Asset Management Plan

Village of South River 2025

Adopted by South Council Resolution #204-2025

Key Statistics

Replacement cost of asset portfolio
$73.8 million

Replacement cost of infrastructure per household
$144,771 (2025)

Percentage of assets in fair or better condition
61.25%

Percentage of assets with assessed condition data
95%

Annual capital infrastructure deficit
$1.5 million

Recommended timeframe for eliminating annual infrastructure deficit
175 Years

Target reinvestment rate
2.4%

Actual reinvestment rate
0.55%

Table of Contents

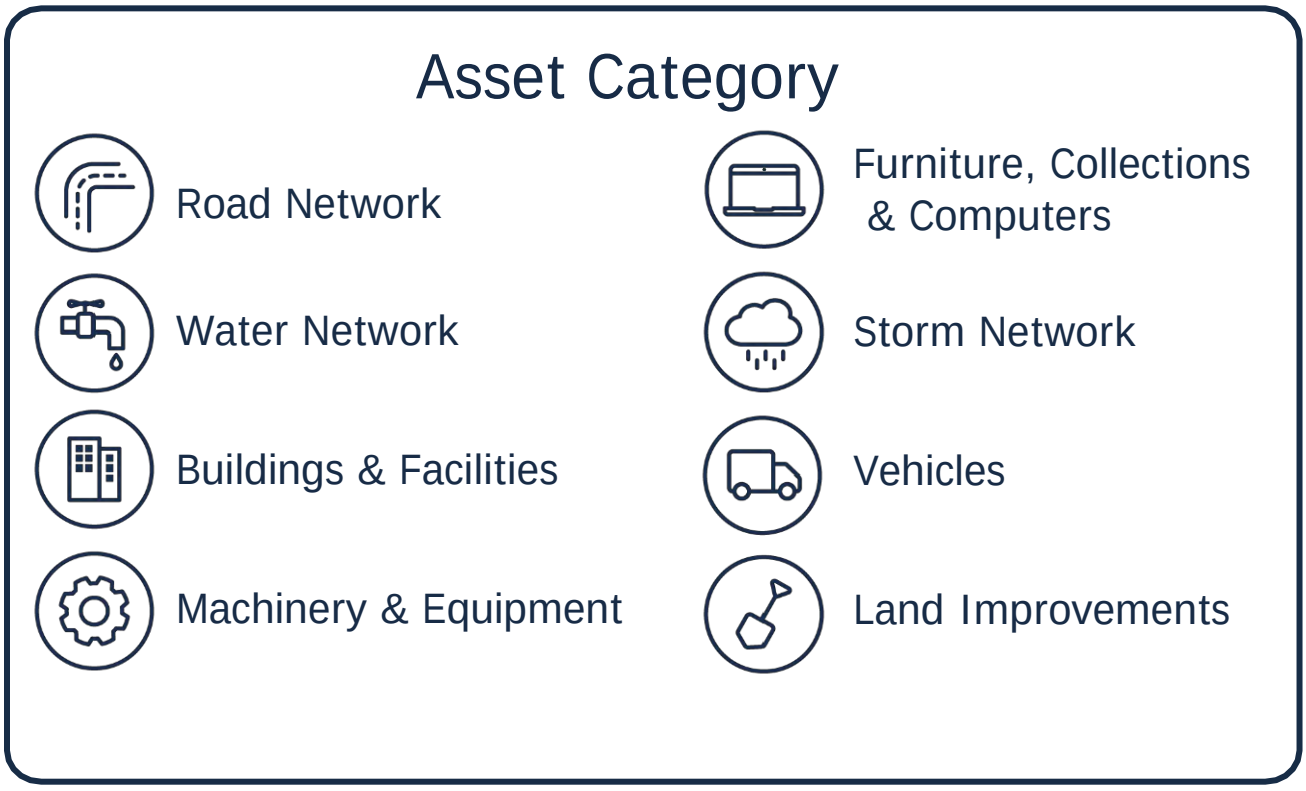
Executive Summary

Municipal infrastructure provides the foundation for the economic, social, and environmental health and growth of a community through the delivery of critical services. The goal of asset management is to deliver an adequate level of service in the most cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

Scope

This AMP identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, the Village can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

This AMP include the following asset categories:



With the development of this AMP the Village has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2025.

Findings

The overall replacement cost of the asset categories included in this AMP totals $72.3 million. 61% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 95% of assets. For the remaining 5% of assets, assessed condition data was unavailable, and asset age was used to approximate condition – a data gap that persists in most municipalities. Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (paved roads) and replacement only strategies (all other assets) to determine the lowest cost option to maintain the current level of service.

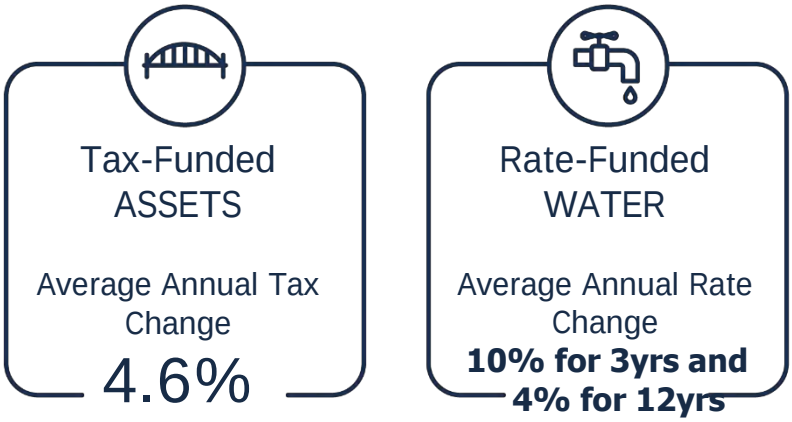
To meet capital replacement and rehabilitation needs for existing infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, the Village's average annual capital requirement totals $1.5 million. For 2023, 2024 and 2025 the Village has far exceeded the annual average with grants and extensive borrowing. Unfortunately that is not a long term sustainable model. Based on a historical analysis of sustainable capital funding sources, the Village is committing approximately $360,000 towards capital projects or reserves per year. As a result, going forward there is an annual funding gap of $1.18 million.

It is important to note that this AMP represents a snapshot in time and is based on the best available processes, data, and information at the Village. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources. The Village is currently updating their financial software to include Asset Management.

Annual Deficit per Household

Recommendations

A financial strategy was developed to address the annual capital funding gap. The following graphics shows annual tax/rate change required to eliminate the Village's infrastructure deficit based on a 15-year plan for water assets and a 20-year plan for tax-funded assets:



To guide continuous refinement of the Village's asset management program include:

- Review data to update and maintain a complete and accurate dataset
- Develop a condition assessment strategy with a regular schedule
- Review and update lifecycle management strategies
- Develop and regularly review short- and long-term plans to meet capital requirements
- Measure current levels of service and identify sustainable proposed levels of service, consider service reductions if necessary

1 Introduction & Context

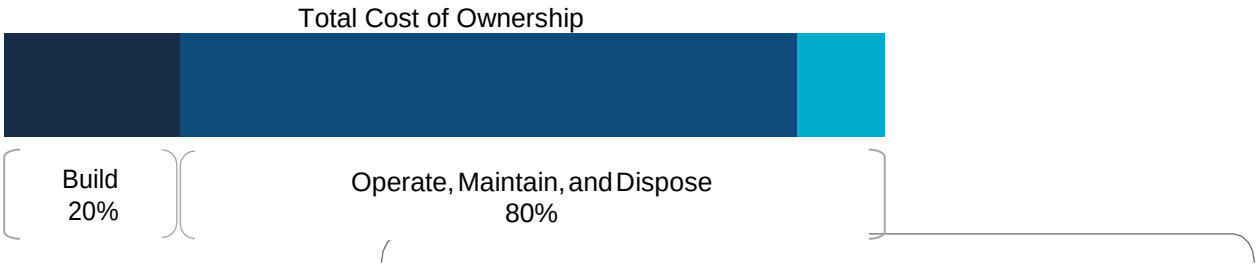
Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio
- The Village's asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management
- An asset management plan is a living document that should be updated regularly to inform long-term planning
- Ontario Regulation 588/17 outlines several key milestone and requirements for asset management plans in Ontario between July 1, 2022 and 2025

1.1 An Overview of Asset Management

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community. The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio.

The acquisition of capital assets accounts for only 10-20% of their total cost of ownership. The remaining 80-90% derives from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.



These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and is an essential element of a broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

1.1.1 Asset Management Policy

An asset management policy represents a statement of the principles guiding the municipality's approach to asset management activities. It aligns with the organizational strategic plan and provides clear direction to municipal staff on their roles and responsibilities as part of the asset management program.

The Village adopted Policy No. 1-2019 "South River Asset Management Policy" on May 27, 2019, in accordance with Ontario Regulation 588/17.

The purpose of the policy is to establish consistent standards and guidelines for management of municipal infrastructure. The objectives of the policy include:

- Economic Development
- Budgeting and Planning
- Infrastructure Prioritization
- Community Focused

1.1.2 Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the policy on how the municipality plans to achieve asset management objectives through planned activities and decision-making criteria.

The Village's Asset Management Policy contains many of the key components of an asset management strategy and may be expanded on in future revisions or as part of a separate strategic document.

1.1.3 Asset Management Plan

The asset management plan (AMP) presents the outcomes of the municipality's asset management program and identifies the resource requirements needed to achieve a defined level of service. The AMP typically includes the following content:

- State of Infrastructure
- Asset Management Strategies
- Levels of Service
- Financial Strategies

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available. This will allow the municipality to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.2 Key Concepts in Asset Management

Effective asset management integrates several key components, including lifecycle management, risk management, and levels of service. These concepts are applied throughout this asset management plan and are described below in greater detail.

1.2.1 Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation and replacement. The following table provides a description of each type of activity and the general difference in cost.

Lifecycle Activity	Description	Example (Roads)	Cost
Maintenance	Activities that prevent defects or deteriorations from occurring	Crack Seal	$
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	Mill & Re-surface	$$
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	Full Reconstruction	$$$

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

The Village's approach to lifecycle management is described within each asset category outlined in this AMP. Developing and implementing a proactive lifecycle strategy will help staff to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

1.2.2 Risk Management Strategies

Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road. These high-value assets should receive funding before others.

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused.

This AMP includes a high-level evaluation of asset risk and criticality. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation and replacement strategies for critical assets.

1.2.3 Levels of Service

A level of service (LOS) is a measure of what the Village is providing to the community and the nature and quality of that service. Within each asset category in this AMP, technical metrics and qualitative descriptions that measure both technical and community levels of service have been established and measured as data is available.

