VILLAGE OF WESTPORT ASSET MANAGEMENT PLAN

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1.0 EXECUTIVE SUMMARY

1.1 Problem and Opportunity

In order to properly allocate the resources required to meet service levels, municipal managers, Councils, and ratepayers need up-to-date useful information. This information is typically described within an Asset Management Plan. Asset management is essentially a decision support tool intended to provide information municipalities need to make the right decisions at the right time to optimize the useful life expectancy of each municipal asset for the best overall value and provide guidance towards financing ongoing maintenance and eventual replacement of those assets.

The Ontario Ministry of Infrastructure's "Building Together: Guide for Municipal Asset Management Plans" has been utilized as a template in developing the Village of Westport Asset Management Plan (AMP) and the Village's Strategic Plan has also been considered within the AMP. This AMP 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
- Wastewater
- Stormwater
- Roads
- Bridges
- Facilities
- Parks & Recreation

It is recommended that the AMP be revisited, re-evaluated, and updated on an as required basis as information inevitably changes over time.

1.2 Local Infrastructure Big Picture

Based on estimated current valuation, the Village of Westport (the Village) owns and operates approximately $13 Million in water, wastewater, stormwater, roads, bridges, facilities, and parks & recreation assets that support ratepayer and Public services in the Village. The 2019 estimated replacement valuation of this infrastructure is approximately $40 Million. Presently, the Village maintains a fair to good level of service for these major asset categories.

Currently, much of the Village's infrastructure is approximately halfway through its ideal useful 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 Village 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.

The Village currently requires a significant infrastructure investment in order to improve roadway and sidewalk infrastructure. Replacement of Bedford St. roadway is the Village's highest priority and funding this project will require additional grants/subsidies beyond the

capacity of the Village's tax and user rate base. The Village has begun the conceptual design of the Bedford St. Roadway project; however, due to the expected cost of the project, it will placed a burden on the Village's finances due to high costs per capita.

1.3 Asset Condition and Rating

All management decisions regarding maintenance, rehabilitation and renewal revolve around a good understanding of *the condition of their assets* and *how they are performing*.

Asset condition reflects the physical state of the asset, which may or may not 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 – those 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.

1.4 Village of Westport Infrastructure Report Card

Asset Group	% of Estimated Replacement Valuation	Condition Estimate	Priority
Water System	17%	Fair	NORMAL
Wastewater System	39%	Good	NORMAL
Stormwater System	2%	Fair	NORMAL
Roads & Sidewalks	12%	Fair to Poor	HIGH
Pedestrian Bridge	1%	Fair	NORMAL
Facilities	28%	Average	NORMAL
Parks & Recreation	2%	Average	NORMAL

The above Report Card represents the current status of infrastructure in the Village. Of particular note is the current condition of the Roads and Sidewalks. The pavement structure (both surface and subsurface layers) of Bedford St. has made the requirement for replacement of the roadway and associated drainage system necessary to maintain transportation, economic

benefit and safety. This is currently recognized as the Village's highest infrastructure priority and conceptual design of the facility has begun. It has been determined that the Village requires complete financing of the project at this point in time.

1.5 Funding Report Card

Funding of Roadway, Sidewalks and stormwater infrastructure rehabilitation remains a challenge for the Village.

It has been determined that to fully pay for the infrastructure life cycle costs through the tax levy 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 at budget time 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.

It has been determined that tax increases to sustain infrastructure to desired service levels is beyond the affordability of taxpayers when considered with the property tax increases which will be required for core services such as policing and road infrastructure.

The implications of aging infrastructure are becoming apparent and long term financing strategies become more important through an effective AMP.

1.6 Concluding Statement

The asset management plan framework presented is meant to guide Council and staff so that they can better 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 Village to make informed and cost effective decisions. Economic benefits apply to a diversity of stakeholders including the Village, 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 Village change and as new asset information emerges.

2.0 INTRODUCTION

2.1 What is an Asset Management Plan?

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 preclude 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 maximized. 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?

A large portion of the infrastructure in the Village is mid-way through its useful life cycles since a significant investment in infrastructure was made during the early 1970s. As with any aging infrastructure, the Village can expect an increase in maintenance and operating costs, and also ultimately new costs for renewal and replacement at some point in the future.

In order to properly allocate the resources required to meet service levels, staff and Council need a summary document which identifies the technical and financial needs of assets and this information is best described within an AMP. Asset management is essentially a decision support tool intended to provide the information municipalities need to

make the right decisions at the right time to optimize the useful life expectancy of each asset for the best overall value.

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

Specific benefits associated with an AMP are:

- 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; and
- 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:

- Life Cycle Approach – Plan using the full life cycle costs of infrastructure assets (capital costs, operating and maintenance, rehabilitation, disposal, etc.).
- Cost-Effective Management Strategies – 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).
- Defined Levels of Service – 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.
- Demand Management – Recognize that future changes that are anticipated within the municipality and how these might impact the services you provide (i.e., population, demographic or regulation changes, etc.).

- Risk Management – Plan for managing the risks associated with providing services, including those that can result from failure of key critical infrastructure.

- Sustainable Use of Physical Resources – Plan to ensure services can be provided into the future in a sustainable and affordable way.

- Continuous Improvement – 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.

A key benefit of completing an AMP is to document 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 which 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.

The Village adopted a Strategic Plan in January 2015 which is intended to create new opportunities for growth and development in the future. The Strategic Plan is part of a desire to bring the Village's Vision, Mission, and Official Plan up to date.

Per the Strategic Plan, the Village of Westport **Vision Statement** states:

"A progressive people-centered community that enhances the quality of life for its residents and visitors."

The **Mission Statement** from the Strategic Plan further notes that:

"Providing services that promote a friendly, safe, and sustainable community which reflects the needs of all of those who work, live, and visit the Village of Westport."

The Mission Statement is supported by four (4) Core Values in reviewing or undertaking actions in the Village. Westport's Values include:

- ***Integrity -*** Through honesty and openness we earn the trust of the people we serve.
- ***Transparency -*** Committed to keeping the public informed about Town Hall activities.
- ***Community engagement -*** Community engagement is foundational to the safety and sustainability of our community; people are the backbone of Westport.
- ***Professionalism -*** We adhere to a high standard of excellence.

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

2.5 How does An Asset Management Plan Support a Capital and Operating Financial Plan?

Having a 10 year Capital Plan budget would allow the Village to identify timing for priority asset renewal, rehabilitation, or replacement and the cost to construct these assets.
A Capital Plan would include all municipal asset categories and would align with the categories in this AMP. *These priority projects could be amended annually based on asset management information gathered by staff.* This medium term infrastructure planning process would have regard for asset data stored in spreadsheets and databases, as well as known operational problems or issues identified by municipal staff. At a minimum the following infrastructure information should be maintained by municipal staff:

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

For any 10 Year Capital Plan, infrastructure projects and budgets are identified, prioritized, and reviewed annually by municipal staff. 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. In June 2016 a Water & Wastewater Financial Plan was prepared for The Village, which includes a 10 year financial planning forecast. Using this Water & Wastewater Financial Plan as a base, the Village would greatly benefit from a comprehensive 10 Year Capital Plan for all of its assets.

2.6 Village of Westport 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 scope of this AMP includes Water, Wastewater, and Stormwater Assets, as well as Roads, Bridges, Facilities, and Parks & Recreation.

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 adapted 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" (the Guide) has been utilized as a template in developing the AMP. This AMP meets the requirements of the Guide and has been particularly structured based on Section 3 of the Guide.

The Village's AMP has been designed as a "living document". It is intended to be revisited, re-evaluated, and updated as required.

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

- *2012 Risk Management Inspection, 2012*
- *Village of Westport Asset Management Plan (Working Draft), December 2014;*
- *Village of Westport Strategic Plan 2015-2018, January 2015;*
- *Village of Westport Official Plan, adopted March 2006, Consolidated July 2008;*
- *Village of Westport Capital Budget Summary;*
- *Village of Westport Water and Wastewater Ontario Regulation 453/07 Financial Plan #268-101, June 2016;*
- *Village of Westport Consolidated Financial Statements, 2013-2015;*
- *Village of Westport Proposed Rehabilitation/Expansion of the Westport WWTS Municipal Class EA Environmental Study Report, December 2015;*
- *Village of Westport Public Sector Accounting Board (PSAB) 3150 Road Section Valuation Model, 2007;*
- *"Sewage Treatment Plant Electrical and Process Assessment", 2013;*
- *"Asset Management Program Report [Draft]", 2009;*
- *"Asset Inventory" (List), 2009;*
- *"Facility Inventory and Review", 2007;*
- *"Road Needs Study", 2007;*
- *"Sanitary Sewer System Inventory", 2009;*
- *"Water Distribution System Inventory", 2009;*
- *"Footbridge OSIM Report", 2008, 2013;*
- *"Water Tower Inspection Report", 2008, 2013; and*
- *"Sanitary Sewer Inflow and Infiltration Report", 2013.*
- *2018 Streetscan Study*

3.0 STATE OF LOCAL INFRASTRUCTURE – ASSET INVENTORY

3.1 Background

Based on estimated current replacement valuation, the Village owns and operates approximately $13 Million in water, wastewater, stormwater, roads, a pedestrian bridge, facilities, and parks & recreation assets which support ratepayer and Public services to the Village. These assets have a replacement value of approximately $40 Million. Currently, the Village maintains a fair to good level of service for these infrastructure categories. In general, these assets are approximately midway through their life cycle.

