100%	1	L-SUM	\$5,000	\$5,000	\$1,000	\$6,000
Eganville Generation Plant	46 Bonnechere Street West, Eganville	H3010014	Barrier-Free Design	A barrier-free review was conducted by MP. Review is to OBC standards except as noted.	The hydroelectric generator building is not designed to accessible standards. The Ontario Building Code (OBC) waives the requirement for "buildings that are not intended to be occupied on a daily or full time basis".	No allowances are carried to provide barrier-free amenities to this building.	Fair	Necessary		15	35	15	0	2021	0	100%	0	L-SUM	\$0	\$0	\$0	\$0

MCINTOSH PERRY

1	2	3	4	5	6	7	8	9	10	11	12	13	14
							ESTIM/		UAL EXPE	NDITURES	- 2021 to 2	2040	

Construction Inflation 0.0%

UNIFORMAT CODE	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
A101001	0	0	\$90.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A101001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$14,400	0	0	0	0	0
A101001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A101001	0	0	0	0	\$6,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B101001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0	0
B101001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B101002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B101002	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B102001	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B102001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B201001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B201010	0	\$960	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B201008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B201011	0	0	0	0	0	0	0	0	0	0	\$900	0	0	0	0	0	0	0	0	0
B202001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B203004	0	0	0	\$4,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B203001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B301001	0	0	0	0	0	\$19,440	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B301001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B301004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B301006	0	0	0	0	0	0	0	0	0	0	0	\$4,920	0	0	0	0	0	0	0	0
C1010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0	0
C103009	0	0	\$4,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C201001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C201001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0	0
C201001	0	0	\$3,480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C201002	0	0	0	0	0	\$6,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C301003	0	0	\$1,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C301005	0	0	\$3,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C302007	0	0	\$2,760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C303003	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0
D2010	0	0	0	0	0	¢10,900	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2010	0	0	0	0	0	\$10,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D202003		0	0	0	0	0	0	000 \$2	0	0	0	0	0	0	0	0	0	0	0	0
D204003	0	0	0	¢1 800	0	0	0	\$3,000	0	0	0	0	0	0	0	0	0	0	0	0
D403001	0	0	0	0	0	0	0	0	0	0	\$810	0	0	0	0	0	0	0	0	0
D409099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501004	\$10,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B501006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D501005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$4,200	0	0	0
D501099	0	0	0	0	0	0	0	0	0	0	0	\$1,800,000	0	0	0	0	0	0	0	0
D501099	0	0	0	0	0	0	0	0	0	0	0	\$2,880,000	0	0	0	0	0	0	0	0
D501099	0	0	0	0	\$138,000	0	0	0	0	0	\$138,000	0	0	0	0	0	\$138,000	0	0	0
D501099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D502001	0	0	\$1,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

14

15	16	17	18	19	20

1 2 3 4 5 6 7 8 9 10 11 12 13 14 ESTIMATED ANNUAL EXPENDITURES - 2021 to 2040

Construction Inflation 0.0%

UNIFORMAT CODE	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
D502002	0	0	\$13 440	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D503008	0	0	0	0	0	0	0	0	0	0	0	\$4 200	0	0	0	0	0	0	0	0
D503008	0	0	0	0	0	0	0	0	0	0	0	0	0	000 02	0	0	0	0	0	0
D509006	0	0	0	0	0	0	0	0	0	0	0	\$60,000	0	0	0	0	0	0	0	0
D509002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D509002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D509002	0	\$1 800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D509002	0	0	0	0	0	0	0	\$6,840	0	0	0	0	0	0	0	0	0	0	0	0
D509002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$1.140	0	0	0
D509005	0	0	0	0	0	0	\$12.240	0	0	0	0	0	0	0	0	0	0	0	0	0
E201002	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0	0	0	0
G2010	0	0	0	\$46,080	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G2020	0	0	0	\$30,240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G202001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$2,640	0	0
G203099	0	\$4,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G203099	0	\$12,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G203099	0	\$3,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G204099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G204001	0	0	0	0	0	0	0	0	0	0	0	0	0	\$5,184	0	0	0	0	0	0
G204001	0	0	\$9,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G204001	0	0	\$60,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G204005	0	0	0	0	0	0	0	0	0	0	0	\$4,200	0	0	0	0	0	0	0	0
G2050	0	0	\$6,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	0	0	0	0	0	0	0	0	\$11,400	0	0	0	0	0	0	0	0	0
G909099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$60,000	0	0	0	0
G909099	0	\$24,000	0	0	0	\$24,000	0	0	0	\$24,000	0	0	0	\$24,000	0	0	0	\$24,000	0	0
G909099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	\$2,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G909099	0	0	\$18,000	0	0	0	0	\$18,000	0	0	0	0	\$18,000	0	0	0	0	\$18,000	0	0
G205007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G301002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	0	0	0	0
G302001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$U	0	0	0	0
G303001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$4,200 \$0	0	0	0	0
G303001	0	0	0	0	0	\$2,400	0	0	0	0	0	0	0	0	0		0	0	0	0
G402000	0	0	0	0	0	φ <u>2</u> ,400	0	0	0	0	0	0	0	\$8.640	0	0	0	0	0	0
G402006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010001	0	0	0	0	0	\$6.000	0	0	0	0	\$6.000	0	0	0	0	\$6.000	0	0	0	0
H3010002	0	0	\$3,000	0	0	0	0	0	\$3,000	0	0	0	0	\$3,000	0	0	0	0	\$3,000	0
H3010003	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010006	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010007	0	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010008	0	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010009	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010010	0	0	\$6,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010011	0	0	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010012	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010013	0	\$2,400	0	0	0	0	0	0	\$2,400	0	0	0	0	0	0	\$24,000	0	0	0	0
H3010014	0	0	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3010014	0	0	\$6,000	0	0	0	0	\$6,000	0	0	0	0	\$6,000	0	0	0	0	\$6,000	0	0

15	16	17	18	19	20

1	2	3	4	5	6	7	8	9	10	11	12	13	14		
			ESTIMATED ANNUAL EXPENDITURES - 2021 to 2040												

Construction Inflation 0.0%

UNIFORMAT CODE	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	203
Annual Estimated Expenditures	\$10,800	\$49,560	\$231,480	\$82,920	\$144,000	\$68,640	\$12,240	\$34,440	\$5,400	\$24,000	\$157,110	\$4,753,320	\$24,000	\$49,824	\$14,4

15	16	17	18		19	20
5	2036	2037	2038	2039	2040	
00	\$94,200	\$143,340	\$50,640	\$3,000	\$0	