These measures include a combination of those that have been outlined in O. Reg. 588/17 in addition to performance measures identified by the Village as worth measuring and evaluating. The Village measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (Roads, Bridges & Culverts, Water, Storm) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, the Village has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

Technical levels of service are a measure of key technical attributes of the service being provided to the community. These include mostly quantitative measures and tend to reflect the impact of the municipality's asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For core asset categories (Roads, Bridges & Culverts, Water, Storm) the Province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. The current levels of service have been measured and the Village plans to maintain those levels of service over a 10-year period, in accordance with O. Reg. 588/17 if financially possible.

The proposed levels of service are realistic and achievable within the timeframe outlined by the Village. They are determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability. The levels of service have been established and identify a lifecycle management and financial strategy which allows these targets to be achieved.

1.3 Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17). Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

The diagram below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

2019

Strategic Asset Management Policy

2022

Asset Management Plan for Core Assets with the following components:

1. Current levels of service
2. Inventory analysis
3. Lifecycle activities to sustain LOS
4. Cost of lifecycle activities
5. Population and employment forecasts
6. Discussion of growth impacts

2024

Asset Management Plan for Core and Non-Core Assets (same components as 2022)

2025

Asset Management Policy Update and an Asset Management Plan for All Assets with the following additional components:

1. Proposed levels of service for next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impacted lifecycle and financial

1.3.1 O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2022. Next to each requirement a page or section reference is included in addition to any necessary commentary.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	4.1.1 - 5.2.1	Complete
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1.1 - 5.2.1	Complete
Average age of assets in each category	S.5(2), 3(iii)	4.1.3 - 5.2.3	Complete
Condition of core assets in each category	S.5(2), 3(iv)	4.1.2 – 5.2.2	Complete
Description of municipality's approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.1.2 – 5.2.2	Complete
Current levels of service in each category	S.5(2), 1(i-ii)	4.1.6 - 5.2.6	Complete
Current performance measures in each category	S.5(2), 2	4.1.6 - 5.2.6	Complete
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.4 - 5.2.4	Complete
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix B	Complete
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	6.1-6.2	Complete

2 Scope and Methodology

Key Insights

- This asset management plan includes 8 asset categories and is divided between tax-funded and rate-funded categories
- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation
- Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.1 Asset categories included in this AMP

This asset management plan for the Village of South River is produced in compliance with Ontario Regulation 588/17.
The AMP summarizes the state of the infrastructure for the Village's asset portfolio, establishes current levels of service and the associated technical and customer oriented key performance indicators (KPIs), outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

Asset Category	Source of Funding
Road Network	Tax Levy
Storm Network	
Buildings & Facilities	
Vehicles	
Machinery & Equipment	
Land Improvements	
Furniture and Computers	
Water Network	User Rates

2.2 Deriving Replacement Costs

There are a range of methods to determine the replacement cost of an asset, and some are more accurate and reliable than others. This AMP relies on two methodologies:

- **User-Defined Cost and Cost/Unit**: Based on costs provided by municipal staff which could include average costs from recent contracts; data from engineering reports and assessments; staff estimates based on knowledge and experience
- **Cost Inflation/CPI Tables**: Historical cost of the asset is inflated based on Consumer Price Index or Non-Residential Building Construction Price Index

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically used in the absence of reliable replacement cost data. It is a reliable method for recently purchased and/or constructed assets where the total cost is reflective of the actual costs that the Village incurred. As assets age,

and new products and technologies become available, cost inflation becomes a less reliable method.

2.3 Estimated Useful Life and Service Life Remaining

The estimated useful life (EUL) of an asset is the period over which the Village expects the asset to be available for use and remain in service before requiring replacement or disposal. The EUL for each asset in this AMP was assigned according to the knowledge and expertise of municipal staff and supplemented by existing industry standards when necessary.

By using an asset's in-service data and its EUL, the Village can determine the service life remaining (SLR) for each asset. Using condition data and the asset's SLR, the Village can more accurately forecast when it will require replacement. The SLR is calculated as follows:

$$Service\ Life\ Remaining\ (SLR) = In\ Service\ Date + Estimated\ Useful\ Life (EUL) - Current\ \ Year$$

2.4 Reinvestment Rate

As assets age and deteriorate they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost.

By comparing the actual vs. target reinvestment rate the Village can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

$$Target\ Reinvestment\ Rate = \frac{Annual\ Capital\ Requirement}{Total\ Replacement\ Cost}$$

$$Actual\ Reinvestment\ Rate = \frac{Annual\ Capital\ Funding}{Tota \quad Replacement\ Cost}$$

2.5 Deriving Asset Condition

An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making. Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life.

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across the Village's asset portfolio. The table below outlines the condition rating system used in this AMP to determine asset condition. This rating system is aligned with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. When assessed condition data is not available, service life remaining is used to approximate asset condition.

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-80
Fair	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-60
Poor	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-40
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-20

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix E includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

3 Portfolio Overview

Key Insights

- The total replacement cost of the Village's asset portfolio is $73.8 million
- The Village's target re-investment rate is 2.4%, and the actual re-investment rate is 0.55%, contributing to an expanding infrastructure deficit
- 61% of all assets are in fair or better condition
- 24% of assets are projected to require replacement in the next 10 years
- Average annual capital requirements total $1.5 million per year across all assets

3.1 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $73.8 million based on inventory data from 2025. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

3.2 Target vs. Actual Reinvestment Rate

The funding gaps or surpluses are found by comparing target vs actual reinvestment rate. To meet the long-term replacement needs, the Village should be allocating approximately $1.5 million annually, for a target reinvestment rate of 2.4%. Actual annual spending on infrastructure totals approximately $373,000, for an actual reinvestment rate of 0.55%.

3.3 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 63% of assets in South River are in fair or better condition. This estimate relies primarily on staff based field condition data and some age- based assessments.

This AMP relies on assessed condition data for 95% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	% of Assets with Assessed Condition	Source of Condition Data
Road Network	100%	Staff /Consultants
Storm Water Network	85%	Staff /Consultants
Buildings & Facilities	100%	Staff /Consultants
Vehicles	100%	Staff Assessments
Machinery & Equipment	100%	Staff Assessments
Land Improvements	100%	Staff Assessments
Furniture, Collections & Computers	100%	Staff Assessments
Water Network	100%	Staff /Consultants

3.4 Service Life Remaining

Based on asset age, available assessed condition data and estimated useful life, 24% of the Village's assets will require replacement within the next 10 years. Capital requirements over the next 10 years are identified in Appendix B.

4 Analysis of Tax-funded Assets

Key Insights

- Tax-funded assets are valued at $56.9 million
- 52% of tax-funded assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for tax-funded assets is approximately $1.1 million
- Critical assets should be evaluated to determine appropriate risk mitigation activities and treatment options

4.1 Road Network

The Road Network is a critical component of the provision of safe and efficient transportation services and represents the highest value asset category in the Village's asset portfolio. It includes all municipally owned and maintained roadways in addition to supporting roadside infrastructure including sidewalks, streetlights, and curbs and gutters.

The Village's roads and sidewalks are maintained by the Public Works department who is also responsible for winter snow clearing, ice control and snow removal operations.

4.1.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Road Network inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Curb and Gutter	1,681m	CPI Tables	$250,955
HCB	12,981m	Cost/Unit	$15,646,330
LCB	3000m	Cost/Unit	$1,975,100
Sidewalks	5650m	CPI Tables	$764,755
Street Lighting	188	CPI Tables	$334,640
Total			**$18,971,780**

,Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a value based on 2013 Aecon Engineering Assessment updated by Village staff in 2022.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Curb and Gutter	85	Very Good	100% Assessed
HCB	65	Good	100% Assessed
LCB	1%	Very Poor	100% Assessed
Street Lighting	74%	Good	100% Assessed
Average	**56.25%**	**Fair**	**100%Assessed**

HCB - High Class Bituminous
LCB – Low Class Bituminous

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- The 2013 formal condition assessment is updated by staff for the road network
- Road surfaces and supporting infrastructure are visually assessed annually by municipal staff to identify deficiencies and guide long-term capital planning.
- Substantial resurfacing and curb and gutter work occurred over the previous three years as part of watermain rehabilitation.

4.1.2 Estimated Useful Life & Average Age

The Estimated Useful Life for Road Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Curb and Gutter	50	15
HCB	20	18
LCB	15	27
Sidewalks	30	18
Street Lighting	20-30	10.0
Average		**17.6**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.1.3 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment.

The following lifecycle strategies have been developed as a proactive approach to managing the lifecycle of LCB and HCB roads. Instead of allowing the roads to deteriorate until replacement is required, strategic rehabilitation is expected to extend the service life of roads at a lower total cost.

Paved Roads (HCB)		
Event Name	**Event Class**	**Event Trigger**
Crack Sealing	Preventative Maintenance	5 Years (Repeated)
Full Reconstruction	Replacement	0% Condition

Paved Roads (LCB)		
Event Name	**Event Class**	**Event Trigger**
Pothole Filling	Maintenance	5 Years (Repeated)
Double Lift Surface Treatment	Rehabilitation	8 Years
Single Lift Surface Treatment	Rehabilitation	16 Years & 24 Years
Full Reconstruction	Replacement	0% Condition

Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for HCB and LCB Roads, and assuming the end-of-life replacement of all other assets in this category, the following forecasts capital requirements for the Road Network. Phasing the work over several years can help flatten the peaks and distribute capital requirements more evenly.

The annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs to meet future capital needs.

2026 to 2030

Curb and Gutter $40,000, HCB $2.5M, LCB $ 50,000, Sidewalks $50,000, Streetlight $0 Total $2.6M

2031 to 2035

Curb and Gutter $0, HCB $1M, LCB $0.3M, Sidewalks $.2M, Streetlights $0 Total $1.5M

2036 to 2040

Curb and Gutter $0, HCB $5M, LCB $1.0M, Sidewalks $.2M, Streetlights $0 Total $6.2M

2041 to 2045

Curb and Gutter $45,000, HCB $3M, LCB $50,000 Sidewalks $70,000, Streetlight $0 Total $3.2M

Total refurbishment is anticipated a $13.5M over the next 20 years for an average annual capital requirement of $675,000.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.1.4 Risk & Criticality

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Aging Infrastructure

As municipal roads continue to age, the majority of the road inventory is approaching the original useful life. Though extensive asphalt was replaced as necessary during watermain rehabilitation for the period of 2022 -2024. It now appears formal asphalt replacement planned for 2025-2026 will not happen as grant funding has not materialized. Staff continues to implement a proactive maintenance strategy, primarily cold patching and crack sealing to extend the service life of roads.