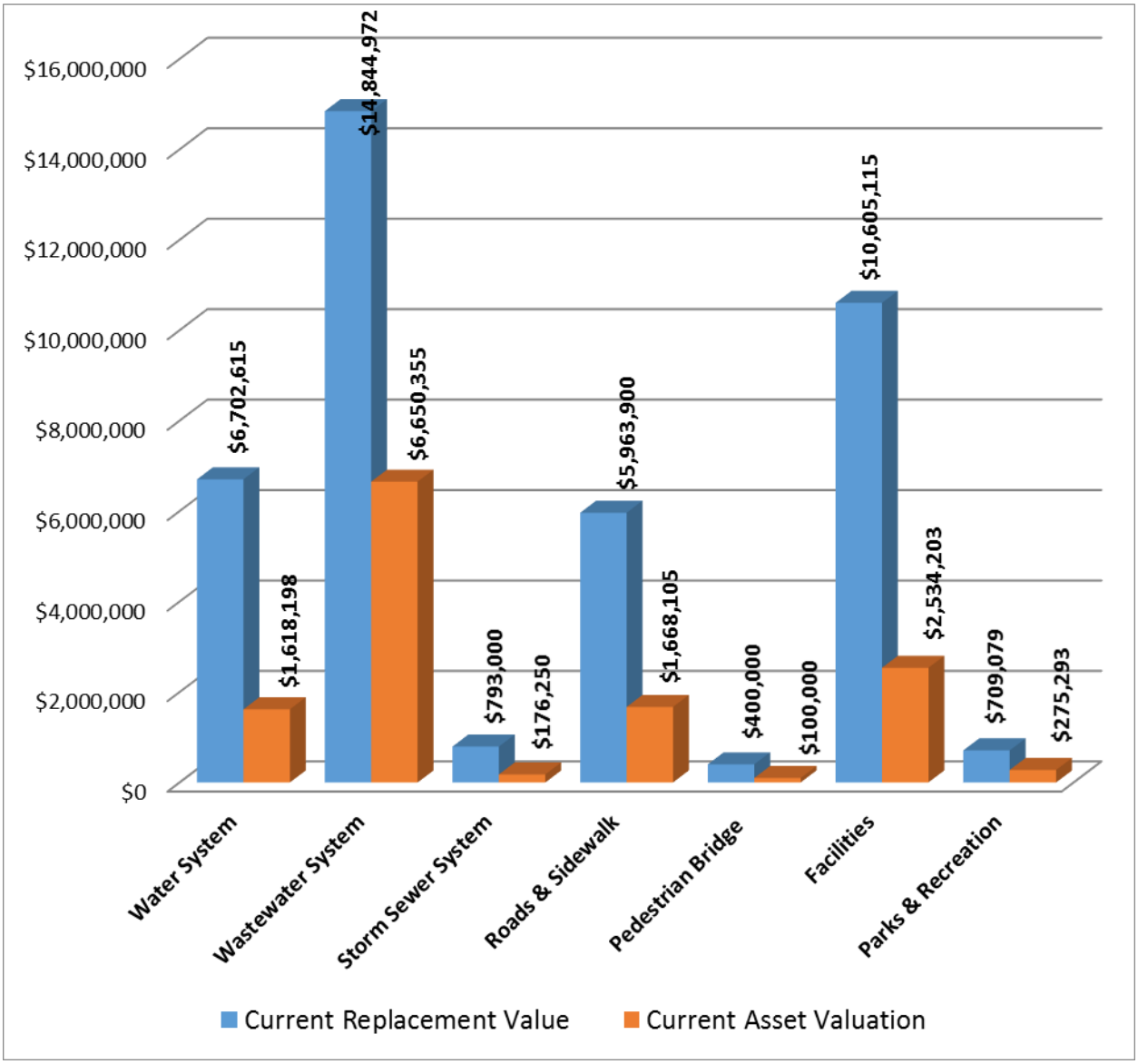


Figure 1: Current Estimated Value of Village Infrastructure

Table 1 – Asset Components

Asset Component	Estimated Current Asset Value	Estimated Replacement Value
Water System	$1,618,198	$6,702,615
Wastewater System	$6,650,355	$14,844,972
Storm Sewer System	$176,250	$793,000
Roads and Sidewalks	$1,668,105	$5,963,900
Pedestrian Bridge	$100,000	$400,000
Facilities	$2,534,203	$10,605,115
Parks and Recreation	$275,293	$709,079
	$13,022,404	**$40,018,681**

The asset inventory information contained in this section of the AMP has been developed based on background information and reports provided by the Village.

It should be noted that the Village does not have any assets in the following categories:

- Fleet/Public Transit
- Solid Waste (collection and processing is contracted out)
- Community Energy Systems
- Capacity Building
- Short-sea shipping
- Short-line rail
- Regional or local airport
- Broadband Connectivity
- Brownfield Redevelopment

3.2 Water System

The Village provides municipal water to all residents of the Village and is dedicated to delivering a clean, safe, reliable, drinking water supply while remaining compliant with all regulatory requirements. In general, major components of the water system are approximately 40 to 50 years old on average. 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 are funded through consumption-based user fees, flat rate user fees, federal gas tax, Provincial/Federal Assistance Programs, and new debt.

An overview of the Village's water system is presented in Drawing No. 1 with major components summarized in Table 1. The system generally consists of Water Treatment Plant (WTP), an underground network of distribution piping, and an elevated storage tank. The distribution system consists of approximately 5.6km of underground piping as well as 42 hydrants and 309

water service meters and corresponding service connections to individual properties. The WTP consists of two groundwater supply wells and a UV and chlorination disinfection system. It conveys water into the distribution system which consists of pipes ranging in size from 150mm (6") to 200mm (8"). Pipe material includes poly vinyl chloride (PVC). The entire water system piping is of the early 1970's vintage.

Table 2 – Water System Summary

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Water Distribution Pipes	5,606m	75	44	41
Hydrants	42	75	44	41
Valves	52	75	44	41
Water Service	308	60	44	27
Water Meter	308	60	44	27
Elevated Water Tower	1	75	44	41
Water Treatment Plant	1	75	44	41

The WTP was constructed in 1971 with recent major upgrades including commissioning of a new well and integration of supplementary disinfection through UV. The Village's Permit to Take Water allows a maximum of 900m^3/day. There are a number of major supporting infrastructure components located in the WTP building and on the WTP site. The WTP and its major supporting infrastructure have been treated as one entity in this AMP.

The Village's elevated water tower underwent significant renewal in 2005 that included minor structural improvements and a new coating system.

3.3 Wastewater System

The Village is responsible for the collection and treatment of wastewater generated within the community and provides this service to all Westport residents. In addition to maintaining the collection and treatment system, the Village must ensure that the wastewater treatment plant is operated within strict 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, federal gas tax, Provincial/Federal Assistance Programs, and new debt.

An overview of the Village's communal wastewater system is presented in Drawing No. 2 with major components summarized in Table 2. The system generally consists of approximately 4.9km of wastewater collection piping, one pumping station, and 62 sanitary maintenance holes. The sewage collection system consists of underground pipe, ranging in diameter from 200mm (8") to 375mm (15"). Pipes are generally Asbestos Cement. The wastewater system was constructed in the early 1970's.

Table 3 – Wastewater System Summary

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Sanitary Sewer Collection Pipes	4,900m	75	44	41
Sanitary Maintenance Holes	62	75	44	41
Forcemain	840m	75	44	41
Sanitary Services	308	60	44	27
Sewage Pumping Station – *Above Ground/**Below Ground	1	50	44* / 2**	84
Wastewater Treatment Plant – 2 Wastewater Lagoons	1	75	44 / 20	57
Wastewater Disposal – LSSDS	1	50	1	100

The Village's only sewage pumping station recently underwent a renewal where the majority of the underground portion of the station was replaced and rehabilitated. However, some components of the station remain mature. These include the backup generator and associated building that contains monitoring equipment. The service life of the overall pumping station is, therefore, recognized by a combination of the two ages.

Similarly, the wastewater treatment plant is also represented by two vintages of infrastructure. The facility's original sewage lagoon was constructed with the majority of the Village's underground utilities in the early 1970s. A "Snowfluent" plant and a second lagoon were constructed in the mid-1990s. The Snowfluent Plant has since been decommissioned.

In its current configuration, the Village's sewage treatment facility is using two facultative lagoons to treat sewage effluent. However, significant changes to the facility have been undertaken to rehabilitate the site with a new Large Subsurface Disposal System (LSSDS) with a substantial performance date of July 2019. Elements of the previous sewage treatment plant that remain in operation include two wastewater lagoons, transfer pumps, metering systems, electrical and mechanical controls, valves, associated interior and exterior piping, ancillary buildings, earthworks, and monitoring wells.

3.4 Stormwater System

The stormwater system generally consists of a network of underground piping, structures, and maintained ditches that carry stormwater to local creeks or the Upper Rideau Lake. The stormwater system is designed to manage rainfall and snowmelt and control potential flooding in certain areas of the Village. Annual operating, maintenance, and renewal of the stormwater system are funded through tax rates, federal gas tax, Provincial/Federal Assistance Programs, and new debt.

Storm sewer and drainage mapping for the Village is limited, therefore, Table 3 is only an approximate stormwater asset inventory.

Table 4 –Stormwater System Summary

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Storm Sewers	613m	80	44	45
Storm Structures – Maintenance Holes & Catch Basins	30	75	44	41

3.5 Roads

The Village owns and maintains a road network, as well as sidewalks, and street lights for residents and the general public. All road assets are operated and maintained with the intention of being safe and accessible. Road assets allow movement of goods and people within and around the Village and are one of the most visible infrastructure assets to the general public. The Village manages the road network as a series of local roads. Surface types include hot mix asphalt and gravel. The Village

classifies their roads by profile types rural, semi-urban, and urban. Annual operating, maintenance, and renewal of the road system are funded through tax rates, Federal Gas Tax, Provincial/Federal Assistance Programs, and new debt. It should be noted that the scope of this AMP, roads include paved width and curbing, but does not include road signs.

An overview of the Village's road network is presented in Drawing No. 3 with major components summarized in Table 5. There are approximately 4.2km of Local roads operated and maintained by the Village. The Village's most recent Road Needs Study (RNS) developed an effective and practical Pavement Condition Index (PCI) system which rates a roads overall pavement condition and ride comfort rating. Pavement condition and ride comfort rating will be re-evaluated when the RNS is updated.

Several other roads within the Village are maintained by the County of Leeds and Grenville. County Roads 10, 12, and 42 serve the Village by connecting to the Town of Perth, the City of Kingston, and the City of Brockville.

Table 5 – Roads Summary

Asset Component	Quantity (m)	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Rural Road	130	60	31	48
Semi-Urban Road	2,745	60	31	48
Urban Road	1,334	60	26	56
Sidewalk	5,960	60	29	52
Street Lights	142 (ea)	40	20	50

3.6 Bridges

The Village owns, and operates only one (1) pedestrian bridge which connects the mainland to the harbour. The Village does not have any vehicular traffic bridges. Annual operating, maintenance, and renewal of Village owned bridges are funded through tax rates, Federal Gas Tax, Provincial/Federal Assistance Programs, and new debt.

The concrete arch pedestrian bridge was constructed in the early 1960's and is approximately 2m wide and 22m long.

The location of the pedestrian bridge can be seen on Drawing 3 and is summarized in Table 5.

Table 6 – Bridge Summary

Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Pedestrian Bridge	1	75	56	25

3.7 Facilities

The Village owns, operates, and maintains 9 facilities that all require annual maintenance. These facilities include administrative, recreational, and tourist facilities, as well as cultural and historical buildings. It is unknown if any of these facilities are post disaster buildings. Table 6 presents a comprehensive summary of all Village owned facilities.

Table 7 – Facilities Summary

Facility	Location	Year Constructed	Approximate Area (square feet)	Average Ideal Service Life (Years)	Estimated % of Service Life Remaining
Municipal Office, PUC Office & Garage	30 Bedford Street	1860	3,500	75	N/A*
Arena & Community Centre	37 Spring Street	1975	26,500	75	45
Fire Hall	31 Spring Street	1980	3,800	75	52
Post Office	36 Main Street	1980	1,550	75	52
Information Centre	3a Spring Street	1995	1,350	60	65
Public Library	3 Spring Street	1987	2,600	60	52
Museum	29 Bedford Street	1860	1,500	75	N/A*
Picnic Shelter	East end Spring Street	2000	500	50	68
Storage Shed	30 Bedford	1980	750	30	0
Lockwood Stage	Lockwood Park	2018	750	40	40

**Historic building being maintained past normal life expectancy*

Municipal Office/PUC Office/Garage

Approximate Construction Date: 1856
Additions were constructed 40-50 years ago. Interior renovations were completed approximately 6-7 years ago.