APPENDIX "D" Levels of Service

• Strategic and Operational Levels of Service

STRATEGIC AND OPERATIONAL LEVELS OF SERVICE

Level of Service Statement	Level of Service Heirarchy (Type)	Measurement	Current Target	Current Provision	% of Target Complete	Target in 10 years	Document Reference
To meet or exceed the applicable provincial standards for water & wastewater performance under current legeslation	Strategic & Operational	Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation	100%	Meet all Provincial Regulation & Legislation	Strategic Plan & Drinking Water Quality Management System (DWQMS)
To maintain in good working order, a WTP, distribution system & associated works within the Village of Eganville	Operational	Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation, more training	Meet all Provincial Regulations & Legislation, computerized MMS & GIS	90%	Meet all Provincial Regulation & Legislation, MMS, GIS & more training	Implied
To maintain in good working order, a STP, collection system & associated works within the Village of Eganville	Operational	Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation, computerized MMS & GIS	100%	Meet all Provincial Regulation & Legislation, MMS, GIS & more training	Implied
To maintain in good working order, fire protection services within the Village of Eganville	Operational	Provincial Regulations & Legislation	Meet all Provincial Regulations & Legislation, more training	Meet all Provincial Regulations & Legislation, computerized MMS & GIS	95%	Meet all Provincial Regulation & Legislation, MMS, GIS & more training	Implied
To make our community an affordable, efficient place where people choose to live, work, visit & participate in a culture that fosters communication, rural lifestyle, personal growth, & healthy commerce	Strategic	Meet Critical Success Factors & Overarching Goals - Public Works, Recreation & Culture, Sewage & Water & Fire Protection	To constantly strive for improvement	Ongoing	N/A	Ongoing	Strategic Plan
To know and manage our assets effectively and efficiently	Strategic & Operational	Meet Critical Success Factors & Overarching Goals - Public Works, Recreation & Culture, Sewage & Water & Fire Protection	Develop annual maintenance plan plus 5- 10 year maintenance & replacement plan, reviewed annually	Annual maintenance plan plus 5-15 year maintenance & replacement plan, reviewed annually	95%	Annual maintenance plan plus 5-15 year maintenance & replacement plan, reviewed annually	Strategic Plan, Infrastructure Management Strategy
To deliver excellence in quality customer service	Operational	Current standards - 24 hour response or better to service calls, water & sewer interruptions - immediate response	Have top quality ice in arena, better document control & respond promptly to service calls/breaks	Top quality ice in arena, arena BCA Report, MMS & GIS, meet current standards	90%	Top quality ice in arena, maintain MMS & GIS, meet current standards	Strategic Plan, Arena/Hall, various condition assessment reports
To regularly evaluate services & how they are delivered	Operational	Critical Success Factors & Overarching Goals - Public Works, Recreation & Culture, Sewage & Water & Fire Protection	Keep better records, meet all regulatory standards, customer survey, develop 5-10 year forecast plan for water & sewage system	MMS & GIS, meet water & sewage regulations, Infrastructure Management Strategy & condition assessments	85%	MMS & GIS, meet water & sewage regulations, Infrastructure Management Strategy & condition assessments - complete customer service survey	Strategic Plan
To maintain effective communication among all departments, Council and the Public	Strategic	Critical Success Factors & Overarching Goals - Public Works, Recreation & Culture, Sewage & Water & Fire Protection	Work with key organizational partners, utilize MMS to improve response to Public complaints/requests	Regular Council & Departmental Committee meetings bimonthly, special Public meetings, website postings & using MMS to track Public complaints/requests	90%	Regular Council & Departmental Committee meetings bimonthly, special Public meetings, website postings & using MMS to track Public complaints/requests	Strategic Plan
To recognize that we serve a community with a variety of ages and disabilities	Strategic	Critical Success Factors & Overarching Goals - Recreation & Culture	Develop plan to address access concerns for seniors/disabled	Plan in place, chair lift in place to access community centre - meets access requirements for disabled and/or seniors	100%	Continue to monitor	Strategic Plan, Arena/Hall BCA Report
To recognize that we are the first line of contact with the Public	Strategic	Critical Success Factors & Overarching Goals - Public Works, Recreation & Culture, Sewage & Water & Fire Protection	Evaluate complaints/requests & prioritize	Ongoing	N/A	Ongoing	Strategic Plan
To recognize that what we do has a direct effect on the health & safety of the Public and Township staff	Strategic & Operational	Provincial Regulations & Legislation & Critical Success Factors & Overarching Goals	Keep current with regulatory standards including inspections, maintenance & training	Meet all Provincial Regulations & Legislation, annual inspection & maintenance program	90%	Meet all Provincial Regulations & Legislation, annual inspection & maintenance program & more training	Strategic Plan, Provincial Regulations & Infrastructure Management Strategy
To serve the Public's need for quality of life	Strategic & Operational	Critical Success Factors & Overarching Goals - Recreation & Culture	Identify areas where we can provide improved access for people with special needs	Chair lift in place for community centre	100%	Continue to monitor	Strategic Plan, Arena/Hall BCA Report
APPENDIX "E" Planned Actions

- Summary of Water System Planned Actions
- Summary of Sanitary Sewage Collection System Planned Actions
- Summary of Storm Sewer System Planned Actions
- 10 Year Road Maintenance Rural Roads

Summary of Sanitary Sewage Collection System Planned Actions

NO.	DESCRIPTION OF ACTIVITY	TYPE OF WORK	BENEFITS	ESTIMATED TIME FRAME	BUDGET ALLOWANCE	STATUS
Α	INVENTORY					
1	Improve the accuracy of spatial information and content of the GIS	GIS	Will improve overall accuracy and expand available content	Ongoing	As required	Ongoing
2	Update GIS	GIS	Will ensure information is current and accurate	Ongoing	As required	Ongoing
3	Undertake Special Projects a. Prepare Master Servicing Drawings	GIS	Will provide operations staff with better tools	Ongoing	As required	Ongoing
в	CONDITION ASSESSMENT					
1	Sewage Treatment Plant					
1.1	Assess/rehabilitate exterior doors	Structural	Will extend building service life	0-2 years	\$10,000	
1.2	Improve drainage and repair asphalt roadway	Civil	Will extend service life	5-10 years	\$5,000	
1.3	Upgrade instrumentation and control system	I&C	Improve overall operations, reduce risk and extend service life	5-10 years	\$200,000	
1.4	Repair 1970s fence	Civil		10-15 years	\$10,000	
1.5	Replace 1970s control building structure	All disciplines	Improve overall operations	10-15 years	\$500,000	
1.6	Replace 1970s prefabricated unit	All disciplines	Reduce risk of failure	10-20 years	\$2M	
2	North Side Pump Station					
2.2	Clean out weep holes	Structural	Extend building service life	0-2 years	\$250	
2.3	Investigate potential screening system improvements	Mechanical	Improve operational efficiency and safety	0-2 years	\$2,000	
3	South Side Pump Station					
3.1	N/A					
4	Raglan Street Pump Station					
4.1	N/A					
5	Mill Street Pump Station					
0. I	N/A					
6.1	Undertake video inspection of the entire collection system including maintenance holes	Other	Anticipate repair, reduce inflow extending life of STP and pipes, minimize risk	0-5 years	\$60,000 over 5 years	High Priority
6.2	Prepare Condition Assessment Report and Action Plan	Civil/GIS	Will determine priority for rehabilitation/replacement including estimated costs and schedule	0-5 years	\$25,000	High Priority
6.3	Implement repairs based on video inspection results and Action Plan	Other	Will extend life of system	5-10 years	Budget annually	As required
С	CAPACITY ASSESSMENT					
1	Apply sewer model to assess development impacts	Civil	Impacts and costs for development can be determined	As required	Budget as required	As required
2	Update hydraulic model	Civil	Improve accuracy	As required	Budget annually	Nothing Required at this time
3	Undertake uncommitted reserve capacity calculation	Civil	Planning for future studies and expansions can be anticipated	Annually	Own forces	
D	OPERATIONS					
1	Implement QMS similar to water works system	Other	Streamline operations and align with	0-2 years	Own forces	
F	MAINTENANCE					
1	Establish preventative maintenance program	Other	Reduce potentially costly upgrades and risks	0-2 years	Own forces	
F	DOCUMENTATION CONTROL					
1	Reorganize documentation	Other	Improve operational efficiency	Ongoing	Own forces	Ongoing
2	Prepare Master Servicing Drawings	GIS	Improve operational efficiency	Ongoing	Own forces	Ongoing
G	SPECIAL PROJECTS AND OTHER					
1	Assess Biosolids/Septage Dewatering requirements			Ongoing	Own forces	Underway
2	Water & Wastewater Master Servicing Plan	Civil/Planning	Planning for future development	0-5 Years	\$50,000	Being discussed

