Enterprise Asset Management Plan

Executive Summary

In 2019, the Council of the Town of Blind River approved a Strategic Asset Management Policy aimed at ensuring its municipal infrastructure systems are supported by plans and financing decisions that demonstrate effective service support and appropriate regard for managing lifecycle costs.

The Strategic Asset Management Policy was prepared to meet the first requirement of *O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure* under the *Infrastructure for Jobs and Prosperities Act, 2015. Ontario Regulation 588/17* was formally approved by the Province on December 13, 2017. The Regulation dictates the scheduled phase in dates for asset management policies and plans and provides a description of the content required for each milestone. For example: asset management plans are to describe an asset's expected service level and performance based on technical data.

In June 2022, the Town of Blind River achieved the critical second milestone of the Provincial Regulation with the approval of the Asset Management Plan - 2021. The plan successfully met the requirements of *O. Reg. 588/17* for core assets. The regulation defines core infrastructure as water, wastewater, stormwater management, roads, bridges, and large culverts. The Town of Blind River's Asset Management Plan – 2021 can be found on the Town's website. This Plan exceeded the requirements by also including a high-level analysis of all asset classes and a financial strategy to provide a path for the Town to address infrastructure funding gaps over the long term.

The Enterprise Asset Management Plan (2024) is a strategic document that uses a risk-based approach to asset management planning. The plan meets the second phase requirements of *O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure* with a mandated completion date of July 1, 2024 (formerly 2023).

Asset classes included within this asset management plan are the previous asset classes as described above in the 2021 AMP as well as more in-depth Fire services, Fleet & Equipment, Parks & Recreation, and Buildings & Facilities.

The asset class specific asset management plans describe the characteristics and condition of infrastructure assets along with action and investment plans, required to achieve the current level of service set out by Council.

The Enterprise Asset Management Plan is a consolidated and integrated document of core infrastructure asset management plans that provide a clear integrated and holistic picture of core infrastructure and their asset maturity level. The plan will serve as a roadmap for future action plans by defining the next steps which include the legislated milestones to further the maturity of asset management planning. A state of the infrastructure provides comprehensive information regarding the asset classes included within the plan.

The Enterprise Asset Management Plan was developed in line with the Strategic Asset Management Policy which provides the guiding principles for the plan.

Unless otherwise stated, all financial values in this asset management plan are described in 2024 dollars.

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Tables and Figures

1. Introduction

Asset management is the systematic and coordinated activities and practices of an organization to realize value from an asset by optimally and sustainably delivering on its service objectives through cost-effective lifecycle management of assets.

Service delivery to the community is based on managing existing assets in an environmental, social, and economically sustainable manner to reduce cost and risks, while complying with regulation.

The majority of the Town's assets have long service lives extending beyond a decade. These assets require significant ongoing investment in operation, maintenance, and renewal activities to maintain a safe and reliable condition to support service delivery.

The Town, like most Canadian municipalities, must overcome multiple challenges in managing assets including aging infrastructure; expectations of higher levels of service with minimal financial impact; increasingly demanding and complicated legislation with environmental requirements; and mitigation of the increased risk involved with the execution of service delivery. As a result, the Town is moving to implement a focused and calculated approach to address these challenges of managing infrastructure assets with the development and implementation of the Enterprise Asset Management Plan.

1.1. Background and Legislation

In June of 2011, the province of Ontario released a long-term infrastructure plan for Ontario entitled *Building Together*. *Building Together* laid out a standardized and calculated approach to asset management planning. *Building Together* in conjunction with the *Infrastructure for Jobs and Prosperity Act, 2015* established a criteria and timeline for all municipalities to have an asset management plan in place by December 31, 2016. An asset management plan was required by this date to continue to be eligible for Federal and Provincial Government funding.
In response, PSD was retained to produce the Town of Blind River Asset Management Plan (2017).

On December 13, 2017, the province approved *O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure* under the *Infrastructure for Jobs and Prosperities Act, 2015.* The Town has been working to develop asset management plans for all infrastructure assets that comply with legislation. This includes describing the asset's expected performance level (that is, its "service level") based on technical data.

In 2019, Council of the Town of Blind River achieved the first requirement of *O. Reg. 588/17* with the approval of the Strategic Asset Management Policy aimed at ensuring municipal infrastructure systems are supported by plans and financing decisions that demonstrate effective service support and appropriate regard for managing lifecycle costs.

On April 16, 2021, the Province formally announced an amendment to *O. Reg. 588/17*. The amendment extends the legislative phase-in schedule by one year. Specifically, municipalities must have had approved phase one asset management plans for core assets (roads, bridges and culverts, water, wastewater, and storm water management systems) completed by July 1, 2022.

These plans identified current levels of service and the cost to maintain the current level of service. With the approval of the Enterprise Asset Management Plan (2024), the Town of Blind River will meet the second phase requirement of *O. Reg. 588/17*. The extension to the phase-in schedule is further reflected in the asset management roadmap.

Asset management represents the management of infrastructure, using proven lifecycle strategies that have been evolving over several years. Throughout this time, the Town has developed asset management planning knowledge that is formally defined as part of the strategies within the Enterprise Asset Management Plan. The plan will culminate with the establishment of an improved and evolving long-term strategy to address the Town's investment in infrastructure.

1.2. Maturity

The Federation of Canadian Municipalities (FCM) has prepared an Asset Management Readiness Scale to help municipalities understand where they started, where they currently are, and where they would like to be in asset management maturity. The levels that the Town of Blind River has currently achieved and will strive to achieve in the FCM Asset Management Readiness Scale are provided in Figure 1, which follows the description of the tool itself and how the tool is applied.

The readiness scale measures and analyzes five competency areas, with each competency acting as a building block. The five building block competencies include the following descriptions as provided by the FCM:

Policy and Governance: By developing this competency, the Town is putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

This competency helps create the policy structure that lays out asset management goals and how they will be achieved, leading to organizational alignment and commitment.

People and Leadership: By developing this competency, the Town is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Asset Management requires collaboration and integration from multiple perspectives. At a minimum, the asset management team should be a representation of people who understand finance, decision-making, and the planning and operations of each relevant service area. This competency helps create and sustain connections across teams and build leadership in asset management.

Data and Information: By developing this competency, the Town is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

This competency helps improve data management practices to ensure appropriate asset information is available as required.

Planning and Decision-Making: By developing this competency, the Town is documenting and standardizing how the organization sets asset management priorities, conducts capital, operations, and maintenance (O&M) planning, and develops budgets.

This competency helps implement asset management, by ensuring that asset management

policies, objectives and information are consistently informing organizational plans.

Contribution to Asset Management Practice: By developing this competency, the Town is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

This competency helps build the organization's overall asset management practice by ensuring that internal stakeholders are well-informed and that the organization stays current with, and contributes to, leading practices, training, and education.

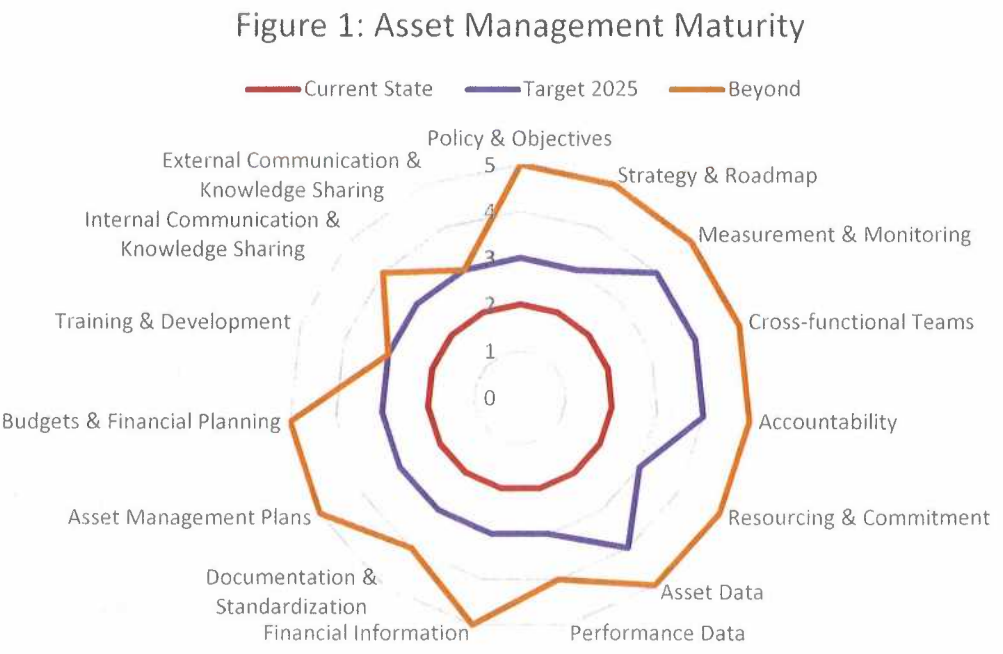
Each of the five competency areas is organized on a progressive scale of five levels. Each level is further broken down into three outcome areas. The outcomes describe milestones in asset management from initial investigation of practices to adoption, and eventually to full integration of asset management practices into daily routines. Each of these outcome areas need to be achieved by the entire organization before a level can be achieved. Examples of outcomes within the readiness scale are Policy and Objectives, Asset Data, Financial Information, Asset Management Plans, Training and Development, among others.

Various asset classes may progress in the competencies at different rates and be further along in some competencies than in others. Furthermore, some asset classes may be further along with asset management practices than others. **The entire organization must achieve each outcome prior to advancing a level, meaning the overall rating should reflect the less advanced asset classes**. The levels are useful in planning for improvement.

Once the Town achieves a Level 4 in the Asset Management Readiness Scale, the Town will be roughly aligned with the requirements of the ISO 55000 standard; which is a significant accomplishment. The ISO 55000 provides an overview of asset management, its principles and terminology, and the expected benefits from adopting asset management.

The Town's asset management maturity has been measured in the readiness tool on several occasions during grant applications with the FCM. The latest maturity measurement and targets are provided in Figure 1. Please note, the readiness scale is intended for the Town of Blind River to measure progress and set goals, it is not intended to benchmark or compare progress of various municipalities. For further details on the readiness tool and the various competency outcomes and levels please visit: https://fcm.ca/en/resources/mamp/tool-asset- management-readiness-scale.

Figure 1: Asset Management Maturity



Currently, the Town's asset management maturity score is a Level 2. As an example of what is required to improve, per the FCMs scoring criteria, the Training and Development Level is at a Level 2. To achieve a Level 4, an asset management training plan must be in place for **all** Town staff, even staff whose job descriptions do not include the operation or management of infrastructure assets. Currently, the approach to training and development is to implement proactive development training and role appropriate training for staff. If the Town were to develop a training plan and provide asset management training to all staff, the Training and Development score would move directly to a Level 5. A copy of the Asset Management Readiness Scale Assessment Tool is attached at Appendix C which outlines all the requirements to attain the various different levels.

The Town will continue to use this assessment tool to develop action plans and monitor progress towards greater asset management maturity.

1.3. Roadmap

The asset management roadmap outlines the actions, and time frames needed to implement and deliver asset management objectives. The key steps that must be performed to develop and implement effective asset management plans are detailed in Figure 2.

Within the asset management roadmap, the legislated phase 1 and 2 asset management plans are developed in steps 1 through 6 (Assess and Plan). The implement column represents requirements of the phase 3 asset management plan. Recently, activity has been focused on data collection and analysis to identify existing level of service, quantifiable risk, and infrastructure need. Over the next months, activities will be focused on the development of a sustainable financing strategy to achieve target level of service at an acceptable level of risk.

Figure 2: The Asset Management Roadmap

A) Assess	B) Plan	C) Implement
1. Framework • Asset Management Policy • Review Asset Management Practices • Develop Council Reporting	**4. Modeling** • Criticality • Failure Prediction • Climate Change Resiliency • Risk Management Framework	**7. Benchmark** • Target Level of Service Framework • Review Existing and Generate Additional Key Performance Indicators
2. Need and Gap Analysis • Data Availability • Data Collection Practices • Path to Improvement	**5. Prioritization** • Asset Lifecycle Planning and Optimization • Cost Benefit Analysis • Project Scheduling	**8. Sustainability Strategy** • Financing Strategy for Target Levels of Service • Plan to manage infrastructure within the Town's capaTown to renew and maintain assets, and accept the associated risk • Cost & Asset Tracking
3. Assessment • Data Analysis • Asset Performance • Legislative and Industry Standards • Levels of Service	**6. Financial Strategy** • Long-Term Needs • Capital expenditure and significant operating costs to maintain life cycle activities • Funding Gap • Future Demand	**9. Execution** • Monitor Performance of Asset Management Program

The asset management roadmap will be guided by the principle of continuous improvement, industry best practices, and regulatory requirements. Asset management planning is dynamic and must be continuously evolving to leverage opportunities and address upcoming challenges.

Upcoming milestones that will be achieved within the asset management roadmap are provided in Table 1.

Table 1: Asset Management Roadmap upcoming Milestones		
Year	**Milestone**	**Actions**
2024	2nd Enterprise Asset Management Plan (Phase 2)	Include all core and non-core infrastructure. EAMP now includes all asset classes
2024-2025	Define Target Levels of Service	Prepare Level of Service options for Council review and selection
	Prepare Sustainability Strategy	Prepare investment and financing plan to achieve the targets directed by Council
2025	3rd Enterprise Asset Management Plan (Phase 3)	Complete compliance with O. Reg. 588/17
2026 & beyond	Continuous Improvement	Monitor the progress, achievements and needs of asset management planning Revise Enterprise Asset Management Plans, Strategies and Policy to reflect improvement objectives

1.4. Purpose of the Enterprise Asset Management Plan

The plan provides details to facilitate the best possible decisions regarding construction, operation, maintenance, renewal, replacement, expansion, and disposal of infrastructure assets while minimizing risk and cost and maximizing service delivery. The plan integrates several individual plans by asset class including Water and Wastewater, Storm Water Management, Roads and Transportation, Bridges and Large Culverts (included in Transportation), Fleet and Equipment, Fire Services, Parks and Recreation, and Buildings and Facilities.

The Enterprise Asset Management Plan is developed in accordance with Building Together – Guide for Municipal Asset Management Plans and *Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure, 2017* and the principles included in Section 3 of the *Infrastructure for Jobs and Prosperity Act, 2015*.

Asset management plans provide a framework that functions along with annual budgets and long-term financial plans to help understand the implications of budget and investment planning decisions on infrastructure. The 2024 Enterprise Asset Management Plan establishes a baseline of current asset management practices.

Asset class specific asset management plans are attached to the document in the appendices. Most asset class specific details such as current level of service, condition, risk exposure and financial need are provided in the appendices.

Also included within the appendices is the Strategic Asset Management Policy and the Asset Management Strategy. The strategy builds upon the principles set out in the Strategic Asset Management Policy. The strategy provides practices that can be applied consistently across the Town of Blind River aimed to improve asset management and support the objectives of the roadmap.

The Enterprise Asset Management Plan is dynamic and will be revised and updated regularly as a

minimum per legislative schedule or as significant revisions become available. Revisions are expected as the Town's maturity in asset management planning progresses.

2. State of the Infrastructure

The Town of Blind River asset inventory serves various functions, but in all cases the assets are physical infrastructure assets that depreciate over time.

The State of the Infrastructure communicates the performance of infrastructure assets that are included in the Enterprise Asset Management Plan.

While the available asset data and information did not indicate that there are any major physical issues with the assets at the network level, normal degradation of assets will continue at the individual asset level and will require funding to address future needs. Leading up to 2024, the Town has greatly increased the maturity and availability of datasets for the major asset classes included in the State of the Infrastructure.

2.1. Asset Valuation

The Town has a historical capital investment of $129.1M (2023) invested into infrastructure assets that is detailed in Figure 3. The expenditure data to develop Figure 3 is managed within the Town's Tangible Capital Asset Database.

Figure 3: Asset Investment History for ALL Infrastructure (2023)

The historical investment of $129.1M (2023) invested into all infrastructure assets spans across a large portfolio that translates into a $539M replacement value for all infrastructure assets.

Replacement values for all infrastructure assets are presented in Figure 4.

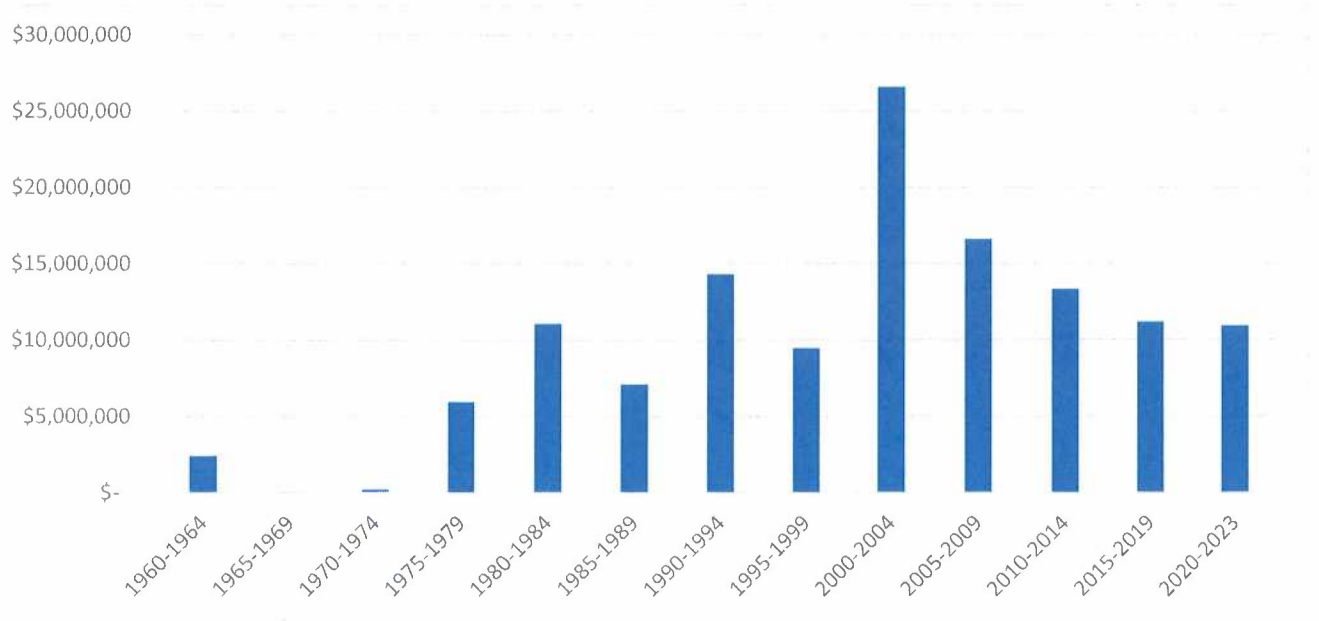
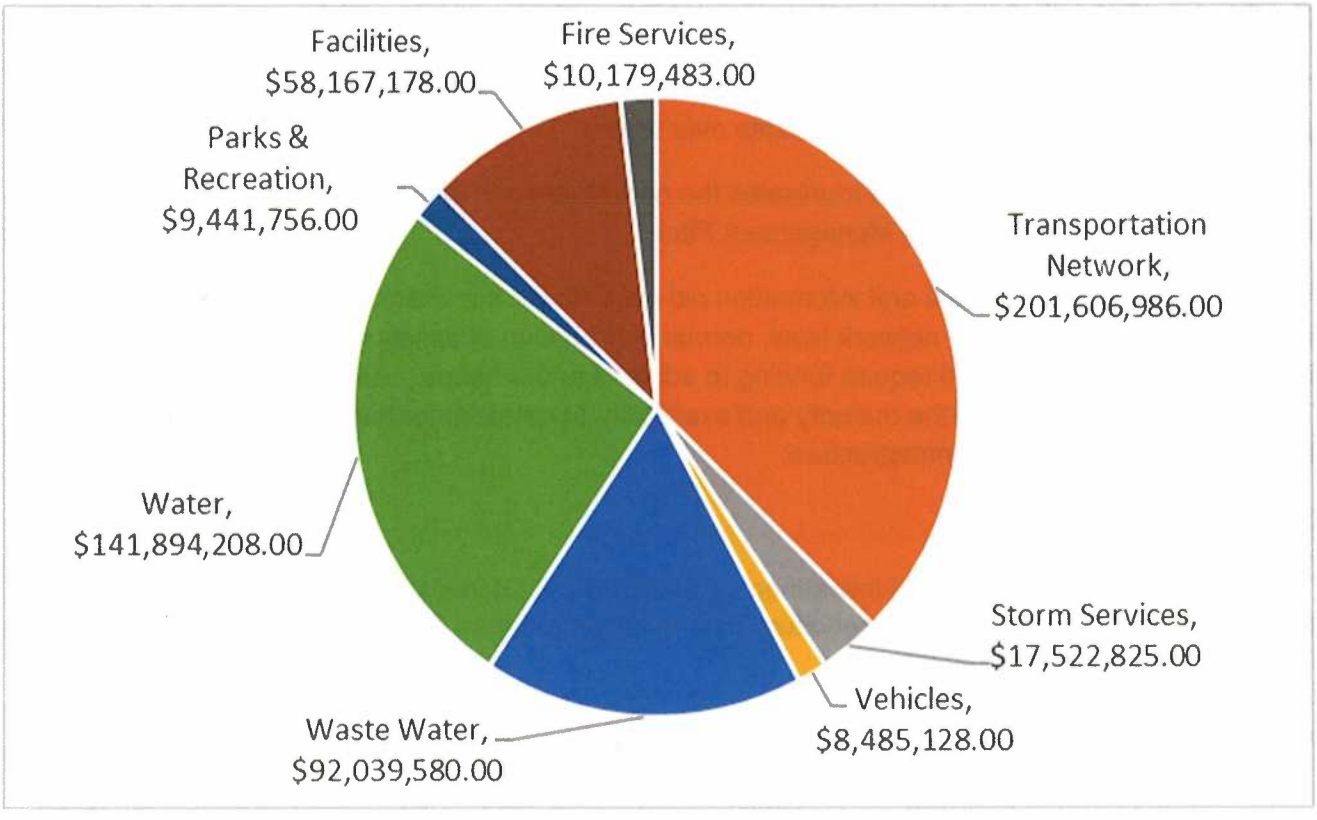
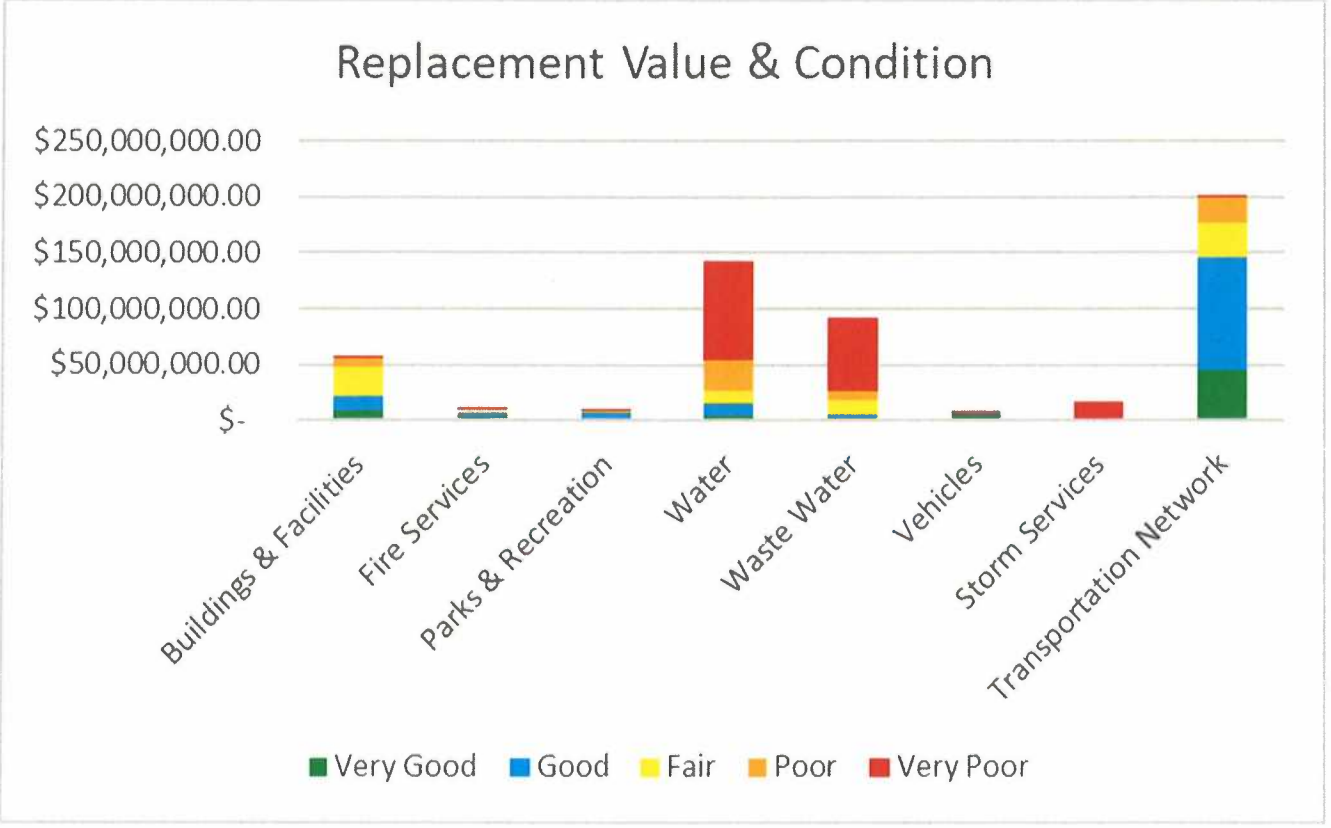