Facility Summary: Facilities are in Average condition. In the last ten years the roof has been replaced, masonry work completed, interior refinished, and some of the electrical updated. Maintenance is performed as required.

Estimated 2016 Replacement Valuation:
$1,982,500
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Westport Arena/Community Centre

Approximate Construction Date: 1975

Facility Summary: The arena is in average condition. The facility is two stories and includes a lobby, dressing rooms, ice pad, and a seating area on the main level. The Second floor includes a viewing room with canteen and washrooms, and meeting/club rooms. Maintenance is performed as required.

Estimated 2016 Replacement Valuation: $5.8 million
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Fire Hall

Approximate Construction Date: 1980

Facility Summary: The Fire Hall is in Fair condition. It is shared with the neighboring Municipality, Rideau Lakes Township. Very little preventative annual maintenance is performed. One new overhead door has been installed. No other issues have been reported. Maintenance is performed as required.

Currently both municipalities are investigating expanding the fire hall to accommodate a bigger fire truck.

Estimated 2016 Replacement Valuation: $987,375
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Post Office

Approximate Construction Date: 1935

Facility Summary: This Facility accommodates the post office on the first floor and an apartment on the second floor and is in average condition. The copper roof was replaced in 2006. In the past the basement has flooded and a backup sump pump is required. Maintenance is performed as required.

Estimated 2016 Replacement Valuation: $850,500 (Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Information Centre

Approximate Construction Date: 1995

Facility Summary: The Information Centre is in average condition. Maintenance is performed as required.

Estimated 2016 Replacement Valuation: $219,375 (Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Library

Approximate Construction Date: 1987

Facility Summary: The Library is in Average condition. Maintenance is performed as required. Part of the roof needs replacing.

Estimated 2016 Replacement Valuation: $744,000 (Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Museum

Approximate Construction Date: 1855

Facility Summary: The Museum is formerly a blacksmith's shop and is in fair condition. It is open from June through the first weekend in October. Maintenance is performed as required.

Estimated 2016 Replacement Valuation:
$1,086,000
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Picnic Shelter

Approximate Construction Date: 1995

Facility Summary: The shed built on a concrete slab on-grade and is in good condition. It has been recently painted and re-shingled. Maintenance is performed as required.

Estimated 2016 Replacement Valuation:
$25,000
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Storage Shed

Approximate Construction Date: 1980

Facility Summary: The shed is considered in fair condition. The facility includes at-grade access for vehicles. Maintenance is performed as required.

Estimated 2016 Replacement Valuation:
$55,000
(Based on the 2012 Frank Cowan Company Risk Management Inspection with annual inflation added)

Westport's facilities are dispersed around the Village as shown on Drawing 4.

3.8 Parks & Recreation

The Village of Westport is responsible for the general maintenance of parkland, an athletic field and the harbour. The day-to-day operations of the harbour are also carried out by the Village. The Westport Harbour is fully equipped for the comfort of boaters with shore power, water, picnic tables and barbeques, ATM and WiFi. All of these features are new and in good condition. The Visitor's Centre's is just a short walk away and offers a telephone, the internet and washrooms with shower facilities.

Lockwood Memorial Field is Westport's only athletic field, which features a baseball diamond, performance stage, bleachers, basketball half court fencing, floodlighting, and storage. Washroom facilities are offered in the nearby Water Treatment Plant building. Future plans a fountain, children's play area, and an adult exercise area. These plans are being funded primarily by donations.

The Village also owns a backup generator that can be connected to the water treatment plant and Town Hall in case of an emergency. Table 7 summaries the Village's parks & recreation assets.

Table 8 – Parks & Recreation Summary

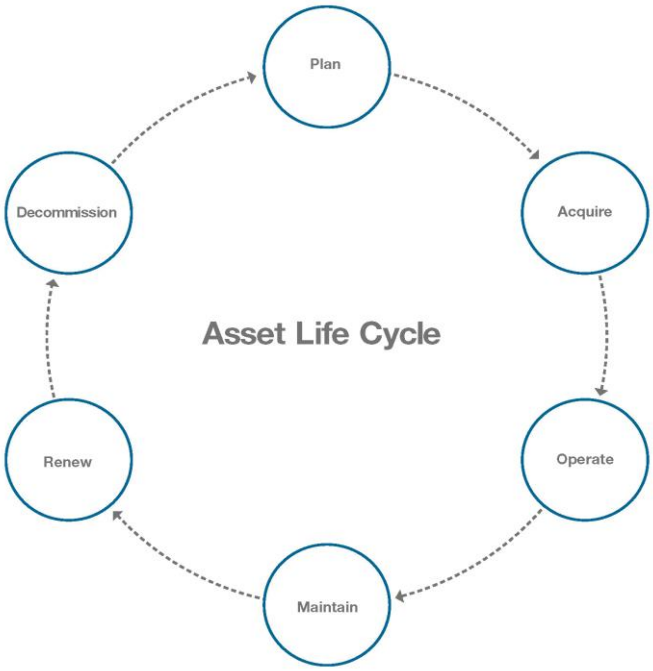
Asset Component	Quantity	Average Ideal Service Life (Years)	Average Age (Years)	Estimated % of Service Life Remaining
Lockwood Memorial Field (floodlighting, bleachers, fencing, storage)	Varies	50	30	40
Harbour Docks & Shed	Varies	40	25	40
Backup Generator	1	40	15	65

4.0 STATE OF LOCAL INFRASTRUCTURE – ASSET CONDITION

4.1 Asset Life Cycle

Asset management is a structured program intended to minimize the life cycle costs of asset ownership while maintaining required service levels and sustaining the infrastructure. The principle of *Life Cycle Costing* is expressed in financial terms to include the total cost 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 exhibit below.

Figure 2 – Typical Asset Life Cycle



In this AMP, supporting tables reference the column headings “Ideal Service Life” and “% 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. “Average Age” is an approximation and has been

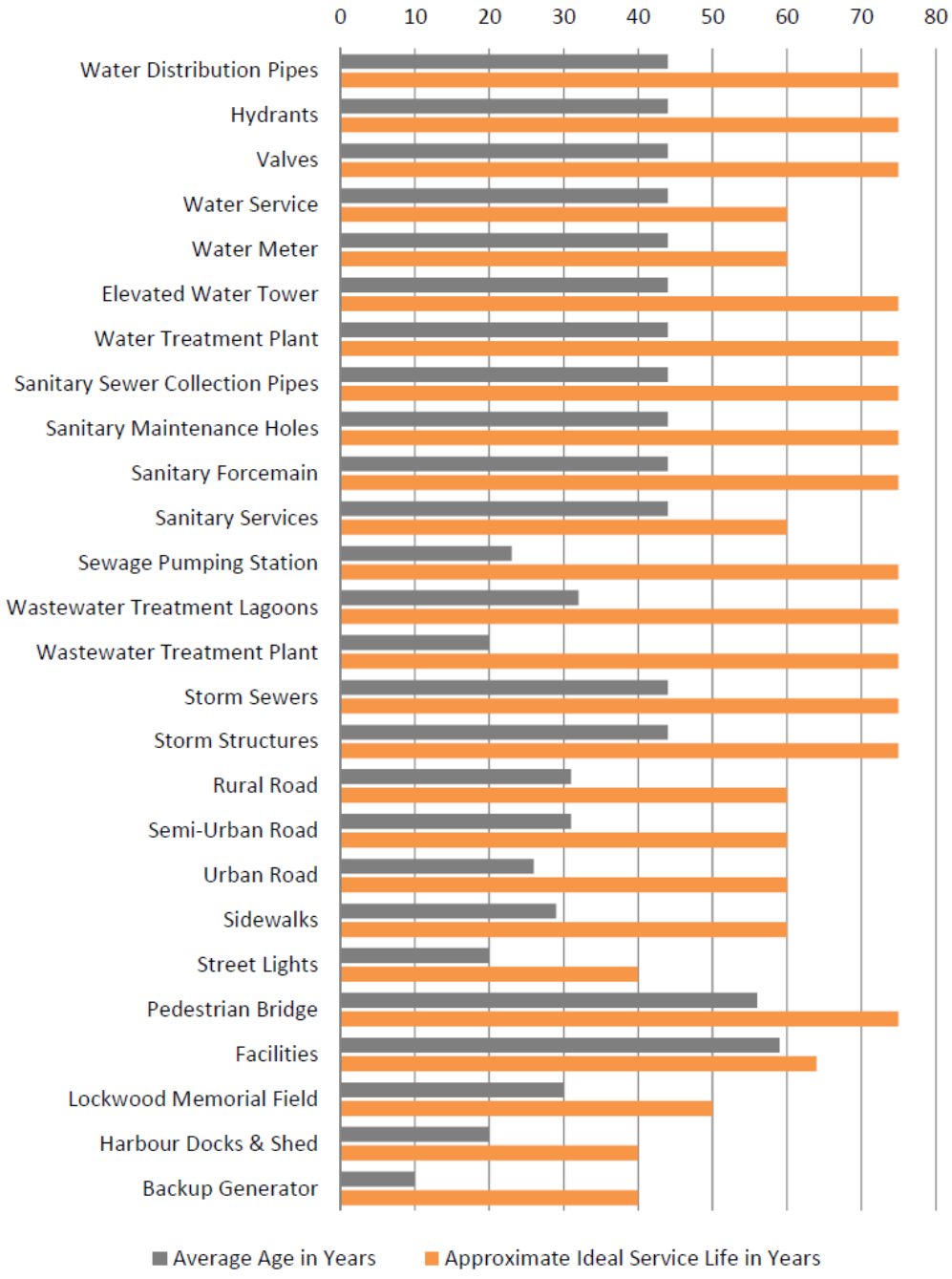
determined based on the average age of the overall asset/system. The "% of Service Life Remaining" has simply been calculated by subtracting the assets "Average Age" from "Ideal Service Life" and showing the "Service Life Remaining" as a percentage of the "Ideal Service Life".

4.1.1 Major Village Infrastructure – Average Age and Ideal Service Life

Much of the Village's infrastructure is at least 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 Village should 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 3 below illustrates the Village's water, wastewater, and stormwater assets as well as roads, bridges, facilities, and parks & recreation Average Age versus Ideal Service Life.

Figure 3 – Average Age and Ideal Service Life



4.2 Asset Condition

As part of its maintenance program, the Village should collect 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 physical 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 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 service life. These factors could include:

- Technical advances which 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.

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., good, average, fair, poor).

The Village's AMP uses a rating system that includes both the *physical* condition and *intangible* factors. The Asset Condition Rating System also incorporates any existing condition assessment reports which 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 6 for an overview of the Village's Asset Condition Rating System.

Due to the lack of available buried pipe condition assessment data, a significant emphasis has been placed on pipe "material", "diameter", and "age" to determine overall condition. It has also been determined that there are some data gaps. The Asset Condition Rating System described in Table 6 is self-explanatory and has been used to determine priority asset improvements contained in this AMP.

Table 9 – 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 sometime 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.