Summary of Storm Sewer System Planned Actions

NO.	DESCRIPTION OF ACTIVITY	TYPE OF WORK	BENEFITS	ESTIMATED TIME FRAME	BUDGET ALLOWANCE	STATUS
Α	INVENTORY					
1	Improve the accuracy of spatial information and content of the GIS	GIS	Will improve overall accuracy and expand available content	Ongoing	As required	Complete
2	Update GIS	GIS	Will ensure information is current and accurate	Ongoing	As required	Complete
3	Undertake Special Projects					
	a. Prepare Master Servicing Drawings	GIS	Will provide operations staff with better tools	Ongoing	As required	Ongoing
в	CONDITION ASSESSMENT					
1	Undertake visual inspection of structures visible from surface - storm maintenance holes, catch basins and outlets	Civil	Will determine condition, anticipate repairs, extend life of appurtenances	0-2 years	\$20,000	Priority
2	Undertake video inspection of the entire collection storm sewer system	Other	Anticipate repair, extend life of storm pipes, minimize risk	0-2 years	\$40,000 over 2 years	Priority
3	Prepare Condition Assessment Report and Action Plan	Other	Will determine priority for rehabilitation/replacement including estimated costs and schedule	0-5 years	\$20,000	Priority
4	Implement repairs based on video inspection results and Action Plan	Other	Will extend life of system	5-10 years	Budget annually	As required
5						
6						
1	CAPACITY ASSESSMENT Review Capacity of System - Investigation, Model and Report	Civil	To evaluate capacity performance and system deficiencies	5-10 years	\$40,000	
D	OPERATIONS					
1						
Е	MAINTENANCE					
1	Establish preventative maintenance program	Other	Reduce potentially costly upgrades and risks	0-2 years	Own forces	
F	DOCUMENTATION CONTROL					
1	Reorganize documentation	Other	Improve operational efficiency	Ongoing	Own forces	Ongoing
2	Prepare Master Servicing Drawings	GIS	Improve operational efficiency	Ongoing	Own forces	Ongoing
G	SPECIAL PROJECTS AND OTHER					
1						

Summary of Water System Planned Actions

NO.	DESCRIPTION OF ACTIVITY	TYPE OF WORK	BENEFITS	ESTIMATED TIME FRAME	BUDGET ALLOWANCE	STATUS
Α	INVENTORY					
1	Improve the accuracy of spatial information and	GIS	Will improve overall accuracy and	Ongoing	As required	Ongoing
2	Update GIS	GIS	Will ensure information is current	Ongoing	As required	Ongoing
3	<u>Undertake Special Projects</u> a. Prepare Master Servicing Drawings	GIS	Will provide operations staff with better tools	Ongoing	As required	Ongoing
в	CONDITION ASSESSMENT					
1	Water Treatment Plant	<u></u>			405.000	
1.1 1.2	Install new canopy at side entrance to building Replace domestic sewage pump steel cover	Structural	Improvements to safety Will extend life of equipment	0-2 years 0-2 years	\$25,000	
1.3	Implace democial schulge pump steer sover Implace democial structural upgrades	Structural	Will extend life of building	0-2 years	\$10,000	
1.4	(caulking, masonry, doors, etc.) Undertake detailed heating system review	Mechanical	Will improve protection of existing	0-2 years	\$10,000	
1.5	Install level transmitters in coagulant tanks	I&C	Will improve overall operations and control	0-2 years	\$5,000	
1.6	Replace low and high lift pump pressure switches	I&C	Will improve overall operations and control	0-2 years	\$5,000	
1.7	Perform intake inspection	Civil	Preventative maintenance	0-5 years	\$5,000	
1.8	Evaluate need for additional process system	Process	Will lead to process improvements	0-5 years	\$80,000	
1.9	Repaint miscellaneous metals	Structural	Will extend service life	0-5 years	\$5,000	
1.10	Paint open web steel joints in treatment and pump room	Structural	Will extend service life	0-5 years	\$15,000	
1.11	Decommission soda ash system and consider replacement with caustic soda (liquid) system	Mechanical	Will provide operations staff with better tools	0-5 years	\$10,000	
1.12	Replace knife gate valve on treated water trough	Mechanical		0-5 years	\$20,000	
1.13	Undertake major heating system upgrade	Mechanical	Improve protection of existing systems	Complete	Complete	Commissioning in 2013
1.14	Replace analyzers, transmitters and flow meters	I&C	Reduce risk of failure	5-10 years	\$5,000 (annually)	
1.15	Refurbish/replace low lift pumps	Mechanical	Preventative maintenance	Ongoing	Already budgeted	Commissioning in 2013
1.16	Replace old polymer system Replace filtered water transfer numps	Mechanical	Preventative maintenance	5-10 years 5-10 years	\$50,000	
1.18	Perform detailed inspection of high lift pumps	Mechanical	Preventative maintenance	5-10 years	\$10,000	
1.19	Refurbish/replace high lift pumps	Mechanical	Preventative maintenance	Ongoing	Already budgeted	Commissioning in 2013
1.20	Resurface asphalt parking	Civil	Servicing improvements	10-15 years	\$10,000	
1.21	Long term replacement of Monoplant system	Process	Planning for future	10-15 years	\$3,000,000	
2 2.1	Undertake coatings and safety equipment inspection	Structural	Plan for future	Complete	Complete	Considering report
2.2	Evaluate options for mixing or rechlorination	Process	Improve water quality and reliability	0-2 years	\$5,000	
2.3	Install mixing system (static type) or rechlorination	Process	Improve chlorination in distribution	0-5 years	\$60,000	
2.4	Replace entrance gate	Civil	Improve security	5-10 years	\$2,000	
2.5	Implement safety equipment and coatings rehabilitation	Structural	Will extend service life	5-10 years	\$250,000	
2.6	Repair base slab	Structural	Will extend service life	5-10 years	\$3,000	
2.7	Replace main fill line valve	Mechanical	Reduce risk of failure	5-10 years	\$5,000	
з 3.1	Undertake leak detection survey and water loss assessment	Process	Reduction of water loss and reduction of costly expansions	0-5 years	Own Forces	
3.2	Peform C-factor testing for improvements to hydraulic model	Process	Evaluation of watermain condition	0-5 years	\$15,000	
С	CAPACITY ASSESSMENT		and appealing or hydraulic model			
1	Undertake uncommitted reserve capacity calculations	Civil	Planning for future studies and expansions can be anticipated	Annually	Own forces	
2	Apply water model to assess development impacts	Civil	Impacts and costs for development can be determined	As required	Budget as required	
D	OPERATIONS					
1	Implement DWQMS (new licensing requirements) - including Financial Plan component	Other	Streamline overall operations	Complete	Complete	Ongoing updates and implementation
Е	MAINTENANCE					
1	Establish preventative maintenance program	Other	Reduce costly upgrades and risk	Ongoing	Own forces	Underway
2	Perform annual review of program	Other	Reduce costly upgrades and risk	Ongoing	Own forces	Underway
F	DOCUMENTATION CONTROL	0*	have been been to be the second se	Fact (0010	0	l la demonse
$\frac{1}{2}$	Reorganize documentation	Other	Improve operational efficiency	End of 2010	Own forces	Underway
Ġ		00		Chyoling	Own rolles	
1	Water & Wastewater Master Servicing Plan	Civil/Planning	Planning for future development	0-5 years	\$50,000	Being discussed
÷		2 ionining		, 00.0	+,000	