Capital Funding Strategies

An annual capital funding strategy is in place to reduce dependency on grant funding and help prevent deferral of capital works, however major capital rehabilitation projects for roads are largely dependent on the availability of additional grant opportunities to maximize value.

4.1.5 Levels of Service

The following tables identify the Village's current level of service for the Road Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Village has selected for this AMP.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by the Road Network.

Service Attribute	Qualitative Description	Current LOS (2025)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	See Appendix C
Quality	Description or images that illustrate the different levels of road class pavement condition	Extremely Poor: Widespread signs of deterioration. Requires remedial work to bring road up to standard. Service is affected
		Poor: Large portions of road exhibiting deterioration with rutting, potholes, distortions, longitude and lateral cracking. Road is mostly below standard.
		Fair: Some sections of road starting to deteriorate. Requires some remedial work and surface upgrade in near future.
		Good: Road is in overall good condition. Few sections are starting to show signs of minimal deterioration.
		Excellent: Road is well maintained and in excellent condition. Surface was newly or recently upgraded. No signs of deterioration or remedial work required.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the Road Network.

Service Attribute	Technical Metric	Current LOS (2025)
Scope	Lane-km of arterial roads (MMS classes 1 and 2) per land area (km/km^2)	0
	Lane-km of collector roads (MMS classes 3 and 4) per land area (km/km^2)	0
	Lane-km of local roads (MMS classes 5 and 6) per land area (km/km^2)	0.94
Quality	Average pavement condition index for paved roads in the municipality	HCB: Fair LCB: Poor
	Average surface condition for unpaved roads in the municipality (e.g. excellent, good, fair, poor)	Good
Performance	Capital reinvestment rate	1%

4.1.6 Recommendations

Asset Inventory

- Review road culverts and sidewalk inventory to determine whether all municipal assets within these asset segments have been accounted for.

Replacement Costs

- Update replacement costs on a regular basis to ensure the accuracy of capital projections. New software will assist with this.

Condition Assessment Strategies

- Condition data for road surfaces and supporting infrastructure be uploaded into new Townsuite Software and used for capital planning.

Lifecycle Management Strategies

- Implement the identified lifecycle management strategies for HCB and LCB roads to realize potential cost avoidance and maintain a high quality of road pavement condition.
- Evaluate the efficacy of the Village's lifecycle management strategies at regular intervals to determine the impact cost, condition and risk.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics identified in O. Reg. 588/17 and those metrics that the Village believes to provide meaningful and reliable inputs into asset management planning.

4.2 Storm Network

The storm water services are delivered and maintained by municipal staff.

The Storm Water Network includes the following assets:

- Machinery and equipment for system maintenance
- Storm sewer
- Catch basins, culverts, and ditches

4.2.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Sanitary Sewer Network inventory.

Asset Segment	Quantity (Components)	Replacement Cost Method	Total Replacement Cost
Catch basins	82	CPI Tables	$570,725
Storm Sewer	5.01 km	CPI Tables	$2,099,375
Culverts and ditches	22 km	CPI Tables	$294,200
Bridges	2	Consultant	$3,113,545
Total			**$6,077,845**

4.2.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition (%)	Average Condition Rating	Condition Source
Storm sewer	70%	Good	Camera/Staff
Catch basins	80%	Good	Staff
Culverts and ditches	70%	Good	Staff
Bridges	55%	Fair	Consultant
Average	**68.8%**	**Good**	**100% Assessed**

To ensure that the Village's Storm Sewer Network continues to provide an acceptable level of

service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Storm Sewer Network.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

- CCTV inspections were recently completed on most of the storm sewer network; the footage is used to identify issues, and condition ratings are informed by staff
- Catch basins are inspected and vacuum trucked annually. Repairs are done as issues are identified by staff
- Culverts and ditches are routinely inspected during or after storm events and issues identified are repaired or updated by staff.

4.2.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Storm Sewer Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Storm sewer	60	48
Catch basins	60	48
Culverts and ditches	15-60	38
Bridges	50-60	96
Average		**57.5**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.2.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is

important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Village's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Repairs are reactive, and conducted only after issues are identified by camera inspections (e.g., loose joints, cracked or sunken pipe, root infiltration).
	Primary activities include catch basin cleaning and dredging ditches of accumulated sand. Most of the storm sewer network was completed recently with CCTV inspections.
	CCTV inspection, cleaning and visual inspections are used to identify issues and this information is used to drive forward rehabilitation and replacement plans.
Rehabilitation	Trenchless re-lining has the potential to reduce total lifecycle costs and will be considered as the storm sewer deteriorates to determine viability.
Replacement	Replacement of storm water assets is partly reactive. However, replacement of storm assets may also take place in coordination with road construction based on an assessment of asset age, material, and CCTV inspections. Due to the overall young age and good condition of the Village's storm sewer network, storm sewers, culverts and ditches are generally upgraded only to accommodate new growth.

Forecasted Capital Requirements

The following graph forecasts long-term capital requirements. The annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

2026 to 2030
Catch basins $10,000, Storm Sewer $10,000, Culverts and Ditches $15,000 Bridges $250,000
Total $285,000

2031 to 2035
Catch basins $20,000, Storm Sewer $20,000, Culverts and Ditches $30,000 Bridges $300,000
Total $370,000

2036 to 2040
Catch basins $20,000, Storm Sewer $20,000, Culverts and Ditches $30,000 Bridges $1.5M
Total $1,570,000

2041 to 2045
Catch basins $10,000, Storm Sewer $10,000, Culverts and Ditches $15,000, Bridges $200,000
Total $235,000

Given the average age and condition of the storm water system no significant capital requirements are anticipated in the next 20 years. The total cost of $210,000 excluding bridges represents $7500 per year and is manageable. The cost to maintain and replace the bridges inherited from MTO is challenging. As only a few homes and lots are serviced by the twin bridges hopefully an affordable alternative can be found.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.2.5 Risk & Criticality

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Aging Infrastructure

As municipal assets continue to age, most of the stormwater structures have an extensive useful life remaining. Structures that do require replacement are minor in nature and within annual maintenance budgets

Staff plan to continue proactive maintenance and initiate a capital rehabilitation strategy to extend the service life of structures at the lowest cost.

Extreme Weather

Leaks and breaks are most commonly caused by freezing temperatures. Incorporating a monitoring and maintenance program for all storm infrastructure into the asset management plan can further support infrastructure resiliency and reduce risk. Catch basins are cleaned annually and the storm sewer filmed as necessary.

4.2.6 Levels of Service

The following tables identify the Village's current level of service for Storm Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Village has selected for this AMP.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by Storm Network.

Service Attribute	Qualitative Description	Current LOS (2025)
Scope	Description, which may include map, of the user groups or areas of the municipality that are protected from flooding, including the extent of protection provided by the municipal stormwater system	See Appendix C

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the Storm Network.

Service Attribute	Technical Metric	Current LOS (2025
Scope	% of properties in municipality resilient to a 100-year storm	70%[1]
	% of the municipal stormwater management system resilient to a 5-year storm	90%[2]
Performance	Capital reinvestment rate	0%

[1] The Village does not currently have hard data available to determine this technical metric. The rate of properties that are expected to be resilient to a 100-year storm is estimated at 70% based on North Bay Matawa Conservation Authority sensitivity maps

2 This is based on the observations of municipal staff as some low lying properties are susceptible to high ground water during major rain or thaw events.

4.2.7 Recommendations

Asset Inventory

- The Village's Storm Network inventory remains at a basic level of maturity and staff have a high level of confidence in its accuracy and reliability. The enhancement of a comprehensive inventory of the storm network should be priority particularly the interconnection with the Ministry of Transportation storm network along Highway 124.

Replacement Costs

- All replacement costs used in this AMP were primarily based on staff inspections and some used the inflation of historical costs. These costs need to be reevaluated on a regular basis to maintain their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- The comprehensive inventory has been enhanced by a system- wide assessment of the condition of the storm sewer through a CCTV inspection.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Lifecycle Management Strategies

- A trenchless re-lining strategy may extend the service life of storm water mains at a lower total cost of ownership and could be implemented to extend the life of infrastructure at the lowest total cost of ownership.

- Document and review lifecycle management strategies for the Storm Network on a regular basis to achieve the lowest total cost of ownership while maintaining adequate service levels.

Levels of Service

- Continue to measure current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are

determined to provide meaningful and reliable inputs into asset management planning.

4.3 Buildings & Facilities

The Village of South River owns and maintains several facilities and recreation centres that provide key services to the community. These include:

- administrative offices
- fire station and associated offices and facilities
- public works garages and storage sheds
- arena, park structures, and community centre
- cemetery vault and shed

4.3.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Buildings & Facilities inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Administration Buildings	1	CPI Tables	$3,446,630
Cemetery Buildings	2	CPI Tables	$70,454
Fire Hall	1	CPI Tables	$1,738,050
Ambulance Base	1	CPI Tables	$613,892
Rental Building	2	CPI Tables	$3,697,440
Public Works Buildings	4	CPI Tables	$1,160,330
Recreation Buildings	4	CPI Tables	$13,245,555
Train Station	1	CPI Tables	$524,361
Total			**$24,496,712**

4.3.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Administration Buildings[3]	70%	Good	Study/Staff
Cemetery Buildings	30%	Poor	Study/Staff
Fire Hall	60%	Fair	Study/Staff
Ambulance base	50%	Fair	Study/Staff
Rental Buildings	90%	Very Good	Study/Staff
Public Works Buildings	70%	Good	Study/Staff
Recreation Buildings	65%	Good	Study/Staff
Train Station[3]	75%	Good	Study/Staff
Average	**63.75%**	**Good**	Study/Staff

To ensure that the Village's Buildings & Facilities continue to provide an acceptable level of service, the Village will continue to monitor the average condition of all assets. Aecom Engineering completed a physical assessment in 2015 and staff monitors annually. If the average condition declines, staff will re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Buildings & Facilities.

[3] The administration building was originally built in 1965 with extensive renovation in 2010.

[3] The Train Station is underwent significant renovations in 2025 to improve condition.

4.3.2 Estimated Useful Life & Average Age

The Estimated Useful Life for Buildings & Facilities assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Administration Buildings[5]	45	61
Cemetery Buildings	60	61
Fire Hall	50	35
Ambulance base	50	36
Rental Buildings	50	16
Public Works Buildings	50	23
Recreation Buildings	50	49
Train Station	50	120
Average (excluding train station)		**40.14**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

[5] Due to maintenance and rehabilitative activities the administration buildings have remained functional beyond the originally estimated useful life.