4.2.2 Infrastructure Report Card

An analysis of the Village's water, wastewater and stormwater systems, roads, pedestrian bridge, facilities, and parks & recreation has been completed based on the asset "Condition Estimate", "% 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.

Estimated Current and Replacement Valuations for each system's infrastructure are including Assumptions related to Current and Replacement Valuations and Average Annual Maintenance Budget can be found in Sections 4.3 to 4.8.

4.2.3 Data Verification and Condition Assessment Policy

The Village does not have an "official" data verification and condition assessment policy. The adopted approach to data verification is simply to update and populate spreadsheets as required. These updates occur, as required, in the form of maintenance records, site observed conditions gathered through maintenance, repairs, and planned condition assessments and special projects. The updating and verification process is shared by municipal staff.

4.2.4 Limitations and Assumptions

The information and tables developed for Section 3.0 of the AMP are based on 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, ideal service life, and remaining service life.

Development of the data contained in these fields can also be somewhat subjective (i.e., Table 6 – 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 Village 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 Village, subject to other conditions (i.e., 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.*

- *Average Annual Maintenance Costs and Revenues have been determined based on actual expenditures from Financial Statements 2013-2017 (See Appendix 'A').*

- *Current and Replacement Valuation and Average Annual Maintenance Budget costs are expressed in 2016 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 periodically reviewed in order that information presented, including financial data, be kept current and relevant.

- *It has been assumed that existing Asbestos Concrete steel pipes will be replaced with PVC pipe, therefore, replacement costs for Asbestos Concrete pipe has been based on unit rates for PVC pipe.*

4.3 Water System Report

Table 10 – Water System Condition and Estimated Valuation

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Water Distribution Pipes	4	**Fair**	$700,750	$2,803,000
Hydrants	4	**Fair**	$84,000	$336,000
Valves	4	**Fair**	$34,100	$136,400
Water Service	3	**Fair**	$43,092	$287,280
Water Meter	4	**Fair**	$34,984	$139,935
Water Treatment Plant	4	**Fair**	$250,000	$1,000,000
Elevated Water Tower	6	**Average**	$500,000	$2,000,000
		Total	**$1,646,926**	**$6,702,615**

- On average, the Water System is at the mid-point of its Ideal Service Life.
- Water distribution pipes, WTP and Hydrants, and Water meters are in Fair condition.
- All of the water distribution pipes were installed in the early 1970s. These pipes are all made of PVC and are approximately 47 years old, as a minimum. They have an Ideal Service Life of 75 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. The Village 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 a database/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 cause of failure. Careful examination of these records will allow Village 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 also be examined.

4.4 Wastewater System Report

Table 11 – Wastewater System Condition and Estimated Valuation (2016)

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Sanitary Sewer Collection Pipes	4	**Fair**	$658,023	$2,632,092
Sanitary Maintenance Holes	4	**Fair**	$108,500	$434,000
Forcemain	4	**Fair**	$105,000	$420,000
Sanitary Services	3	**Fair**	$91,332	$608,880
Sewage Pumping Station	8	**Good**	$187,500	$750,000
Wastewater Treatment Plant	6	**Good**	$5,500,000	$10,000,000
		Total	**$6,650,355**	**$14,844,972**

- On average, the Wastewater System is past the mid-point of its Ideal Service Life.
- Wastewater sanitary sewer collection pipes are in Fair condition.
- In 2014 the pumping station was rehabilitated to increase pumping capacity future flows and is in Good condition.
- The current Wastewater Treatment System (WWTS) is a 2 Lagoon Facultative Lagoon System with Large Subsurface Disposal Currently in Good Condition
- All of the sanitary sewer collection pipes were installed during the early 1970s and are Asbestos Cement.

Recommendations

The Village has undertaken the recommendations in the 2015 Municipal Class Environmental Assessment for renewal of the WWTP due to the underperformance of the existing system. Work commenced in June 2017. Significant capital expenditures have been required to implement the “Large Subsurface Disposal System” identified as the preferred alternative.

The Village should implement a Closed Circuit Television (CCTV) condition assessment program for its entire sanitary sewer collection system to validate pipe condition. This work program should be completed over a 5-year period beginning in 2017. Maintenance holes should be included in this assignment as it proceeds. Collection of this data will allow staff to make informed decisions with respect to priority replacement or rehabilitation of sanitary sewers. History of breaks and interviews with municipal staff to determine operational issues should also be a component of this exercise. History of breaks and operational issues should be entered into a database/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 cause of failure. Trenchless technologies for 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 be examined.

4.5 Stormwater System Report

Table 12 –Stormwater System Condition and Estimated Valuation

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Storm Sewers	4	Fair	$153,250	$613,000
Storm Structures – Maintenance Holes & Catch basins	3	Fair to Poor	$23,000	$180,000
		Total	**$176,250**	**$793,000**

- On average, the Drainage and Storm Sewer Collection System is past the mid-point of its Ideal Service Life.
- Storm sewers are in Fair condition.
- Storm structures (i.e., maintenance holes and catch basins) are in Fair to **Poor** condition.

Recommendations

It is recommended that a number of projects on the storm sewer system be completed to gain a better understanding of its overall condition and hydraulic capacity.

The Village should continue a CCTV condition assessment program for the entire storm sewer system to validate pipe condition. . 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 storm sewers. History of breaks and interviews with municipal staff to determine operational issues will also constitute a component of this exercise. History of breaks and operational issues should be entered into a database/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 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 construction, sanitary sewer replacement, and other related capital projects should be examined.

Storm infrastructure on Bedford Street requires extensive review and renewal as drainage has been determined to be deficient or non-existant.

4.6 Roads Report

Table 13 – Roads Condition and Estimated Valuation

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Rural Road	5	Average	$34,125	$97,500
Semi-Urban Road	5	Average	$1,152,900	$3,294,000
Urban Road	3	Poor to Fair	$240,120	$1,600,800
Sidewalk	5	Average	$229,460	$655,600
Street Lights	4	Fair	$11,500	$46,000
		Total	**$1,668,105**	**$5,693,900**

- The Village uses a road rating scale derived from their Roads Needs Study (RNS) that rates a roads overall pavement condition.

- Village roads are generally in Poor to Average condition overall. Certain urban roads within the Village are in Poor condition (Bedford Street) and required immediate attention.

- There are approximately 2.5km's of local road in the Village.

Road surfaces are a mix of hot mix asphalt and gravel.

The Village'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.

Bedford Street has been identified as in Poor condition requiring immediate attention due to failing road surface and pavement/granular structure. It also has deficient sidewalks and drainage. Bedford Street requires immediate attention and is Village's highest priority infrastructure project.

4.7 Bridges Report

Table 14 – Pedestrian Bridge Condition and Estimated Valuation

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Pedestrian Bridge	3	Fair	$100,000	$400,000
		Total	**$100,000**	**$400,000**

- The only bridge owned and maintained by the Village is a pedestrian bridge and it is generally in Fair condition.

- The pedestrian bridge was built in 1960 and was last inspected in 2013.

Recommendations

As part of the Village's overall asset management strategy, a program of routine maintenance and condition assessments should be on-going for all structures. 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 structures. It is recommended that the pedestrian bridge be inspected in accordance with the Ontario Structure Inspection Manual (OSIM).

4.8 Facilities Report

Table 15 – Facilities Condition and Estimated Valuation

Facility	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Municipal Office, PUC Office & Garage	5	Average	$446,264	$1,785,057
Arena & Community Centre	5	Average	$1,308,404	$5,233,616
Fire Hall	5	Average	$222,260	$889,039
Post Office	5	Average	$191,449	$765,796
Information Centre	5	Average	$49,382	$197,527
Public Library	5	Average	$167,476	$669,903
Museum	3	Fair	$95,242	$977,842
Picnic Shelter	7	Good	$7,278	$21,835
Storage Shed	3	Fair	$1,948	$20,000
Lockwood Stage	10	Excellent	$44,500	$44,500
		Total	**$2,534,203**	**$10,605,115**

- The Village's Facilities are generally in Average condition.

Recommendations

A program of routine maintenance should be on-going for all facilities to ensure efficient operation and to meet/extend expected life cycles. Specialized and focused engineering/architectural condition assessments should be undertaken for facilities to better plan required upgrades, renewals, and to determine post disaster buildings.

4.9 Parks & Recreation Report

Table 16 – Parks & Recreation Summary

Asset Component	Average Rating	Condition Estimate	Estimated Current Asset Valuation	Estimated Current Replacement Valuation
Lockwood Memorial Field Assets (floodlighting, bleachers, fencing, storage, basketball court)	5	Average	$160,293	$320,171
Harbour Docks & Shed	7	Good	$100,000	$348,908
Backup Generator	5	Average	$15,000	$40,000
		Total	**$275,293**	**$709,079**

- The Village's Parks & Recreation equipment are generally in Average condition.

- The Harbour docks and shed is in Good condition.

Recommendations

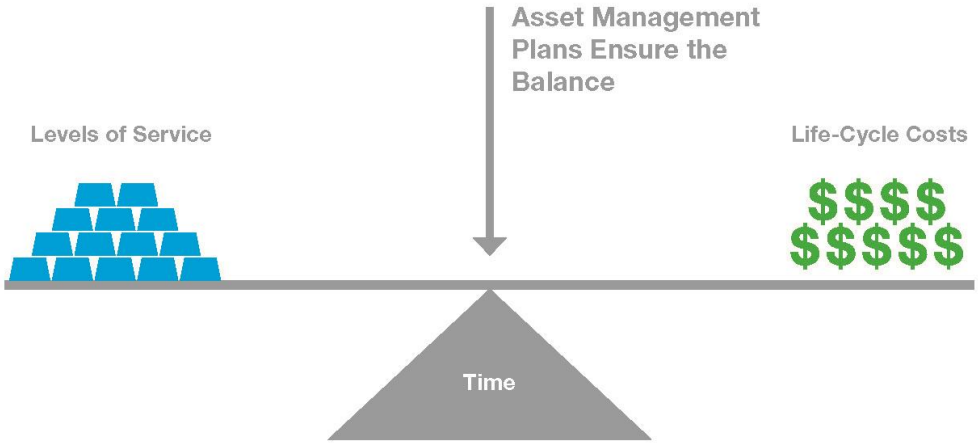
A program of routine annual inspection should be implemented for all parks & recreation asset components. New methods of extending the life cycle should be applied when warranted. Opportunities to coordinate with other related capital projects should be examined and pursued when necessary.

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 within asset management best practices. 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 a particular level of service is influenced by affordability as well as community needs and desires. With reference to the Village's Strategic Plan, levels of service are a reflection of guiding principles, vision, core values, strategic initiatives, outcomes, and 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 need 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 every asset manager should be to move away from reactive and "worst first" planning to maintenance of assets in a "state of good repair". This is the most economical way to maintain or provide higher levels of service.

Discussing, communicating, consulting, and defining LOS can be a rigorous and exhaustive process depending on the municipality's desire to record and measure this information. Levels of Service are directly linked to customer expectations and willingness and/or ability to pay.