Ten-	Year Capital Maintenance Plan	- Rurai Rodus (\$1,000s)																	
No	o. Street Name	From	То	Length (km)	Type of Construction, Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
17	2 Augsburg Road	Civic # 967	Silver Lake Road	1.5	Partial Reconstruction Rural	\$ 330.00													
05	0 Franklin Street	Hyndford Road	Hindford Road	0.2	Pad and SST Overlay (2025)	\$ 10.00													
049	PA Scotch Bush Road	Fourth Chute Road	Hyndford Road	3.4	Partial Reconstruction Rural		\$ 748.00												
049	9B Scotch Bush Road	Hyndford Road	Hussey Rd/McMaster Rd	2.0	Partial Reconstruction Rural			\$ 440.00											
10	4 Silver Lake Road	Foymount Road	Sand Road	1.9	Pulverize and DST	\$ 256.50													
10	5 Silver Lake Road	Sand Road	Augsburg Road	2.0	Pulverize and DST				\$ 270.00										
10	6 Silver Lake Road	Augsburg Road	Crimson Maple Road	0.6	Pulverize and DST				\$ 81.00										
113	3A Silver Lake Road	Crimson Maple Road	Corrigan Road	1.7	Pulverize and DST				\$ 229.50										
18	6 Bridge Street	Bonnechere Street	Queen Street	1.3	Crack Sealing					\$ 13.00									
18	7 Bonnechere Street West	Bridge Street	Village Limits (West)	0.7	Crack Sealing					\$ 7.00									
18	8 Bonnechere Street East	Bridge Street	Village Limits (East)	1.5	Crack Sealing					\$ 15.00									
06	5 Sammon Road	Scotch Bush Road	0.3km East	0.3	Pulverize and DST					\$ 40.50									
06	7 Scotch Bush Road	Sammon Road	Fiebig Road	1.7	Partial Reconstruction Rural					\$ 374.00									
12	2 Zadow Road	Silver Lake Road	Ruby Road	2.3	Pulverize and DST						\$ 310.50								
12	3 Zadow Road	Ruby Rd	Hoffman Rd	1.0	Pulverize and DST						\$ 135.00								
12	4 Zadow Road	Hoffman Road	Rocky Point Drive	1.2	Pulverize and DST						\$ 162.00								
12	6 Hoffman Road	Cedar Beach Lane	Ruby Road	1.6	SST Overlay							\$ 80.00							
16	2 Wieland Shore Road	Opeongo Road	Dead End	1.4	Pulverize, Widening and DST							\$ 189.00							
113	3B Silver Lake Road	Corrigan Road	0.9km west of Zadow	6.0	SST Overlay							\$ 300.00							
134	4B Cormac Road	Silver Lake Road	McCaulay Mountain Road	4.9	Pad and SST Overlay								\$ 245.00						
134	1A Cormac Road	Killaloe/Haggart/Richards Town Line	Silver Lake Road	2.1	Pad and SST Overlay								\$ 105.00						
13	6 Cedar Hedge Lane	McCaulay Mountain Road	Dead End	0.2	Partial Depth Reconstruction - Rural								\$ 44.00						
13	7 McCaulay Mountain Road	Foymount Road	0.4km North	0.4	SST Overlay								\$ 20.00						
15	0 Dunnigan Road	Foymount Road, South	Dead End	0.6	Pulverize and DST								\$ 81.00						
09	2 Spring Creek Road	Foymount Road	Hwy. 41	2.7	Partial Depth Reconstruction - Rural									\$ 594.00					
10	8 Crimson Maple Road	1.3km Mudlake Road	Pickewakin Reserve Boundary	4.2	Pulverize and DST										\$ 567.00				
10	7 Crimson Maple Street	Silver Lake Road	1.3km Mudlake Road	1.1	Pulverize and DST											\$ 148.50			
08	8 Wentland Road	Hwy. 41	Dead End	1.6	Pulverize and DST											\$ 216.00			
14	2 Sebastopol Drive	Foymount Road	Janet Street	0.9	Partial Depth Reconstruction - Rural											\$ 198.00			
14	0 Madawaska Crescent	Janet Street	Algonquin Road	0.7	Partial Depth Reconstruction - Rural												\$ 154.00		
14	1 Algonquin Road	Sebastopol Drive	Dead End	0.4	Partial Depth Reconstruction - Rural												\$ 88.00		
13	9 Janet Road	Sebastopol Drive	Dead End - Township Garage	0.1	Partial Depth Reconstruction - Rural												\$ 22.00		
17	4 McKitchen Road	Hwy. 41	Dead End	0.1	Partial Depth Reconstruction - Rural												\$ 22.00		
16	4 McGrath Road	Opeongo Road	6.8km North of Opeongo Road	6.5	Pulverize and DST													\$ 877.50	
05	5 Scotch Bush Road	Hussey Road / McMaster Road	Sammon Road	8.7	Partial Depth Reconstruction - Rural														\$ 1,914.00
16	5 Trebbien Road	McGrath Road	Dead End	0.7	Partial Depth Reconstruction - Rural												\$ 154.00		
			TOTAL	68.2		\$ 596.50	\$ 748.00	\$ 440.00	\$ 580.50	\$ 449.50	\$ 607.50	\$ 569.00	\$ 495.00	\$ 594.00	\$ 567.00	\$ 562.50	\$ 440.00	\$ 877.50	\$ 1,914.00
and the second s																			

Proposed yearly	\$ 674.36 \$	674.36	\$ 674.36	\$ 674.36	\$ 674.36	\$ 674.3	\$ 674.36	\$ 674.36	\$ 674.36	\$ 67	4.36	\$ 674.36	\$ 674.36	\$ 674.36	\$ 674.36
Grants (Prov & Fed)	\$ 350.00 \$	350.00	\$ 350.00	\$ 350.00	\$ 350.00	\$ 350.0	\$ 350.00	\$ 350.00	\$ 350.00	\$ 35	0.00	\$ 350.00	\$ 350.00	\$ 350.00	\$ 350.00
Taxation	\$ 174.36 \$	174.36	\$ 174.36	\$ 174.36	\$ 174.36	\$ 174.3	\$ 174.36	\$ 174.36	\$ 174.36	\$ 17	4.36	\$ 174.36	\$ 174.36	\$ 174.36	\$ 174.36
Reserves	\$ 150.00 \$	150.00	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.0	\$ 150.00	\$ 150.00	\$ 150.00	\$ 15	0.00	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00

Ten-Year Capital Maintenance Plan - Rural Roads (\$1,000s)

APPENDIX "F" Risk Analysis

- Township of Bonnechere Valley Risk Analysis Matrix
- Risk Analysis Rating System

Risk Analysis Rating System

Likelihood is probability/likelihood of a risk event occurring.

Description	Likelihood of Risk Event Occurring	Rating
Rare	May occurr in exceptional circumstances or has not occurred in the past.	1
Unlikely	Could occurr at some time, historically has not occurred less than once every 5 years.	2
Possible	Has occurred or may occur once or more per year.	3
Likely	Has occurred or may occur on a monthly to quarterly basis.	4
Very Likely	One or more occurrances on a monthly or more frequent basis.	5

Consequence is the potential impact to service levels, health, quality of life or operations.

Description	Consequence of Risk Event Occurring	Rating
Insignificant	Little to no public impact and/or insignificant impact to normal operation/service levels.	1
Minor	Minor public impact and/or manageable operation/service level disruption.	2
Moderate	Moderate public impact and/or significant disruption to normal operations/service levels.	3
Major	Major public impact and/or systems significantly compromised and minimal operation/service levels.	4
Catastrophic	Major public impact, complete failure of system, no service levels provided.	5

Detectability is a measure of the ability to detect the presence of a system, component or asset failure.

Description	Detectability of Risk Event	Rating
Very Detectable	Easy to detect, obvious, almost instantaneous, instrumentation monitored or public complaint.	1
Moderately Detectable	Moderately detectable, alarm may be present, monitoring program in place, problem is noted by staff within 24 hours.	2
Normally Detectable	Normally detectable or identified through normal rounds or regular maintenance, monitoring program in place.	3
Poorly Detectable	Poorly detectable, not normally detected before problem becomes evident, requires specialized condition assessment or investigation required.	4
Undetectable	Cannot detect before problem becomes evident, specialized condition assessment or investigation required.	5