4.3.3 Forecasted Capital Requirements

The long-term annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

The total capital expenditures for buildings over the next ten years are estimated at $710,000 or $71,000 per year.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.3.4 Asset Management Strategies

The documentation of lifecycle management strategies, current levels of service, and risk are critical to the development of a comprehensive asset management program. These components of the asset management plan support effective short- and long-term capital planning and contribute to more proactive asset management practices, thus extending the estimated useful life of many assets and providing a higher level of service.

In accordance with O. Reg. 588/17, the Municipality will continue to gather data and information in order to detail and review the lifecycle management strategies, levels of service, and risk of all non-core asset categories.

4.3.5 Recommendations

Asset Inventory

- The Village's asset inventory contains a single record for most facilities. Facilities consist of several separate capital components that have unique estimated useful lives and require asset-specific lifecycle strategies. Staff will work towards a component-based inventory of all facilities to allow for component-based lifecycle planning as has been done for the Arena
- The estimated useful life of building assets should be reviewed, and revised where necessary, to ensure it aligns with the observed service life.

Replacement Costs

- The replacement costs for buildings in this AMP are based on historical costs, inflation and where possible actual 2025 costs. Staff will continue to gather user-defined costs to support capital planning.

Condition Assessment Strategies

- Conditions for buildings in this AMP are staff and age-based. The Village will continue to implement regular condition assessments for all facilities to better inform short- and long-term capital requirements as part of the Townsuite software.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Develop risk models and review them on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying strategies that are required to close any gaps between current and proposed levels of service.

4.4 Vehicles

Vehicles allow staff to efficiently deliver municipal services and personnel. Municipal vehicles are used to support several service areas, including:

- Vehicles for winter control activities
- fire rescue vehicles to provide emergency services
- backhoe, tractors, and dump truck for public works and transportation services
- pick-up trucks to support the maintenance of the transportation, water and stormwater networks

4.4.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Vehicles.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Dump and Plow	1	Staff	$350,000
Fire	5	Staff	$2,368,000
Medium Duty Pickups w/plows	2	Staff	$182,000
All-Terrain Vehicle	1	Staff	$44,000
Trackless and Backhoe	2	Staff	$419,000
Lawn Mowers, Ice Resurfacer	4	Staff	$165,000
Total			**$3,528,000**

4.4.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Dump and Plow	40%	Fair	Visual/Staff
Fire	80%	Good	Visual/Staff
Medium Duty Pickups	70%	Good	Visual/Staff
Trackless and Backhoe	70%	Good	Visual/Staff
Lawn Mower, Olympia Resurfacer	60%	Fair	Visual/Staff
	64%	**Good**	Visual/Staff

To ensure that the Village's Vehicles continue to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Vehicles.

4.4.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Vehicles assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Dump and Plow	10-12	12
Fire	10-20	10
Medium Duty Pickups	10	6
Trackless and Backhoe	10-15	5.5
Lawn Mowers, Olympia Resurfacer	10-15	8
Average		**8.3**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.4.4 Forecasted Capital Requirements

The long-term annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

The total capital expenditures for vehicles over the next ten years are estimated at $1,919,000 or $191,900 per year.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.4.5 Asset Management Strategies

The documentation of lifecycle management strategies, current levels of service and risk are critical to the development of a comprehensive asset management program. These components of the asset management plan support effective short- and long-term capital planning and contribute to more proactive asset management practices, thus extending the estimated useful life of many assets and providing a higher level of service.

In accordance with O. Reg. 588/17, the Municipality will continue to gather data and information in order to detail and review the lifecycle management strategies, levels of service, and risk of all non-core asset categories.

4.4.6 Recommendations

Asset Data

- Vehicles and equipment need to be maintained and rehabilitated to ensure they are functional for their full estimated useful life (EUL) and beyond if possible. Staff should annually revise EULs to accurately reflect the asset's useful life.

Replacement Costs

- Some of the replacement costs for vehicles in this AMP are based on historical costs and inflation but most are based on current market conditions. Staff will continue to refine user-defined costs to support capital planning from time to time as market conditions are currently very volatile.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk vehicles.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Develop and review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning

4.5 Machinery & Equipment

In order to maintain the high quality of public infrastructure and support the delivery of core services, Village staff own and employ various types of machinery and equipment. This includes:

- Landscaping equipment to maintain public parks
- Fire equipment to support the delivery of emergency services
- Equipment for recreation and administrative buildings such as skate park, condensers, dehumidifiers, etc.

Keeping machinery & equipment in an adequate state of repair is important to maintain a high level of service.

4.5.1 Asset Inventory & Replacement Cost

The following table includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Machinery & Equipment inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Fire Department Equipment	98	Software	$571,797
Miscellaneous Machinery and Equipment	34	Staff	$1,364,068
Recreation Equipment	23	Staff	$936,527
Total			**$2,872,392**

4.5.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Fire Department Equipment	70%	Good	Visual/Staff
Miscellaneous Machinery and Equipment	65%	Good	Visual/Staff
Recreation Equipment	70%	Good	Visual/Staff
Average	**68%**	**Good**	**Visual/Staff**

To ensure that the Village's Machinery & Equipment continues to provide an acceptable level of service, the Village will monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Machinery & Equipment.

4.5.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Machinery & Equipment assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Fire Department Equipment	10	10
Miscellaneous Machinery and Equipment	10-30	17
Recreation Equipment	5-20	5
Average		**11**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.5.4 Forecasted Capital Requirements

The long-term annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

The total capital expenditures for equipment over the next ten years are estimated at $2,198,750 or $219,875 per year. However a significant amount of the arena equipment, $1,000,000 included in that total has been replaced in 2025. The short-term effect on finances without substantial grant money is quite dramatic.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.5.5 Asset Management Strategies

The documentation of lifecycle management strategies, current levels of service, and risk are critical to the development of a comprehensive asset management program. These components of the asset management plan support effective short- and long-term capital planning and contribute to more proactive asset management practices, thus extending the estimated useful life of many assets and providing a higher level of service.

In accordance with O. Reg. 588/17, the Municipality will continue to gather data and information in order to detail and review the lifecycle management strategies, levels of service, and risk of all non-core asset categories.

4.5.6 Recommendations

Replacement Costs

- All replacement costs used in this AMP were primarily based on staff inspections and some used the inflation of historical costs. These costs need to be reevaluated on a regular basis to maintain their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk equipment.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Develop risk models and review them on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying the strategies that are required to close any gaps between current and proposed levels of service.

4.6 Land Improvements

The Village of South River owns a small number of assets that are considered Land Improvements. This category includes:

- Parking lots
- Fencing
- Miscellaneous landscaping and other park structures

4.6.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Land Improvements inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Fencing	3	Staff	$49,237
Miscellaneous Land Improvements	26	Staff	$409,988
Paving	54,301 sq ft	Staff	$218,087
Recreational Assets	3	Staff	$138,287
Total			**$815,599**

4.6.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost. Based on age alone, the majority of land improvement assets are in fair to good condition. However, visual condition assessments may indicate land improvement assets are in better condition.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Fencing	15%	Very Poor	Staff
Miscellaneous Land Improvements	65%	Good	Staff
Paving	50%	Fair	Staff
Recreational Assets	60%	Good	Staff
Average	**48%**	**Fair**	**Staff**

To ensure that the Village's Land Improvements continues to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Land Improvements.

4.6.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Land Improvements assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Fencing	20	32
Miscellaneous Land Improvements	15-60	13
Paving	20-40	15
Recreational Assets	5-20	10
Average		**17.5**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.6.4 Forecasted Capital Requirements

The long-term annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

The total capital expenditures for equipment over the next ten years are estimated at $467,000 or $46,700 per year.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.6.5 Asset Management Strategies

The documentation of lifecycle management strategies, current levels of service, and risk are critical to the development of a comprehensive asset management program. These components of the asset management plan support effective short- and long-term capital planning and contribute to more proactive asset management practices, thus extending the estimated useful life of many assets and providing a higher level of service.

In accordance with O. Reg. 588/17, the Village will continue to gather data and information in order to detail and review the lifecycle management strategies, levels of service, and risk of all non-core asset categories.

4.6.6 Recommendations

Replacement Costs

- All replacement costs used in this AMP were primarily based on staff inspections and some used the inflation of historical costs. These costs need to be reevaluated on a regular basis to maintain their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Develop risk models and review them on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Continue measuring current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying the strategies that are required to close any gaps between current and proposed levels of service.

4.7 Furniture & Computers

The Village of South River owns a small number of assets for use in the administrative and recreation buildings. This category includes computer, furniture, and other miscellaneous assets for administrative buildings.

4.7.1 Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Furniture and Computers inventory.

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Computer Hardware	12	CPI Tables	$55,691
Furniture & Equipment	119	CPI Tables	$110,392
Total			**$166,083**

4.7.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Computer Hardware	35%	Poor	Staff
Furniture & Equipment	65%	Good	Staff
Average	**50%**	**Fair**	**Staff**

To ensure that the Village's Furniture, Collections & Computers continues to provide an acceptable level of service, the Village should monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Furniture and Computers.

4.7.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Furniture and Computers assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Computer Hardware	5-10	7
Furniture & Equipment	5-25	15
Average		**11.0**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type.

4.7.4 Forecasted Capital Requirements

The long-term annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs.

The total capital expenditures for equipment over the next ten years are estimated at $68,000 or $6,800 per year.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

4.7.5 Asset Management Strategies

The documentation of lifecycle management strategies, current levels of service, and risk are critical to the development of a comprehensive asset management program. These components of the asset management plan support effective short- and long-term capital planning and contribute to more proactive asset management practices, thus extending the estimated useful life of many assets and providing a higher level of service.

In accordance with O. Reg. 588/17, the Municipality will continue to gather data and information in order to detail and review the lifecycle management strategies, levels of service, and risk of all non-core asset categories.

4.7.6 Recommendations

Replacement Costs

- All replacement costs used in this AMP were primarily based on staff inspections and some used the inflation of historical costs. These costs need to be reevaluated on a regular basis to maintain their accuracy and reliability. Replacement costs should be updated according to the best available information on the cost to replace the asset in today's value.

Condition Assessment Strategies

- Identify condition assessment strategies for high value and high-risk assets.
- Review assets that have surpassed their estimated useful life to determine if immediate replacement is required or whether these assets are expected to remain in-service. Adjust the service life and/or condition ratings for these assets accordingly.