These relationships have not been developed in depth as part of this AMP, and should be better analyzed through further study.

In the interim, the Village has a practical holistic approach to defining service levels.

5.3 Cost of Service

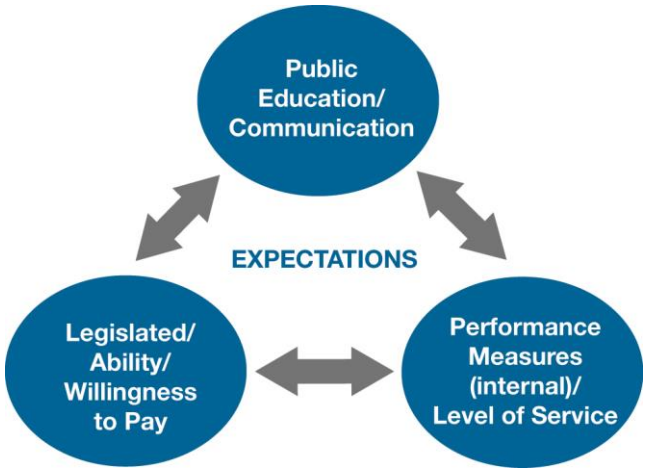
Cost of Service is the annual expenditure required to continue to provide the service at the current level. Cost of service is an accumulation of all elements of the asset life cycle, including operations, maintenance, depreciation, and overhead. Costs of current services are well understood by the Village 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 Village 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 Village adds services or provides a service at a higher level, the costs to provide the service increases and so does the price that the Village 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.

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 4.

Figure 4 – Level of Service



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.

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 Village must be aware of this exposure to risk and determine its level of comfort and willingness to accept that risk.

5.5 Specific Infrastructure Goals for the Village of Westport

The Village of Westport has reviewed their goals for routinely assessing the levels of service of various infrastructure categories and identified strategies to manage and prioritize these activities. Table 16 provides a summary of these infrastructure goals.

5.6 Performance Measurement and Monitoring

Regularly measuring and evaluating an asset's performance is a 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 Village'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:

Strategic Indicators 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 (i.e., Village of Westport Community Strategic Plan).

Functional Indicators result from analyzing different but related operational indicators to obtain an overview of an infrastructure asset's condition. A functional indicator provides managerial-level municipal decision makers 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)).

Operational Indicators 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 (i.e. CCTV inspections of sewers, number of breaks per kilometer of water pipeline, average time to repair the break, etc.).

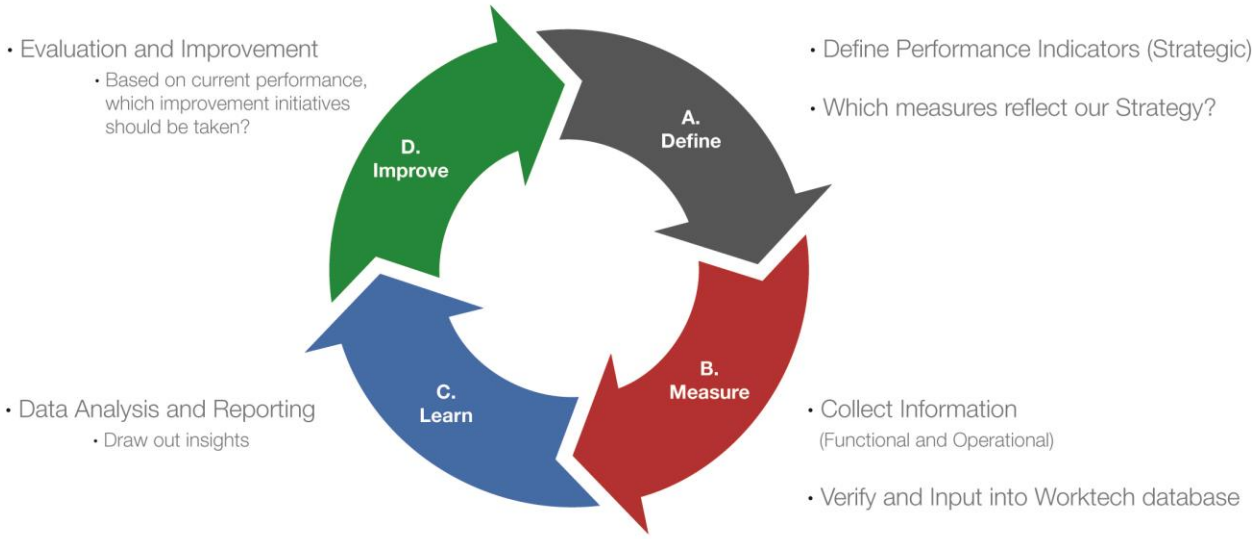
Table 17 – Levels of Service

Department	Current	Expected	Comments
Water	Achieved compliance with MECP Safe Drinking Water Act	Maintain compliance - Operator receives/requires annual training and certification	
	Water main breaks - 0 main breaks in 2018 5 Water Service Leaks Repairs	Goal is 1 main break/year. 3 Service Leak Repairs	The valve maintenance cycle assists in isolating the break and minimizing the number of service interruptions
	Valve Maintenance cycle	100 %/ year implemented in 2017	Meets Best Practices
	Hydrant inspections	100% /year implemented in 2017	Meets Fire Protection and Prevention Act RSO
	Water Meters - large number that are inoperable	100% properly functioning meters	Budgeted to replace 20% of inoperable ones in 2018
	SCADA system - increases accuracy of data acquisition and reporting to MOECC	To be installed by 2019	Funded through formula OCIF (2017 & 2018) and formula CWWF (2017)
	Reduce the amount of chlorine in water	reduce cost of chlorine and improve customer satisfaction	Priority to 2019
Waste Water	2 Cell Facultative Lagoon System	Maintain Servicing and Compliance	Will be compliant with the ECA

Department	Current	Expected	Comments
	Sewer inspections	Source Protection requires inspection sewers within 100 metres of water well heads. Inspect and clean 15% of sewers per year	Completed by 2022 Meet Best Practices
	Pump Stations failures	0 per year	Enhanced maintenance procedures to meet best practices
	Infiltration and Inflow	identify the sources and develop strategies to address	Budgeted for camera survey in 2018 continuing in 2019. Epoxy Resin Sealing in 2018 Continuing in 2019
Storm Water	Maintenance Hole Inspections	100 %/year implemented in 2017	Meets Best Practices
	Catch Basin Sump maintenance	100%/year	Meets Best Practices
	Ditch Inspection	every second year	Meets Best Practices
Roads (paved)	All Level 5 roads.	Pavement assessed weekly and potholes to be repaired in 30 days Winter control requires immediate removal of snow once 5 cm has accumulated or as directed	Exceeds provincial standard and reflects expectations of community. Exceeds provincial standard and reflects expectations of community.

Department	Current	Expected	Comments
Pedestrian Bridge	Concrete pedestrian bridge joining the island to the mainland, built in 1961	Structural analysis to be conducted by professional engineer to ensure that the bridge is safely capable to support the theoretical loads prescribed in the Ontario Building code	2020 - 2023
Sidewalks	Annual inspection for condition of sidewalks.	Money is allocated to capital budget for repair/replacement. Winter control requires immediate removal of snow once 5 cm has accumulated or as directed	Village is planning to achieve the accessibility standard. under the Ontario disabilities Act. For example, in 2017 several intersection ramps were installed to enhance accessibility.

Figure 5 – Asset Performance Measurement and Monitoring



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 regards 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 Village 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
- The duration of the service interruption
- The response time by municipal staff
- The severity of the asset failure

An analysis of trends in performance indicators over several years will allow the Village 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 Village:

- 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; and
- 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.

5.7 External Trends

Aside from existing funding issues, the Village 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 Village is bound to provide levels of service which are beyond its control. For example, the Village 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;
- Heightened 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.

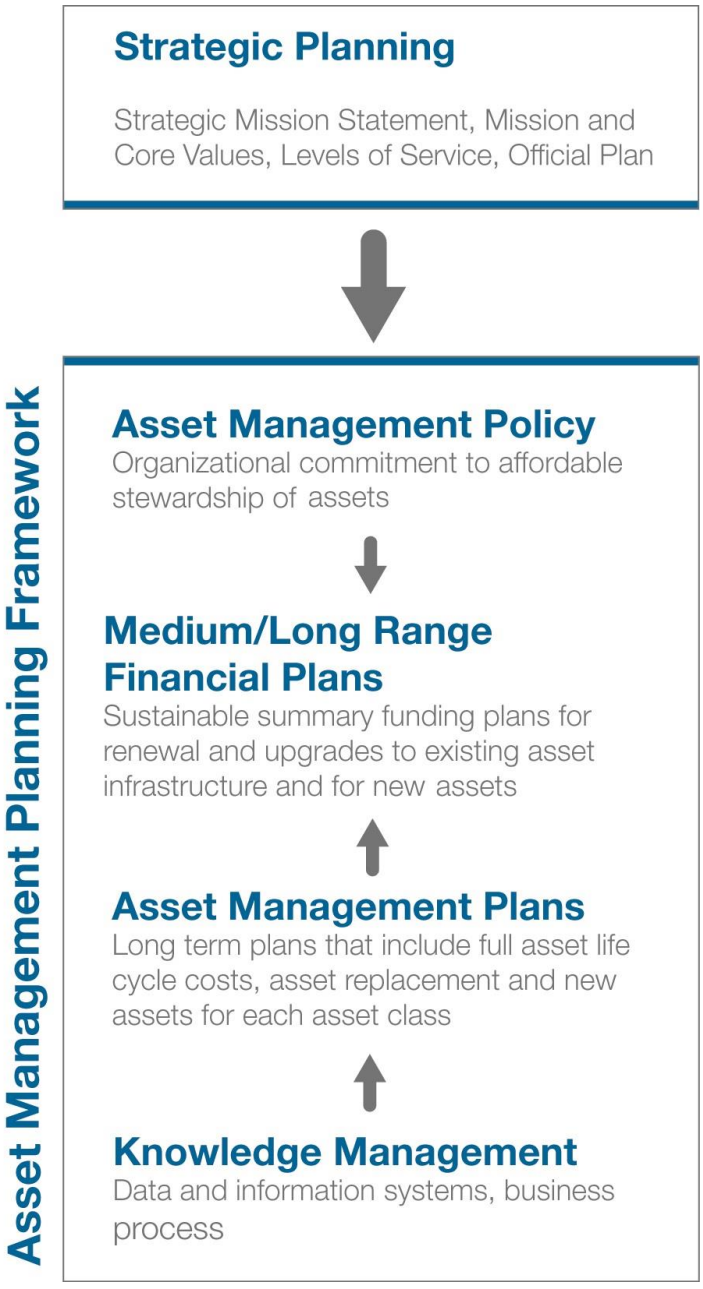
These trends reinforce the importance of asset management best practices, strategic planning, annual user fee reviews, and the building of reserve funds. One of these best practices should include the exploration of all available avenues with respect to alternative funding mechanisms. Other potential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



6.2 Asset Management Planning Framework

Strategic Planning

Council adopted the following statements as part of the Strategic Plan process in 2015:

Vision Statement

"A progressive people-centered community that enhances the quality of life for its residents and visitors."