Figure 4: Replacement Value for Town Infrastructure



2.2. Summary of Replacement Valuation for Asset Classes within the Enterprise Asset Management Plan

The replacement value of the Town's assets is $539M. Elements related to the Roads Network comprise 35.7% of the Town's total replacement valuation. Water and Waste Water follow at 26.3% and 17.1% respectively. Buildings & Facilities account for 10.8% of the total replacement value. These four asset classes represent 89.9% of the total replacement value of the Town's assets.



2.3. Infrastructure Summary Reports

Please see the following Infrastructure Summary Reports by asset class.

Intentionally Blank

Transportation Network

The transportation network comprises:

- Paved Roads - High Class Bituminous Roads (HCB)
- Surface Treated Roads – Low Class Bituminous (LCB)
- Gravel Roads
- Sidewalks
- Curbs
- Traffic Signs
- Bridges
- Culverts

The above infrastructure assets have replacement value estimated at $ 201,606,985.

Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels for the planning period.

The main service consequences of the Planned Budget are:

- Continued degradation of the condition of roads
- Decreased levels of service
- Increased long-term life-cycle costs for the transportation network

Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Climate Change
- Tourism and Seasonal Variation
- Population Growth
- Regulatory Changes
- Public Expectations and Levels of Service
- Technological Advancements

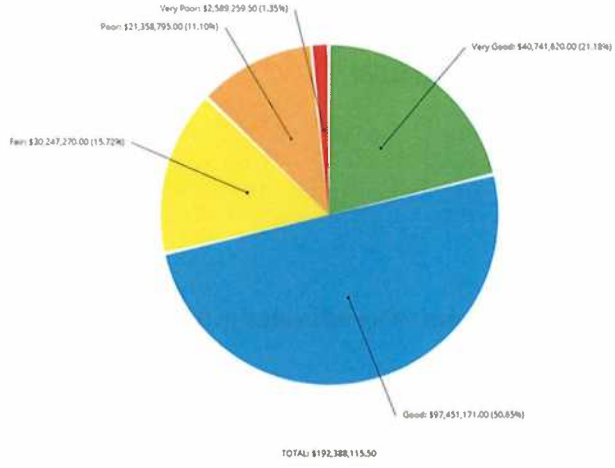
These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Proactive plan for monitoring population growth trends and forecasting of expansion/improvements to the transportation network
- Citizen expectation surveys
- Review and continual improvement of the efficiency and efficacy of maintenance practices
- Development of a climate change resiliency plan

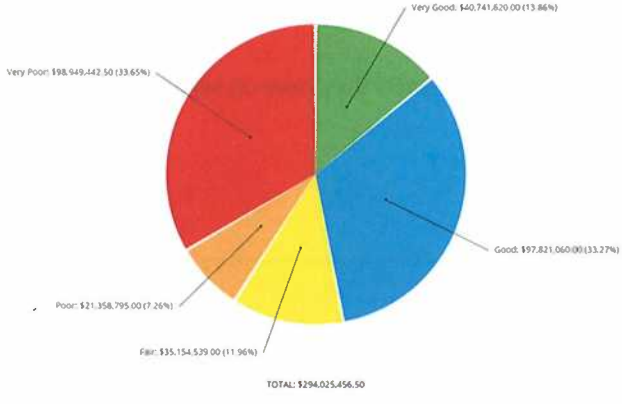
What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of a 10 year total outlay, which for the transportation network is estimated as **$ 72,435,671 or $ 7,243,567** on average per year.

Road Network Asset Condition Profile



Bridges and Culverts Asset Condition Profile



Funding Gap			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{10}**	**Funding Gap**
Transportation Network	**$904,749**	**$7,243,567**	**$6,338,818**

Drinking Water System

The Town of Blind River's water distribution system serves a population of approximately 2,500 residents.

Drinking Water Assets

Asset Segment	Asset Count	2024 Replacement Cost ($)
Control Valves	1,212 each	$3,277,186
Hydrants	197 each	$2,557,179
Service Leads	8,536 m	$15,730,290
Treatment Plant	1 each	$16,379,090
Valve Box	1,196 each	$451,500
Water Mains	34,131 m	$100,957,121
Water Treatment Equipment	17.00	$475,232
Water Well	5	$2,064,740

The above infrastructure assets have replacement value estimated at $141,894,208.00.

Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of water assets.
- Increased replacement costs.
- Disruption to water service for residents

Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in a required increased level of service for water assets.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Drinking water assets are scheduled for replacement after 60 years of service to minimize repairs costs and asset failure. This timeframe can be extended or reduced based on condition assessments.
- Replacements of water assets are completed in conjunction with the replacements of roads, and other underground services.
- Water assets due for replacement will undergo a needs analysis to determine if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

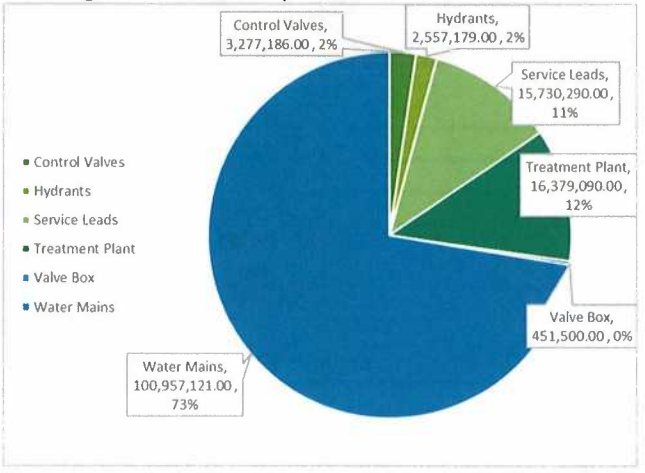
What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Fleet Assets is estimated as **$91,229,790** or **$ 9,122,979** on average per year.

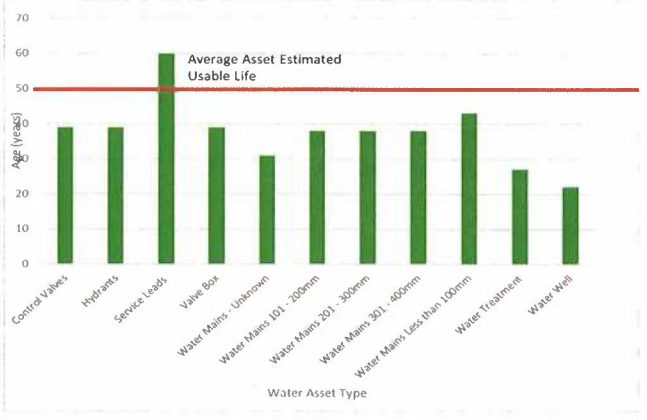
However, the Drinking Waster System Asset Management Policy directs the staff to investigate the following factors before deciding on DWS asset replacements:

- The number of historical water lines breaks
- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

Drinking Water Assets Replacement Cost Distribution



Water Asset Age Distribution



Funding Gap			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{10}**	**Funding Gap**
Drinking Water System	**$1,489,675**	**$9,122,979**	**$7,633,304**

Wastewater System

The Town of Blind River's water distribution system serves a population of approximately 2,500 residents.

Wastewater Assets

Asset Segment	Asset Count	Unit of Measure	2024 Replacement Cost ($)
Fittings	1,477.00	each	123,900.00
Manholes	349.00	each	4,927,438.00
Sanitary Pumping Stations	4.00	each	2,117,700.00
Sewer Lines - Unknown	3.00	each	6,062,132.00
Sewer Lines 100-200mm	9,409.30	length (m)	21,641,390.00
Sewer Lines 201-300mm	15,009.90	length (m)	34,522,770.00
Sewer Lines 301-400mm	1,186.60	length (m)	2,514,720.00
Sewer Lines 401-500mm	707.10	length (m)	1,767,750.00
Sewer Lines 501mm and over	747.90	length (m)	1,869,750.00
Sewer Services	6,835.60	length (m)	11,620,520.00
Wastewater Treatment/Disposal Facility	1.00	each	4,871,510.00

The above infrastructure assets have replacement value estimated at $**92,039,580.00.**

Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of wastewater assets.
- Increased replacement costs.
- Disruption to wastewater service for residents.

Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in the a required increased level of service for wastewater assets.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

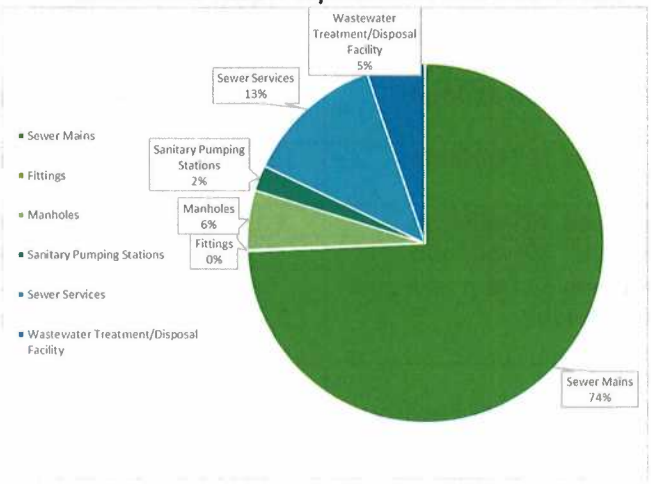
- The biggest component of the wastewater system is the sewer lines which are scheduled for replacement after 40 years of service to minimize repairs costs and asset failure. This timeframe can be extended or reduced based on condition assessments.
- Replacements of wastewater assets are completed in conjunction with the replacements of roads, and other underground services.
- Wastewater assets due for replacement will undergo a needs analysis to determine the if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

What does it Cost?

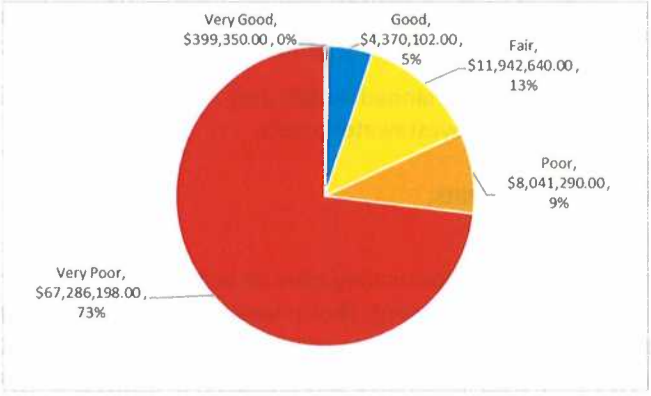
The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Fleet Assets is estimated as **$71,988,500** or **$ 7,198,850** on average per year. The following factors are reviewed prior to asset replacements:

- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager.
- Age/Year of asset vs expected lifecycle.

Wastewater Assets Replacement Cost Distribution



Wastewater Asset Condition Distribution



Funding Gap			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{10}**	**Funding Gap**
Wastewater System	**$956,274**	**$7,198,850**	**$6,242,576**

Storm Water Management

The Town is responsible for owning and maintaining a stormwater network of 6km storm sewer mains, catch basins, and other supporting infrastructure.

Stormwater Assets

Asset Segment	Asset Count	Unit of Measure	2024 Replacement Cost ($)
Catch Basin Leads	564	length (m)	123,900.00
Catch Basins	164	each	4,927,438.00
Culverts	274	each	2,117,700.00
Manholes	82	each	6,062,132.00
Storm Sewer Lines - Unknown	4	length (m)	21,641,390.00
Storm Sewer Lines 200-300mm	4,789	length (m)	34,522,770.00
Storm Sewer Lines 301-400mm	355	length (m)	2,514,720.00
Storm Sewer Lines 401-500mm	613	length (m)	1,767,750.00
Storm Sewer Lines 501mm and over	318	length (m)	1,869,750.00

The above infrastructure assets have replacement value estimated at $ **17,522,825.**

Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of stormwater assets.
- Increased replacement costs.
- Disruption to stormwater service.

Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in a required increased level of service for stormwater assets.
- Climate change and extreme precipitation events may require the storm water system capacity to be upgraded to accommodate these events.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Replacements of stormwater assets are completed in conjunction with the replacements of roads, and other underground services.
- Stormwater assets due for replacement will undergo a needs analysis to determine the if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

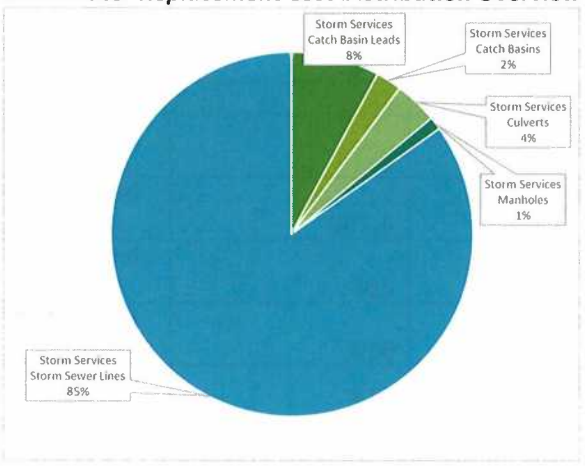
What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Stormwater Assets is estimated as
$ 14,446,720 or $**1,444,672** on average per year.

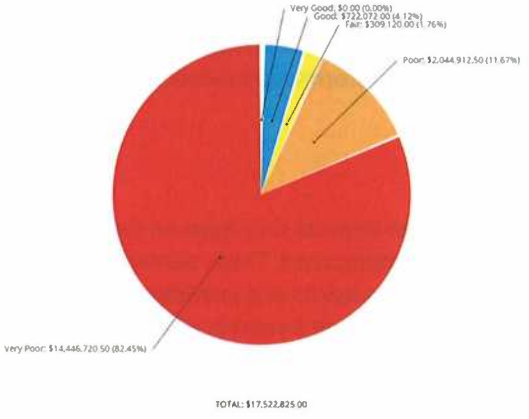
The following factors are reviewed prior to asset replacements:

- Condition and Usability determined through routine inspections and preventative maintenance by public works staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

Stormwater Replacement Cost Distribution Overview



Stormwater Asset Overview



Funding Gap			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{10}**	**Funding Gap**
Stormwater System	**$315,229**	**$1,444,672**	**$1,129,443**

Fleet Assets

The Town has 34 fleet in its inventory. This includes fire apparatus which are also covered in the Fire AMP. The Fleet network is classed by:

- Class 1 - Light Duty Fleet
- Class 2 - Medium Duty Fleet
- Class 3 - Heavy Duty Fleet

The above infrastructure assets have replacement value estimated at $8,485,128.

Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased downtime of fleet assets.
- Increased repair costs for fleets assets.
- A reduction in service that the Town can provide.

Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Growth in fleet due to demand for other services. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Preventative Maintenance (PM) of Fleet using a work order system called Citywide Maintenance Manager.
- The Fleet Forecast and development of a Fleet Management Policy as a driver for fleet replacement.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Fleet assets are scheduled for replacement after 10 years of service to minimize repairs costs and maximize return on trade when purchasing a replacement. This timeframe can be extended or reduced based on the condition assessment and recommendation of mechanic staff as well as other factors.
- Requests for the addition of fleet assets are reviewed for approval by the Director of Public Services.
- Fleet assets due for replacement will undergo a needs analysis to determine if replacement is necessary or if the asset's service can be fulfilled within the existing fleet.

What does it Cost?