Risk Management Strategies

- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.
- Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

- Begin measuring current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.
- Work towards identifying the strategies that are required to close any gaps between current and proposed levels of service.

5 Analysis of Rate-funded Assets

Key Insights

- Rate-funded assets are valued at $16.9 million
- 72% of rate-funded assets are in fair or better condition
- The average annual capital requirement to sustain the current level of service for rate-funded assets is approximately $200,000
- Critical assets to be evaluated annually to determine appropriate risk mitigation activities and treatment options

5.1 Water Network

The water services provided by the Municipality are delivered and maintained by municipal staff and OCWA (Ontario Clean Water Agency). The Water Network includes the following assets:

- Machinery and equipment for system maintenance
- A distribution system of water valves, hydrants, mains, and service connections
- A water treatment plant

5.1.1 Water treatment plant Asset Inventory & Replacement Cost

The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Village's Water Network inventory.

Asset Segment	Quantity (Components)	Replacement Cost Method	Total Replacement Cost
Hydrant	72	Staff	$540,370
Meters and bases	509	Staff	$169,582
Water Mains and Valves	13,818m	Consultant	$9,145,415
Water Treatment Plant	1	Staff	$6,208,705
Water Treatment Plant Equipment	26	Staff	$786,777
Water Distribution Equipment	5	Staff	$54,140
Total			**$16,904,989**

5.1.2 Asset Condition

The table below identifies the current average condition and source of available condition data for each asset segment. The Average Condition (%) is a weighted value based on replacement cost.

Asset Segment	Average Condition	Average Condition Rating	Condition Source
Hydrant	70%	Good	Age-Based/Staff
Meters and Bases	80%	Very Good	Age-Based/Staff
Water Mains	65%	Good	Age-Based/Staff
Water Treatment Plant	70%	Good	Age-Based/Staff
Water Treatment Plant Equipment	70%	Good	Age-Based/Staff
Water Distribution Equipment	80%	Very Good	Age-Based/Staff
Average	**72%**	**Good**	**100% Assessed**

To ensure that the Village's Water Network continues to provide an acceptable level of service, the Village will monitor the average condition of all assets. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation and replacement activities is required to increase the overall condition of the Water Network.

Current Approach to Condition Assessment

Accurate and reliable condition data allows staff to more confidently determine the remaining service life of assets and identify the most cost-effective approach to managing assets. The following describes the municipality's current approach:

5.1.2.1 The formal condition assessment of 2020 is the basis for a substantial upgrade of the watermain network from 2022 to 2025. Replacement of the 1950's 4 inch cast piping is the highest priority

5.1.2.2 Staff annually evaluate the age and material of water mains to determine the projected condition and supporting infrastructure is visually assessed annually

5.1.3 Estimated Useful Life & Average Age

The Estimated Useful Life for Water Network assets has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service. Assessed condition may increase or decrease the average service life remaining.

Asset Segment	Estimated Useful Life (Years)	Average Age (Years)
Hydrant	60	34.7
Meters and Bases	25	8
Water Mains	60	45
Water Treatment Plant	15-45	25
Water Treatment Plant Equipment	5-20	13
Water Distribution Equipment	15	10
Average		**22**

Each asset's Estimated Useful Life should be reviewed periodically to determine whether adjustments need to be made to better align with the observed length of service life for each asset type. The Watermains network was updated 2022-25.

5.1.4 Lifecycle Management Strategy

The condition or performance of most assets will deteriorate over time. To ensure that municipal assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

The following table outlines the Village's current lifecycle management strategy.

Activity Type	Description of Current Strategy
Maintenance	Main flushing is completed on 100% of the network twice per year using in-house resources
Rehabilitation	Trenchless re-lining of water mains presents significant challenges and is not always a viable option but will be considered going forward.
Replacement	In the absence of mid-lifecycle rehabilitative events, most mains are simply maintained with the goal of full replacement once it reaches its end-of-life.
	Replacement activities are identified based on an analysis of the main break rate as well as any issues identified during regular maintenance activities.

Forecasted Capital Requirements

The annual capital requirement represents the average amount per year that the Village should allocate towards funding rehabilitation and replacement needs for the next 20 years. These amounts are:

2026-2030

Hydrants $12,000, Meters and Bases $500, Watermains $50,000 Water Treatment Plant $1,010,000, Water Treatment Plant Equipment $50,000, Water Distribution Equipment $2,000 Total $1,124,500

2031 to 2035

Hydrants $12,000, Meters and Bases $500, Watermains $50,000 Water Treatment Plant $10,000, Water Treatment Plant Equipment $50,000, Water Distribution Equipment $2,000 Total $124,500

2036 to 2040

Hydrants $12,000, Meters and Bases $500, Watermains $50,000 Water Treatment Plant $10,000, Water Treatment Plant Equipment $50,000, Water Distribution Equipment $2,000 Total $124,500

2041 to 2045

Hydrants $12,000, Meters and Bases $500, Watermains $50,000 Water Treatment Plant $10,000, Water Treatment Plant Equipment $50,000, Water Distribution Equipment $3,000 Total $125,500

Total refurbishment is anticipated at $4,000,000 over the next 20 years for an average annual capital requirement of $200,000.

The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix B.

5.1.5 Risk & Criticality

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that the Village is currently facing:

Extreme Weather

Leaks and breaks are most commonly caused by freezing temperatures. Incorporating a monitoring and maintenance program for all water infrastructures into the asset management plan can further support infrastructure resiliency and reduce risk.

Community Expectations

The public is the prime source for information related to leaks and breaks. The Village has decreased their dependence on public reports by adopting a leak detection program. With sound detection and other tools, staff regularly monitor the entire network.

5.1.6 Levels of Service

The following tables identify the Village's current level of service for Water Network. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that the Village has selected for this AMP.

Community Levels of Service

The following table outlines the qualitative descriptions that determine the community levels of service provided by Water Network.

Service Attribute	Qualitative Description	Current LOS (2025)
Scope	Description, see map of the areas of the municipality that are connected to the municipal water system	See Appendix C
	Description, see map of the area of the municipality that have fire flows	See Appendix C
Reliability	Description of boil water advisories and service interruptions	The Village has had no system wide boil water advisories and most service interruptions have been maintenance related in the last year. The Village delivers boil water advisories to all residents by posting a notice on the municipal website, Facebook, and Code-Red messaging service.

Technical Levels of Service

The following table outlines the quantitative metrics that determine the technical level of service provided by the Water Network.

Service Attribute	Technical Metric	Current LOS (2020)
Scope	% of properties connected to the municipal water system	95%
	% of properties where full fire flow is available	85%
Reliability	# of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0.04
	# of connection-days per year where water is not available due to water main breaks compared to the total number of properties connected to the municipal water system	0.01
	all home currently affected by discoloured water	
Performance	Capital re-investment rate	6.7%

5.1.7 Recommendations

Asset Inventory

5.1.7.1 The asset inventory is very complete and asset-specific lifecycle planning and costing is well advanced.

Replacement Costs

5.1.7.2 The majority of replacement costs in this AMP are based on current costs as significant replacement of watermains is underway and more planned for the next three years. A complete water distribution needs study was completed in 2021.

Condition Assessment Strategies

5.1.7.3 The water needs study identified condition assessments for high value and high-risk water network assets.

5.1.7.4 Multiple factors (age, material, break history, diameter) were used to define condition of water mains based to approximate condition and support capital planning.

Risk Management Strategies

5.1.7.5 Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

5.1.7.6 Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.

Levels of Service

5.1.7.7 Continue to measure current levels of service in accordance with the metrics that the Village has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.

5.1.7.8 Work towards identifying the strategies that are required to close any gaps between current and proposed levels of service.

6 Impacts of Growth

Key Insights

- Understanding the key drivers of growth and demand will allow the Village to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure

- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service

6.1 Description of Growth Assumptions

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow the Village to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

6.1.1 South River Official Plan (1991)

The Village adopted the Official Plan in July of 1991. The purpose of the plan is to set out broad strategic community directions for land use planning. Some of the objectives defined to support growth and development in South River include community enhancement, environmental development, and economic development.

The Official Plan had significant amendments in 2008 and again 2015 and further review is required, particularly for the 1995 Zoning By-law. Though the projected population growth is minimal, the Village is focused on efficient development.

The Village's economy and population have been very stable over the past twenty years with minimal growth. The recent surge in work from home and more remote living has seen a modest increase in new home construction from a very low base. This increase has not been reflected yet in population numbers.

Year	Household	Population
2001	485	1,040
2006	480	1,069
2011	507	1,049
2016	528	1,114
2021	510	1,101

The population in South River is expected to ebb and flow with little growth projected, however, the population of northern Ontario is expected to stabilize and experience moderate growth over the next 10 years. The growth will most likely be centered around urban centers such as North Bay and Huntsville, which could enable growth opportunities in South River. Although the Village is not expected to experience significant population growth, incremental growth is expected to continue.

6.2 Impact of Growth on Lifecycle Activities

The Municipality's asset management plan assumes no significant growth or future changes in population and economic activity. Incremental "in-fill" growth will have a negligible impact on the preparation of the lifecycle management and financial strategy in this asset management plan.

As the municipality's population is expected to remain the same with potential moderate increases and declines in the coming years, demand will evolve, and it is likely that funding will need to be reprioritized. As growth-related assets are constructed, retired, or acquired, they should be integrated into the AMP. Furthermore, the municipality will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

7 Financial Strategy

Key Insights

- The Village had committed over $7,000,000 to upgrade the water distribution network from 2021 to 2025 with 40% from Canada and 33.33% from Ontario and 26.67% from municipal reserves or borrowing. This level of investment is not sustainable over the long-term
- The Village projects $1.5 million as the annual goal for infrastructure investment
- Given the annual capital requirement of $1.5 million, there is currently a funding gap of $1.17 million annually.
- For tax-funded assets, it is recommended to increase tax revenues by 4.6% above the annual inflation rate each year for the next 10 years to achieve a 50% reduction in the funding gap. One time grants would be required to meet the remaining gap.
- For the Water Network, it is recommended to increase rate revenues by 8.0% above inflation annually for the next year and then 4.0% for a further 12 years to achieve a sustainable level of funding

7.1 Financial Strategy Overview

For an asset management plan to be effective and meaningful, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Village of South River to identify the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements.