Mission Statement

"Providing services that promote a friendly, safe, and sustainable community which reflects the needs of all of those who work, live, and visit the Village of Westport."

The Village of Westport Official Plan articulates the desired goals and guidelines for development within the Village. It provides the essential tools to enhance future growth and change in the Village and to create the community envisioned by Westport's residents. It also ensures that the planning framework and tools are in place to make certain that the Village of Westport remains a healthy, vibrant, and sustainable community with a strong economy, and quality of services and amenities.

Asset Management Policy

An asset management policy articulates a Council's commitment to affordable stewardship of assets and provides a clear statement to guide staff in carrying out the Municipality's business strategies, plans, and activities. An Asset Management Policy is considered a best practice for asset management. Information gathered, reviewed, and incorporated could greatly assist Council and staff in the development of a straightforward Asset Management Policy for the Village of Westport. It is recommended that the Village of Westport adopt the following Asset Management Policy and Statements.

Asset Management Policy Statements

Asset management is a broad strategic framework that encompasses many disciplines and involves the entire organization. The term asset management, as used in this document, is defined as "the application of sound technical, social and economic principles that considers present and future needs of users, and the service from the asset". To guide the organization, the following policy statements have been developed:

1. Municipal staff will maintain and manage infrastructure assets at defined levels to support public safety, community well-being, and community goals;
2. Municipal staff will monitor standards and service levels to ensure that they meet/support community and Council goals and objectives;
3. Municipal staff will develop and maintain asset inventories of all its infrastructure;

4. Municipal staff will establish infrastructure replacement strategies through the use of full life cycle costing principles;
5. Municipal staff will plan financially for the appropriate level of maintenance of assets to deliver service levels and extend the useful life of assets;
6. Council will plan for and provide stable long term funding to replace and/or renew and/or decommission infrastructure assets;
7. Where appropriate, Council will consider and incorporate asset management in its other corporate plans; and
8. Municipal staff will report to citizens regularly on the status of performance of work related to the implementation of this asset management policy.

Medium Range Financial Plans

A critical component of asset management is the analysis of funding needs for asset renewal over a 10 year period. The Village has a "medium term" 10 Year financial forecast for water and wastewater but should consider including all municipal assets.

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 Village 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, financial budget numbers, and actual maintenance, rehabilitation, and/or renewal costs from the previous year. This "constant improvement" approach will allow the Village to develop more precise timing and costs of ongoing and projected infrastructure renewal.

Knowledge Management

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

- Municipal Financial System;
- Departmental maintained databases and documents;
- Consultant reports; and
- Knowledgeable staff.

All Public Works data should be stored in a centralized database and updated on a regular (i.e., monthly) basis by key municipal staff. A structured data maintenance and updating protocol is essential in order to eliminate duplicate information and ensure that this data is complete,

accurate, and up-to-date. The Village has initiated a GIS system to help store and visualize their data. A centralized infrastructure database will be a key component of a Municipal GIS.

Succession planning is a process which should be ongoing at the Village given that staff members may become ill or may be nearing retirement. Their wealth of knowledge needs to be captured and transferred into a database/GIS system; especially with respect to existing buried infrastructure.

6.3 Planned Actions

Operations and maintenance activities typically do not receive as much attention from the public as new construction; however, they are key to the reliable and safe delivery of water and sewer services.

This information should be reviewed and updated regularly 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 significant planned actions related to Disposal Activities – the activities associated with disposing of an asset once it has reached the end of its useful life. Materials such as concrete, asphalt, and other components are recycled where feasible. In particular, opportunities to re-use asphalt millings related to road repair at other locations in the Village are considered.

6.4 Maintenance Activities

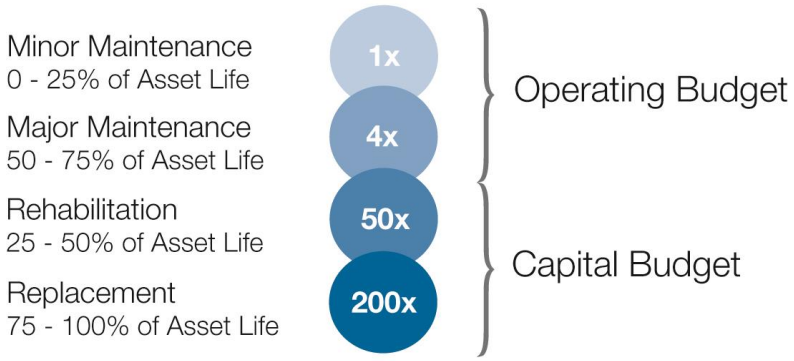
An excerpt from the 2005 City of Hamilton State of the Infrastructure Report (SOTI) states that *"most municipal infrastructure has four major steps in its life cycle:*

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

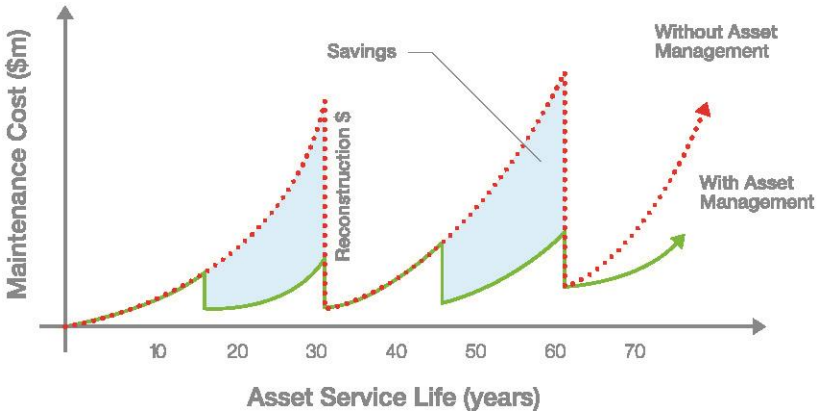
Figure 6 – Operating/Capital Budget



"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 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 Village 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 7 – 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 Village'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. Therefore it is recommended that the Village complete a high level qualitative analysis of significant potential risk analysis events. This information can be developed based on interviews with Village staff, review of historical inspection and maintenance records, emergency procedures in place, and existing infrastructure management strategies and reports.

Combined with a risk analysis, 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 Village. 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.

Water System

ASSET	WATER SYSTEM
Inventory	1 Water Treatment Plant (WTP), 1 Elevated Storage Tank, 5.6km of water distribution pipes, 42 hydrants, 52 valves, 228 service connections and 285 meters.
Ideal Service Life	Life cycles can vary from 15 -100 years. The WTP is estimated to have a 100 year ideal service life assuming periodic upgrades and preventative maintenance. Water distribution pipes have a service life of approximately 75 years depending on material and soil conditions. Hydrants also have a life cycle of approximately 75 years. Water meters are estimated to have a life cycle of 60 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. A database/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 – Village'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.

Wastewater System

ASSET	**WASTEWATER SYSTEM**
Inventory	1 Wastewater Treatment Plant (WWTP), 1 Pumping Station, 4.9km of sanitary sewer collection pipes, 62 sanitary maintenance holes and 236 sanitary service connections.
Ideal Service Life	Life cycles can vary from 30-100 years. The WWTP is estimated to have a 30-50 year ideal service life assuming periodic upgrades and preventative maintenance. The Pumping Station has an estimated service life of 50 years. Sanitary sewer collection pipes have a service life of approximately 75 years depending on material and soil conditions. Sanitary maintenance hole life cycles are estimated at 75 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	The underperforming "Snowfluent" Sewage Treatment Plant has been recently replaced with a new Large Subsurface Disposal System. Elements of the existing facility are being re-used, including the sewage lagoons however, the "Snowfluent" system has been abandoned following commissioning of the new system in November/December 2017. Future rehabilitation of the sewage treatment plant will depend on performance measures related to the reasonable use criteria for groundwater and the ability of the facility to manage incoming flows. 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. A database/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 STP 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.

Stormwater System

ASSET	STORMWATER SYSTEM
Inventory	0.6km of storm sewers, and 30 stormwater structures (maintenance holes and catch basins).
Ideal Service Life	Life cycles can vary from 60-80 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 are key to maximizing the piped networks life cycle.
Integrated Asset Priorities	A deteriorated storm sewer and associated maintenance holes and catch basins are 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.

Roads

ASSET	ROADS
Inventory	0.13km of Rural road, 2.7445km of Semi-Urban road and 1.334km of Urban road. All roads that are owned and operated by the Village are local.
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: Local Roads – 35 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 & Replacement Criteria	Pavement Condition Index (PCI) is a provincially recognized pavement condition rating between 0 and 100 which measures defects in pavement. PCI structural thresholds % for rehabilitation/reconstruction are as follows: between 0 and 20 – High, between 20 and 40 – Medium, between 40 and 60 – Low, between 60 and 80 – Low and between 80 and 100 – None.
Rehabilitation & Replacement Strategies	Based on the PCI index, road classification (arterial, collector, local) and cost/benefit ratio, one of the following rehabilitation strategies is selected: Total reconstruction of pavement with 80mm to 120mm of hot mix asphalt. Mill and resurface pavement with 50mm to 75mm of hot mix asphalt. Pulverize and remix with 50mm to 75mm of hot mix asphalt. Mill and resurface patches of pavement with 50mm of hot mix asphalt. Routing and crack sealing pavements. Granular structure to be reviewed by geotechnical investigations and replaced as needed.
Life Cycle Consequences/Risk Assessment	Under funding pavement rehabilitation results in more pavement falling below a PCI value of 60 and results in escalating construction costs. Pavement falling below a PCI value of 20 affects levels of service and increases risk and liabilities for the Village.
Integrated Asset Priorities	Pavement rehabilitation forecast is compared to underground utility forecasts. The integration of projects occurs internally within the Village 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.