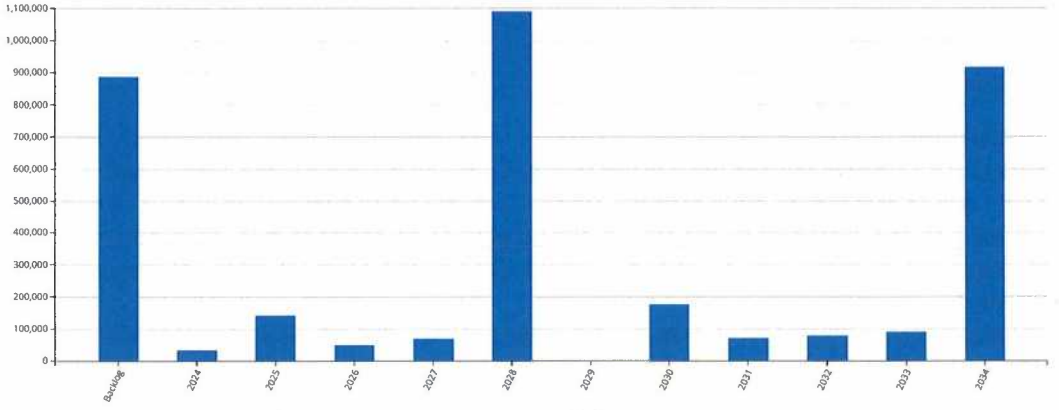
The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for Fleet Assets is estimated as **$2,805,814 or $ 280,581** on average per year. However, the Fleet Asset Management Policy directs the staff to investigate the following factors before deciding on fleet replacements:

- Usage through mileage/ Hours vs Expected, and these readings are tracked using Citywide Maintenance Manager
- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

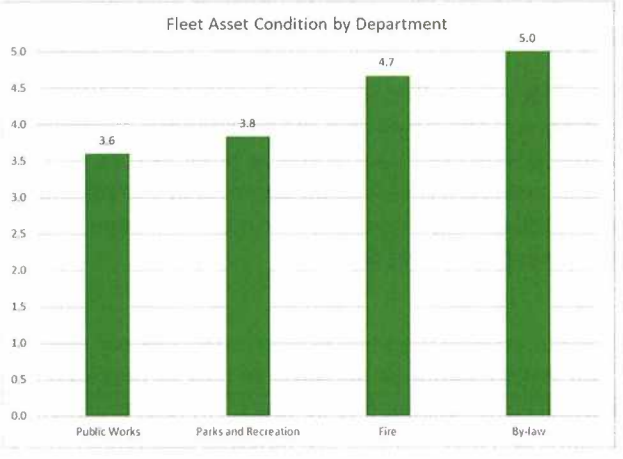
Fleet Assets by Department

Department	Fleet Asset Count
Protective Services	
Fire	6
By-law Enforcement	1
Community Services and Facilities	
Parks and Recreation	6
Public Services	
Public Works	22
Total Assets	**34**

Fleet Asset Replacement Forecast



Average Fleet Asset Condition by Department



Funding Gap			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{10}**	**Funding Gap**
Fleet	**$611,007**	**$280,581**	**($330,426)**

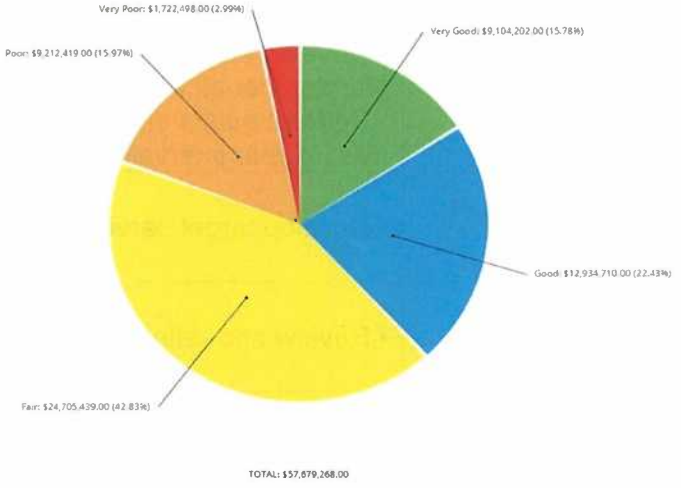
(Note that the funding gap is skewed by the purchase of 2 fire trucks in 2021 & 2022)

Buildings & Facilities

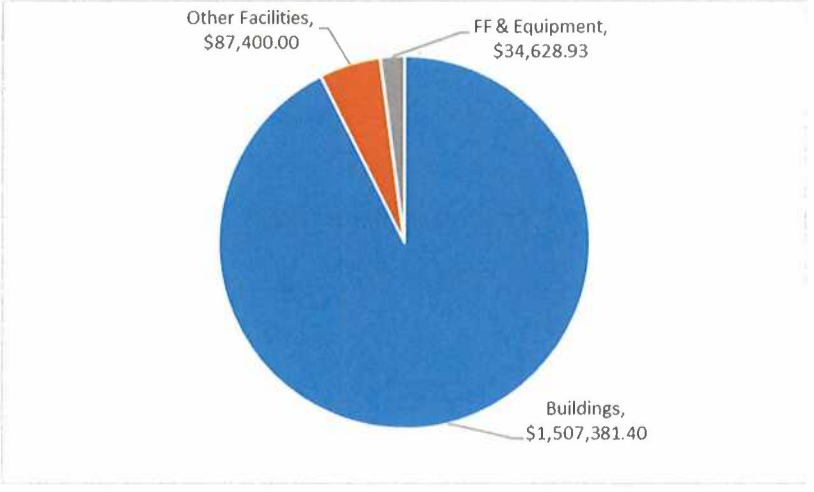
The Buildings & Facilities Asset Management Plan covers 20 facilities that equates to over 100,000 square feet. This plan does not include the Fire, Water or Waste Water facilities as they are included in their own respective plans. The building inventory is managed across several areas including Public Works, Cemetery Services, Administrative Services, Emergency Services, Community Services, Library Services and the Golf Course.

Building Condition Summary

(excludes Fire, Water & Waste Water)



Annual Average Reinvestment Required



Asset (Technical) – Key Performance Indicators (KPI)

Buildings and Facilities Existing Level of Service, outlines the levels of services that are currently being offered by facilities within the Town of Blind River. This current level of service is the condition of the facility as a percentage based on the current and deferred investment requirement by the Facility replacement value in current dollars.

- Facility condition state = % of facilities in various condition state, by Current Replacement Value
    - % of facilities in poor or very poor condition = 18.96%
    - % of facilities in fair condition = 42.83%
    - %of facilities in good or very good condition = 22.43%
- 100% of Buildings and Facilities have Facility Condition Assessments completed.
- Facility Condition Assessments completed at 5-year intervals for all Buildings and Facilities.

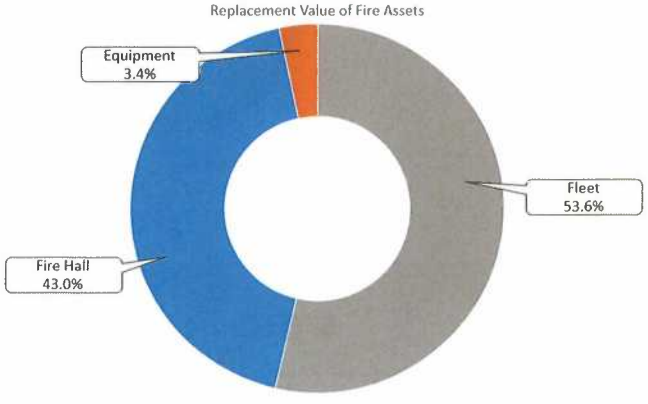
Next Steps		
Section	**Category**	**Action Item**
State of the Infrastructure	Inventory	• Monitor and refine the building and facility asset inventory to reduce the quantity of data assumptions • Develop and implement an updated asset identification standard for all buildings and facilities • Perform audits on building and facility site conditions at five (5) year intervals
Level of Service	Asset Level of Service	• Develop target service levels for Council review
Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the risk framework for buildings and facilities as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

Funding Gap (Capital)			
Asset Class	**5 Yr Expenditure (Avg)**	**AAR_{50}**	**Funding Gap**
Buildings and Facilities	$827,225	$1,630,000	$802,775

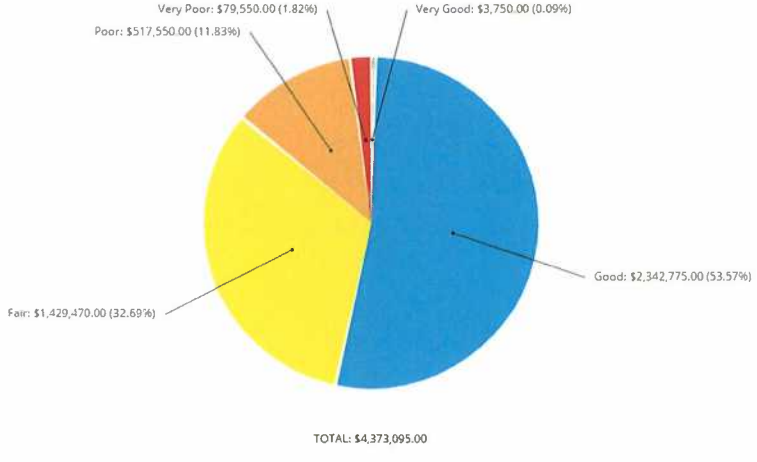
Fire Services

The Blind River Fire Department has one full-time Fire Chief, 17 volunteer firefighters and 7 probationary volunteer firefighters that operate from one fire station located at 241 Causley Street.

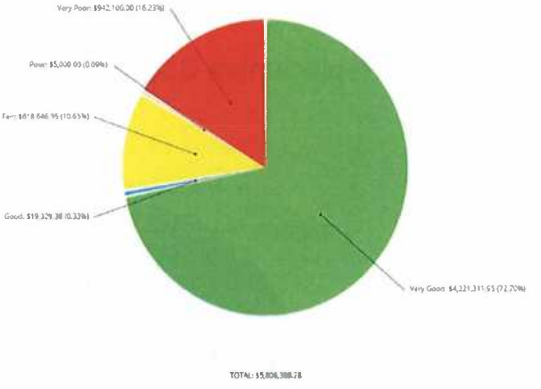
Total Replacement Cost of Fire Assets: $10,179,500



Fire Hall Condition Rating



Vehicle & Equipment Condition Rating

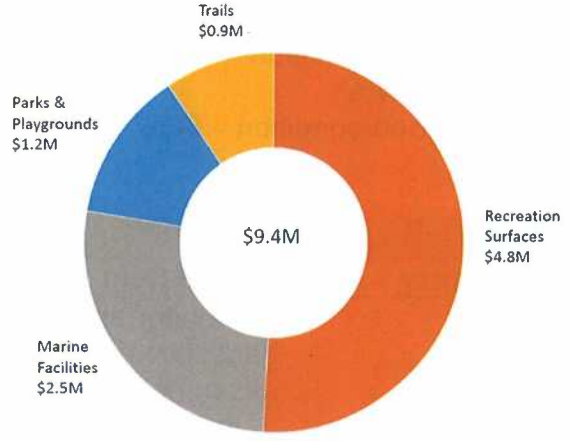


Funding Gap			
Asset Class	**5 Yr. Expenditure (Avg)**	**AAR10**	**Funding Gap**
Fire Services	**$371,419**	**$357,945**	**($13,474)**

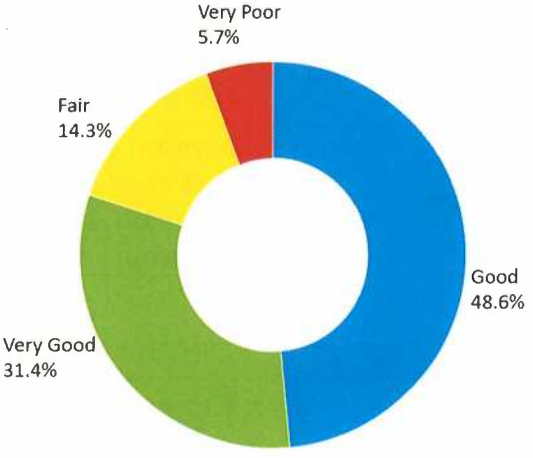
Parks and Recreation

The Parks & Recreation asset management plan covers 35 assets with an estimated replacement cost of $9,441,756. The portfolio consists of boat launches & marine facilities, parks & playgrounds, sports fields and a golf course, among others.

Replacement Value Distribution of Parks and Recreation Infrastructure



Asset Condition Rating



Asset (Technical) Level of Service and Key Performance Indicators (KPI)

An asset level of service is a quantitative measure that defines the performance expectations for a given asset to produce the desired levels of service. These services are measured and can include asset conditions, responsiveness, expenditure, and asset

value.
Levels of service can be evaluated by measures that consider customer complaints, customer surveys, community engagement, technical data, or discussions with municipal staff familiar with service operations.
The key performance indicators currently included in the asset levels of service are indicated below.

- Asset data collection and Inspections completed on an annual basis

- Asset condition breakdown

  - % of assets in poor or very poor condition = **6%**
  - % of assets in fair condition = **14%**
  - % of assets in good or very good condition = **80%**

Next Steps		
Section	**Category**	**Action Item**
State of the Infrastructure	Inventory	• Monitor and refine the parks and recreation asset inventory to reduce the quantity of data assumptions • Implement a digital solution to track, monitor and analyze parks and recreation data
Level of Service	Asset Level of Service	• Develop target service levels for Council review
Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the deterioration model for Parks and Recreation assets as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

Funding Gap (Capital)			
Asset Class	**5 Yr. Expenditure (Avg)**	**AAR20**	**Funding Gap**
Parks and Recreation	**$658,400**	**$495,000**	**($163,400)**

2.4. Infrastructure Deficit and Annual Funding Gap

The Town of Blind River must balance a multitude of competing spending priorities with limited resources. As the Town's infrastructure ages, the need to make sustainable, well-timed infrastructure investments is essential to continue to deliver high-quality services to the community.

A combination of department-specific and Town-wide financial strategies are required to effectively address the infrastructure deficit.

The infrastructure need detailed in the asset management plans are prepared for appropriate periods of time that were determined by the service life duration of the asset class. For example, a road or a sanitary sewer will have different service lives while also having significantly longer service lives than fleet or equipment. The capital need is based upon lifecycle management strategies required for the selected period.

The average annual reinvestment requirement (AAR) is the mean investment required for a selected period. The AAR is useful for defining the required rate of funding based on the investment profiles prepared for various asset classes. With the average annual reinvestment requirement, the Town may either benchmark infrastructure investment against the AAR metric while monitoring the variability year to year or contribute to reserves in years where the annual investment is short of the average annual reinvestment value.

Following the identification of the average annual capital requirement by asset class, the capital reinvestment needs are compared to the recent annual capital budget to determine the adequacy of the funding for the sustainability of the infrastructure. The comparison yields the financial risk associated with asset ownership known as a funding gap.

Addressing the Capital Funding Gap

In recent years, the Town of Blind River has taken some steps to increase capital funding and maintain infrastructure asset level of service. Most notably, Council approved a 9% increase to the water and wastewater rates for 2022 and for the remaining 10-year period covered by the plan as recommended in the Town of Blind River Water and Wastewater Financial Plan adopted in December 2021. The annual increase to the water and wastewater rates begins to steer the Town on the path to sustainability for water and wastewater service delivery.

The latest Water and Wastewater Long-Range Financial Plan is subject to a revision every 5 years, with the next revision scheduled for the year 2026.

Within the Town of Blind River Asset Management Plan - 2021 prepared by PSD, it was recommended that the Town pursue a municipal levy increase of 3.2% per year to fund capital expenditures. The actual changes in levy-funded capital are summarized below:

Table 2: 5-Year History Levy-Funded Capital

Year	Actual Levy Funded Capital	Target	Actual change	Percent
2020	$ 1,361,845	$ 1,358,850	$ 52,741	3.87%
2021	$ 1,381,900	$ 1,413,595	$ 20,055	1.45%
2022	$ 1,303,145	$ 1,434,412	$ (78,755)	-6.04%
2023	$ 1,735,414	$ 1,488,920	$ 432,269	24.91%
2024	$ 1,461,207	$ 1,545,499	$ (274,207)	-18.77%

This translates to an average increase of only 2.32% or $170,000 per year. With the significant cost increases since the COVID-19 pandemic, the Town continues to fall behind in terms of capital funding.

A recommendation from the previous asset management plan is to make use of borrowing for infrastructure investments. Historically, borrowing as a means of funding infrastructure investment has not been commonplace for Town of Blind River. However, recent decisions by Council have been more accepting of borrowing. Additionally, the Town does look for opportunity to periodically debt finance infrastructure investment as per the recommended criteria provided below; conditional upon one or more of the following:

- The principles of debt financing are in accordance with the Town of Blind River Debt Management Policy; **and**
- The infrastructure investment will provide a stream of non-taxation revenues that can be used to fund some or all the associated debt servicing costs; and/or
- The Town requires debt financing to fund its portion of infrastructure projects that are cost shared with senior government; and/or
- The infrastructure investment is unavoidable because of regulatory changes or concerns over public health and safety and cannot be funded through other means; and/or
- The associated debt servicing costs would not jeopardize the Town's financial sustainability or result in the Town exceeding its annual debt repayment limit.

Furthermore, as asset management planning progresses, Council will have the ability to set target levels of service to mitigate the financial risks of infrastructure ownership. The Ontario Regulation 588/17 requires that the Town explain their reason for selecting target levels of service and their ability to afford the proposed service levels. In the upcoming target level of service conversations, the Town will define not only the targets, but the risk that is associated with a level of service. Concurrently, a lifecycle management and financial strategy will be prepared to outline how the Town plans to invest annual funding projected to be available.

In some cases, the risk of a declining asset condition may be acceptable to a certain degree. At the appropriate time, detailed service level scenarios will be prepared for Council's review and discussion.

2.5. Future Demand

The entirety of the Town's infrastructure assets will be monitored and benchmarked against future demand. The most significant future demand drivers are growth (which can be negative), the aging population and population health. The Town of Blind River should implement preventative measures in anticipation of the demand drivers. In some cases, the preventative measures may be linked through accompanying documents; for example, a Transportation Master Plan, a Water/Wastewater Master Plan, and policy initiatives. Preventative measures may include:

- Review of the Town's buildings and facilities and opportunities for economy of scale and multipurpose uses of existing facilities;
- An increase in capacity of water treatment and distribution along with sanitary sewer collection and treatment;
- Review of fleet and equipment usage and service requirements prior to replacement;
- Repurposing under-utilized facilities to address activities with greater need;
- Optimizing existing facility use through programming, strategic partnerships, and allocation processes to increase the potential of existing assets;
- Intensifying existing parks by adding new amenities as appropriate for the site and Town- wide service levels.

Further evaluation of the need and cost-benefit of each of the above strategies would need to be undertaken in the future.

A. Appendix A: Strategic Asset Management Policy

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1.0 Purpose

A strategic asset management policy formalizes the Town of Blind River's commitment to asset management, aligns its asset management actions with strategic goals and objectives, and provides direction to guide Council, management and staff in carrying out its business strategies, plans and activities. This policy will support the municipality in focusing its infrastructure efforts on managing risks, addressing priorities, and meeting short and long-term needs within the bounds of possible funding.

2.0 Vision

The Town's vision is to proactively manage its assets to best serve the Town's objectives, including:

- Prioritizing the need for existing and future assets to effectively deliver services,
- Supporting sustainability and economic development, and
- Maintaining prudent financial planning and decision making.

3.0 Objectives

The objectives of this policy are to:

- Provide a consistent framework for implementing asset management throughout the organization, and
- Provide transparency and accountability and to demonstrate to stakeholders the legitimacy of decision-making processes which combine strategic plans, budgets, service levels and risks.

To assist with this, the following definitions apply to this policy:

- ASSET – An item, object or entity that has potential or actual value to the Town.
- ASSET MANAGEMENT – Coordinated activity of the Town to realize value from its assets.
- ASSET MANAGEMENT PLAN – Documented information that specifies the activities, resources and timescales required for an individual asset or a grouping of assets to achieve the Town's asset management objectives.
- ASSET MANAGEMENT SYSTEM – The people, processes, tools and other resources involved in the delivery of asset management.

- CORPORATE ASSET MANAGEMENT – The application of asset management principles at a corporate level to maximize consistency among diverse asset groups. Corporate asset management creates efficiency by harmonizing service levels and business processes wherever possible.
- LIFECYCLE – Stages involved in the management of an asset.
- LEVEL OF SERVICE – Parameters, or a combination of parameters, which reflect social, political, environmental and economic outcomes that the Town delivers.

4.0 Strategic Alignment

Council and Senior Management will review this policy and incorporate it into the asset management planning approach that fosters the integration of municipal documents such as:

- The Strategic and Economic Development Plan
- The Accessibility Plan
- The Capital Budget Policy
- The Asset Management Plan
- The Official Plan
- The Tangible Capital Asset Policy

All of the municipality's plans rely to some extent on the physical assets owned by the Town of Blind River and the commitment of staff to ensure their strategic use. This includes the long-term maintenance, repair, and replacement of existing assets along with the acquisition of new assets to meet the evolving needs of the Town.

Asset management planning therefore will not occur in isolation from other municipal goals, plans and policies.

5.0 Stakeholder Engagement

The ultimate goal of the Town is to efficiently provide its various stakeholders with the municipal services they need within the bounds of regulatory requirements, the built environment, and the natural environment.

In order to achieve this goal, it is necessary that the Town:

- Understand the needs of current stakeholders;
- Consider the needs of future generations; and
- Incorporate these perspectives into asset management plans.

The municipality recognizes them as an integral part of the asset management approach. Accordingly, the municipality will:

- Provide opportunities for residents and other stakeholders served by the municipality to provide input in asset management planning; and

- Coordinate asset management planning with other infrastructure asset owning agencies such as municipal bodies and regulated utilities.

6.0 Guiding Principles

The Infrastructure for Jobs and Prosperity Act, 2015 sets out principles to guide asset management planning in municipalities in Ontario. The Town of Blind River will strive to incorporate the following principles whenever possible into the day to day operation of the municipality:

- **Forward looking:** The Town shall take a long-term view while considering demographic and economic trends in the region.
- **Budgeting and planning:** The Town shall take into account any applicable budgets or fiscal plans, including those adopted through Ontario legislation.
- **Prioritizing:** The Town shall clearly identify infrastructure priorities which will drive investment decisions.
- **Economic development:** The Town shall promote economic competitiveness, productivity, job creation, and training opportunities.
- **Transparency:** The Town shall be evidence-based and transparent, basing decision on publicly shared information and make information available to the public
- **Consistency:** The Town shall ensure the continued provision of core public services, such as health care and education.
- **Environmentally conscious:** The Town shall minimize the impact of infrastructure on the environment by:
    - Respecting and helping maintain ecological and biological diversity,
    - Augmenting resilience to the effects of climate change, and
    - Endeavoring to make use of acceptable recycled aggregates.
- **Health and safety:** The Town shall ensure that the health and safety of workers involved in the construction and maintenance of infrastructure assets is protected.
- **Community focused:** The Town shall promote community benefits, being the supplementary social and economic benefits arising from an infrastructure project that are intended to improve the well-being of a community affected by the project, such as:
    - Local job creation and training opportunities (including for apprentices, within the meaning of section 9 of the Infrastructure for Jobs and Prosperity Act, 2015),
    - Improvement of public space within the community, and
    - Promoting accessibility for persons with disabilities.
- **Innovation:** The Town shall create opportunities to make use of innovative technologies, services, and practices, particularly where doing so would utilize technology, techniques, and practices developed in Ontario.
- **Integration:** The Town shall where relevant and appropriate, be mindful and consider the principles and content of non-binding provincial or municipal plans and strategies established under an Act or otherwise, in planning and making decisions surrounding the infrastructure that supports them.