This report develops such a financial plan by presenting several scenarios for consideration and culminating with final recommendations. As outlined below, the scenarios presented model different combinations of the following components:

1. The financial requirements for:
    a. Existing assets
    b. Existing service levels
    c. Requirements of contemplated changes in service levels (none identified for this plan)
    d. Requirements of anticipated growth (none identified for this plan)
2. Use of traditional sources of municipal funds:
    a. Tax levies
    b. User fees
    c. Reserves
    d. Debt
3. Use of non-traditional sources of municipal funds:
    a. Reallocated budgets
    b. Partnerships
    c. Procurement methods
4. Use of Senior Government Funds:
    a. Gas tax
    b. Annual grants

Note: Periodic grants are normally not included due to Provincial requirements for firm commitments. However, if moving a specific project forward is wholly dependent on receiving a one-time grant, the replacement cost included in the financial strategy is the net of such grant being received. The Village recently had two large watermain rehabilitation projects with significant one-time funding.

If the financial plan component results in a funding shortfall, the Province requires the inclusion of a specific plan as to how the impact of the shortfall will be managed. In determining the legitimacy of a funding shortfall, the Province may evaluate a Village's approach to the following:

1. In order to reduce financial requirements, consideration has been given to revising service levels downward.

2. All asset management and financial strategies have been considered. For example:
    a. If a zero-debt policy is in place, is it warranted? If not, the use of debt should be considered. The Village strives to use debt wisely.
    b. Do user fees reflect the cost of the applicable service? If not, increased user fees should be considered.

7.1.1 Annual Requirements & Capital Funding

Annual Requirements

The annual requirements represent the amount the Village should allocate annually to each asset category to meet replacement needs as they arise, prevent infrastructure backlogs and achieve long-term sustainability. In total, the Village must allocate approximately $1.5 million annually to address capital requirements for the assets included in this AMP.

For most asset categories the annual requirement has been calculated based on a "replacement only" scenario, in which capital costs are only incurred at the construction and replacement of each asset.

However, for the Road Network, lifecycle management strategies should be developed to identify capital costs that can be realized through strategic rehabilitation and renewal of the Village's roads. The development of these strategies may allow for potential cost avoidance if the strategies were to be implemented. The following are two scenarios for the Road Network:

1. **Replacement Only Scenario**: Based on the assumption that assets deteriorate and – without regularly scheduled maintenance and rehabilitation – are replaced at the end of their service life.
2. **Lifecycle Strategy Scenario**: Based on the assumption that lifecycle activities are performed at strategic intervals to extend the service life of assets until replacement is required.

The implementation of a proactive lifecycle strategy for roads could lead to potential annual cost savings for the Road Network. These lifecycle strategy scenarios need to be explored fully to achieve the lowest cost option available to the Village. This plan uses full replacement cost for its base.

Annual Funding Available

Based on a historical analysis of sustainable capital funding sources, the Village is committing approximately $383,000 towards capital projects per year from sustainable revenue sources. Given the annual capital requirement of $1.5 million, there is currently a funding gap of $1.17 million annually.

7.2 Funding Objective

We have developed a scenario that would enable South River to achieve full funding within 20 years for the following assets:

1. **Tax Funded Assets:** Road Network[8], Storm Network, Bridges & Culverts, Buildings & Facilities, Vehicles, Machinery & Equipment, Land Improvements, and Furniture and Computers
2. **Rate-Funded Assets:** Water Network

[8] For the purposes of this AMP, we have excluded gravel roads since they are a perpetual maintenance asset and end of life replacement calculations do not normally apply. If gravel roads are maintained properly, they can theoretically have a limitless service life.

For each scenario developed we have included strategies, where applicable, regarding the use of cost containment and funding opportunities.

7.3 Financial Profile: Tax Funded Assets

7.3.1 Current Funding Position

The following tables show, by asset category, South River's average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by taxes.

Asset Category	Avg. Annual Requirement	Annual Funding Available			Annual Deficit
		Taxes	Annual Grants	Total Available	
Road Network	682,250	43,250	72,000	115,250	567,000
Storm Network	54,750	5,000	0	5,000	49,750
Buildings	110,015	10,000	0	10,000	100,015
Vehicles	193,430	33,000	0	33,000	160,430
Machinery & Equipment	204,730	35,000	0	35,000	169,730
Land Improvements	22,950	5,000	0	5,000	17,950
Furniture and Computer	8,850	2,000	0	2,000	6,850
Total	**1,276,975**	**133,250**	**72,000**	**205,250**	**1,071,725**

The average annual investment requirement for the above categories is $1.1 million. Annual revenue currently allocated to these assets for capital purposes is $207,000 leaving an annual deficit of $978,900. Put differently, these infrastructure categories are currently funded at 17.5% of their long-term requirements.

7.3.2 Full Funding Requirements

In 2021, Village of South River has budgeted annual tax revenues of $1,352,523. As illustrated in the following table, without consideration of any other sources of revenue or cost containment strategies, full funding would require the following tax change over time:

Asset Category	Tax Change Required for Full Funding
Road Network	522%
Storm Network	3.1%
Buildings	6.3%
Vehicles	9.9%
Machinery & Equipment	10.4%
Land Improvements	1.1%
Furniture, Collections and Computer	0.4%
Total	**83.2%**

The following changes in costs and/or revenues over the next number of years should also be considered in the financial strategy:

a) South River's debt payments for these asset categories will be decreasing by $99,000 over the next 10 years. Although not shown in the table, debt payment decreases will be $122,000 over the next 20 years.

It is recommended to capturing the above changes and allocate them to the infrastructure deficit outlined above.

7.3.3 Financial Strategy Recommendations

Considering all the above information, we recommend the 20-year option. This involves full funding being achieved over 20 years by:

a) when realized, reallocating the debt cost reductions of $122,000 to the infrastructure deficit as outlined above.
b) increasing tax revenues by 4.6% each year above inflation for the next 20 years solely for the purpose of phasing in full funding to the asset categories covered in this section of the AMP.
c) allocating all funding from the current gas tax and OCIF revenue as outlined above.
d) increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. By Provincial AMP rules, this periodic funding cannot be incorporated into an AMP unless there are firm commitments in place. We have included OCIF formula-based funding and NORDS funding since this funding is a multi- year commitment.
2. Raising tax revenues by the amounts recommended above for infrastructure purposes will be very difficult to do. However, considering a longer phase- in window may have even greater consequences in terms of infrastructure failure.

Although this option achieves full funding on an annual basis in 20 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $1,200,000 for the Road Network, $60,000 for Facilities, $1,200,000 for Equipment, $40,000 for Land Improvements and $400,000 for Storm Network
Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

7.4 Financial Profile: Rate Funded Assets

7.4.1 Current Funding Position

The following tables show, by asset category, South River's average annual asset investment requirements, current funding positions, and funding increases required to achieve full funding on assets funded by rates.

Asset Category	Avg. Annual Requirement	Annual Funding Available				Annual Deficit
		Rates	To Operations	OCIF	Total Available	
Water Network	200,500		54,000	100,000	154,000	46,500
Total	**200,500**		**54,000**	**100,000**	**154,000**	**46,500**

The average annual investment requirement for the above categories is $200,500. Annual revenue currently allocated to these assets for capital purposes is $154,000 leaving an annual deficit of $46,500. Put differently, these infrastructure categories are currently funded at 75% of their long-term requirements.

7.4.2 Full Funding Requirements

In 2025, South River has budgeted annual water revenues of $468,000. As illustrated in the table below, without consideration of any other sources of revenue, full funding would require the following changes over time:

Asset Category	Rate Change Required for Full Funding
Water Network	24%

In the following tables, we have expanded the above scenario to present multiple options. Due to the significant increases required, we have provided phase-in options of up to 20 years:

	Water Network			
	5 Years	10 Years	15 Years	20 Years
Infrastructure Deficit	$3.7M	$4.3M	$4.9M	$5.5M
Rate Increase Required	16%	8%	5.5%	4%
Deficit	$2.7M	$1.7M	$1.9M	$1.7M

7.4.3 Financial Strategy Recommendations

Considering the above information, it is recommended to achieve full funding over 15 years by:

a) Increasing rate revenues by 10.0% for water services for next year than 4% for further 12 years resulting in a balanced budget.
b) Increasing existing and future infrastructure budgets by the applicable inflation index on an annual basis in addition to the deficit phase-in.

Notes:

1. As in the past, periodic senior government infrastructure funding will most likely be available during the phase-in period. This periodic funding should not be incorporated into an AMP unless there are firm commitments in place.
2. Raising rate revenues for infrastructure purposes to that degree will be very difficult to do. However, considering a longer phase-in window may have even greater consequences in terms of infrastructure failure.
3. Any increase in rates required for operations would be in addition to the above recommendations.

Although this option achieves full funding on an annual basis in 15 years and provides financial sustainability over the period modeled, the recommendations do require prioritizing capital projects to fit the resulting annual funding available. Current data shows a pent-up investment demand of $1,750,000 for the Water Network.

Prioritizing future projects will require the current data to be replaced by condition-based data. Although our recommendations include no further use of debt, the results of the condition-based analysis may require otherwise.

7.5 Use of Debt

For reference purposes, the following table outlines the premium paid on a project if financed by debt. For example, a $1M project financed at 3.0%[10] over 15 years would result in a 26% premium or $260,000 of increased costs due to interest payments. For simplicity, the table does not consider the time value of money or the effect of inflation on delayed projects.

Interest Rate	Number of Years Financed					
	5	10	15	20	25	30
7.0%	22%	42%	65%	89%	115%	142%
6.5%	20%	39%	60%	82%	105%	130%
6.0%	19%	36%	54%	74%	96%	118%
5.5%	17%	33%	49%	67%	86%	106%
5.0%	15%	30%	45%	60%	77%	95%
4.5%	14%	26%	40%	54%	69%	84%
4.0%	12%	23%	35%	47%	60%	73%
3.5%	11%	20%	30%	41%	52%	63%
3.0%	9%	17%	26%	34%	44%	53%
2.5%	8%	14%	21%	28%	36%	43%
2.0%	6%	11%	17%	22%	28%	34%
1.5%	5%	8%	12%	16%	21%	25%
1.0%	3%	6%	8%	11%	14%	16%
0.5%	2%	3%	4%	5%	7%	8%
0.0%	0%	0%	0%	0%	0%	0%

It should be noted that current interest rates are fluctuating. Sustainable funding models that include debt need to incorporate the risk of rising interest rates. Since 2010 the business prime rate has been as low as 2.25% for many years before rising to 7.2% in 2023. It has since fallen back into a range of 4.25% to 4.95%

[10] Current municipal Infrastructure Ontario rates for 15-year money is 4.55%.

A change in 15-year rates from 3% to 6% would change the premium from 26% to 54%. Such a change would have a significant impact on a financial plan.