Risk Rating = Likelihood x Consequence x Detectability

Township of Bonnechere Valley Risk Analysis Matrix

Risk Analysis Event	Description of Risk Impact	Monitoring & Control Measures	Emergency/Contingency Plan	"A" Likelihood	"B" Consequence	"C" Detectability	Risk Priority Score (AxBxC)
WATER STSTEM	District description and and Datific to all	SCADA and routine manual monitoring,	la altra	Â			
Valer Quality Contamination (Various scenarios)	biological, chemical, operational, Public health	DWQMS Regulations in place	in piace	2	3	2	12
failure)	Quantity/quality, operational	SCADA system)	In place	1	2	1	2
Feedermain/Watermain Break	Quality/quantity, operational, biological & chemical contamination, loss of pressure, domestic water interruption, potential fire protection impact	Community complaints, annual maintenance/inspection program in place	In place	5	3	3	45
Standpipe Failure	Quality/quantity, operational, fire protection interruption	Level alarms at standpipe, annual maintenance/inspection program in place	In place	2	4	1	8
Hydrant Failure	Operational, loss of domestic water pressure, potential fire protection impact	Community complaints, annual maintenance/inspection program in place	In place	3	3	1	9
Chemical Systems Failure or Spill	Biological & chemical contamination, operational, Public health	Weekly residual testing, daily monitoring, on- line analyzers	In place	1	1	2	2
Failure of intake pipe	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	well, Operator and contractor visual inspection of low levels in intake well, Alarm levels of intake well on SCADA setpoint page	No procedure in place	1	5	1	5
Source Water Characteristic changes (i.e. oil spill, terrorist act, illegal dumping, etc.)	Biological & chemical contamination, operational, Public health	Alarm on SCADA, shutdown low lift station, MOECC Spills action, Source Water Protection Plan	In place	1	5	3	15
Blocked intake screens	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	Low level alarm on intake well, manual screens	In place	2	2	1	4
Structureal/Electrical/Mechanical Failures	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	Alarm on SCADA, redundant back-up equipment, regular inspections	In place	2	4	1	8
Loss of flow/supply	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	Alarm of SCADA, Trunk main repair	In place	1	5	1	5
Chemical feed line/pump failure	Quantity/quality, operational	Coagulant chemical feed flow meter alarmed and trended through SCADA, redundant chemical feed lines, redundant pumps, increase maintenance and inspection	In place	3	5	3	45
Filter failure	Quantity/quality, operational	Turbidty on line analyzers alarmed and trended through SCADA, watertrax alert settings on turbidty data, restrictions on water use, regular assessments	In place	2	5	1	10
Lack of Chlorine supply	Quantity/quality	Low chlorine alarm through SCADA, adjust seasonally, redundant chlorination equipment and feed lines, backup UV for disinfection	In place	1	5	1	5
Structural issues	Operational, loss of domestic water pressure	SCADA alarms, visual inspection	In place	1	2	4	8
Pump failure	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	SCADA alarms, maintenance, replacement program	In place	2	3	1	6
Chemical application - overdosing	Chemical contamination, operational, Public health	Falcon security monitoring, redundancy for SCADA alarms	In place	2	5	1	10
Not able to operate or monitor water treatment or distribution process	Quantity/quality, operational	SCADA alarms, falcon security monitoring, operate plant 24/7, redundant SCADA computers	In place	3	2	1	6
Difficulty maintaining chlorine residual	Quantity/quality	SCADA alarms, redundant chlorination equipment	In place	1	4	1	4
Lack of Redundancy, lack of ability to clean and inspect, unknown valve condition	Quality/quantity, operational, biological & chemical contamination, loss of pressure, domestic water interruption, potential fire protection impact	SCADA alarms, capital planning, redundant feeder main, maintenance and replacement condition assessment, implement inspection program and redundancy	In place	3	5	4	60
Gate valve failure	Quantity/quality, operational, loss of domestic water pressure, potential fire protection interruption	SCADA alarms, preventative maintenance program	In place	1	5	1	5
Contanmination	Quantity/quality	Public comments, captial reconstruction program, leak detection program	In place	3	4	5	60
Breach/lack of security, sabotage/vandalism	Quantity/quality, operational	Alarms and Security system, contingency plan, security inpections	In place	1	2	1	2
Emerging Contaminants	Quantity/quality	Sampling	In place	1	1	1	1
Sustained Extreme Weather	Quantity/quality, operational	Public comments, monitoring	Procedure Under Development	1	2	1	2

Algal blooms	Quantity/quality	MOECC communications, raw water	Procedure Under Development	1	2	1	2
WASTEWATER SYSTEM		montoning	Bereiepinient	, 			
Pumping Station Failure	Potential for flooded basements, Public health, environmental	Liquid level alarms	In place	2	2	1	4
Power Disruption at STP	Potential for flooded basements, Public health, environmental	Standby power and alarming	In place	1	2	1	2
Sanitary Sewer Break	Potential for flooded basements, Public health, environmental	Visual observations	In place	3	3	4	36
Forcemain Break	Potential for flooded basements, Public health, environmental	Visual observations	In place	3	3	4	36
Failure/Collapse of Incoming Sewer Main	No flow or reduced flow into plant, Public health, environmental	Flow measurement at both the Main Pumping Station and Plant, Set-up portable pumping systems to by-pass damaged area	No procedure in place	1	4	2	8
Spill/Discharge of Contaminant into Sewer	Contamination of biological community in plant, contaminant discharge to St. Lawrence River, environmental	Colour/Odour detected by staff, notified by outside agencies, ability to isolate tanks if affected	No procedure in place	2	4	4	36
Screen Failure	Potential for damage to process equipment downstream, force shut down of key plant components, environmental	Alarmed and monitored by SCADA, manual rake of screens, by-pass channel to be installed in 2014	No procedure in place	3	3	1	9
Primary clarifier tank structural failure	Leaking into ground, environmental	Operational SCADA alarms would trigger, isolate affected tank	No procedure in place	1	2	4	8
STORM SYSTEM		ionate anested tank			•		
Storm Sewer Main Break	Surcharging sewers, potential for flooded basements	Visual observations, community complaints	In place	3	3	3	27
ROADS							
Road Surface Icing	Injury to drivers, passengers, vehicle and/or property damage	Road patrols, weather monitoring	In place	5	2	1	10
Road Surface Failure	Vehicle damage	Road patrols	In place	4	1	1	4
Loss of Power/Traffic Signals Malfunction	Injury to drivers, passengers, vehicle and/or property damage	Public complaint, road patrol	In place	4	2	1	8
Night Visibility of Regulatory Signage	Injury to drivers, passengers, vehicle and/or property damage	Scheduled life cycle replacement	In place	4	2	2	16
BRIDGES & CULVERTS							
Road Surface icing	Injury to drivers, passengers, vehicle and/or property damage	Road patrols, weather monitoring	In place	5	2	1	10
Water Blockage Due to Debris	Localized flooding	Road patrols	In place	3	1	1	3
Load Restriction Due to Poor Condition	Cost, invconvenience of longer travel routes	Bi-annual inspections	In place	3	1	3	9
Failure of Structure	Injury to drivers, passengers, vehicle and/or property damage	Bi-annual inspections	In place	1	5	3	15
FACILITIES							
Failure of Structure	Injury to occupants, interruption of business	Annual inspections	In place	1	5	2	10
Roof leak	Damage to business equipment, interruption of business	Annual inspections	In place	2	4	1	8
FLEET							
Failure of vehicle safety system	Injury to drivers, passengers, vehicle and/or property damage	Regualr inpections	In place	2	4	1	8
Vehicle inoperable	Interruption of business	Regualr inpections	In place	2	3	1	6
PARKS & RECREATION							
Failure of Structure	Injury to users	Regualr inpections	In place	1	4	1	4
SOLID WASTE							
Failure of Structures	Injury to occupants, interruption of business	Annual inspections	In place	1	5	2	10
Landtills reach capacity			In place		4	1	4
Failure of Structures	Injury to occupants, interruption of business	Annual inspections	In place	1	5	2	10
Failure of Generators	Interruption of business	Annual inspections	In place	1	4	3	12
Failure of Dam	Injury to occupants interruption of business; property damage public health	Annual inspections	In place	1 1	5	4	20

APPENDIX "G" Procurement

• By-law No. 2019-060

THE CORPORATION OF THE TOWNSHIP OF BONNECHERE VALLEY BY-LAW NO. 2019-060

BEING A BY-LAW TO ADOPT POLICIES AND PROCEDURES GOVERNING THE PROCUREMENT OF GOODS & SERVICES

WHEREAS, Section 271 of the Municipal Act, Chapter 25, S.O. 2001 imposes upon municipalities the obligation to adopt policies with respect to the procurement of goods and services;

AND WHEREAS the Council of the Corporation of the Township of Bonnechere Valley deems it expedient to establish procedural policy for purchasing and tendering.;

NOW THEREFORE, the Council of the Corporation of the Township of Bonnechere Valley ENACTS as follows;

PART I – SHORT TITLE

1. This By-Law may be cited as the "Procurement By-Law".

PART II – PURPOSES, GOALS AND OBJECTIVES

- 1. The purpose, goals and objectives of this By-Law and of each of the methods of procurement authorized are:
 - (a) To ensure openness, accountability and transparency while protecting the financial best interests of the Township;
 - (b) To encourage competition among suppliers;
 - (c) To maximum savings for taxpayers;
 - (d) To ensure service and product delivery, quality, efficiency and effectiveness;
 - (e) To ensure fairness among bidders;
 - (f) To have regard to the accessibility for persons with disabilities to the goods, services, and construction purchased by the Township;
 - (g) The Township will wherever possible, promote and incorporate the requirements of the Accessibility for Ontarians With Disabilities Act, 2005 and the regulations thereunder in Township purchasing activities;
 - (h) To attempt to recue the amount of solid waste requiring disposal through the purchase of environmentally responsible goods and services.