- **Customer focused**: The Town will have clearly defined levels of service and apply asset management practices to maintain the confidence of customers in how Town assets are managed.
- **Service focused**: The Town will consider all the assets in a service context and take into account their interrelationships as opposed to optimizing individual assets in isolation.
- **Risk-based**: The Town will manage the asset risk associated with attaining the agreed levels of service by focusing resources, expenditures, and priorities based upon risk assessments and the corresponding cost/benefit, recognizing that public safety is the priority.
- **Value-based affordable**: The Town will choose practices, interventions and operations that aim at reducing the lifecycle cost of asset ownership, while satisfying agreed levels of service. Decisions are based on balancing service levels, risks, and costs.

7.0 Community Planning

The combination of lifecycle analysis and financial sustainability principles will be the driver in the design and selection of community development or redevelopment that requires new assets, or existing asset enhancements, to take place. Parties involved in the development of the Asset Management Plan will reference the direction established in other Town plans as well as the methods, assumptions, and data used in their development. The aim of cross-referencing these plans is to ensure that development and redevelopment occur within the Town's means through an understanding of current and future asset needs.

8.0 Climate Change

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

9.0 Scope and Capitalization Thresholds

The Asset Management Policy applies to all assets whose role in service delivery requires deliberate management by the Town. The service-focus intent of this policy differentiates its requirements for identifying assets from the capitalization thresholds which are developed for the purposes of financial reporting. For this reason, the capitalization threshold developed for financial reporting will not be the guide in selecting the assets covered by asset management planning processes.

10.0 Financial Planning and Budgeting

The Town will integrate asset management planning into the annual capital budget, operating budget and its long-term financial plan, as applicable. The Asset Management Plan will be used as a resource in order to:

- Identify all potential revenues and costs (including operating, maintenance, replacement and decommissioning) associated with forthcoming infrastructure asset decisions;
- Evaluate the validity and need of each significant new capital asset, including considering the impact on future operating costs; and
- Incorporate new revenue tools and alternative funding strategies, where possible.

Service area personnel will reference the asset management plan for their area in order to:

- Determine forecasted spending needs identified in the plan,
- Verify progress made on the plan to identify potential gaps, and
- Prioritize spending needs, across the gap identified in the plan and recent developments, for the budget year.

Finance staff will be involved in the asset management planning process to coordinate the information from the service personnel in the preparation of the budget submission. The department level budget submissions will be reviewed and evaluated by the Clerk Administrator and the Treasurer in the preparation of the Town`s annual budget.

For the purposes of managing water and wastewater assets, the water and wastewater financial plans will be used as a basis for establishing user fees, and master plans (if applicable) will be referenced in order to ensure alignment with the budgeting process.

11.0 Governance and Continuous Improvement

This policy requires the commitment of key stakeholders within the Town of Blind River's organizational structure. The following details the responsibilities of the key stakeholders within the municipality:

Council

- Approve by resolution the Asset Management Plan and its updates every five years;
- Conduct annual reviews of management plan implementation progress on or before July 1 of every year; that includes:
    - Progress on ongoing efforts to implement the Asset Management Plan;
    - Consideration of the Strategic Asset Management Policy;
    - Consultation with Senior Management;
    - Any factors affecting the ability of the municipality to implement its Asset Management Plan; and
    - A strategy to address these factors including the adoption of appropriate practices.

- Support ongoing efforts to continuously improve and implement the Asset Management Plan.

Clerk Administrator

- Maintain compliance with the Strategic Asset Management Policy and provincial asset management regulation(s).

Senior Management

- Oversee asset management planning activities that fall within their service area and in support of others.

Approval Date:	January 21, 2019	Approved by:	Res. #19-030
1.Amendment Date:		Approved by:	
2.Amendment Date:		Approved by:	
3.Amendment Date:		Approved by:	

B. Appendix B: Asset Management Strategy

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ASSET MANAGEMENT AT THE TOWN OF BLIND RIVER

Asset Management Strategy

SUBMITTED TO THE TOWN OF BLIND RIVER
SUBMITTED BY PSD CITYWIDE
JANUARY 2022

Final Version

The preparation of this project was carried out with assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them."

Table of Content

Executive Summary

This asset management strategy provides a practical roadmap and framework for the Town of Blind River to establish and maintain an efficient asset management program. We give particular focus to continuously improving the Town's datasets, and on building an asset management culture—reinforced by sound processes and practices.

The strategy identifies eight priority initiatives, and 33 recommendations, distributed over three years. These recommendations are based on a current state assessment. This assessment established the Town's current asset management maturity levels on seven core elements of asset management; identified 40 gaps in asset management practices, procedures, and business processes; and, discovered critical information gaps in the Town's infrastructure datasets.

The seven core elements of asset management are: Organization and People; Strategy and Planning; Asset Information; Project Prioritization; Risk Management; Levels of Service; and Financial Management. The elements, or core competencies, are consistent across leading asset management associations and industry groups, including the Institute of Asset Management (IAM), the Global Forum on Maintenance and Asset Management (GFMAM), and the International Infrastructure Management Manual (IIMM).

The Town of Blind River's overall asset management maturity was assessed as 'Basic', suggesting that the municipality is in the learning stage of asset management. At the time of the initial assessment, performance was virtually identical across all seven elements. Through the course of one year, between 2020 and 2021, the Town made substantial progress on several key elements.

Organizations in the learning stage benefit from improving their asset management knowledge, and from actively assessing and building their capacity and culture. At this stage, it is typical to find many gaps across each of the seven core elements of asset management, particularly datasets and business processes. For Blind River, these gaps, constraints, and challenges include:

- asset management not considered a high priority;
- capacity for asset management may not be adequate;
- insufficient use of existing asset management tools to facilitate processes;
- only basic considerations for current and forecast demand;
- low staff confidence in asset datasets;
- data incomplete, inconsistent, and outdated, with minimal data management;
- no current infrastructure master plan to guide long-term projects;
- investments and asset needs lists are based mostly on informal analysis;
- no risk frameworks, or models in place;

- no customer or technical KPIs in place to monitor performance;
- basic analysis of short- and long-term infrastructure funding needs;

To address gaps, we have proposed priority initiatives as summarized in Table 1.

Table 1: Priority Initiatives - Roadmap to Higher Asset Management Maturity

Timeline	Priority Initiatives
Year 1 Build a Data-rich Foundation	I. Establish asset management culture.
	II. Enhance data quality.
	III. Produce essential guiding documents to support planning and transparency.
Year 2 Analyze and Update	IV. Improve understanding of community and infrastructure.
	V. Enhance and update guiding documents.
	VI. Increase internal efficiencies and technological capacity.
Year 3 Refine and Optimize	VII. Optimize asset inventory.
	VIII. Use data to support advanced long-term planning.

In Year 1, the focus is on building a strong foundation that can support more advanced asset management functions and processes later on. Building an asset management program from the ground up requires substantial upfront investments in time and resources. This pre-work includes educating and training staff and council, continuing the buildout and refinement of the Town's inventory, development of essential documents such as risk and levels of service frameworks, and adding some rigidity to internal processes and practices.

In Year 2, with improved datasets, greater clarity on roles and responsibilities, and more structure, the focus shifts to producing useful analytics, updating and improving essential documents and reports, and a continuation of data refinement. During the second year, staff confidence in datasets grows noticeably, and the asset management program begins to take shape.

In Year 3, more advanced asset management components are developed. At this stage, refined risk and criticality frameworks should support project prioritization, and supplement staff judgement. In addition, community engagement can be used, with caution, to guide proposed service level targets. This will prepare the Town to meet Ontario Regulation 588/17 requirements for 2025, and improve alignment of the Town's infrastructure program with resident expectations and fiscal capacity.

Some benefits of implementing the strategy will be immediately transparent, including higher staff confidence in datasets, more efficient business processes, and greater cohesiveness across the organization. Other, such as improved capital planning, cost savings, better risk management, and more seamless alignment of infrastructure services with community expectations will become evident more gradually.

Background and Context

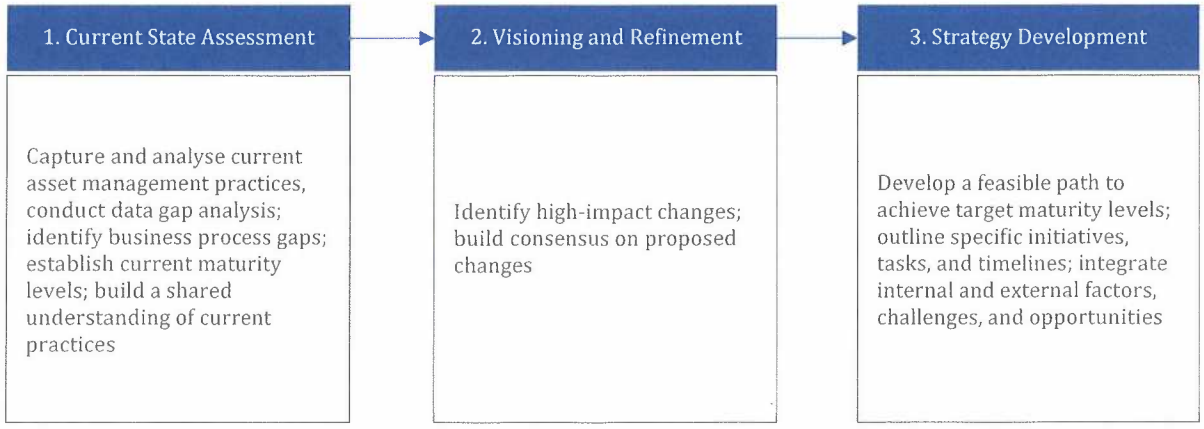
This asset management strategy will serve to guide staff at the Town of Blind River in establishing a high-functioning asset management program. The strategy outlines strategic priority initiatives designed to gradually close critical gaps in people, processes, tools, and build the Town's overall organizational capacity for asset management.

This is Blind River's first asset management strategy. The recommendations in this document span approximately three years, and reflect the challenges, opportunities, and priorities identified through the Town's current state assessment and ongoing dialogue with staff.

Methodology

The development of the strategy involved three distinct phases, as illustrated in Figure 1, and beginning with a comprehensive current state assessment. A description of each phase follows.

Figure 1 Developing the Asset Management Strategy: Project Path



Current State Assessment

Blind River's current state assessment took place between 2020 and 2021, and included three core components: administration of PSD's Asset Management Self-Assessment Tool (AMSAT), a structured, technical survey; a data gap analysis; and, ongoing follow-up discussions with staff.

The AMSAT is a technical survey that covers seven core elements of an industry standard asset management program, defined in Table 2. It is designed to diagnose underlying issues, limitations, and concerns within a municipality's asset management program. The seven elements are considered core competencies, and are consistent across leading asset management associations and industry groups, including the Institute of Asset Management (IAM), the Global Forum on Maintenance and Asset Management and Maintenance (GFMAM), and the International Infrastructure Management Manual (IIMM). The survey includes questions for each of the seven elements, and is designed to assess the asset management maturity level of an organization.

The AMSAT was completed by two staff members, one each from finance and public works. Responses contained a self-assessment of all major asset categories, including roads and bridges, water, wastewater, storm, buildings, and machinery and equipment.

Following the administration of the survey, we held regular dialogues with staff to further understand current asset management practices and approaches, ongoing challenges, especially those related to data, lifecycle, risk, and levels of service.

Table 2 Seven Key Elements of Asset Management

Seven Key Elements of Asset Management		
1	Organization and People	Review of existing organizational capacity and culture for asset management
2	Asset Data	Asset data completeness, management strategy, standards, and systems
3	Strategy & Planning	Alignment between asset management activities and corporate or strategic objectives
4	Project Prioritization	Approach to lifecycle activities, including maintenance and rehabilitation, and project prioritization
5	Risk Management	Identification, understanding, and management of economic, financial, environmental and climate change related, social, and reputational risks
6	Levels of Service	Existing approach to the development and application of levels of service frameworks and their ongoing monitoring and review
7	Financial Strategy	The feasibility of current financial strategies to maintain a practical asset management program, and support current and proposed LOS

The current state assessment stage also included a data gap analysis of Blind River's current asset datasets. The gap analysis identified critical gaps in both primary and secondary datasets. Primary datasets include information on asset replacement costs, estimated useful life (EUL), in-service date, condition, and historical cost. Secondary datasets include additional attribute information for assets, including location, material, composition, etc. This information is required in developing a thorough understanding of the Town's infrastructure portfolio and generate meaningful reporting and analytics.

Visioning and Refinement

Throughout the duration of the project, we consulted with Town staff to identify organizational needs, and high-value priority areas. Staff discussed current constraints, potential opportunities, and provided feedback that was instructive in developing the strategy document.

Strategy Development

The results of the AMSAT, departmental dialogues, and the data gap analysis were synthesized to develop an ambitious, but feasible path for the Town to follow to improve its asset management program. As with most organizations that endeavour to build such programs systematically and for the first time, considerable time and resources are required initially. However the benefits of these initial investments are clear and far outweigh these upfront costs.

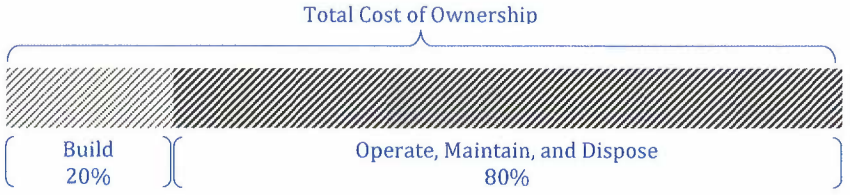
The Rationale for Systematic Asset Management

Asset management is not a new concept. Infrastructure-intensive organizations like Blind River exercise asset management every day, although they vary in the extent to which these activities may be systematic, formal, documented, data-driven, analyzed, and optimized over time. Many lack a strong asset management framework, made up of key skillsets, documents, business processes, and technological tools. Some simply lack the requisite organizational culture.

An Overview of Asset Management

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community, making up nearly 60% of Canada's public infrastructure stock. Investments in infrastructure can be substantial, ranging from minor repairs to multi-million-dollar upgrades and rebuilds, funded by taxpayers, and often financed over decades. The initial construction or acquisition of an asset accounts for only 20% of its lifecycle costs; the remaining 80% is incurred in maintaining, operating, and disposing the asset.

Figure 2: Total Cost of Asset Ownership



With proper lifecycle planning, these costs can be minimized. Without it, assets can malfunction and fail, disrupting service provision, day-to-day economic activity, and can threaten public health and safety. A long-term strategy that does not consider end-of-life activities, such as rehabilitation, renewal or disposal, may not optimize the limited funding available, and can lead to a decline in service quality. Poorly managed infrastructure can also bring reputational damage to the community, making it less competitive and desirable.

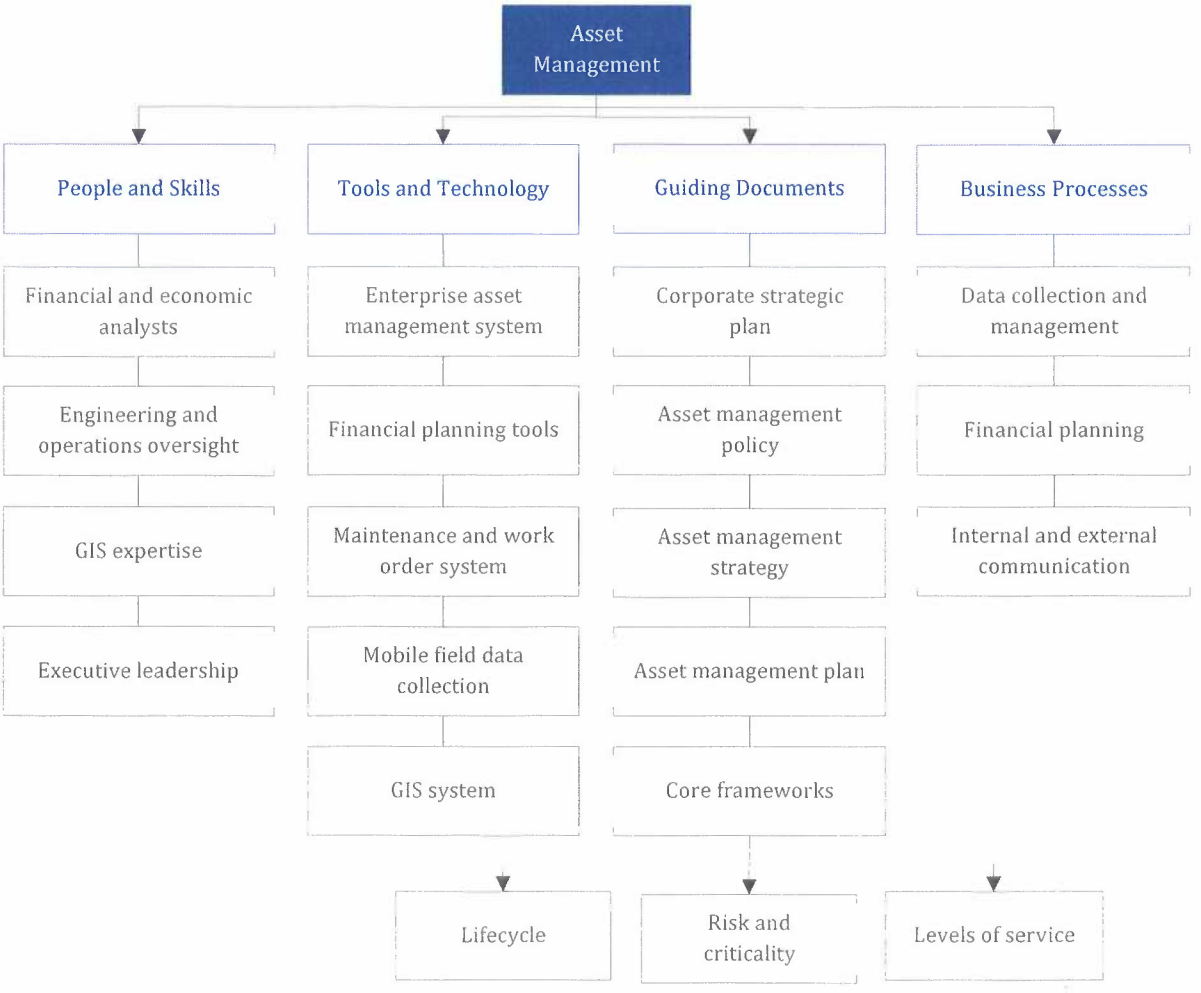
Asset management is the coordinated effort of all relevant departments and stakeholders across an organization to extract the highest value from tangible assets at the lowest lifecycle cost. This relies on selecting the right asset, for the right lifecycle activity, at the right time. All departments across the organization must work together to implement strong asset management practices and build a high-functioning asset management program.

A municipal asset management program is a combination of several disciplines or business functions, including executive management, financial and economic analyses, engineering, and operations and maintenance. A framework comprises many components such as: guiding documents and reports including the asset management policy, strategy, and plan; software applications that can produce valuable analytics on the municipality's infrastructure portfolio; and, qualified and knowledgeable staff to carry out complex initiatives—all underpinned by efficient, documented, and repeatable business processes.

The Asset Management Framework

As with any complex structure, a well-built yet flexible asset management framework has many parts, including people, processes, technology, and guiding documents. Figure 3 summarizes elements we typically find in effective, advanced asset management frameworks. These are non-exhaustive, and presented only at the high-level. These elements all work together.

Figure 3: Asset Management Framework: Common Elements



Asset Management Plan vs. Asset Management Strategy

In the municipal sector, 'asset management strategy' and 'asset management plan' are often used interchangeably. Other concepts such as 'asset management system' and 'strategic asset management plan' further add to the confusion. Lack of consistency in the industry on the precise purpose and definition of these elements also offers little clarity. We make a clear distinction between the strategy and the plan.

An asset management strategy—this document—is typically a higher-level document, focusing on business processes, organizational practices, and key initiatives with associated timelines and resources designed to create and sustain an asset management program. While not a static document, the strategy should not evolve and change frequently—unlike the asset management plan. The strategy provides a long-term outlook on the overall asset management program development and strengthening key elements of its framework.

The asset management plan follows from the strategy, with a sharp focus on the current state of the municipality's asset portfolio, and its approach to managing and funding individual service areas or asset groups. It is tactical in nature and provides cross-sectional data.