The following tables outline how South River has historically used debt for investing in the asset categories as listed. There is currently $2,132,593 of debt outstanding for the assets covered by this AMP with corresponding principal and interest payments of $247,725, well within its provincially prescribed maximum of $403,633.

Asset Category	Current Debt Outstanding	Use of Debt in the Last Five Years				
		2020	2021	2022	2023	2024
Road Network	545,000	0	0	0	560,000	0
Storm Network	0	0	0	0	0	0
Buildings	392,625	0	0	0	0	0
Vehicles (Fire)	140,457	0	0	0	0	0
Machinery & Equipment	69,511	106,037	0	0	0	0
Land Improvements	0	0	0	0	0	0
Furniture, Collections & Computers	0	0	0	0	0	0
Total Tax Funded:	**1,147,593**	**106,037**	**0**	**0**	**560,000**	0
Water Network	985,000	0	0	0	1,040,000	0
Total Rate Funded:	**985,000**	0	0	0	**1,040,00**	0

Asset Category	Principal & Interest Payments in the Next Ten Years						
	2025	2026	2027	2028	2029	2030	2035
Road Network	43,184	43,184	43,184	43,184	43,184	43,184	43,184
Storm Network	0	0	0	0	0	0	0
Buildings	46,104	46,104	46,104	46,104	46,104	46,104	23,352
Vehicles (Fire)	37,650	37,650	37,650	12,347	11,578	10,044	0
Machinery & Equipment	16,788	16,788	16,788	16,788	7,012	0	0
Land Improvements	0	0	0	0	0	0	0
Furniture and Computers	0	0	0	0	0	0	0
Total Tax Funded:	**143,726**	**143,726**	**143,726**	**118,423**	**107,878**	**99,332**	**66,536**
Water Network	103,999	103,999	103,999	103,999	103,999	103,999	103,999
Storm Sewer Network	0	0	0	0	0	0	0
Total Rate Funded:	**103,999**	**103,999**	**103,999**	**103,999**	**103,999**	**103,999**	**103,999**

The revenue options outlined in this plan allow South River to fully fund its long-term 2nfrastructure requirements without further use of debt.

7.6 Use of Reserves

7.6.1 Available Reserves

Reserves play a critical role in long-term financial planning. The benefits of having reserves available for infrastructure planning include:

a) the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors
b) financing one-time or short-term investments
c) accumulating the funding for significant future infrastructure investments
d) managing the use of debt
e) normalizing infrastructure funding requirement

By asset category, the table below outlines the details of the reserves currently available to South River.

Asset Category	Balance on December 31, 2024
General Municipal	665,620
Cemetery	21,000
Roads	33,250
Medical Centre	115,000
Fire	126,000
Ambulance Building	38,500
Arena	56,000
Economic Development	126,300
Library	2,000
Happy Landing Commercial Court	165,500
Total Tax Funded	**1,349,170**
Deferred Revenue - Canada Community Building	491,210
- Ontario Community	9,990
Total Infrastructure Reserves and Deferred	**1,850,370**

There is considerable debate in the municipal sector as to the appropriate level of reserves that the Village should have on hand. There is no clear guideline that has gained wide acceptance. Factors that municipalities should take into account when determining their capital reserve requirements include:

a) breadth of services provided
b) age and condition of infrastructure
c) use and level of debt
d) economic conditions and outlook
e) internal reserve and debt policies.

These reserves are available for use by applicable asset categories during the phase-in period to full funding. This coupled with South River's judicious use of debt in the past, allows the scenarios to assume that, if required, available reserves and debt capacity can be used for high priority and emergency infrastructure investments in the short- to medium-term.

7.6.2 Recommendation

Ontario Regulation 588/17 requires South River to integrate levels of service for all asset categories in its asset management plan updates. Planning here reflects the significant debt taken on to advance recent infrastructure projects as well as their impacts on reserve balances.

8 Appendices

Key Insights

- Appendix A includes a one-page report card with an overview of key data from each asset category
- Appendix B identifies projected 10-year capital requirements for each asset category
- Appendix C includes several maps that have been used to visualize the current level of service
- Appendix D identifies the criteria used to calculate risk for each asset category
- Appendix E provides additional guidance on the development of a condition assessment program
- Appendix F Source Documents

Appendix A: Infrastructure Report Card

Asset Category	Replacement Cost (millions)	Asset Condition	Financial Capacity	
Road Network	$19.0	Fair	Annual Requirement:	$682,250
			Funding Available:	$115,250
			Annual Deficit:	**$567,000**
Storm Network	$6.0	Good	Annual Requirement:	$54,750
			Funding Available:	$5,000
			Annual Deficit:	**$49,750**
Buildings	$24.5	Fair	Annual Requirement:	$110,115
			Funding Available:	$10,000
			Annual Deficit:	**$100,015**
Vehicles	$3.5	Good	Annual Requirement:	$193,430
			Funding Available:	$33,000
			Annual Deficit:	**$160,430**
Machinery & Equipment	$2.9	Good	Annual Requirement:	$204,730
			Funding Available:	$35,000
			Annual Deficit:	**$169,730**
Land Improvements	$0.8	Fair	Annual Requirement:	$22,950
			Funding Available:	$5,000
			Annual Deficit:	**$17,950**
Furniture, Collection, Computers	$0.2	Good	Annual Requirement:	$8,850
			Funding Available:	$2,000
			Annual Deficit:	**$6,850**
Water Network	$16.9	Good	Annual Requirement:	$200,500
			Funding Available:	$154,000
			Annual Deficit:	**$46,500**
Overall	$73.8	Good	Annual Requirement:	$1,477,575
			Funding Available:	$359,250
			Annual Deficit:	**$1,118,325**

Appendix B: 10 Year Capital Requirements

The following tables identify the capitaql cost requiremets for each of the next 10 years in order to meet projected capital requirements and maintain the current level of service.

Road Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Curb and Gutter	$0	$75,000	$10,000	$10,000	$25,000	$0	$0	$10,000	$10,000	$10,000	$10,000
HCB	$1,100,000	$0	$0	$1,100,000	$0	$0	$0	$0	$1,500,000	$0	$0
LCB	$0	$0	$0	$50,000	$50,000	$0	$0	$0	$0	$50,000	$0
Sidewalks	$100,000	$0	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Street Lighting	$0	$0	$0	$0	$0	$0	$10,000	$10,000	$10,000	$10,000	$10,000
Total	**$1,200,000**	**$75,000**	**$20,000**	**$1,170,000**	**$85,000**	**$10,000**	**$20,000**	**$30,000**	**$1,530,000**	**$80,000**	**$30,000**

Vehicles

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Dump and Plow	$0	$0	$0	$300,000	$25,000	$0	$0	$10,000	$10,000	$10,000	$10,000
Fire	$0	$0	$0	$0	$500,000	$0	$455,000	$0	$0	$0	$0
Medium Duty Pickups	$0	$0	$0	$0	$80,000	$0	$0	$0	$0	$0	$80,000
Trackless and Backhoe	$0	$0	$0	$0	$0	$0	$0	$150,000	$0	$150,000	$0
Lawnmowers and Olympia	$0		$16,000	$105,000	$0	$18,000	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$16,000**	**$405,000**	**$605,000**	**$18,000**	**$455,000**	**$160,000**	**$10,000**	**$160,000**	**$90,000**

Machinery and Equipment

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fire Department Equipment	$0	$25,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
Misc Machinery and Equip	$0	$5,000	$58,750	$58,750	$58,750	$58,750	$58,750	$58,750	$58,750	$58,750	$58,750
Arena Equipment	$1,200,000	$1,200,000	$0	$0	$0	$0	$40,000	$0	$0	$40,000	$0
Total	**$1,200,000**	**$1,230,000**	**$98,750**	**$98,750**	**$98,750**	**$98,750**	**$138,750**	**$98,750**	**$98,750**	**$138,750**	**$98,750**

Furniture and Computers

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Computer Harware	$0	$12,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$20,000	$2,000	$2,000
Furniture and Equipment	$0	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Total	**$0**	**$14,000**	**$4,000**	**$4,000**	**$4,000**	**$4,000**	**$4,000**	**$4,000**	**$22,000**	**$4,000**	**$4,000**

Land Improvements

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fencing	$40,000	$0	$40,000	$0	$0	$0	$0	$0	$0	$0	$0
Misc Land Improvents	$0	$0	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Paving	$0	$0	$0	$0	$300,000	$0	$0	$0	$0	$50,000	$5,000
Recreational Assets	$0	$0	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Total	**$40,000**	**$0**	**$48,000**	**$8,000**	**$308,000**	**$8,000**	**$8,000**	**$8,000**	**$8,000**	**$58,000**	**$13,000**

Buildings

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Administration Buildings	$50,000	$0	$10,000	$60,000	$25,000	$0	$0	$10,000	$10,000	$10,000	$10,000
Cemetery	$10,000	$5,000	$5,000	$0	$0	$0	$0	$0	$0	$0	$0
Fire Hall	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$50,000	$0
Ambulance Base	$0	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0
Rental Buildings	$0		$0	$0	$10,000	$0	$10,000	$10,000	$10,000	$10,000	$10,000
Public Works Buildings	$0	$0	$0	$0	$0	$0	$50,000	$0	$0	$0	$0
Recreation Buildings	$0	$0	$0	$250,000	$0	$0	$0	$15,000	$0	$0	$0
Train Station	$0	$0	$0	$10,000	$10,000	$10,000	$10,000	$0	$0	$0	$0
Total	**$60,000**	**$5,000**	**$15,000**	**$320,000**	**$95,000**	**$60,000**	**$70,000**	**$35,000**	**$20,000**	**$70,000**	**$20,000**

Water Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Hydrants	$0	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000
Meters and Bases	$0	$2,000	$500	$500	$500	$500	$500	$500	$500	$500	$500
Water Mains	$500,000	$0	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Water Treatment Plant Major Capital	$1,100,000	$0	$600,000	$0	$50,000	$0	$0	$0	$0	$50,000	$0
Water Treatment Plant Equipment	$0	$39,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Water Distribution Equipment	$150,000	$15,000	$90,000	$90,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000
Total	**$1,750,000**	**$62,000**	**$796,500**	**$196,500**	**$171,500**	**$121,500**	**$121,500**	**$121,500**	**$121,500**	**$171,500**	**$121,500**