PART III – DEFINITIONS AND SCHEDULES

- 1. The words and phrases listed below when used in this By-Law shall have the following meaning ascribed to them:
 - (a) "CAO" shall mean the Chief Administrative Officer of the Township of Bonnechere;
 - (b) "COMMODITY" shall mean supplies, materials, services, publications, goods or undertaking required from time to time by the Corporation;
 - (c) "CO-OPERATIVE PURCHASING" shall mean the process by which a group of purchasers enter into an agreement to purchase commodities, jointly, to establish greater buying owner, in an effort to obtain lower prices;
 - (d) "CORPORATION" shall mean the Township of Bonnechere Valley;
 - (e) "COUNCIL" shall mean the Council of the Township of Bonnechere Valley;
 - (f) "DEPARTMENT" shall mean a particular municipal function as determined by Council;
 - (g) "DEPARTMENT HEAD" shall mean that person appointed by Council to be in charge of and responsible for a particular municipal function;
 - (h) "DEPARTMENT HEAD DESIGNATE" shall mean that person in charge and responsible for a department in the absence of the Department Head;
 - (i) "QUOTATION" shall mean a price requested and submitted for a specified commodity, either written or verbal;
 - (j) "TENDER" shall mean a sealed bid, indicating the charge for a commodity as invited;
 - (k) "TENDER DOCUMENT" shall mean a document setting out specifications for a product, commodity, service or undertaking;
 - (I) "VENDOR" shall mean the supplier of a commodity.

PART IV – PROCUREMENT PROCEDURES

- 1. PURCHASE OF GOODS
 - (a) Budgeted purchases up to \$5,000.00 shall be authorized at the discretion of the appropriate Department Head, without tender or quote but the transaction shall be in the best financial interest of the Corporation;
 - (b) Budgeted purchase in excess of \$5,000.00 up to and including \$10,000.00 shall require a minimum of two written or verbal quotations;
 - (c) Budgeted purchases in excess of \$10,000.00 shall be processed as per Part IV 3 (a);
 - (d) Non-Budgeted purchases in excess of \$10,000.00 shall be processed as per Part IV 3 (a) and approved by Council. However, 1 (b) may be used at the discretion of the Department Head to a maximum of \$10,000.00;

- (e) Purchases to a maximum of \$100.00 may be paid from Petty Cash;
- (f) Written quotations may be received electronically;
- (g) All maintenance items deemed urgent shall be purchased in the best financial interest of the Corporation.
- 2. QUOTATION PROCEDURE
 - (a) Prices for goods may be negotiated on the open market without advertisement. Negotiations shall follow good business practices;
 - (b) Should a commodity be available only through one supplier, due to repairs to equipment installed by a manufacturer, or for whatever reason, the process of obtaining only one quotation shall first be authorized by the Department Head & CAO.
- 3. TENDERING BY INVITATION
 - (a) Purchases in excess \$10,000.00 up to an including \$50,000.00 may be tendered by invitation. A minimum of three (3) invitations must be requested. However, the tender shall be open, with all tenders accepted and considered. In the case that three invitations, for whatever reason, cannot be requested, the process of obtaining less than three (3) tenders must be authorized by Council.
- 4. TENDERS BY ADVERTISEMENT
 - (a) Purchases in excess of \$50,000.00 shall be open and advertised;
 - (b) Tenders submitted in excess of \$100,000.00 shall include a certified cheque in the amount of 10% of the value of the contract;
 - (c) Tenders shall not be accepted electronically;
 - (d) Tenders shall be delivered to Bonnechere Valley Municipal Office, 49 Bonnechere Street East, Eganville, ON K0J 1T0 or the location specified in the tender document, within the time period required;
 - (e) Tenders, which arrive after the specified deadline will be returned unopened with an accompanying letter;
 - (f) In the event that a late tender package has no return address, said package shall be opened for the purpose of obtaining a return address, resealed and returned as per Part IV 4 (d);
 - (g) Tenders shall be received by municipal staff, who shall indicate, on the tender package, the time and date received.
- 5. TENDERS OPENING
 - (a) Tenders shall be opened by the Tender Committee;
 - (b) The Tender Committee shall consist of:
 - i) The Department Head or his/her designate;
 - ii) The CAO or his/her designate.

- (c) It shall be the responsibility of the CAO to arrange for time and place of the Tender Opening;
- (d) The Tender Meeting shall be open to public;
- (e) The CAO or his/her designate shall open the tenders and call out the following;
 - i) Announce the date and time received on the package;
 - ii) The name of the tenderer;
 - iii) Total Contract Price;
 - iv) Amount of certified cheque or bid bond;
 - v) Announce that the tender has been properly signed and sealed;
- (f) Once opened the following procedure shall ensure:
 - i) Tenders shall be listed and recapped by the Department Head or his/her designate;
 - ii) The Department Head shall analyse and make recommendations to the Council.
- 6. TENDERS PERFORMANCE GUARANTEE
 - (a) Contract awarded in excess of \$100,000.00 shall require a performance guarantee as follows;
 - i) Renewable, irrevocable Letter of Credit (50%) as per attached.
- 7. ADVERTISING TENDERS
 - (a) Notice of "Invitation to Tender" shall be published a minimum of once in at least one daily or weekly newspaper or trade journal with said notice appearing no later than fourteen days before the tender closing date.
 - (b) The tender notice shall contain the following information:
 - i) The name of the Corporation;
 - ii) The project name;
 - iii) Type of work;
 - iv) Location of work;
 - v) The Official designated to receive tenders;
 - vi) The time of tender closing;
 - vii) The location where tender documents;
 - viii) The charge for tender documents, if applicable;
 - ix) Information that "lowest or any tender not necessarily accepted".
- WITHDRAWAL OF TENDER PRIOR TO TENDER OPENING (a) A withdrawal of a tender shall be allowed as follows;

- i) If the request is received prior to the closing time of the tender as advertised;
- ii) Said request must be in writing, signed by an authorized signing officer of the company tendering or by an individual if sole proprietorship.