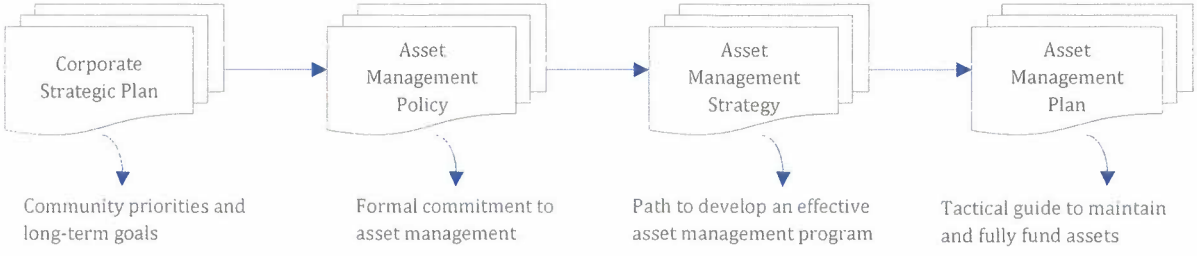
Table 3 Asset Management Strategy vs. Asset Management Plan

Element	Asset Management Strategy	Asset Management Plan
Perspective	Corporate, strategic, and programmatic	Departmental, tactical, and asset-centric
Focus	People, business processes, and tools	Assets
Purpose	Improve organizational capacity to create and maintain an asset management program; optimize asset portfolio based on strategic goals	Improve asset performance to maintain or improve levels of service; optimize asset performance and funding
Updates	Infrequent, e.g., 3-5 years	Frequent, e.g., annually or biannually
Audience	Primary: Executive and council Secondary: Departmental	Primary: Departmental Secondary: Executive and council

Adopted from the Institute of Asset Management, Figure 4 illustrates the relationship between various industry-standard documents found in an effective asset management program, beginning with the municipality's strategic plan. It also illustrates the concept of 'line of sight', or alignment between an organization's corporate strategic plan and various asset management documents.

The strategic plan has a direct, and cascading impact on asset management planning and reporting, making it a foundational element. Many municipalities begin with an asset management plan. However, without the preceding documents, the AMP operates in a vacuum.

Figure 4: Key Guiding Documents in Asset Management



Progress to date

The Town of Blind River has already taken important steps towards developing its asset management program. Table 4 identifies key asset management documents in progress or already completed by the Town. In choosing to develop a strategy and take an incremental approach to asset management, the Town becomes part of a small group of municipalities in Canada.

Table 4 Status of Various Asset Management Documents

Document	Status	Updates
Corporate Strategic Plan	Completed	A Corporate Strategic Plan and Economic Development Strategy Action Plan was completed in 2018. The Plan provided guidance on long-term goals for Blind River.
Asset Management Policy	Completed	Completed in 2019
Asset Management Strategy	Completed	(This document will be the Town's first asset management strategy.)
Asset Management Plan	Completed	Completed in compliance with O. Reg 588/17.

Current State Assessment

In this section, we detail the results of the Town of Blind River's current state assessment. The assessment measures the Town's asset management maturity and the degree to which the seven essential elements of asset management are implemented in the organization. See Table 2 for details on these elements.

In some sections, a progress update is provided, illustrating how the Town has advanced in its asset management program between 2020 and 2021. Municipalities with advanced asset management maturity deliver desired services consistently, in a fiscally responsible manner, while minimizing the associated risks. The assessment also includes a data gap analysis.

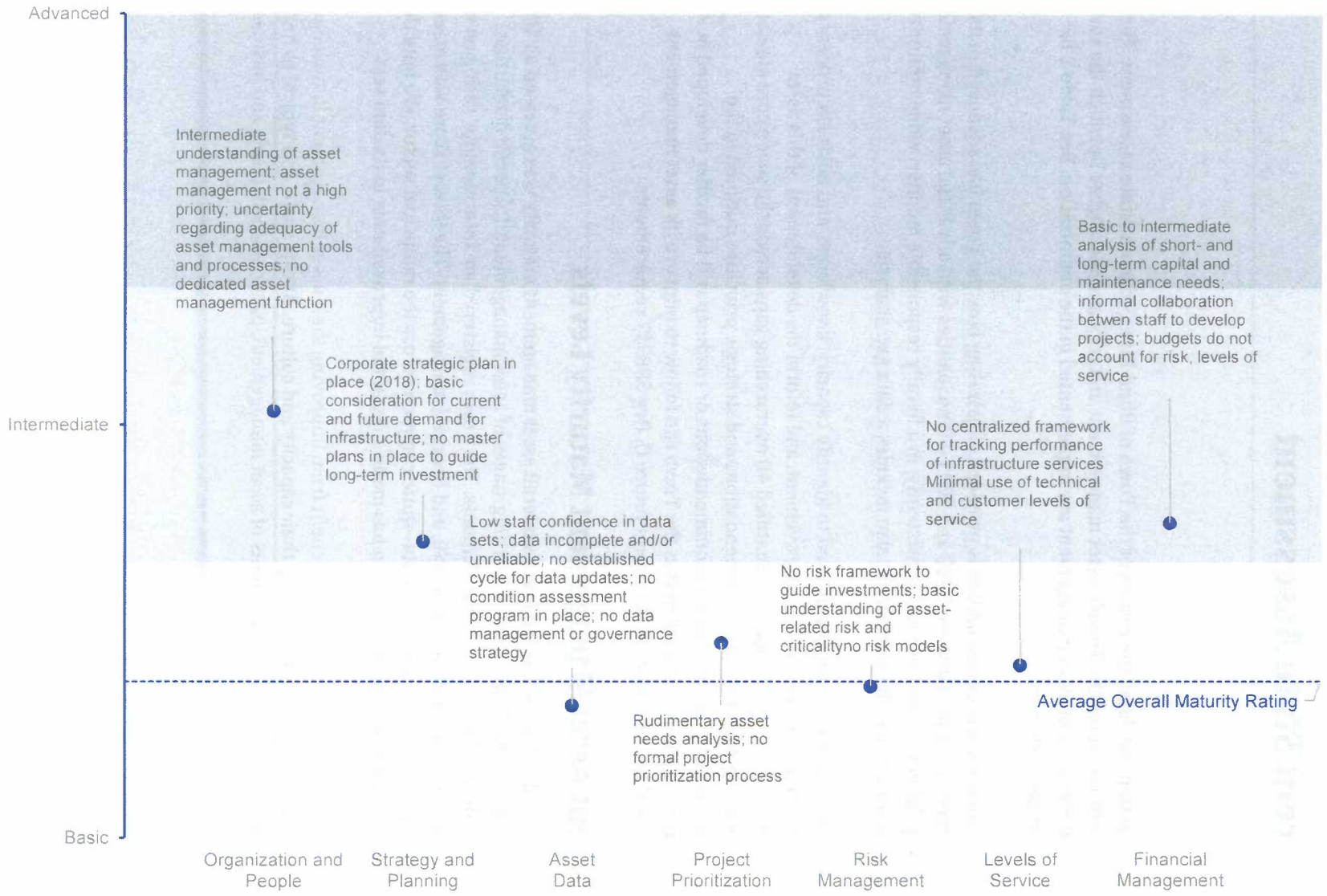
The current state assessment was used to identify capacity, knowledge, and business process gaps, determine high priority areas of improvement, and inform the development of this asset management strategy. In total, we identified 40 overarching gaps across the seven core elements. These form the basis for our recommendations and strategic priorities outlined in the recommendations section. These recommendations or roadmap will be further developed in 2022 to create an implementation plan that the Town can follow to improve its asset management program and be well-positioned to meet future O. Reg 588/17 requirements.

Current Asset Management Maturity Levels

As illustrated in Figure 5, Blind River's overall asset management maturity was assessed as 'Basic', suggesting that the Town is in the learning stages of asset management. Its performance was virtually identical across all seven elements. The Town registered an 'Intermediate' rating on only two elements: organization and people, and financial management. The lowest score was measured in risk, levels of service, and asset data--quite common across the municipal sector. We note that since the initial assessment, the Town has made substantial improvements in its data sets.

Organizations in the learning stage benefit from improving their asset management knowledge, and from actively assessing and building their capacity and culture. At this stage, it is typical to find gaps across each of the seven core elements of asset management, particularly datasets and business processes.

Figure 5: Current Maturity Levels



Element 1: Organization and People

The 'Organization and People' element considers the Town's general ability to create and maintain an asset management program. Key components include team makeup, staff knowledge and capacity, processes and practices, communication, and how asset management is prioritized across the organization, at the council, senior management, and departmental levels.

Table 5 summarizes the three maturity levels for the 'Organization and People' element and identifies key competencies typically found within each level.

Table 5: Defining Maturity Levels - Organization and People

Basic	Intermediate	Advanced
Minimal understanding of asset management concepts and principles among staff.	Some understanding of asset management concepts and principles among staff.	Expert understanding of asset management concepts and principles among staff.
Asset management a low priority.	Asset management a medium priority.	Asset management a high priority.
Absence of adequate human resource capacity for asset management.	Adequate human resource capacity for asset management	High human resource capacity for asset management, with dedicated staff.
Processes and tools do not facilitate asset management planning; may impede planning.	Processes or tools facilitate asset management planning.	Processes and tools facilitate asset management planning.
Lack of strategic communications on asset management initiatives.	Some or ad hoc communications related to asset management initiatives.	Strategic communications on asset management initiatives.

Resource Challenges

Most municipalities typically treat formal asset management as a tangential initiative. Staff spend only a fraction of their time on developing asset management programs. Blind River is no exception. Without a dedicated asset management function, moving key initiatives forward can be challenging.

Key Gaps in People, Tools, and Processes: Organization and People

Blind River's maturity rating on the 'Organization and People' element was assessed as 'Intermediate'. Key gaps identified through the technical survey, and follow-up dialogues with staff are discussed below.

1. basic to intermediate understanding of core asset management principles and concepts among staff;
2. asset management may not be considered a high priority across the organization;
3. staffing may not be adequate to carry out advanced asset management activities;
4. lack of clarity on whether there is an asset management coordinator, cross-functional team, or a split-role function;
5. current tools and processes may not be well utilized to facilitate asset management;

Progress Made

This document is the Town's first corporate asset management strategy. The Town's approach is now in substantial alignment with the Institute of Asset Management recommended framework. The recommendations in this document should serve as a higher-level roadmap for the Town to follow over the next 1-3 years to sustain its current momentum. A full implementation plan will be developed in 2022 with ownership and timelines for each recommendation.

Element 2: Strategy and Planning

Asset management is only useful and meaningful if it aligns with the municipality's overarching strategic direction as informed by council's priorities. This 'line of sight' approach ensures that all expenditures on infrastructure programs advance the community's long-term objectives. In the 'Strategy and Planning' element, we evaluated how closely the Town's asset management program is linked with its corporate goals.

Table 6 summarizes the three maturity levels for the 'Strategy and Planning' element and identifies key competencies typically found within each level.

Table 6: Defining Maturity Levels – Strategy and Planning

Basic	Intermediate	Advanced
No departmental service mission, vision, or key objectives.	Departmental service mission in place, but may lack vision, or key objectives.	Departmental service mission, vision, and key objectives in place.
No key asset management documents in place, such as an asset management policy, strategy, or up-to-date plan.	Some key asset management documents in place, such as an asset management policy, strategy, or up-to-date plan.	An asset management policy, strategy, and up-to-date plan are in place.
No formal service demand planning in place, or done through ad hoc analyses.	Service demand planning integrates some, but not all, elements, including master plans, external engineering or economic studies, modeling, policies, and public consultation.	Service demand planning integrates most or all elements, including master plans, external engineering or economic studies, modeling, policies, and public consultation.

Key Gaps in People, Tools, and Processes: Strategy and Planning

Blind River's maturity rating on the 'Strategy and Planning' element was assessed as 'Intermediate. Key gaps identified through the technical survey, and follow-up dialogues with staff are discussed below.

6. a corporate strategic plan is in place, although it is unclear how closely infrastructure decisions adhere to plan 'Focus Areas', including 'Investment Attraction';
7. lack of clarity among respondents on which asset management related documents are available for guidance (e.g., policy vs. strategy vs. plan);
8. no clearly defined service goals for various service areas that are documented and defined in a policy;
9. only a basic assessment is typically conducted of current and forecasted demand for infrastructure services;
10. no master plans in place to guide long-term and major investments in infrastructure;

Element 3: Asset Data

The 'Asset Data' element considers the municipality's current asset related data, and data management practices and processes—including how staff collect, store, analyze, and link data to their decision processes. Standardized, complete, and accurate information contributes to better decisions, and in the long-term, can help organizations stop the reactive maintenance loop and implement proactive strategies.

Although all seven elements are mainstays of an effective asset management program, for most organizations, reinforcing datasets often brings the highest initial marginal value for time and money spent. As such, we have devoted a considerable portion of this document to discussing data gaps and how improvements can be made.

Table 7 summarizes the three maturity levels for the 'Asset Data' element and identifies key competencies typically found within each level.

Table 7 Defining Maturity Levels - Asset Data

Basic	Intermediate	Advanced
Many gaps in in primary datasets, including replacement costs, historical costs, estimated useful life, in-service dates, and condition.	Some gaps in primary datasets, including replacement costs, historical costs, estimated useful life, in-service dates, and condition.	Minimal gaps in primary datasets, including replacement costs, historical costs, estimated useful life, in-service dates, and condition.
Minimal secondary or attribute data, including physical properties, size, material	Some secondary or attribute data, including physical properties, size, material	Detailed secondary or attribute data, including physical properties, size, material
Inventory is decentralized across many systems.	Inventory is centralized, but may not be fully accessible, current, accurate, completed, or verified.	Inventory is highly centralized, accessible, current, accurate, verified, complete, linked to GIS
No established cycle for updating replacement costs.	Replacement costs are updated on an ad hoc basis.	Replacements costs are updated on an established cycle.
Replacement costs are updated primarily using inflation.	Replacement costs are updated using a combination of inflation and procurement data.	Replacement costs are updated using procurement data and/or prevailing market conditions.
No strategic and scheduled condition assessment programs in place.	Condition assessment programs is scheduled but not strategic.	Strategic and scheduled condition assessment program is in place.
Data governance is informal.	Some elements of formal data governance and management are in place and documented, including data governance policies and procedures.	Most elements of formal data governance and management are in place and documented, including data governance policies and procedures.

As part of this engagement with Blind River, we conducted a data gap analysis of the Town's inventory to determine the validity, completeness, accuracy, and relevance of the datasets to support asset management program development in the long term and allow the Town to comply with O. Reg 588/17 in the short term. A total of 60 data sources or files were assessed to determine their usability.

Table 8: Data Sources Reviewed

Data Source (and File Names)	Assets Included	Type of Data	Document Date
Tangible Capital Assets Financial Database	Roads, Water, Wastewater, Storm, Land, Land Improvements, Buildings, Machinery & Equipment, Vehicles, Furniture & Fixtures	Financial reporting data pertinent for PSAB 3150	2019-12-31
StreetLogix	Roads	Road Name; Pavement Condition Index (PCI); Length, Width, Area; Road Class; Ownership; Maintenance Suggestion; Repair Priority; Estimated Replacement Cost	2020-08-01
StreetScan	Sidewalks	Street Name; Location; Sidewalk Material; Present Serviceability Rating (1-5); Length, Width, and Area; Past Repairs and Current Defects; photographs	2017-07-01
CCTV Sewer Inspections	Wastewater Sewers	Location; Pipe Rating Index; Condition Description; Material; Pipe Measurements; Date Cleaned; Length Surveyed; Manhole Pipe Drawing	2020-06-15
Geographic Information Systems (GIS); 50 shapefiles	Water, Wastewater, Storm, Roads	Install Date; Dimensions; Material; Facility ID; Rotation; Type; Upstream; Downstream; Slope; Road Class; Maintenance Cycle; Direction; Number of Lanes; Surface Type	2019-01-21

Key Gaps in People, Tools, and Processes: Asset Data

Blind River's maturity rating on the 'Asset Data' element was assessed as 'Basic'. Key gaps identified through the technical survey, data gap analysis, and follow-up dialogues with staff are discussed below.

11. low confidence in asset data sets;
12. outdated replacement costs, and no cycle to maintain current replacement costing data
13. use of inflation measures to establish replacement costs, rather than actual procurement data or market analysis;
14. inventory is demonstrably incomplete and outdated;
15. data not centralized or consolidated in the asset register;
16. other primary asset data, including estimated useful life, in-service dates, and condition not available or not centralized;
17. lack of standardized forms and templates for data collection, classification, and analysis;
18. risk and lifecycle data is minimal, and not managed or stored digitally;
19. no condition assessment program in place, nor protocols in place to integrate available condition data with asset register
20. lack of componentization of buildings assets

Progress Made

Over the course of a year in 2021, staff worked with PSD to make substantial improvements to their asset inventory. The following objectives were accomplished:

- Consolidation of available asset data into CityWide™ Asset Manager, the Town's primary asset management register. Data included key asset attributes (e.g., condition, material, location, surface types) and primary fields such as replacement costs, estimated useful life data, and in-service dates;
- Update of inventory to reflect current asset portfolio; removal of disposed assets, and inclusion of new additions;
- More accurate approach to replacement cost estimates, including implementation of unit costing and user-defined costing based on staff judgement, and PSD review of other comparable municipal databases;

We note that some gaps still persist, including minimal componentization of buildings assets. Currently, many buildings are listed as singular sites, rather than componentized using standard classification systems, e.g., Uniformat II code.

Element 4: Project Prioritization

In 'Project Prioritization', we evaluate how the Town prioritizes specific projects and spending decisions. It is closely linked to the 'Strategy and Planning' element, which focuses on broader trends and corporate goals. With a focus on individual projects, it is more tactical in nature.

Table 9 summarizes the three maturity levels for the 'Project Prioritization' element and identifies key competencies typically found within each level.

Table 9: Defining Maturity Levels – Project Prioritization

Basic	Intermediate	Advanced
Asset needs lists are produced primarily based on age data.	Assets needs lists are produced based on a combination of age data and condition assessments.	Assets needs lists are produced based on a combination of age, condition assessment data, and recommendations from various technical or economic studies.
Growth and demand projects not identified in long-term budgets.	Growth and demand projects identified in long-term budgets.	Growth and demand projects identified in long-term budgets.
No infrastructure master planning process to determine which growth and demand projects are coordinated into budgets.	An infrastructure master planning process determines which growth and demand projects are coordinated into budgets.	An infrastructure master planning process determines which growth and demand projects are coordinated into budgets. Accounts for public affordability expectations.
No formal project prioritization process to develop budgets and capital plans	A formalized project prioritization process is used to develop budgets and capital plans.	A formalized project prioritization process is used to develop budgets and capital plans and includes lifecycle analysis, treatment options, and risk management.
The capital investment prioritization process is best described as a set of informal recommendations.	The capital investment prioritization process is best described as a structured annual process.	The capital investment prioritization process is best described as a structured annual process identifying risks and benefits.

Key Gaps in People, Tools, and Processes: Project Prioritization

Blind River's maturity rating on the 'Project Prioritization' element was assessed as 'Basic'. Key gaps identified through the technical survey, data gap analysis, and follow-up dialogues with staff are discussed below.

21. no formalized project prioritization process to develop budgets and capital plans;
22. capital investments are most often made through informal staff recommendations, professional judgements, and field knowledge of asset needs;
23. uncertainty regarding factors used to develop asset needs list, e.g., functional requirements, capacity requirements, or regulatory pressures
24. no infrastructure plans available to guide long-term spending and investments;

Element 5: Risk Management

The level of risk an asset carries determines how closely it is monitored and maintained, including the frequency of various lifecycle activities, and the investments it requires on an ongoing basis. Risk is a function of an asset's probability of failure and the consequences of that failure event.

Risk = Probability of Failure x Consequence of Failure

The likelihood that an asset will fail can be based on many factors, including its age, condition, design, and its exposure to deterioration accelerators, e.g., extreme weather events. An asset failure event can have many different consequences, each with its own magnitude and weighting. These can include economic, financial, social, health and safety, environmental, and even political or reputational consequences.

Using the probability and consequence, asset risk models and frameworks can be developed. Over time, as these 'Risk Management' frameworks become more sophisticated, they can provide reliable guidance on prioritizing projects.

There is no asset management without risk management. Together with target levels of service, an asset's risk profile should determine capital investment decisions. Table 10 summarizes the three maturity levels for the 'Risk Management' element and identifies key competencies typically found within each level.

Table 10: Defining Maturity Levels – Risk Management

Basic	Intermediate	Advanced
No documented understanding of the probability of asset failure, and the various economic, financial, social, and environmental risks associated with assets (risk frameworks).	Some documentation on the probability of asset failure, and the various economic, financial, social, and environmental risks associated with assets.	Various economic, financial, social, and environmental risks are well-documented for most or all assets. Probability of asset failure is also quantified. Detailed risk frameworks in place.
No quantitative models, scores, or risk matrices in place.	Rudimentary risk models, scores, or matrices in place.	Advanced risk models in place, including numerical indices, informed by staff judgement and expert reports and studies.
No formal and documented risk management process to prioritize infrastructure related spending.	Formal risk management process to inform project prioritization and infrastructure related spending; may not be documented.	Formal, documented risk management process to determine project prioritization and infrastructure related spending.

Key Gaps in People, Tools, and Processes: Risk Management

Blind River's lowest maturity rating, also assessed as 'Basic', was found in the 'Risk Management' element. Key gaps identified through the technical survey, data gap analysis, and follow-up dialogues with staff are discussed below.