Bridges

ASSET	**BRIDGES**
Inventory	1 pedestrian bridge.
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 Loads, climate and salt exposure. The Village Pedestrian 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 Village owned infrastructure.
Rehabilitation & Replacement Criteria	Criteria for prioritizing includes level of service and safety. Bi-annual visual inspections of bridge should be completed. Bridge components are evaluated and tested providing severity and extent of deterioration and overall condition. An overall Bridge Condition Index is provided for each bridge. A value of 100 indicates that the bridge is in excellent condition and a value of zero indicates that the bridge is in extremely poor condition.
Rehabilitation & Replacement Strategies	Bridge rehabilitation or replacement is based on bridge component age and assumed life spans and the results of condition surveys.
Life Cycle Consequences/Risk Assessment	Bridge cycles will be reduced, level of service is lowered and safety is compromised.
Integrated Asset Priorities	N/A

Facilities

ASSET	**FACILITIES**
Inventory	9 Facilities.
Ideal Service Life	Buildings consist of various components incorporating different construction practices and materials. As such, buildings can have varying assumed service

	lives. The life cycle can also be affected by natural elements. Building components service life can vary from 10 to 75 years. Ideal service life assumes adequate annual maintenance is being performed through the components life.
Integrated	Individual components should be reviewed and combined with other projects to minimize the disruption of operations. Generally not integrated with other Village owned infrastructure.
Rehabilitation & Replacement Criteria	Facility Condition Index (FCI) is a standard ratio recognized throughout North America. FCI is the Cost of Maintenance, Repair and Replacement Deficiencies of the Facility(s) / Current Replacement Value of the Facility(s)
Rehabilitation & Replacement Strategies	Facilities rehab/replacement will be based on a comprehensive asset condition report. In most cases, once the facility has been inspected and assigned a condition rating, staff can determine the best method for maintenance and rehabilitation.
Life Cycle Consequences/Risk Assessment	Under funding facility maintenance will lead to increased deterioration of facilities, health and safety issues, inefficient operation, higher operating cost and accelerated depreciation.
Integrated Asset Priorities	N/A

Parks & Recreation

ASSET	**PARKS & RECREATION**
Inventory	Floodlighting Bleachers Fencing Baseball Equipment Storage Harbour Docks Harbour Shed Basketball/Pickleball Court
Ideal Service Life	Service life varies depending on the asset component.
Integrated	Individual components should be reviewed and combined with other projects to minimize the disruption of operations. Generally not integrated with other Village owned infrastructure.
Rehabilitation & Replacement Criteria	Analysis for replacement considers depreciation, maintenance time & costs.
Rehabilitation & Replacement Strategies	Review individual components usage and asset category as a whole.
Life Cycle Consequences/Risk Assessment	Under funding maintenance will lead to increased deterioration of components, health and safety issues, inefficient operation, higher operating cost and accelerated depreciation.
Integrated Asset Priorities	N/A

6.6 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 2015, the Council of the Village of Westport passed By-law No. 15-11 (known as the Procurement By-law) which is a by-law to provide the purchasing policies, practices, and procedures of goods and services by the Village. This by-law allows for the consideration of various delivery mechanisms, is reviewed periodically, and is attached to the AMP as Appendix 'B'.

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 Village utilizes a number of procurement methods, including, but not limited to, Low Value Procurement, Oral Quotations, Written Quotations, Short Form Tender, Public Tender, Request for Proposal (RFP), Qualifications-based Selection (QBS), Request for Qualifications/Expression of Interest (RFQ), Non-Competitive Purchasing, Two-Envelope Method, Sole Sourcing, etc.

It is important that the Village 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 Financial Strategy section is intended to provide the Village with a framework to integrate asset management with annual budgeting and long-term financial planning. The Village of Westport Consolidated Financial statements from 2013 to 2016 can be found in Appendix 'A'. Additionally, Watson & Associates Economists Ltd. prepared for the Village of Westport a Water and Wastewater Ontario Regulation 453/07 Financial Plan, dated June 2, 2016.

7.2 Yearly Maintenance

On an annual basis, 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 17 shows that the Village has spent increasing amounts annually on maintenance related to Environmental Services (in particular of its underperforming Sewage Treatment Plant) in recent years. It should be noted that the costs for 2014, 2015 and 2016 were much higher than typical years and much higher than anticipated. Historical normal maintenance costs more closely reflect 2013.

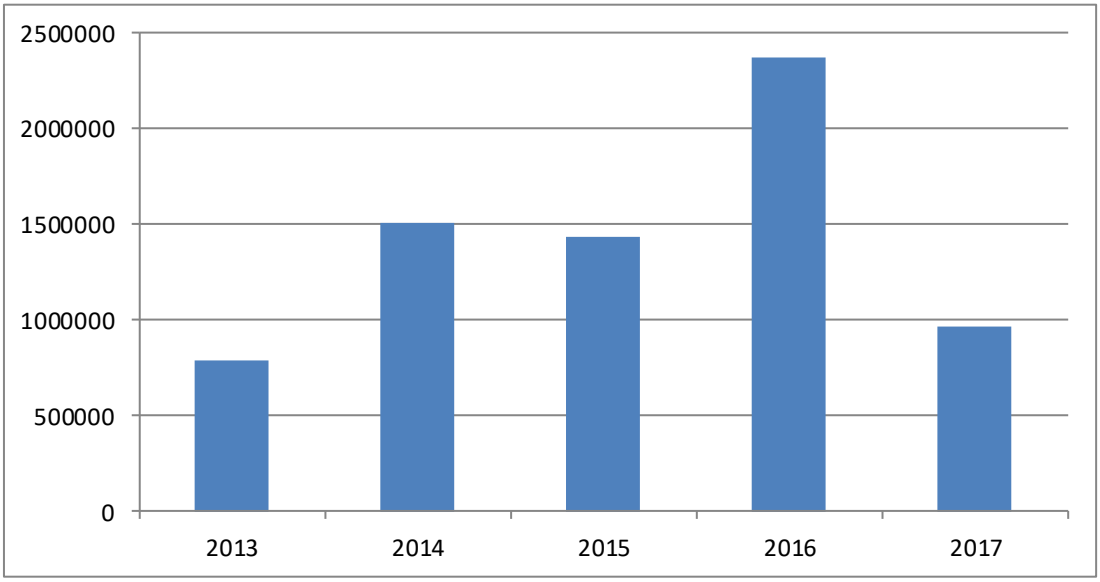
Higher maintenance costs experienced in 2014, 2015 and 2016 have significantly added to the Village's debt levels.

Table 18 – Average Annual Maintenance Costs

Asset Category	2013	2014	2015	2016	2017
Environmental Services	$424,360	**$1,168,969***	**$1,106,569***	**$2,014,862***	**$598,002****
Transportation Services	$149,312	$131,858	$88,180	$122,046	$129,291
Facilities/Parks & Recreation	$212,180	$211,487	$238,980	$209,480	$236,394
Total	**$785,852**	**$1,512,314***	**$1,433,729***	**$2,346,388**	**$963,687**
	Typical	**High Costs Related to Sewage Treatment**			**Above Typical**

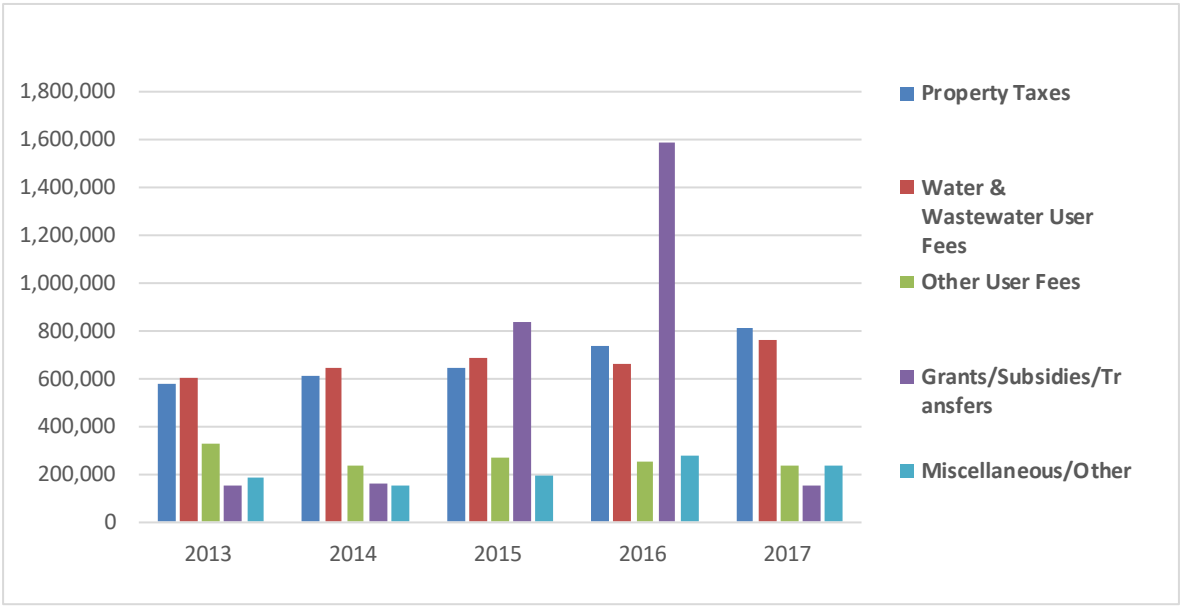
(*Increased maintenance costs experienced as a direct result of underperforming sewage treatment plant and replacement of plant.)
(**Excludes capital costs for Wastewater Treatment Plant Upgrades)

Figure 8 – Total Maintenance Costs Incurred Between 2013 and 2017



Maintenance funding sources for the same 5 year period are highlighted below in Figure 9.

Figure 9 – Maintenance Funding Sources 2013-2016



7.3 Capital Replacement

The Village is required to undertake capital replacement of all assets over time. Funding for capital replacement can be accomplished through reserves, tax rates, water and sewer rates, debt, developer charges, and grants/subsidies. In the past, the Village has been able to fund capital replacement of assets through the above means. In addition, the Village has undertaken a water and sewer rate review and has implemented increases in these rates to help fund these operating and capital project expenses. However, a full range of alternative means of funding capital expenses is required.

The largest capital replacement that the Village is undertaking is the reconstruction of Bedford St. This project is expected to cost approximately $2.6M. Since the Village will be required to undertake this project without adequate upper level funding, it is being forced to utilize its remaining debt capacity to obtain long term funding of the project. The Village will apply for additional grants/subsidies to recover from the financial burdens this has placed on the Municipalities' tax and user rate base.

Additional capital replacement costs are expected by the Village within the next ten years. At a minimum, examples of upcoming projects include:

- Road resurfacing and reconstruction projects
- Water Treatment Plant CT Improvements
- Water Treatment Plant Cartridge Filtration
- Stormwater management upgrades
- Inflow and infiltration reduction work
- Foot bridge rehabilitation work

Prioritizing these projects within the framework of the asset management plan process described in this document and within a ten year capital plan will be a priority for the Village.

The Village has approximated annualized depreciation values for their asset categories, as shown in Table 17 below, in order to better understand the rate at which they should be setting aside funds for future capital projects. These values will be reviewed in 2019 to recognize renewed infrastructure at the Wastewater Treatment Plant. Currently, the Village is utilizing depreciation values set in 2016.

Table 19 – Projected Depreciation Values (2016)

ITEM	Useful Life	Plant Replacement Value	Annual Depreciation
	Years	$	$
Water System			
Distribution Piping	75	$2,800,000	$37,333
Hydrants	60	$335,000	$5,583
Valves	60	$136,000	$2,267
Water Services	60	$287,000	$4,783
water meters	60	$140,000	$2,333
Water tower	40	$1,000,000	$25,000
Water treatment	50	$1,000,000	$20,000
Totals		$5,698,000	$97,300
Wastewater Collection			
Sewers	75	$2,600,000	$34,667
Maintenance Holes	75	$435,000	$5,800
Force Main	75	$420,000	$5,600
Services	75	$605,000	$8,067
Pumping station	75	$750,000	$10,000
Totals		$4,810,000	$64,133
Wastewater Treatment			
Treatment Facility	30	$5,000,000	$166,667
Storm Water Management			
Storm Sewers	75	$613,000	$8,173
Maintenance Holes and Catch Basins	50	$180,000	$3,600
Totals		$793,000	$11,773
Roads and Sidewalks			
Rural Roads	25	$100,000	$4,000
Semi Urban roads	25	$2,500,000	$100,000
Urban Roads	20	$1,200,000	$60,000
Sidewalks	25	$660,000	$26,400
Totals		$4,460,000	$190,400

7.4 Ten Year Capital Plan

Municipalities with Ten Year Capital Plans commonly review them each year and update according to project priorities and the approved level of spending. The main focus of the 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.