PART V – GENERAL PROCUREMENT AND PURCHASES

- 1. AWARDING OF TENDERS AND PURCHASES
 - (a) The following criteria shall be used for the purpose of awarding tenders and/or purchases:
 - i) Tender price;
 - ii) Financial stability of the supplier of the commodity or service;
 - iii) Ability to fulfil contract;
 - iv) Adherence to specifications;
 - v) Quality standards.
 - (b) Tenders shall be awarded by resolution of Council.
 - (c) Tender deposits shall be dealt with as follows:
 - i) The tender deposit for the lowest tender shall be retained until the tender is accepted and the performance guarantee is received;
 - ii) The tender deposit for the second lowest tender is accepted. If the lowest tender is rejected the second lowest tender shall be subject to Part V 1. (c) (i);
 - iii) All other tender deposits shall be returned within two working days of the tender opening.
 - (d) Upon payment for services, an amount equal to 10% of the requested payment shall be withheld under the provisions of the Construction Lien Act.
- 2. NEGOTIATIONS
 - (a) Purchase by negotiation with one or more sources or bidders shall be permitted under the following circumstances and requirements for inviting tenders and quotations may be waived:
 - i) When in the judgement of the Department Head, goods are judged to be in short supply, due to market conditions;
 - ii) Where there is only one source of supply for the commodity;
 - iii) Where two or more identical bids have been received;
 - iv) Where the lowest quotation, excluding tenders, meets the specifications, but is excessive in total cost and substantially exceeds the estimated costs;

- v) When the process of purchase by negotiation is invoked, it shall be conducted jointly by a special tender committee made up in the same manner as per Part IV 5 (b).
- 3. CO-OPERATIVE PURCHASING
 - (a) Co-operative purchasing with other Municipalities, Boards, Commissions, Agencies and other levels of government, etc. shall be permitted;
 - (b) The method of purchasing and sharing of costs shall be determined by the CAO in co-operation with the partner or partners in the Cooperative Purchasing Plan;
 - (c) Co-operative Purchases may be undertaken at he discretion of the CAO provided that he discretion of the CAO provided that monies are allocated for said commodity in the current budget;
 - (d) Purchases not allocated in the current budget shall require Council approval.
- 4. EMERGENCY PROCEDURE
 - (a) Where an emergency or pending emergency exists, in the opinion of the Department Head, constituting imminent danger to life and/or property and to prevent the disruption of work or service to the public, the immediate procurement of commodities may be made by the Department Head;
 - (b) Procurement of commodities shall be on the open market, at the lowest obtainable price, regardless of the amount of the expenditure;
 - (c) When such a purchase is made, the Department Head is required to file a report to council within five days.
- 5. DISPOSAL OF SURPLUS EQUIPMENT OR SUPPLIES
 - (a) Equipment or supplies shall be offered to other departments prior to item (b) being invoked;
 - (b) Equipment or supplies to be offered for sale must first be declared surplus by Resolution of Council upon the recommendation of the Department Head;
 - (c) Said equipment or supplies shall then be advertised as per Part IV 7 (a);
 - (d) Tenders shall be received and sale awarded as per Part IV 8.
- 6. The Township will ensure this By-law and Supporting Policies and Procedures are made readily accessible to the public
- 7. This by-law repeals By-Law 2005-13.

READ A FIRST & SECOND TIME THIS 5TH DAY OF NOVEMBER 2019 READ A THIRD TIME AND PASSED THIS 5TH DAY OF NOVEMBER 2019

Jennifer Murphy, Mayor

Sandra Barr, Acting CAO

APPENDIX "H" Long Term Financial Plans

Township of Bonnechere Valley Capital Projects Listing 20 Year Plan

			Original Asset	t		Useful									7-10 years 2028 - 10 -	15 years 2031 -	15-20 years 2047 -	
ocation	Description of Activity	Estimated cost	ID	Asset Category	Asset ID	life	Operating Account Desc.	2021	2022	2023	2024	2025	2026	2027	2030	2046	2067	Unalloc
ater Treatment Plant Inspectio	n																	
Raw Water Intake	Inspection	\$ 75,000)				2444007165 Engineering & Consulting			\$ 75,000								\$
ater Treatment Plant	Replace old polymer system - 1	\$ 53,000	No old asset	Water Equipment		30	Acquisition of tangible capital	l assets - water		\$ 53,000								\$
ater Treatment Plant			WTPME09-															
rbidimeter replacements	Replacing 4	\$ 50,000	1A,1B,2A,2B	Water Analyzer		10	Acquisition of tangible capital	l assets - water	\$ 50,000									\$
ater Standpipe	Install mixing system	\$ 25,000)	Water Equipment	WTPME17	25	Acquisition of tangible capital	l assets - water	\$ 25,000									\$
ter Treatment Plant Replacing																		
e GAC Filter Media		\$ 80,000)				2444002010 Materials & Supplies		\$ 80,000									\$
ater Treatment Plant	Resurface asphalt parking	\$ 10,000)	Pavement Area	WTPPKLT01	30									\$ 10,000			\$
ter Treatment Plant	Long Term Penjacement of Monoplant system	¢ 4.029.000	WIPMONOPLANIS	Water Equipment	WIPMONOPLANI -	40									ć	4 028 000		ć
ter Treatment Plant	Desess System Legrades	\$ 40,000	1,-2	water Equipment	3,-4	40	2444002070 Equipment Pennirs & Maint				ć 40.000				2	4,058,000		\$
ter Treatment Plant	Print Open Web Steel Joint	¢ 40,000	,				2444002170 Equipment Repairs & Maint			ć 40.000	÷ 40,000							÷
ter Treatment Plant	Install Caustie Soda Sustem	¢ 10.000		Water Equipment	WTDME	25	2444007140 Building Waintenafice			40,000							\$ 10.000	2 C
ater Treatment Plant	Pronane Boiler	\$ 10,000	, j	Building Component	WTPBI D01-	20	Acquisition of tangible capital	assets - water		\$ 60.000							Ş 10,000	¢
ater Treatment Plant	Propane Boller Benjace Knife Cate Valve on Treated Water Trough	\$ 30,400	, j 1	building component	WIT DEDOI-	20	2444002070 Equipment Repairs & Maint	assets - water		5 00,000	ć	20,400						ć
	Filter Water Splitter Box	\$ 15,000	· 				2444002070 Equipment Repairs & Maint		\$ 15,000	1	*	20,400						Ś
ater Treatment Plant	C-Factor Testing for Improvement to Hydraulic Model	\$ 15,000	1				2444007165 Engineering & Consulting		ç 13,000		\$ 15,000							ć
ater Treatment Plant	Detailed Inspection of High Lift Pumps	\$ 10,800	1				2444007165 Engineering & Consulting				\$ 15,000		\$ 10,800					Ś
ater Treatment Plant	Master Services Plan	\$ 51,000	1			+	2444007165 Engineering & Consulting				\$	51.000	20,000				1	Ś
ter Treatment Plant	Water Main Replacement Program	\$ 4.810,000)								*	,					\$ 4,810,000	i Š
ter Treatment Plant	Hydrant and Valve Beplacement Program	\$ 1,492,000)														\$ 1,492,000	i Š
ter Treatment Plant	Water Services Replacement Program	\$ 360,000)														\$ 360,000	Ś
ater Treatment Plant	Water Meter Benlacement Program	\$ 340,000					Acquisition of tangible capital	lassets - water	\$ 340.000	1							500,000	Ś
ater Treatment Plant	Belining of John Street Water Main	\$ 350,000)				Acquisition of tangible capital	lassets - water	,		\$ 350,000							Ś
			PUMP-01-2013.02-								+,							•
	Replace High Lift Pumps - 3 pumps @ \$55.000	\$ 165.000	2013.03-2013	Water Pumps	PUMP-XX	20											\$ 165.000	Ś
			PUMP-07-2013,08-															
	Replace Low Lift Pumps - 3 pumps @ \$40,000	\$ 120,000	2013,09-2013	Water Pumps	PUMP-XX	20											\$ 120,000	\$
																		\$
	Subtotal Water	\$ 12,230,200)					\$-	\$ 510,000	\$ 228,000	\$ 405,000 \$	71,400	\$ 10,800	\$-	\$ 10,000 \$	4,038,000	\$ 6,957,000	\$
						Add 15												
art of Insulation Projects (A)	Engineering for Bridge Street Force Main	\$ 30,000	0 S-0999	Sewer Main		Years	Acquisition of tangible capital	l assets - sewer	\$ 30,000									
				Sewage Facility														
wage Treatment Plant	Upgrade Instrumentation and control system	\$ 540,000	5	Components	XXX	25									\$ 540,000			\$
wage Treatment Plant	Exterior Lighing	\$ 18,000	0				2442007140/2 Building Maintenance	\$ 18,000										\$
wage Treatment Plant	Replace 1970 Control Building Structure	\$ 750,000	STPBLD01	Buildings		50									\$	750,000		\$
				Sewer Facility														
wage Treatment Plant	Replace 1970 prefabricated unit	\$ 3,000,000	D STPME05	Component		60									\$	3,000,000		\$
O Tube	Dewatering Pad #3 - Pad Re-Construction	\$ 10,000	0				2442007140 Building Maintenance			\$ 10,000								\$
wage Treatment Plant	Retaining Wall at the Sewage Plant	\$ 20,000	0				Acquisition of tangible capital	l assets - sewer		\$ 20,000								\$
						Add 15												
wage Collection (A)	Insulation on the force Main on the Bridge - Betterment	\$ 100,000	S-0999	Sewer Main		Years	Acquisition of tangible capital	a		\$ 100,000								\$
wage Collection	Replacement of Sanitary Sewer to North Side Station(jane to NSPUMP)	\$ 300,000	Various Assets												\$ 300,000			\$
wage Treatment Plant	Master Servicing Plan	\$ 50,000	D				2442007165 Engineering & Consulting				\$	50,000						\$
wage collection	Sewage Main Replacement Program	\$ 4,291,000	J								ļ				\$	4,291,000		\$
wage collection	Sanitary Manhole Replacement Program	\$ 962,000	1												\$	962,000		\$
wage collection	Sanitary Sewer Service Replacement Program	\$ 863,000)												\$\$	863,000	ļ	\$
wage i reatment Plant	Exterior Doors	5 10,000	0	Flasteler Con.	COUNTRY	25	2442007140 Building Maintenance		\$ 10,000						20.000			-
	Generac Generators 2 @ 15000	\$ 30,000	U	Electrical Generators	S COLMEXX	25									\$ 30,000			
	Subtotal Sewer	\$ 10,974.000	D					\$ 18.000	\$ 40.000	\$ 130.000	s . s	50.000	s -	s -	\$ 870.000 \$	9.866.000	\$ -	Ś
	Total Water & Sower	\$ 23 204 200						÷ 10,000	÷ +0,000	¢ 250,000	+ + +	424.000	÷	*	¢ 000,000 \$	12 004 000	*	ć
		23.204.200						18 000	>>>0.000	358,000	3 405,000 S	121.400	5 10.800		S 880.000 S	13 904 000	5 6.957.000	