25. no documented understanding of the various financial, economic, social, environmental, and political risks associated with assets;
26. no risk models in place to support strategic lifecycle interventions and project prioritization;
27. any information available on asset risk is typically found in ad-hoc paper and digital records, rather than managed in a centralized asset inventory, maintenance management system, or service request system;
28. uncertainty on whether any form of systematic risk management is used to prioritize infrastructure related spending;
29. no risk matrices in place that classify assets based on risk rating;

Progress Made

Through this project, preliminary risk models have been built into CityWide™. These models incorporate available asset data to generate risk matrices. In 2022, the Town will continue to refine these models to better reflect asset criticality and inform project selection. Risk models can be integrated with budget development to ensure limited funds are spent optimally.

The Town is also implementing CityWide™ Maintenance Manager. Maintenance history can be essential in identifying high-risk assets and inform lifecycle activities. The application may offer valuable insight into the Town's assets and assist staff in improving short- and long-term asset needs lists.

Element 6: Levels of Service

Levels of service (LOS) measure the quality, function, and capacity of an asset class or service area. LOS is an internationally recognized concept, employed across a variety of sectors, including public infrastructure. The International Standards Organization's ISO 55000 defines levels of service as the "parameters, or combination of parameters, which reflect the social, political, environmental, and economic outcomes that the organization delivers."

Levels of service are fundamentally about balancing three key parameters: cost, performance, and risk. Any adjustment to one of these parameters will have a direct impact on the other two. A sustainable levels of service approach requires municipalities to periodically recalibrate these parameters; an imbalance in any can jeopardize the alignment of service delivery with community expectations, the strategic direction of the organization, and its fiscal capacity.

Levels of service frameworks must include both customer and technical key performance indicators to monitor community satisfaction and operational efficiency. Customer levels of service (C-LOS) are designed to measure or approximate end-user experience with the service. For transparency and reporting, they should be understandable to the general public. Technical levels of service (T-LOS) are designed to measure the various activities and steps (inputs) that the organization takes to deliver the customer-oriented levels of service.

Table 11 summarizes the three maturity levels for the 'Levels of Service' element and identifies key competencies typically found within each level.

Table 11: Defining Maturity Levels – Levels of Service

Basic	Intermediate	Advanced
Minimal, or no documentation on current technical or customer-oriented levels of service to track and monitor service delivery.	Some documentation on current levels of service, using customer and technical KPIs.	Detailed levels of service framework for all asset classes illustrating current and proposed customer and technical levels of service for all asset class.
Levels of service data is managed primarily using non-structured methods, e.g., paper records, or disconnected sheets and databases	Levels of service data is managed in centralized databases.	Levels of service data is managed in centralized databases and linked to assets/services within a software system.
No levels of service reporting.	Levels of service reporting is used for some, but not all of the following: set targets and trends for service delivery; prioritize capital projects; adjust operating practices; conduct financial analyses; inform public on the municipality's performance and discuss trade-offs;	Levels of service reporting is used for most or all of the following: set targets and trends for service delivery; prioritize capital projects; adjust operating practices; conduct financial analyses; inform public on the municipality's performance and discuss trade-offs;

Key Gaps in People, Tools, and Processes: Levels of Service

Blind River's maturity rating for the 'Levels of Service' element was assessed as 'Basic'. Key gaps identified through the technical survey, data gap analysis, and follow-up dialogues with staff are discussed below.

30. staff may not have a complete understanding of various regulatory and compliance requirements for their infrastructure assets;
31. only a basic analysis and documentation of current service levels for the Town's asset programs;
32. neither customer nor technical key performance indicators are tracked or systematically used to monitor and evaluate the town's infrastructure programs;
33. no documentation or reporting is produced to verify that levels of service goals are being achieved;
34. when available, technical and customer performance metrics are retrieved as needed through informal staff correspondences, various technical reports and studies; these are not **systematically** managed in any centralized inventory or maintenance management system;

Progress Made

Current customer and technical levels of service KPIs were established for core asset classes in accordance with O. Reg 588/17. Additional KPIs will be developed in 2022 and incorporated into the Town's levels of service framework as part of the Town's continued work with PSD. This framework will allow staff to centralize KPIs for reporting and tracking.

Element 7: Financial Management

The final element focuses on how the Town of Blind River links its long-term financial planning with its asset management program to maintain a sustainable, fiscally responsible service delivery model. Given the lengthy useful life of most capital assets, a long-term view to funding and financing is essential.

Effective 'Financial Management' reflects current and proposed levels of service, with a particular focus on community affordability. One of the primary corporate risks to municipalities is attempting to deliver levels of service that exceed their fiscal capacity.

Table 12 summarizes the three maturity levels for the 'Financial Management' element and identifies key competencies typically found within each level.

Table 12: Defining Maturity Levels – Financial Management

Basic	Intermediate	Advanced
Minimal alignment of departmental budgets with corporate strategic goals. Infrastructure spending does not reflect long-term direction of the community.	Some alignment of departmental budgets with corporate strategic goals. Some infrastructure spending aligned with long-term direction of the community.	Significant alignment of departmental budgets with corporate strategic goals. Infrastructure spending is required to be aligned with long-term direction of the community.
Financial requirement analysis does not account for most of the following elements: operating and maintenance needs; principal and interest payments; future rehabilitation and renewal; inflation; service enhancements; growth elements; proposed levels of service	Financial requirement analysis accounts for some, but not all, of the following elements: operating and maintenance needs; principal and interest payments; future rehabilitation and renewal; inflation; service enhancements; growth elements; proposed levels of service	Financial requirement analysis accounts for most or all of the following elements: operating and maintenance needs; principal and interest payments; future rehabilitation and renewal; inflation; service enhancements; growth elements; proposed levels of service
The department's budget development is not well-aligned with departmental asset management strategies to determine optimal expenditures on assets, and do not consider most of the following: risk, levels of service, optimized lifecycle strategies; forecasted renewal requirements; cross-departmental initiatives	The department's budget development is aligned with departmental asset management strategies to determine optimal expenditures on assets, considering some, but not all of the following: risk, levels of service, optimized lifecycle strategies; forecasted renewal requirements; cross-departmental initiatives	The department's budget development is aligned with departmental asset management strategies to determine optimal expenditures on assets, considering most or all of the following: risk, levels of service, optimized lifecycle strategies; forecasted renewal requirements; cross-departmental initiatives

Key Gaps in People, Tools, and Processes: Financial Management

Blind River's maturity rating in the 'Financial Management' element was determined to be 'Intermediate'. Key gaps identified through the technical survey, data gap analysis, and follow-up dialogues with staff are discussed below.

35. only a basic assessment of short- and long-term capital, operating, and maintenance requirements is conducted for budget development;
36. analysis may not include growth elements, service enhancements, nor future rehabilitation;
37. collaboration in developing budgets includes both ad-hoc meetings and strategic and scheduled discussions;
38. departmental budget development does not systematically consider risk, levels of service, lifecycle strategies, forecasted renewal requirements;
39. when feasible, projects are bundled to optimize spending and minimize service disruptions, e.g., coordinating roadwork with sewer or water main replacements;
40. basic to intermediate alignment between budgets and long-term strategic alignment;

Roadmap to Higher Asset Management Maturity

The current state assessment identified 40 gaps across the seven core elements of asset management. The strategy is designed to close these gaps over time. There are several recurring themes throughout the strategy, including a sharp focus on documentation, and clearer and more consistent internal communications.

Some benefits of implementing the strategy will become transparent quickly or immediately, including higher staff confidence in datasets, clarity on roles and responsibilities, and greater cohesiveness across the organization. Other, such as improved capital planning, cost savings, better risk management, and more seamless alignment of infrastructure services with community expectations will become evident more gradually.

The strategy outlines eight priority initiatives, with 33 recommendations distributed over three years. The initiatives are designed to be cumulative; as a result, many recommendations are sequential, and require completion of preceding task and initiatives.

Table 13: Priority Initiatives - Roadmap to Higher Asset Management Maturity

Timeline	Priority Initiatives
Year 1 Build a Data-rich Foundation	I. Establish asset management culture.
	II. Enhance data quality.
	III. Produce essential guiding documents to support planning and transparency.
Year 2 Analyze and Update	IV. Improve understanding of community and infrastructure.
	V. Enhance and update guiding documents.
	VI. Increase internal efficiencies and technological capacity.
Year 3 Refine and Optimize	VII. Optimize asset inventory.
	VIII. Use data to support advanced long-term planning.

Year 1: Build a Data-rich Foundation

To minimize disruption to the community and complete projects efficiently and safely, municipalities often undertake significant pre-construction work. Similarly, building an asset management program from the ground up requires substantial upfront investments in time and resources. This pre-work includes formalizing processes, educating staff, building a comprehensive inventory, and implementing suitable asset management systems.

I. Establish an asset management culture

1. Formally establish asset management as a priority.
2. Ensure staff have a comprehensive understanding of regulatory requirements related to infrastructure services.
3. Improve staff and council knowledge of asset management.
4. Complete asset management-related business process mapping (BPM).
5. Analyse and document true cost of service delivery for each service area.
6. Formalize asset management team, and asset management related communication efforts.
7. Monitor potential policy changes at the provincial and federal levels to identify challenges and opportunities for asset management programs.

II. Enhance data quality

1. Continue to refine asset inventory and improve costing, estimated useful life data, and asset attribute information.
2. Review current useful life estimates for better alignment with in-field performance.
3. Follow Uniformat II to componentize buildings and facilities data.
4. Continue to optimize asset management register and maintenance management system; train staff as required.

III. Produce essential guiding documents to support planning and transparency

1. Produce levels of service framework.
2. Produce risk framework.
3. Develop standardized condition assessment guidelines to support internal data collection.
4. Create brief public-facing documents to educate residents on asset management and long-term planning

Year 2: Analyze and Report

The first year of establishing a systematic and formal asset management program focuses on foundational elements, such as refining asset inventory, implementing facilitative systems and applications, and adding some rigidity to internal processes and practices.

The second year focuses on analytics, enhancing essential documents and reports, and a continuation of data refinement. During the second year, staff confidence in datasets grows noticeably, and the asset management program begins to take shape.

IV. Improve understanding of community and infrastructure.

1. Develop a strategic, scheduled condition assessment program.
2. Identify trends and pressures that may influence infrastructure programs, in order to optimize asset portfolio.
3. Assess community affordability of current infrastructure programs.

V. Enhance and update guiding documents.

1. Refine and update risk framework for all assets; integrate new attribute data, new metrics, and adjust weightings to better reflect asset criticality.
2. Refine, review, and update levels of service framework to identify trends.
3. Execute public education sessions and external communications to identify public expectations ahead of O. Reg 588/17 proposed levels of service reporting requirements.
4. Develop AMP for all asset categories in compliance with O. Reg 588/17.

VI. Increase internal efficiencies and technological capacity.

1. Assess feasibility of one asset registry for both asset management and financial reporting.
2. Develop standardized business case templates for capital projects with clear linkage to strategic priorities.
3. Utilize maintenance management system to better understand asset performance and better forecast future asset needs.

Year 3: Refine and Optimize

Whereas Years 1 and 2 were about making initial forays into asset management and its various components, Year 3 focuses on more advanced elements of asset management.

VII. Optimize asset inventory.

1. Conduct a data gap analysis, and close information gaps.
2. Incorporate additional attribute data and update risk and levels of service frameworks.

VIII. Use data to support advanced long-term planning.

1. Execute public engagement initiatives to understand constituent expectations.
2. Establish proposed levels of service.
3. Develop a comprehensive financial strategy.
4. Update asset management plan.
5. Formalize data management through a data governance framework.
6. Monitor potential policy changes.

Next Steps

The priority initiatives and recommendations outlined will be further developed to create a comprehensive implementation plan. The plan will include detailed breakdown of each recommendation, recommended timelines for implementation, and ownership for each task.

C. Appendix C: Asset Management Readiness Scale Assessment Tool

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Asset Management Readiness Scale Assessment Tool

Policy and governance

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Policy and governance: By developing this competency, your organization is putting in place policies and objectives related to asset management (AM), bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

Note: To achieve each level, you must meet every requirement of each level before it.

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
A: Policy and Objectives	☑ Senior management is committed to formalizing an **AM program**.	☑ We have drafted an **AM policy**. ☑ Senior management and council have endorsed the **AM policy**.	☐ We are starting to use our **AM policy** to guide our actions.	☐ We manage assets and services in accordance with our **AM policy** and organizational objectives.	☐ We continue to validate and refine our corporate, service and AM objectives based on the evolving needs of our community.
Notes that describe how you have achieved your level at start of project.	We implemented a strategic AM policy and it was endorsed by senior management and council.				

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	No change

Please provide information about how your project activities have helped you achieve your current state.

Asset Management Readiness Scale Assessment Tool

Policy and governance

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State at Start of Project

Outcome areas	Outcomes: Select the outcomes that your organization has achieved at the start of the project.									
		Level 1		Level 2		Level 3		Level 4		Level 5
B: Strategy and Roadmap	☑	We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.	☐	We have a strategy for our **AM program**.	☐	We have a **roadmap** that details the actions for implementing our **AM strategy** over the next 3 to 5 years.	☐	We are achieving our **AM policy** objectives. The necessary workflows, documents, and reporting tools are in place.	☐	We follow our **roadmap** and continually improve our AM practices.
			☐	We have a draft **roadmap** that outlines our approach for the next 1 to 3 years.			☐	We update our **roadmap** to address evolving needs.	☐	We document improvements to our AM practices.
Notes that describe how you have achieved your level at start of project.	We understand the benefits of AM and are looking to advance our program and identify gaps through the proposed AM strategy.									

State at End of Project

Start (from left)	Achieved	
1	**Select the level your organization has achieved at the end of this project.**	2

Please provide information about how your project activities have helped you achieve your current state.

The new Asset Management Strategy gives us the roadmap detailing the actions for implementing over the next 1 - 3 years

Asset Management Readiness Scale Assessment Tool

Policy and governance

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State at Start of Project

	Outcomes: Select the outcomes that your organization has achieved at the start of the project.									
Outcome areas		Level 1		Level 2		Level 3		Level 4		Level 5
C: Measurement and Monitoring	☑	We have identified short-term actions that will demonstrate early progress on AM.	☐	We are collecting baseline data on our current AM practices.	☐	We have established performance measures to monitor our asset management progress, outcomes, and the benefits to our community.	☐	We use performance measures to monitor AM progress, outcomes, and benefits.	☐	We monitor performance and use the feedback to prioritize and make ongoing refinements and improvements to AM practices.
Notes that describe how you have achieved your level at start of project.	We are currently working on advancing our AM program through key first activities.									

State at End of Project

Start (from left)	Achieved
1	**Select the level your organization has achieved at the end of this project.** 2

Please provide information about how your project activities have helped you achieve your current state.

Updating our AMP is helping to identify current AM practices.

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑				

State Achieved
Level 2

Asset Management Readiness Scale Assessment Tool

People and leadership

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People and leadership: By developing this competency, your organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Note: To achieve each level, you must meet every requirement of each level before it.

State at Start of Project

Outcome areas	Outcomes: Select the outcomes that your organization has achieved at the start of the project				
	Level 1	Level 2	Level 3	Level 4	Level 5
A: Cross-functional Teams	☑ We have identified the representation we need on our cross-functional **AM team.**	☑ We have a cross-functional **AM team*** that guides the planning and implementation of our **AM program.**	☐ Our **AM team*** works within our organization to lead, communicate, and support AM improvements and organizational changes.	☐ Our **AM team*** is permanent and tasked with guiding and supporting AM across the organization on an ongoing basis.	☐ Our **AM team*** guides and supports the ongoing improvement of AM within the organization
Notes that describe how you have achieved your level at start of project	We do not have a formal team structure, however, we have several members of the organization involved in our ongoing AM program development. Our Treasurer/Director of Finance is our AM champion and is supported by Public Works, Facilities and the CAO/Clerk.				

***Note: Larger organizations may have both an AM team responsible for implementation and an AM steering committee to provide direction and oversee the work. Smaller organizations may group these functions together. This outcome may be better suited to an AM team or an AM steering committee, depending on the organization. In some small communities the AM team may be as few as two people.**

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project**	No change

Please provide information about how your project activities have helped you achieve your current state

Asset Management Readiness Scale Assessment Tool

People and leadership

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcome areas	Outcomes: Select the outcomes that your organization has achieved at the start of the project.									
		Level 1		Level 2		Level 3		Level 4		Level 5
B: Accountability	☑	We have a champion who has been tasked with planning for our **AM program**.	☐	Our **AM team*** has a documented mandate to develop our **AM program**, which is outlined in a terms of reference and a one- to three-year **roadmap**.	☐	Our **AM team*** is accountable for implementing our **AM program**.	☐	We have operationalized AM roles and responsibilities across our organization.	☐	We document changes to AM roles and responsibilities as needed to support our evolving requirements.
			☐	Our **AM team** is accountable to senior management and council.	☐	AM roles and responsibilities are included in staff job descriptions.				
Notes that describe how you have achieved your level at start of project.	Our Treasurer/Director of Finance is our champion of AM within the Town.									

State at End of Project

Start (from left)	Achieved
1	**Select the level your organization has achieved at the end of this project.** 2

Please provide information about how your project activities have helped you achieve your current state.

The project developed our one- to three-year roadmap. Staff will be accountable to senior management and Council as we move forward with AM.

Asset Management Readiness Scale Assessment Tool

People and leadership

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State at Start of Project

	Outcomes: Select the outcomes that your organization has achieved at the start of the project.									
Outcome areas		**Level 1**		**Level 2**		**Level 3**		**Level 4**		**Level 5**
C: Resourcing and Commitment	☑	Council knows that resources must be dedicated to exploring the requirements for AM and for drafting an **AM roadmap.**	☐	Council demonstrates buy-in and support for AM and allocates resources (funding or staff time) to further develop the **AM program.**	☐	Council champions AM as a core business function and has approved funding to continue **AM roadmap** activities.	☐	Council funds ongoing AM monitoring and enhancement.	☐	The **AM team** measures and monitors progress.
									☐	Council demonstrates commitment to ongoing improvement of AM practices.
Notes that describe how you have achieved your level at start of project.	Council is supportive of AM and understand the necessary funding and resources for ongoing program development.									

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑				

State at End of Project

Start (from left)		**Achieved**
1	**Select the level your organization has achieved at the end of this project.**	2

Please provide information about how your project activities have helped you achieve your current state.

Council demonstrated support by allocating additional funds over and above the FCM grant to continue to develop our AMP, our AM Strategy and our Lifecycle Framework.

State Achieved
Level 2

Asset Management Readiness Scale Assessment Tool

Data and information

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

Data and information: By developing this competency, your organization is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

Note: To achieve each level, you must meet every requirement of each level before it.

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
A: Asset Data	☑ We have **asset inventory data,** including approximate quantities of assets within most asset groups.	☑ We have a **basic inventory** of most **critical assets,** including information on general asset properties such as size, material, location and installation date.	☐ We have a consolidated, **basic inventory** of all assets. ☐ We have defined life cycle investment requirements for **critical assets.**	☐ We have expanded **inventory** data for some assets.	☐ We have expanded **inventory data** for most assets.
	☑ We have some anecdotal information on asset condition. Some age information exists.	☑ We are moving our data to a centralized location for use by the **AM team** (note: this does not require AM software). ☑ We have defined **critical assets** and have some information on asset condition for these assets.	☐ We have standardized condition rating systems defined for most asset groups. ☐ We have asset condition information on all **critical assets.**	☐ We have evaluated the life cycle investment requirements associated with **critical assets.** ☐ We update data according to cycles defined in our **AM plans** or **strategy.**	☐ We have evaluated the life cycle investment requirements associated with most assets.
Notes that describe how you have achieved your level at start of project.	We have a basic inventory of our assets with some age and assessed condition, housed in our AM software tool. We have general information included such as size, material, location, etc.				

State at End of Project

Start (from left)	Achieved
2	**Select the level your organization has achieved at the end of this project.**

Please provide information about how your project activities have helped you achieve your current state.

Asset Management Readiness Scale Assessment Tool

Data and information

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
B: Performance Data	☑ We have informal or anecdotal approaches for measuring asset or service performance.	☑ We have some information on performance of **critical assets**, collected from a variety of sources.	☐ We have defined **level of service** measurements for some service areas. ☐ We have captured data on current **level of service** performance for some service areas. ☐ We have reviewed service levels and asset performance with council.	☐ We have defined **level of service** measurements for critical service areas. ☐ We communicate the results from our **level of service** measurement program to staff and council regularly.	☐ We have defined **level of service** measurements for most or all service areas. ☐ We continually improve how we collect data on **level of service** performance.
Notes that describe how you have achieved your level at start of project.	We have some performance information on our assets, generally collected throughout data collection.				

State at End of Project

Start (from left)	Achieved
2	**Select the level your organization has achieved at the end of this project.**

Please provide information about how your project activities have helped you achieve your current state.

Asset Management Readiness Scale Assessment Tool

Data and information

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
C: Financial Information	☑ We have **financial information** on our assets, supporting minimum PS-3150 reporting requirements.*	☐ We have major capital renewal and operating & maintenance (O&M) expenditure data for some assets. ☑ We have a strategy to link AM and **financial information**.	☐ We have capital (new and renewal) and O&M expenditure data for most assets. ☐ We have linked AM and **financial information** for all **critical assets**. ☐ We can demonstrate the gaps between forecasted infrastructure needs and current spending levels.	☐ We understand the cost of sustaining current **levels of service** for all **critical assets**	☐ We understand the trade-offs between investment and the **level of service** we deliver and use this to optimize our financial plans.
Notes that describe how you have achieved your level at start of project.	We mostly have capital financial information that supports PSAB reporting. We are currently using our AM software to link our financial and asset information.				