Funding of the Capital Plan through the Water and Wastewater rates should also be set each year at budget time according to the current year priorities and funding pressures. It is noted that funding from taxes is through planned contributions for all General Tax Levy projects overall, not limited to Storm Sewer, Roads, and Bridges.

Examples of the 10 year budgets for rate funded expenditures for lifecycle replacement is shown in excerpts from the Water and Sewer Rate Study as shown in Tables 18 and 19 below.

Table 20 – Capital Budget Forecast (Water Services) from Watson Associates Water & Sewer Rate Study (June 2016)

Description	Total	Budget	Forecast								
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Expenditures											
SCADA Upgrade (50%)	1,250	1,250	-	-	-	-	-	-	-	-	-
WDS SCADA Expense	5,000	5,000	-	-	-	-	-	-	-	-	-
Water Tower - Bubbler	15,000	15,000	-	-	-	-	-	-	-	-	-
SCADA Reserve Project (50%)	25,000	25,000	-	-	-	-	-	-	-	-	-
Lifecycle Replacement											
Water Facilities	822,300	-	63,000	70,700	74,700	80,200	88,600	97,400	106,400	115,800	125,500
Water Linear Assets	178,300	-	13,700	15,300	16,200	17,400	19,200	21,100	23,100	25,100	27,200
Total Capital Expenditures	*1,046,850*	*46,250*	*76,700*	*86,000*	*90,900*	*97,600*	*107,800*	*118,500*	*129,500*	*140,900*	*152,700*
Capital Financing											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Transfer from Operating	46,250	46,250	-	-	-	-	-	-	-	-	-
Reserve - Water	1,000,600	-	76,700	86,000	90,900	97,600	107,800	118,500	129,500	140,900	152,700
Total Capital Financing	**1,046,850**	**46,250**	**76,700**	**86,000**	**90,900**	**97,600**	**107,800**	**118,500**	**129,500**	**140,900**	**152,700**

Table 21 – Capital Budget Forecast (Wastewater Services) from Watson Associates Water & Sewer Rate Study (June 2016)

Description	Total	Budget	Forecast								
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Expenditures											
SCADA Upgrade (50%)	1,250	1,250	-	-	-	-	-	-	-	-	-
SCADA Reserve Project (50%)	25,000	25,000	-	-	-	-	-	-	-	-	-
WW Treatment Plant Rehab. & Upgrade	1,525,000	1,525,000	-	-	-	-	-	-	-	-	-
Lifecycle Replacement											
Wastewater Facilities	338,700	-	28,200	28,800	31,800	34,900	38,200	38,900	42,400	45,900	49,600
Wastewater Linear Assets	239,200	-	19,900	20,300	22,500	24,700	27,000	27,500	29,900	32,400	35,000
Total Capital Expenditures	*2,129,150*	*1,551,250*	*48,100*	*49,100*	*54,300*	*59,600*	*65,200*	*66,400*	*72,300*	*78,300*	*84,600*
Capital Financing											
Provincial/Federal Grants	1,225,000	1,225,000	-	-	-	-	-	-	-	-	-
Debenture Requirements	300,000	300,000	-	-	-	-	-	-	-	-	-
Transfer from Operating	26,250	26,250	-	-	-	-	-	-	-	-	-
Reserve - Wastewater	577,900	-	48,100	49,100	54,300	59,600	65,200	66,400	72,300	78,300	84,600
Total Capital Financing	**2,129,150**	**1,551,250**	**48,100**	**49,100**	**54,300**	**59,600**	**65,200**	**66,400**	**72,300**	**78,300**	**84,600**

Not captured in the Water and Sewer Rate Study are lifecycle replacement expenditures related to the rehabilitated Sewage Treatment Plant (Construction completed end of 2018).

The anticipated Capital Budget Forecast (Wastewater Treatment Facilities) (as of September 2017) is shown in Table 20 below and this information will be captured in the next iteration of the Water and Sewer Rate Study.

Table 22 – Anticipated Capital Budget Forecast (Wastewater Treatment Plant) (September 2017)

Description	Total	Budget	Forecast								
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Lifecycle Replacement											
Wastewater Treatment Facility*	$ 5,000,000	-	$158,000	$161,000	$164,000	$167,000	$170,000	$173,000	$176,000	$179,000	$182,000

(*anticipated pending current replacement activities)

7.5 Reserves

Similar to most municipalities, reserve levels have dropped over the last few years. In the Village, this is also in part due to unanticipated Sewage Treatment Plant costs such as bypassing and trucking over the past several years prior to the rehabilitation of the Plant. As of the end of 2017 the total level of reserves for the Village was $352,182. Deposits to reserves have been further restricted due to costs related to funding the Sewage Treatment Plant Rehabilitation (as of 2018). Balancing reserves set aside for capital purposes (including acquisition of capital assets, roads, water and sewer, and recreation) is necessary for those required for working capital. It is recommended that the level of reserves be reviewed to aid in the now completed Village's WWTP upgrades, aging infrastructure, deficient road network and to smooth out funding requirements.

7.6 Debt

Debt repayment levels are reviewed each year at budget time. The Village's current debt level is approaching the Provincial Annual Repayment Limit (ARL). The Village should continue debt financing capital related works for a period no longer than the average useful life of the asset.

8.0 SUMMARY OF RECOMMENDATIONS

The following is a summary of recommendations presented throughout this Asset Management Plan.

- This AMP is a living document and should be reviewed annually prior to the Village's annual budgeting process in order that information presented, including financial data, is current and relevant. Updates of this AMP should be undertaken on a regular and as needed basis. Updated April 2019

- It is recommended that the Village develop and maintain a 10 Year Capital Plan which would identify the timing for priority asset renewal, rehabilitation projects, and the cost to construct these assets. This activity would expand on the 10 Year forecasting completed for water and sewer user rates to include other capital assets.

- It is recommended that the Village of Westport adopt an Asset Management Policy Statement.

- The Village should post the AMP on its website for Public access. – Completed.

- The Village 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 a database or a GIS system 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 Village 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 continue to be examined.

- It is recommended that the Village validate buried pipe conditions, with an annual Closed Circuit Television (CCTV) condition assessment program of the sanitary and storm sewer system. This work program should be adjusted annually to target sewers with known operation issues and/or pipe materials which may be nearing the end of their Ideal Service Life. Maintenance holes should be included in this assignment as it proceeds. Collection of this data will allow staff to make informed decisions with respect to priority replacement or rehabilitation of sewers. History of breaks and interviews with Village staff to determine operational issues should also constitute a component of this exercise. This information should be entered into a database/GIS so that it can be used more effectively 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 sewer rehabilitation may also be investigated as opposed to more expensive open cut watermain replacement. Opportunities to coordinate sewer rehabilitation with road reconstruction and other related capital projects should continue to be examined. ---Begun Spring 2018

- The Village should consider a Public Meeting to present and discuss this AMP including current and desired levels of service, strategic asset management, and funding required.

- A more detailed investigative condition assessment of the Village's Facilities asset category should be undertaken. This should be undertaken to obtain baseline information and to identify a more detailed and engineered/architectural based work plan for renewal, upgrade and eventual replacement.

- It is recommended that the Village re-examine and update/document its current performance measurement program based on the contents of this AMP.

- It is recommended that the level of reserves be reviewed to aid in the replacement of the Village's aging infrastructure and to smooth out funding requirements.

- It is recommended that the Village 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 the Village of Westport Asset Management Plan, the following background information, publications, reports and best practice guides for asset management have been referenced:

- *Village of Westport – Consolidated Financial Statements (2013, 2014, 2015)*
- *2012 Risk Management Inspection -- Frank Cowan Company*
- *2013 Ontario Structure Inspection Manual – AECOM*
- *Village of Westport Proposed Rehabilitation/ Expansion of the Westport WWTS Municipal Class EA Environmental Study Report, AECOM, December 18, 2015*
- *Village of Westport Water and Wastewater Rate Study, Watson & Associates Economists Ltd., June 2, 2016*
- *Village of Westport Asset Management Plan, AECOM, December 2014*
- *Village of Westport Strategic Plan 2015-2018, Stephanie Doornekamp, 2015*
- *Village of Westport 2007 Roads Needs Study, AECOM*
- *Village of Westport 2007 Buildings Survey, AECOM*
- *Ontario Good Roads Association – A Guide for Road and Bridge Asset Management Plan Development, June 2011*
- *Canadian Infrastructure Report Card 2012*
- *International Infrastructure Management Manual - 2011Edition*
- *Asset Management Centre 2011, FRAME – Fundamental Resources for Asset Management Excellence*
- *An Asset Management Governance Framework for Canada – February 2009 National Asset Management Working Group (NAMWG)*
- *Levels of Service Guidelines for Asset Management Planning, February 2012 – Tertiary Education Commission*
- *Defining and Developing Levels of Service – A Best Practice by the National Guide to Sustainable Municipal Infrastructure, April 2003*
- *Developing Indicators and Benchmarks – A Best Practice by the National Guide to Sustainable Municipal Infrastructure, December 2002*
- *Alternative Funding Mechanisms - A Best Practice by the National Guide to Sustainable Municipal Infrastructure, April 2003*
- *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*
- *City of Brockville Asset Management Plan 2013*
- *The Township of Bonnechere Valley Asset Management Plan for Water and Sewer Infrastructure and Arena/Community Centre, 2013*
- *City of Nanaimo Asset Management Plan 2010*
- *City of Nanaimo Asset Management Plan 2012 Update*
- *City of Ottawa Comprehensive Asset Management Plan – 2012 State of the Asset report*
- *City of Thunder Bay Transportation and Works Asset Management Plan Report 2005*

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”
JLR – J.L. Richards & Associates Limited
GIS – Geographic Information System
MMS – Maintenance Management System
WTP – Water Treatment Plant
WPCC – Water Pollution Control Centre
P.V.C. – 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
LOS – Levels of Service
DWQMS – Drinking Water Quality Management Standard
DWMPUDS - Downtown and Waterfront Master Plan and Urban Design Strategy
EPA – Environmental Protection Act
OWRA – Ontario Water Resources Act

ECA – Environmental Compliance Approval
WSER – Wastewater Systems Effluent Regulations
MOE – Ministry of the Environment
QBS – Qualifications-based Selection
RFQ – Request for Qualifications
RFP – Request for Proposals
ARL – Annual Repayment Limit

APPENDIX “A”
Village of Westport Consolidated Financial Statements

- **Consolidated Financial Statements 2015 - 2017**

APPENDIX “B”
Village of Westport Procurement By-Law

- **By-law No. 15-11**