Township of Bonnechere Valley Water and Sewage Department Financial Plan 2021 to 2027

			Staten	nent of Operat	ions		
	2021	2022	2023	2024	2025	2026	2027
	\$	\$	\$	\$	\$	\$	\$
Revenue							
Water Meter Revenue	499,838	512,321	524,895	538,190	551,713	565,319	579,757
Sewage Revenue	443,253	454,322	465,473	477,263	489,255	501,320	514,124
Sludge							
Reserves	150,000	270,000	245,000	245,000	245,000	245,000	245,000
Provincial/Federal Assistance Programs		204,000	100,000	350,000			
From Generations							
	1,093,091	1,440,643	1,335,367	1,610,453	1,285,968	1,311,639	1,338,881
Expenditures							
Sewage:							
Amortization Expense	178,209	151,673	160,340	161,140	160,913	160,875	140,399
Contracts	34,906	46,441	43,233	42,042	91,264	41,888	42,324
Insurance	9,073	9,981	10,979	12,076	13,284	14,612	16,074
Interest Expense	-	-	-	-	-	-	-
Materials/Supplies	59,922	62,890	53,706	57,624	65,364	69,707	59 <i>,</i> 582
Office Supplies	241	218	223	229	234	240	246
Repairs & Maintenance	29,563	37,025	38,191	28,044	28,572	29,777	29,670
Salaries	119,236	121,433	123,474	124,018	123,947	124,489	125,031
Sludge Disposal	12,454	11,454	12,740	12,034	13,335	12,643	13,959
Taxes	2,110	2,163	2,217	2,273	2,329	2,388	2,447
Utilities	43,169	44,051	45,156	46,288	47,448	48,637	49,854
(Gain)/Loss on Disposal of Assets							
Capital Repairs & Maintenance							
	488,884	487,329	490,258	485,767	546,691	505,255	479,585

Township of Bonnechere Valley Water and Sewage Department Financial Plan 2021 to 2027

			Statement of Operations							
		2021	2022	2023	2024	2025	2026	2027		
Water:										
	Amortization Expense	225,562	220,827	227,759	232,508	248,962	248,350	247,010		
	Contracts	56,505	52,163	123,525	67,513	105,728	63,536	53,364		
	Insurance	9,073	9,981	10,979	12,076	13,284	14,612	16,074		
	Interest Expense	27,359	23,289	21,206	19,047	16,810	14,490	12,086		
	Materials/Supplies	53,495	146,096	60,254	60,732	71,983	72,711	66,275		
	Office Supplies	533	508	520	533	547	561	575		
	Repairs & Maintenance	39,369	52,165	78,656	78,840	60,106	41,255	41,499		
	Salaries	239,001	243,051	247,139	248,217	249,552	250,633	250,492		
	Taxes	7,321	7,504	7,692	7,884	8,081	8,283	8,490		
	Utilities	61,001	62,523	66,089	67,694	69,339	71,024	72,751		
	(Gain)/Loss on Disposal of Assets		103,131							
	Capital Repairs & Maintenance	58,970								
		778,190	921,237	843,818	795,045	844,392	785,456	768,615		
Total Expenditures		1,267,074	1,408,566	1,334,076	1,280,812	1,391,083	1,290,710	1,248,200		
Annual	Sumplus ((doficit)	(172.002)	22 077	1 201	220 641	(105 115)	20.020	00.690		
Annual Surplus/(deficit)		(1/3,983)	32,077	1,291	329,641	(105,115)	20,929	90,680		

		Statement of Cash Flow							
		2021	2022	2023	2024	2025	<u>2026</u>	2027	
		\$	\$	\$	\$	\$	\$	\$	
Operati	ing transactions:								
Cash re	ceived from								
	Revenues - water and sewage	1,093,091	1,440,643	1,335,367	1,610,453	1,285,968	1,311,639	1,338,881	
Cash pa	id for:								
	Operating costs - sewage	310,675	335,656	329,918	324,627	385,778	344,380	339,186	
	Operating costs - water	525,269	573,990	594,853	543,489	578,620	522,615	509,519	
	Finance Charges	27,359	23,289	21,206	19,047	16,810	14,490	12,086	
		863,303	932,936	945,978	887,163	981,208	881,485	860,791	
Capital	transactions:								
	Acquisition of tangible capital assets - sewage		30,000	120,000					
	Acquisition of tangible capital assets - water		415,000	113,000	350,000				
	Cash applied to capital transactions	-	445,000	233,000	350,000	-	-	-	
Finance	transactions:								
	Proceeds from issue of debt	-	-	-	-	-	-	-	
	Debt repayment	113,920	57,068	59,531	61,310	63,547	65,867	68,271	
	Cash applied to financing transactions	113,920	57,068	59,531	61,310	63,547	65,867	68,271	
Increase	e (decrease) in cash and cash equivalents	115,869	5,640	96,859	311,979	241,213	364,287	409,818	
Cash an	d cash equivalents, beginning of period	494,049	609,918	615,557	712,416	1,024,395	1,265,608	1,629,895	
Cash and cash equivalents, end of period		609,918	615,557	712,416	1,024,395	1,265,608	1,629,895	2,039,714	

	Statement of Financial Position							
		2021	2022	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>
		\$	\$	\$	\$	\$	\$	\$
Financial Assets								
	Cash & Cash Equivalents	609,918	615,557	712,416	1,024,395	1,265,608	1,629,895	2,039,714
Liabilities								
	Debt - need remaining debt	638,064	580,996	521,846	460,536	396,989	331,122	262,851
Net financial assets (debt)		638,064	580,996	521,846	460,536	396,989	331,122	262,851
Non-financial assets								
	Tangible capital assets (net)	6,945,801	7,015,171	6,760,072	6,716,424	6,306,549	5,897,324	5,509,915
Cash as a percentage of net fixed assets 8.8%		8.8%	10.5%	15.3%	20.1%	27.6%	37.0%	
Debt as a percentage of net fixed assets 9.2%		8.3%	7.7%	6.9%	6.3%	5.6%	4.8%	