*PS-3150 is the Public Sector Accounting Board's standard guiding the treatment of tangible capital assets.

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑				

State at End of Project

Start (from left)	Achieved	
1	**Select the level your organization has achieved at the end of this project.**	No change

Please provide information about how your project activities have helped you achieve your current state.

State Achieved
Working on Level 1

Asset Management Readiness Scale Assessment Tool

Planning and decision-making

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Planning and decision-making: By developing this competency, your organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

Note: To achieve each level, you must meet every requirement of each level before it.

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
A: Documentation and Standardization	☑ Our asset planning approaches vary across the orgnization.	☑ Our departments follow a similar but informal asset planning approach. ☑ We evaluate investment needs and priorities based on a mix of structured and ad-hoc practices and criteria.	☐ We have a structured asset planning approach, but application is inconsistent. ☐ We set priorities using criteria based on organizational goals and objectives.	☐ We employ a consistent structured asset planning approach for each of our **critical services.** ☐ We set priorities using criteria that are fully aligned with our organizational goals and objectives.	☐ We employ a consistent structured asset planning approach for all services. ☐ We adapt our planning approach and criteria to align with evolving organizational goals and objectives.
Notes that describe how you have achieved your level at start of project.	Our departments follow an informal but similar approach to asset planning. We currently use our software and actual data to a degree, but generally evaluate investment needs based on a mix of practices.				

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	**No change**

Please provide information about how your project activities have helped you achieve your current state.

Asset Management Readiness Scale Assessment Tool

Planning and decision-making

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
B: Asset Management Plans	☑ Our approach to asset renewal focuses on reacting to basic needs (e.g. growth, regulation and known problems).	☑ We have draft **AM plans** for some asset classes, with forecasted financial needs based on estimated data.	☑ We have **AM plans** for **critical services**, based on a mix of estimated and actual data.	☐ We have **AM plans** for most services based on actual data.	☐ We have **AM plans** for all services based on actual data.
			☐ Our **AM plans** include available information about **level of service** (current and target) and **risk** management.	☐ Our **AM plans** include basic needs forecasting and **risk** management strategies for **critical assets**.	☐ Our individual **AM plans** are integrated across services.
	☑ We evaluate priorities based on available information, staff experience, and input from council and management.		☐ Our **AM plans** identify short-term issues and priorities.	☐ Our **AM plans** are based on both short- and long-term issues and priorities. They balance short-term service objectives with longer-term goals and **risks**.	☐ Our **AM plans** include needs forecasts and **risk** management strategies for most assets. Plans address **risks** to both service and business goals
				☐ We keep our **AM plans** up to date through normal business.	
Notes that describe how you have achieved your level at start of project.	We updated our last AM plan in 2019 and it contained all our asset categories and had a mixture of estimated and actual data.				

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	**No change**

Please provide information about how your project activities have helped you achieve your current state.

Although we are showing no current change, as part of our bigger AM project, we are also developing levels of service and will be able to identify short-term issues and priorities.

Asset Management Readiness Scale Assessment Tool

Planning and decision-making

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
C: Budgets and Financial Planning	☑ We prepare annual capital and operating budgets based on historical values	☑ We prepare annual capital and operating budgets based on a mix of historical values and new priorities.	☐ We prepare an annual capital budget based on an annual assessment of current needs.	☐ We prepare annual needs-based capital and operating budgets that are based on an annual assessment of **risks** and current needs.	☐ We prepare multi-year needs-based capital and operating budgets that are based on our short- and mid-term needs.
	☑ We deal with new needs reactively, as they occur.		☐ We have a 3-year **capital plan** that addresses short-term issues and priorities.	☐ We have a 5-year **capital plan*** and update it annually. ☐ We update our **long-term financial plan** (at least 10-year) annually and understand the risks associated with our investment gap.	☐ We take a structured approach to address in-cycle changes.
Notes that describe how you have achieved your level at start of project.	We prepare our annual capital and operating budgets based on a mix of historical values and new priorities.				

*Communities may benefit from long-term capital plans that extend beyond five years to ten years or more.

Readiness level (automatic)	Working on Level 1		Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
			☑	☑			

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	No change

Please provide information about how your project activities have helped you achieve your current state.

No change however we can check off "We perpare an annual capital budget based on annual assessment of current needs". We do also try to identify as many capital projects for the next 5 years as we can and update this annually when the capital budget is prepared.

State Achieved
Working on Level 1

Asset Management Readiness Scale Assessment Tool

Contribution to asset management practice

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Contribution to asset management practice: By developing this competency, your organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

Note: To achieve each level, you must meet every requirement of each level before it.

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas		Level 1		Level 2		Level 3		Level 4		Level 5
A: Training and Development	☑	Our AM training and development approach is informal and largely driven by the personal initiative of staff.	☑	Our AM training and development requirements are defined by management based on short-term needs.	☐	We provide all staff with basic AM awareness training.	☐	We define AM knowledge and skill requirements. A training plan is in place for all positions.	☐	We train select staff members as internal experts to support the ongoing development of organizational capacity.
	☑	Some staff conduct targeted research, seeking out basic information on AM concepts and techniques.	☑	Selected staff are trained on basic AM concepts.	☐	Some staff undergo training on advanced AM concepts specific to their roles and responsibilities.	☐	Council, management and staff receive role-appropriate AM training to establish needed capacity across the organization	☐	Proactive, role-based training serves as a support for career development and succession planning.
			☐	Council has opportunities to increase their understanding of AM concepts.	☐	Staff and council are able to communicate the value of AM in their own words.				
Notes that describe how you have achieved your level at start of project.	Staff have attended some training (AM Ontario, engineering seminars, webinars, conferences, etc.), which is generally defined by senior management.									

State at End of Project

Start (from left)	Achieved
1	**Select the level your organization has achieved at the end of this project.** 2

Please provide information about how your project activities have helped you achieve your current state.

Caouncil has been provided opportunities to increase their understanding of AM concepts.

Asset Management Readiness Scale Assessment Tool

Contribution to asset management practice

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas		Level 1		Level 2		Level 3		Level 4		Level 5
B: Internal Communication and Knowledge Sharing	☑	We are aware of the need to mitigate the risk of losing information held in the minds of long-term staff.	☑	We mitigate the risk of losing information held in the minds of long-term staff, through improved record keeping.	☐	A culture of knowledge sharing is emerging internally, supported by official initiatives.	☐	A culture of knowledge sharing exists and is supported by a mix of formal and informal initiatives.	☐	We capture AM knowledge and it flows freely throughout the organization.
					☐	We collect and maintain AM knowledge resources.	☐	We disseminate AM knowledge resources within the organization.	☐	Staff leverage internal and industry knowledge and leading practice resources.
					☐	We communicate the benefits of AM internally to staff and council.				
Notes that describe how you have achieved your level at start of project.	We are using our AM software to better document our asset information, mitigating the risk of losing information held in the minds of long-term staff.									

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	**No change**

Please provide information about how your project activities have helped you achieve your current state.

Asset Management Readiness Scale Assessment Tool

Contribution to asset management practice

FCM FEDERATION OF CANADIAN MUNICIPALITIES / FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

State at Start of Project

Outcomes: Select the outcomes that your organization has achieved at the start of the project.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
C: External Communication and Knowledge Sharing	☑ We are investigating AM-related organizations and resources.	☑ Staff or elected officials attend AM-related events.	☐ We are members of one or more AM organizations and actively share our AM experience.	☐ We are actively involved in AM organizations and present at AM events.	☐ We are a thought leader on AM within the municipal sector.
				☐ We share information with our peers on our experience, innovations and lessons learned.	☐ We are active in coaching other organizations to improve the overall body of AM knowledge.
		☑ We share basic information on current capital projects with the public.	☐ We share basic information on our assets, the services we provide, and future needs with the public.	☐ We rely on the data from our **AM program** to explain decisions to the public.	☐ We communicate the benefits of AM to the public.
Notes that describe how you have achieved your level at start of project.	Staff have attended training sessions, seminars and conferences. Our AM policy and our budgets are posted on the website. Further, we will post about upcoming capital projects.				

Readiness level (automatic)	Working on Level 1	Completed Level 1	Completed Level 2	Completed Level 3	Completed Level 4	Completed Level 5
		☑				

State at End of Project

Start (from left)	Achieved	
2	**Select the level your organization has achieved at the end of this project.**	**No change**

Please provide information about how your project activities have helped you achieve your current state.

State Achieved
Level 2

D. Appendix D: Asset Management Plans by Asset Class

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Blind River

TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN
TRANSPORTATION SYSTEM ASSETS

Chris Zagar
Director of Public Services

Document Control		Asset Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	December 2024	Original Version	C. Zagar	S. Dent/K. Scott	Council

This Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 20 year planning period. The AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provides the transportation network for the Town of Blind River

The transportation network comprises:

- Paved Roads - High Class Bituminous Roads (HCB)
- Surface Treated Roads – Low Class Bituminous (LCB)
- Gravel Roads
- Sidewalks
- Curbs
- Traffic Signs
- Bridges
- Culverts

The above infrastructure assets have replacement value estimated at $ 201,606,985.

1.3 Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels for the planning period.

The main service consequences of the Planned Budget are:

- Continued degradation of the condition of roads
- Decreased levels of service
- Increased long-term life-cycle costs for the transportation network

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Climate Change
- Tourism and Seasonal Variation
- Population Growth
- Regulatory Changes
- Public Expectations and Levels of Service
- Technological Advancements

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Proactive plan for monitoring population growth trends and forecasting of expansion/improvements to the transportation network

- Citizen expectation surveys
- Review and continual improvement of the efficiency and efficacy of maintenance practices
- Development of a climate change resiliency plan

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of a 10 year total outlay, which for the transportation network is estimated as **$ 72,435,671 or $ 7,243,567** on average per year.

1.6 Financial Summary

1.6.1 What we will do

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

We plan to provide transportation network services for the following:

- Operation, maintenance, renewal and acquisition of paved roads, surface treated roads and gravel roads to meet service levels set by O. Reg. 588/17 : ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE and O. Reg. 239/02 O. Reg. 239/02: MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS in annual budgets.
- The following years have significant renewals forecasted (based on current paved road conditions) within the 10-year planning period.

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Completion of the forecasted required renewal rate to keep transportation network assets in good condition
- Increase levels of service
- Acquisition and maintenance of new transportation network assets to meet increased demand from any source
- Addition of climate change resiliency to assets as they are replaced

1.6.3 Managing the Risks

Our present budget levels are insufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Legal action taken against the town when an accident or injury occurs due to inadequately maintained roads or roads in poor condition
- Financial Risk - Underfunding resulting in deferred maintenance and increased repair costs

We will endeavour to manage these risks within available funding by:

- Develop a formalized inspection plan ensuring that all roads are inspected at least once per calendar year. These results are to be recorded and reviewed.
- Implementation of an electronic WO system to improve tracking of inspection and maintenance work to ensure accurate and retrievable records.

- Development of 5 year forecasted maintenance plans which are reviewed annually and updated as needed.
- Implementation of a prioritization plan based on risk after an internal evaluation of current road condition against MTO standards to determine where compliance isn't met.
- Development of a robust asset management plan accurately identifying the infrastructure gap for roads so that the risk of underfunding can be clearly communicated to town council

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Renewal costs for all activities aside from replacement of paved roads was calculated using the estimates received in 2024 asset management plan.
- Updated usable life for paved roads after renewal is 25 years and surface treated roads are 7 years.
- Maintenance activities do not change with preventative maintenance activities continuing to not be completed throughout the planned period.
- Renewal costs are calculated with current prices are expected to be higher based on an expected average of 2.5% inflation throughout the planned period.
- Assets requiring renewal are identified from either the asset register or an alternative method.
- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal.
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The alternate method and asset register method was used to forecast the renewal lifecycle costs for this AM Plan depending on the asset class.

This AM Plan is based on a moderate-high level of confidence in information.

1.8 Monitoring and Improvement Program

The steps that have been completed since the last AM plan to improve asset management practices are:

- Obtain updated pavement condition index information for all paved roads
- Acquire surface condition information on all gravel roads
- Update of the asset register to improve the confidence level of data
- Acquire updated cost estimates for all renewal activities

The next steps resulting from this AM Plan to improve asset management practices are:

- Acquire region specific information to reliably forecast deterioration of transportation network assets factoring in the effects of climate change
- Update lifecycle activities to include the costs of preventative maintenance treatments to extend the useful life of road assets and reduce the long-term financial cost.
- Risk treatment costs should be incorporated into the long term financial plan in 2025.

2.0 Introduction

2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Town of Blind River - Transportation network planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Town of Blind River Financial Plan
- Town of Blind River Service Delivery Review
- Town of Blind River Roads Needs Analysis

The Town of Blind River asset management program is in its early stages but is continually working to improve the

The infrastructure assets covered by this AM Plan include paved, surface treated and gravel roads in the Town of Blind River. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.1.1.

These assets are used to provide transportation, infrastructure support and access to emergency services.

The infrastructure assets included in this plan have a total replacement value of $87,072,368.

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Town Council	■ Represent needs of community/shareholders ■ Allocate resources to meet planning objectives in providing services while managing risks ■ Ensure services are sustainable ■ Conduct annual reviews of management plan implementation progress annually following the requirements stated in STRATEGIC ASSET MANAGEMENT POLICY NO: 1.3.16
CAO, Town of Blind River	Maintain compliance with the Strategic Asset Management Policy and provincial asset management regulation(s).
Senior Management Team	Oversee asset management planning activities that fall within their service area and in support of others.
Staff	■ Asset inspection and monitoring ■ Asset performance monitoring ■ Continuous improvement ■ Record-Keeping and Documentation

2.2 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance
- Managing the impact of growth through demand management and infrastructure investment
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined levels of service
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how they will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided
- Risk Management
- Future demand – how this will impact on future service delivery and how this is to be met
- Lifecycle management – how to manage existing and future assets to provide defined levels of service
- Financial summary – what funds are required to provide the defined services
- Asset management practices – how we manage provision of the services
- Monitoring – how the plan will be monitored to ensure objectives are met
- Asset management improvement plan – how we increase asset management maturity

Other references to the benefits, fundamentals principles and objectives of asset management are:

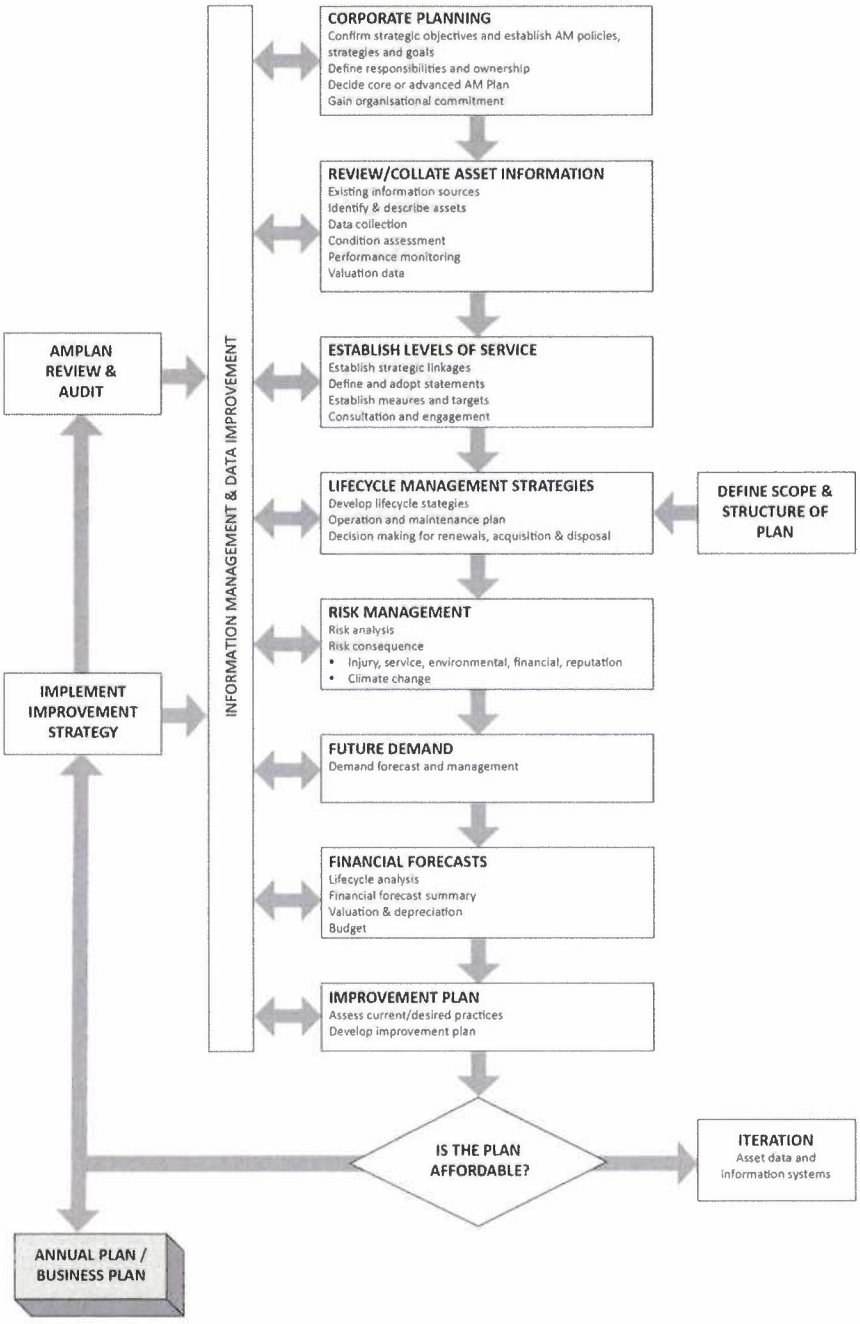
- ISO 55000[1]

[1] ISO 55000 Overview, principles and terminology

A road map for preparing an AM Plan is shown below.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the town council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the town council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

We currently have no research on customer expectations. This will be investigated for future updates of the AM Plan.

3.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Town of Blind River Strategic Plan vision and mission as well as strategy goals and objectives set by the Director of Public Services.

Our vision is:

Driven by extraordinary volunteers and supported by its community leaders, Blind River is a vibrant and prosperous town that has established itself as a year-round destination and ideal community is which to live and do business.

Our mission is:

Providing quality services and leadership that reflect the social, cultural, environmental and economic needs of the community, while creating regional partnerships and managing resources in a fiscally responsible manner.

Strategic goals have been set by the Director of Public Services. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Safety	Ensure the transportation network is safe for all users, including motorists, cyclists, and pedestrians, by addressing hazardous conditions, improving signage, and enhancing visibility.	This is addressed though road maintenance activities ex. snow removal, sweeping and road repair. Crossing guards are in place for children crossing main roads on their way to school. The proposed increase to level of service through the periodic completion of road safety audits.
Asset Preservation	Implement effective maintenance strategies to preserve the quality and extend the lifespan of the road assets, minimizing the need for costly repairs and reconstruction.	This is addressed through the proposed levels of service of supplementing inspections with new survey technology methods to identify defects and the implementation of preventative maintenance strategies.
Efficient Transportation	Optimize the transportation network's capacity and efficiency to support smooth traffic flow, reduce congestion, and improve travel times for residents, visitors, and businesses.	Proposed level of service for 10% of the transportation network to be surveyed annually for speed and volume or 100% every 10 years.