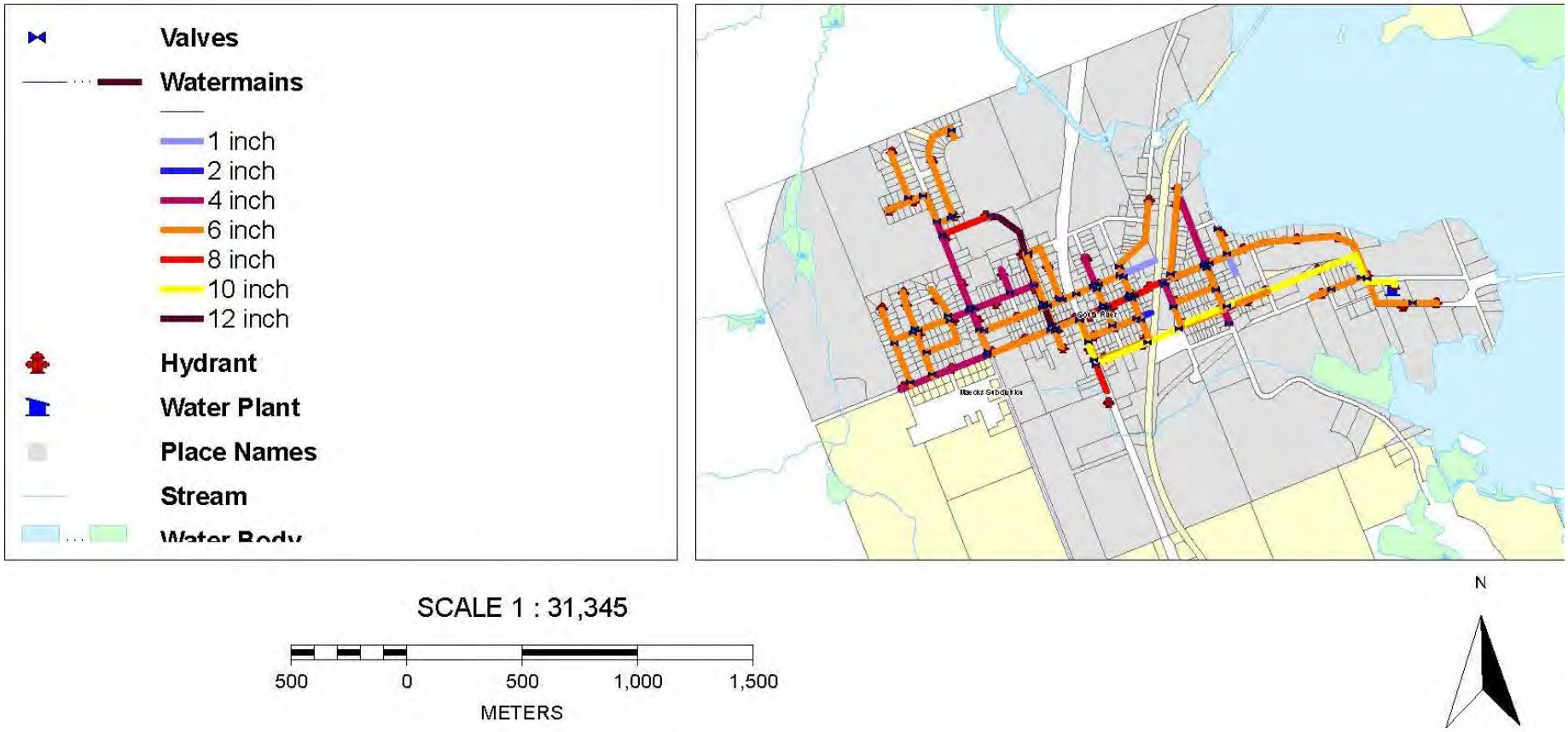
Storm Network

Segment	Backlog	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Catch Basins	$0	$39,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Storm Sewer	$0	$0	$0	$10,000	$0	$0	$0	$0	$10,000	$0	$0
Culverts and Ditches	$0	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Bridges	$400,000	$0	$150,000	$250,000	$0	$0	$0	$0	$0	$0	
Total	**$400,000**	**$42,000**	**$155,000**	**$265,000**	**$5,000**	**$5,000**	**$5,000**	**$5,000**	**$15,000**	**$5,000**	**$5,000**

Appendix C: Level of Service Maps

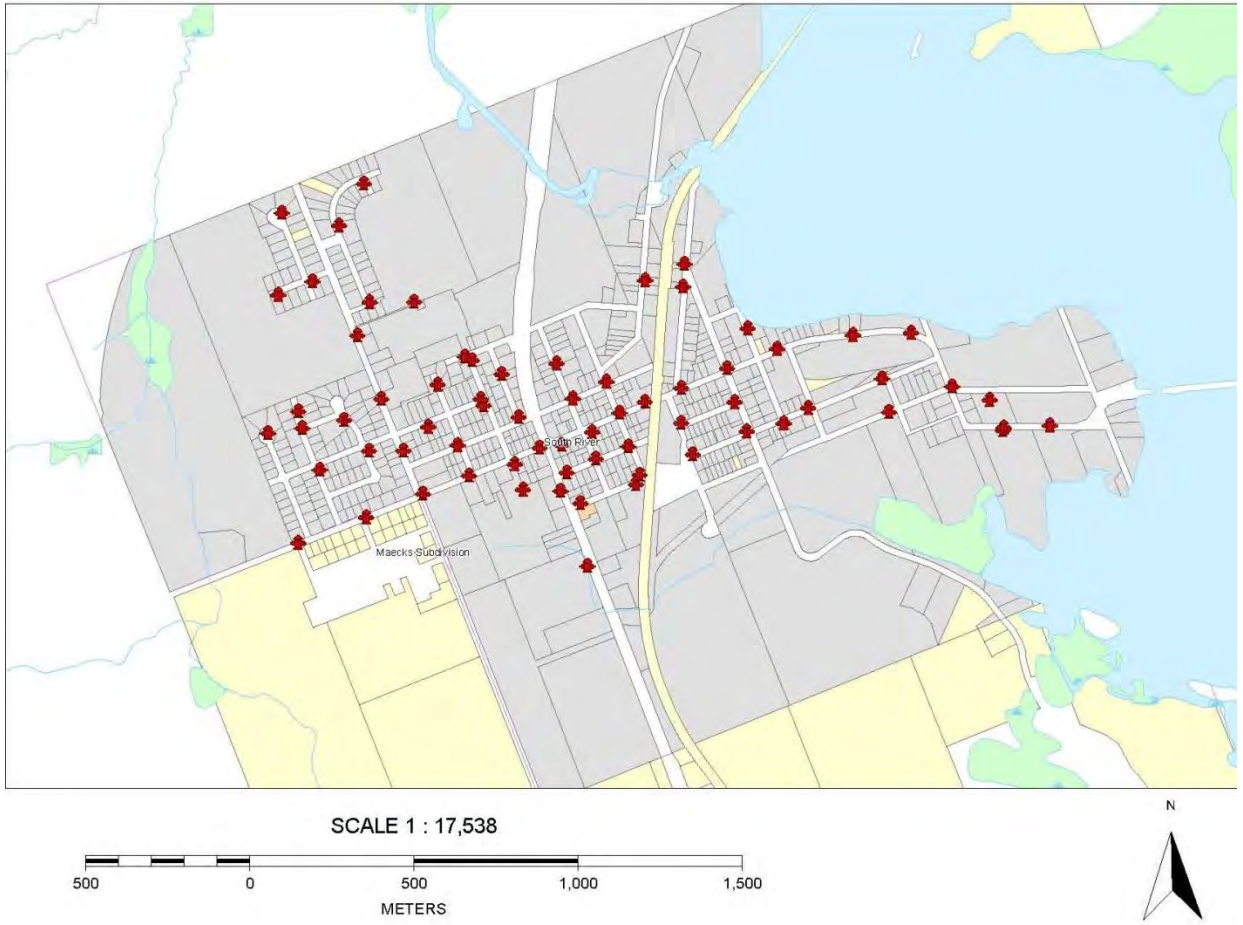
Road Network Connectivity

Water Network Connectivity



Fire Flow

The location of fire hydrants in the Village of South River.



Stormwater Network

1) Blue Lines are ditches or swales
2) Gold Lines are storm sewers
3)Pink lines are connecting culverts
4) Black squares are catch basins
5) Red rectangles are bridges

Appendix D: Risk Rating Criteria

Probability of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Probability of Failure Score
All Asset Categories	Structural	Condition	80-100	1
			60-79	2
			40-59	3
			20-39	4
			0-19	5

Consequence of Failure

Asset Category	Risk Classification	Risk Criteria	Value/Range	Consequence of Failure Score
All Asset Categories	Economic	Replacement Cost	$0-$25,000	1
			$25,000-$100,000	2
			$100,000-$500,000	3
			$500,000-$1,000,000	4
			$1,000,001+	5

Appendix E: Condition Assessment Guidelines

The foundation of good asset management practice is accurate and reliable data on the current condition of infrastructure. Assessing the condition of an asset at a single point in time allows staff to have a better understanding of the probability of asset failure due to deteriorating condition.

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the Village's condition assessment strategy should outline several key considerations, including:

- The role of asset condition data in decision-making
- Guidelines for the collection of asset condition data
- A schedule for how regularly asset condition data should be collected

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired level of service. Accurate and reliable condition data allows municipal staff to determine the remaining service life of assets, and identify the most cost-effective approach to deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the Village's risk management and financial strategies. Assessed condition is a key variable in the determination of an asset's probability of failure. With a strong understanding of the probability of failure across the entire asset portfolio, the Village can develop strategies to mitigate both the probability and consequences of asset failure and service disruption. Furthermore, with condition-based determinations of future capital expenditures, the Village can develop long-term financial strategies with higher accuracy and reliability.

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.

There are many options available to the Village to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource-intensive. It is not necessarily an effective strategy to collect assessed condition data across the entire asset inventory. Instead, the Village should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:

1. **Relevance**: every data item must have a direct influence on the output that is required
2. **Appropriateness**: the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
3. **Reliability**: the data should be sufficiently accurate, have sufficient spatial coverage and be appropriately complete and current
4. **Affordability**: the data should be affordable to collect and maintain

Appendix F: Source Documents

2010 Roads Needs Study – DM Wills Associates

2013 Asset Management Plan – Aecom Engineering

2015 Building Condition Study – Aecom Engineering

2019 Asset Management Policy – Staff

2020 Bridge Inspection Report – GHD Engineers

2021 Assessment of South River Water Distribution System - GSS Engineering

2023 South River Water Treatment Plant's Sludge Management -OCWA

2024 Design Brief Upgrading of High Lift Pumps South River Water Treatment Plant – GSS Engineering