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Accessibility	Enhance accessibility within Blind River by improving connectivity and providing inclusive infrastructure to accommodate individuals with disabilities, ensuring equal access to essential services and facilities.	Infrastructure replacements are completed in compliance with accessibility guidelines.
Sustainability	Incorporate sustainable practices into road asset management, such as using environmentally friendly materials, promoting energy-efficient street lighting, and exploring innovative approaches to minimize environmental impacts.	Sustainability is being supported in this plan through existing service of repairing pot holes using recycled asphalt and the proposed service of employing preventative maintenance practices to extend the life cycle of road assets.
Data-Driven Decision Making	Utilize comprehensive data collection and analysis to inform decision-making processes, including prioritizing maintenance and rehabilitation efforts, optimizing resource allocation, and evaluating performance against set targets.	Renewal of paved road assessments is condition based not age based using PCI information from 3rd party road surveys
Community Engagement	Engage with the community to understand their needs, concerns, and feedback regarding the transportation network, fostering transparency, collaboration, and a sense of ownership among residents.	This is achieved through meetings with public stakeholders and addressing issues raised by residents that are submitted through the E11 portal.
Long-Term Planning	Develop a comprehensive and forward-thinking road asset management plan, considering future growth, technological advancements, and emerging transportation trends to ensure the transportation network meets the evolving needs of the community.	This will be achieved through the proposed periodic road surveys, annual attendance of the Ontario Good Roads Association Conference and utilizing new technologies identified in the proposed levels of service in this plan.
Financial Sustainability	Manage road assets in a fiscally responsible manner, balancing maintenance and improvement needs with available resources, exploring funding opportunities, and seeking cost-effective solutions.	This will be achieved by obtaining baseline condition assessments for all municipally owned roads assets and updating these measurements through periodic surveys. This information will be used to forecast required renewal and replacement costs so that these can be budgeted for years in advance and alternative funding opportunities can be identified to meet these requirements. As replacements are completed the focus of maintenance will continue to shift from reactionary to preventative/predictive to reduce the

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
		long-term costs of maintaining the transportation network.
Resilience and Adaptability	Enhance the transportation network's resilience to natural disasters and climate change impacts by implementing measures like proper drainage systems, vegetation management, and considering climate resilient design practices.	Climate change resiliency will be addressed during the scheduled replacement of road assets, replacing assets using materials and methods shown to counteract the negative effects of a changing climate.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the transportation network service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
O. Reg. 239/02: MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS	These regulations outline the key requirements for the following with respect to municipal road systems: • Winter Maintenance • Sidewalk repair • Pothole Repairs • Road Surface Conditions • Roadside Vegetation Control • Drainage • Traffic Control Devices • Work Zone Safety
O. Reg. 588/17: ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE	These regulations outline the requirements for the following with respect to municipal road systems: • Inventory and Condition Assessment • Performance Monitoring and Reporting • Lifecycle Planning and Asset Valuation • Risk Assessment and Mitigation • Financial Planning and Budgeting • Stakeholder Engagement and Communication • Continuous Improvement and Review
PUBLIC TRANSPORTATION AND HIGHWAY IMPROVEMENT ACT, R.S.O. 1990, C. P.50	These regulations outline the requirements for the following with respect to municipal road systems: • Municipal Road Authorities • Classification of Municipal Roads • Municipal Road Allowances • Municipal Consent for Highway Work • Municipal Cooperation in Highway Improvements • Agreements and Cost Sharing • Special Provisions for Municipal Road Construction

Legislation	Requirement
ONTARIO PROVINCIAL STANDARDS FOR ROADS AND PUBLIC WORKS	These regulations outline the requirements for the following with respect to municipal road systems: • Road Design • Pavement Design and Construction • Drainage and Stormwater Management • Traffic Control Devices • Bridge and Culvert Design • Winter Maintenance • Roadside Safety and Design
HIGHWAY TRAFFIC ACT, R.S.O. 1990, C. H.8	These regulations outline the key requirements for the following with respect to municipal road systems: • Traffic Control Devices • Speed Limits • Parking Regulations • Enforcement of Traffic Offenses • Road Closure and Temporary Traffic Control • Road Maintenance and Repair • Compliance with Provincial Regulations

3.4 Legislated Levels of Service

The following tables identify the Town's current level of service for the Transportation 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 additional performance measures that the Town has selected for this AMP.

3.4.1 Legislated Community Levels of Service

Service Attribute	Qualitative Description	Current LOS
Road Network		
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity	Map provided in Figure 3.4.1.1
Quality	Description or images that illustrate the different levels of road class pavement condition	PCI is available for 100% of the road network. See Figure 3.1.1.2
Bridges and Culverts		
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of the municipal transportation network. Most types of vehicles, including heavy transport, motor vehicles, emergency vehicles and cyclists can cross them without restriction.
Quality	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	Bridges and culverts are generally in good condition and are able to support acceptable levels of service

Figure 3.4.1.1 Road Network Mapping

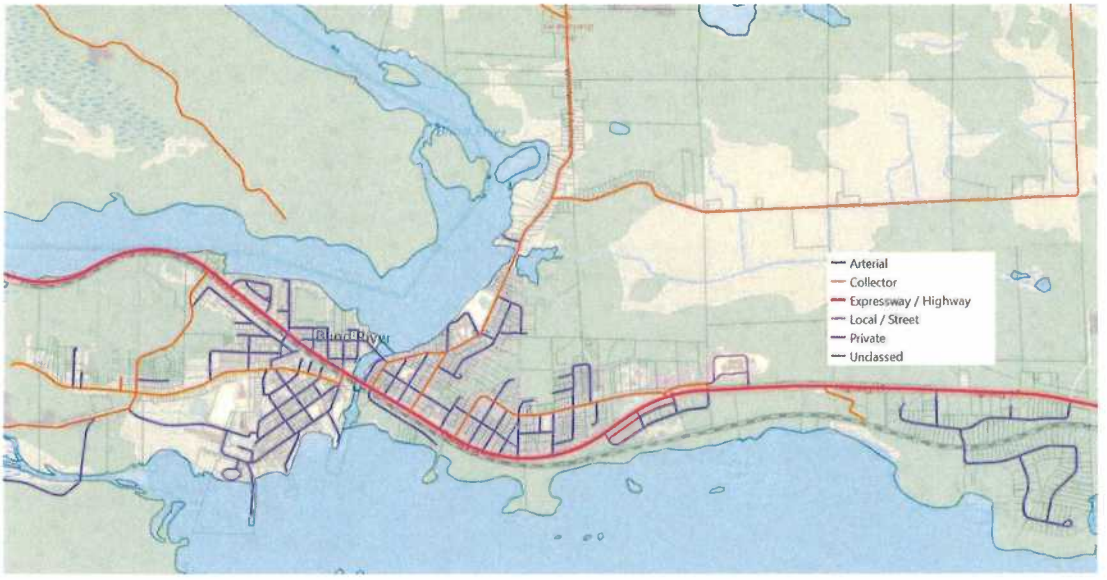
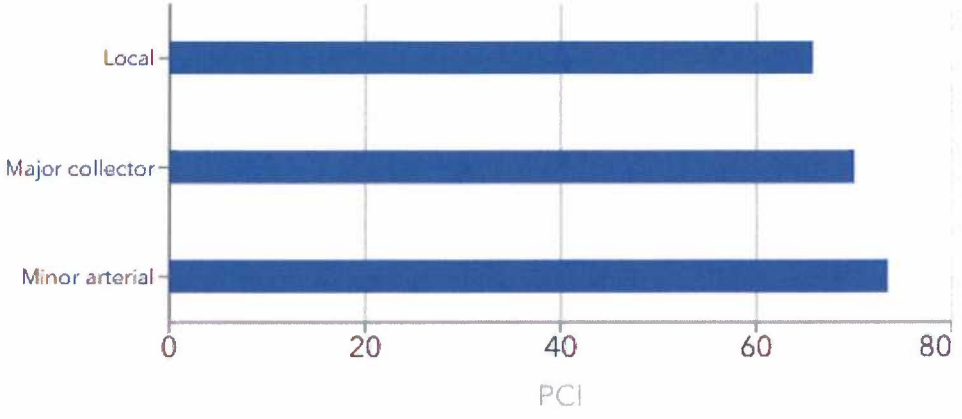


Figure 3.4.1.2 Road Network PCI



3.4.2 Legislated Technical Levels of Service

Service Attribute	Qualitative Description	Current LOS
Road Network		
Scope	Lane-km of arterial roads per land area (km/km2)	Lane-km length not available Using centre-line length: Length: 4.118km Area: 525.65 0.008 km per sq.m
Scope	Lane-km of collector roads per land area (km/km2)	Lane-km length not available Using centre-line length: Length: 43.442km Area: 525.65 0.08km per sq.m
Scope	Lane-km of local roads per land area (km/km2)	Lane-km length not available Using centre-line length: Length: 85.6km Area: 525.65 0.16km per sq.m
Quality	Average pavement condition index for paved roads in the municipality	Local: 64.4 Collector/Major Collector: 68.8 Minor arterial: 73.2
Quality	Average surface condition for unpaved roads in the municipality (e.g., excellent, good, fair, poor)	Surface Condition Index = 61
Bridges and Culverts		
Scope	% of bridges in the Town with loading or dimensional restrictions	0%
Quality	Average bridge condition index value for bridges in the Town	72
Quality	Average bridge condition index value for structural culverts in the Town	48

3.5 Customer Values

Blind River defined Service levels are defined in three ways: customer values, customer levels of service and technical levels of service.

Customer Values indicate:

- what aspects of the service are important to the customer;
- whether they see value in what is currently provided and;
- the likely trend over time based on the current budget provisions

Table 3.4: Customer Values

Service Objective: To provide a safe, accessible, and efficient transportation network that meets the diverse needs of the community.

Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Safety	Customer surveys and complaints	A moderate level of complaints has been received.	The expected trend is that if additional funds are dedicated to road system renewals and road safety audits of areas of complaint.
Accessibility	Customer surveys and complaints	A minimal number of complaints were received.	The expected trend is these should remain consistent.
Reliability and Efficiency	Customer surveys and complaints	A large number of complaints have been received through a variety of sources.	These are expected to increase if road system renewals remain underfunded.
Comfort and Smoothness	Customer surveys and complaints	A large number of complaints have been received through a variety of sources.	These are expected to increase if road system renewals remain underfunded.
Cost-Effectiveness	Cost of road/sidewalk maintenance per square metre	Currently most road maintenance takes place in the form of renewal or replacement. This is the most expensive stage of a transportation system's asset lifecycle.	The expected trend is that with the recent investment in an asphalt recycler and hotbox for improved quality of road patching the cost per square metre for road maintenance is expected to decrease slightly.
Communication and Engagement	Customer surveys and complaints	Minimal complaints and positive feedback have been received regarding the levels of communication regarding road closures and road maintenance through meetings, Voyent Alert and social media.	This is not expected to change.
Long-Term Planning	Customer surveys and complaints	Minimal complaints have been received with regards to long term planning of the transportation network.	This is not expected to change.

3.6 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose .... Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These are measures of fact related to the service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Condition of transportation system assets	Percentage of transportation system assets in good condition	Road Network Good/very good – 71.83% Bridges and Culverts Good/very good – 81.22%	Based on the current shortfall for road network renewal costs in the current planned budget, the percentage of transportation assets in good condition is expected to decrease.
	Confidence levels		Medium (Professional judgement with sampled data)	High (Professional judgement with comprehensive data)
Function	Efficiency and reliability of travel	Average travel time and travel time reliability	The average travel time upon municipal roads is consistent regardless of weather or seasonal traffic changes.	This is not expected to change under the current budget.
	Confidence levels		Low (Professional Judgement with no data evidence)	Low (Professional Judgement with no data evidence)
Capacity	Adequate road capacity to accommodate current and projected traffic volumes.	Volume to capacity ratio	Classification of roads are based on historical information and the volume of traffic on municipal roads is below the rated capacity.	Based on the current budget for traffic monitoring and planning for expansion volume on highway and collector road classes may begin to approach capacity.
	Confidence levels		Low (Professional Judgement with no data evidence)	Low (Professional Judgement with no data evidence)

3.7 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.)

- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement).

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.[2]

Table 3.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Operation	Manage traffic flow	Average vehicle speed, traffic flow and public complaints related to traffic congestion	• Average vehicle speed and traffic flow isn't currently measured. • Traffic lights are installed but 4 complaints were received in 2023 related to traffic congestion when the traffic lights were not working properly. • $433,000/10 Year	• The average vehicle speed and traffic flow data should be periodically surveyed on all roads classified as collector and expressway/highway. • Zero complaints related to traffic congestion. • The traffic lights should operate as designed at all times. • $483,000/10 years
	Ensure road safety of users	Number of traffic accidents on municipally maintained roads.	• Crossing guards are in place at all times when students are crossing roads. • Road safety and intersection sight line issues are assessed on complaint driven process. • 370,000/10 year	• Crossing guards remain in place for existing student crossings. • Road safety audits conducted periodically and after any accident has occurred on municipal roads. • $420,000/10 year
	Coordinate with public stakeholders	Number of meetings held with public	• Meetings are held with bus services as	• Hold a meeting annually with all bus

[2] IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
		transportation agencies	needed to mitigate potential impacts to their routes. • 1,000/10 year	services to coordinate potential improvements in service delivery for both parties. • 4,000/10 year
		Budget	$804,000 over 10 year period	$907,000 over 10 year period
Maintenance	Address road deterioration issues and defects	Frequency of inspection/ public complaints received	• Regular inspections are completed to meet minimum maintenance standards to identify and address issues like potholes, cracks, and signs of pavement distress. • Residents can submit concerns through the E11 reporting portal and these concerns are addressed by staff • $150,000/10 year	• Supplement existing inspections with road survey technology solutions. • Decrease the number of resident complaints received by 20% • $183,000/10 year
	Prevent paved and surface treated road deterioration	Average annual PCI% decrease for each road segment	• Ditches are maintained to ensure proper flow and eliminate standing water but this work is currently limited by staff resources. • Coldmix asphalt is used to repair potholes. • $1,131,679/10 years	• Increase the budget for ditching by 10% to maintain ditches adjacent to paved and surface treated roads. • Conducting preventive maintenance, including asphalt rejuvenation, pavement sealing, crack sealing, and surface treatments. • Replace coldmix asphalt with recycled hot asphalt for permanent repairing of potholes. • $1,221,896.90/10 years

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	Prevent gravel road deterioration	Number of unpaved road segments that saw a decrease in average surface condition	• Ditches are maintained to ensure proper flow and eliminate standing water but this work is currently limited by staff resources. • Grading is performed as needed and at a minimum 4 times annually • $299,321.00 / 10 years	• Increase the budget for ditching by 10% to maintain ditches adjacent to un-paved roads. • Maintain Current frequency of grading • $305,553.10/10 year
	Maintain transportation system in a safe usable condition	Frequency of maintenance/Response time	• Street sweeping is completed during the spring months to remove winter sand. This year completion of sweeping was delayed due to equipment downtime. • Snow removal is completed on all municipal roads within 12 hours of a significant snowfall. • Downed trees are maintained as identified during road patrols and on a complaint basis. Staff is on call 24/7 to address tree issues. • $2,228,160 /10 years	• Propose to have staff start street sweeping early in the morning working 2 hours overtime to avoid traffic and resident complaints. This will help to ensure sweeping on all municipal roads is completed prior to mid-May and lessen disruption to residents • *No proposed change to snow removal service delivery.* • *No proposed change to vegetation/tree management.* • $2,267,160 / 10 years
		Budget	$3,809,160 over 10 year period	$3,977,609 over 10 year period
Renewal	Planning and implementing of	Budget	• Budget for replacement of	• Budget for replacement of roads

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	paved, surface treated and gravel road renewal projects, such as resurfacing, reconstruction, or widening.		roads based on the forecasts from the 2021 asset management plan • $12,000,000 / 10 years	based on the forecasts determined by the current life cycle model and asset register. • $17,521,729 / 10 years
		Budget	$12,000,000 / 10 years	• $17,521,729 / 10 years
Disposal	Disposal of road assets no longer in use.	Number of assets identified for disposal in the town's strategic plan.	• No disposal activities are forecasted.	• No disposal activities are forecasted.
		Budget	*$0 total over 10 year period*	*$0 total over 10 year period*

Note: * Current activities related to Planned Budget.

** Expected performance related to forecast lifecycle costs.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged that changing circumstances such as technology and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Climate Change	No consideration of the impacts of climate change are considered in the maintenance of the transportation network	Maintenance costs will increase	If additional funding is not allocated the level of service will decrease.	• Evaluate and revise current processes to improve the efficacy of maintenance practices. • Allocate additional funds towards these activities.
Climate Change	No consideration of the impacts of climate change are considered in the replacement of road assets	The usable life of road assets will decrease	The level of service will decrease.	• Build climate change resiliency into newly replaced assets. • Replace assets ahead of schedule to extend useable life and reduce replacement costs in the long-term
Population Growth	A process doesn't currently exist to monitor and forecast the impacts of growth on the road systems	Population will increase slowly	The level of service will decrease slowly over time in relation to population growth.	Establish a process for monitoring and forecasting population growth to proactively plan for required expansion/improvements to the transportation network.
Tourism and Seasonal Variation	Impacts to roads as a result of increased seasonal tourism aren't currently considered.	Improvements to tourism and advertising will increase traffic on roads.	The level of service and minimum maintenance standards will need to be increased to meet demand.	Establish a process for monitoring and forecasting increased traffic due to tourism to proactively plan for required expansion/improvements to the transportation network.

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Regulatory Changes	The process of addressing changing regulations is reactionary.	New regulations related to road safety, environmental sustainability, and accessibility will be introduced	The cost of road asset replacements will increase to meet new regulatory requirements.	Monitor industry and regulatory trends, address anticipated changes proactively prior to the ratification of regulatory requirement.
Public Expectations and Service Levels	Complaints from the public are tracked through an online reporting portal.	As road infrastructure ages the public demand for improvements will increase	The level of service will have to be increased to meet public demand and aging infrastructure.	Citizen surveys should be introduced to determine their expectations and address these proactively before they become a widespread cause of complaints.
Technological Advancements	No consideration of the impacts of technological advancements are considered in the maintenance/renewal of the transportation network.	Advancements in transportation technology, such as electric vehicles (EVs) or autonomous vehicles (AVs) will alter the demands related to the transportation network	The long-term resident expectations will change resulting in a required change to technical levels of service.	• EV charging infrastructure may need to be installed • AVs may require specialized road markings or sensors, leading to changes in asset management strategies.

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Town of Blind River - Transportation network to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.[3]

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

Risk and opportunities identified to date are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Extreme Weather Events	The frequency of extreme weather events in our region is expected to increase.	Direct damage to road infrastructure, including pavement, signage, guardrails, and drainage systems, due to high winds, heavy rainfall, or debris.	• Develop emergency response plans to efficiently address road damage following extreme weather events. • Conduct regular inspections and repairs of transportation system infrastructure. • Use resilient materials and design standards that can withstand extreme weather conditions.
Increased Temperature and Heatwaves	Average summer temperatures are expected to increase	Pavement distress such as rutting, cracking, and accelerated deterioration due to higher temperatures.	• Apply heat-resistant surface treatments or asphalt mixes. • Incorporate climate projections into pavement design
Soil Instability	Precipitation patterns are expected to alter resulting in changes to soil moisture levels resulting in soil instability.	Road closures due to changes in precipitation patterns and soil moisture levels resulting in instability and sink holes.	• Adopt reduced load periods based on the MTO Reduced Load Period Calculator which uses road weather data specific to our area to protect the soil bed of municipal roads during this vulnerable time.
Increased Maintenance Costs	Climate change impacts are expected to result in accelerated deterioration of .	Accelerated deterioration of road infrastructure, requiring more frequent maintenance, repairs, and rehabilitation.	• Integrate climate change considerations into asset management planning. Conduct regular condition assessments and prioritize maintenance based on asset condition and vulnerability. • Use climate-resilient materials and construction techniques to improve durability.

[3] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

			• Explore funding options and partnerships to support increased maintenance needs.
Increased Flooding	Climate change can lead to more intense and frequent rainfall events, resulting in increased flooding.	Damage to road infrastructure, erosion of roadbeds, pavement washouts, and compromised stability of bridges and culverts.	• Implement improved drainage systems, including culverts and ditches, to handle increased water flow. • Elevate vulnerable sections of roads or consider constructing flood-resistant road designs. • Regularly inspect and maintain drainage infrastructure to ensure proper functioning.
Reduced Winter Maintenance Effectiveness	Climate change can alter winter weather patterns, including changes in snowfall, freeze-thaw cycles, and ice formation.	Challenges in winter maintenance due to changes in snowfall, freeze-thaw cycles, and ice formation, resulting in reduced road safety.	• Enhance winter maintenance practices by utilizing advanced weather forecasting technologies. • Optimize salt and sand usage to minimize environmental impacts. • Invest in equipment and resources for effective snow removal and ice control.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Asphalt Roads	Accelerated deterioration	Utilize climate change resilient materials as a part of asphalt road renewals.
Surface Treated Roads	Accelerated deterioration	Utilize climate change resilient and heat resistant surface treatment as a part of surface treated road renewals.

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Town of Blind River - Transportation network plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AM Plan are shown in Table 5.1.1.

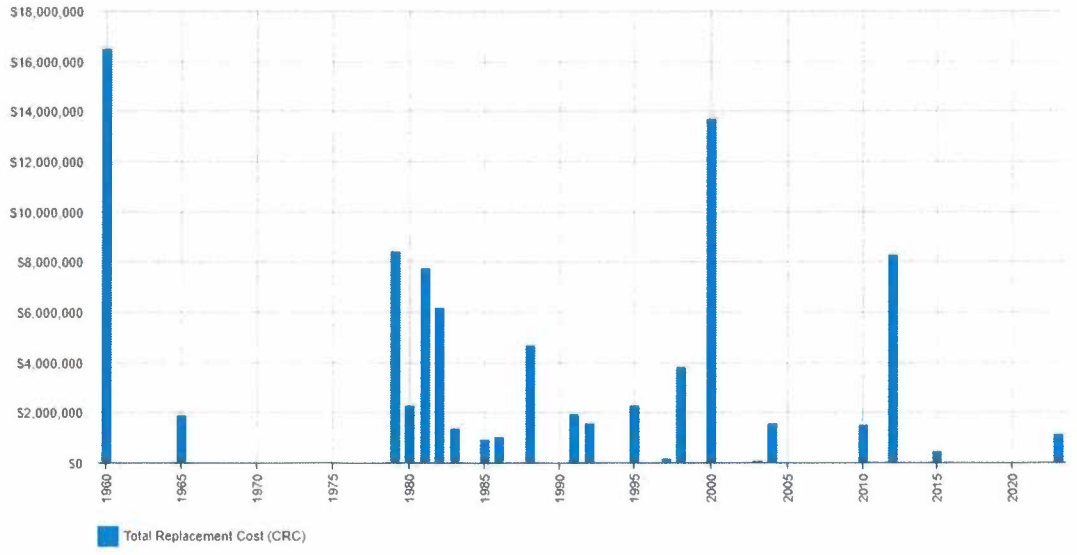
The majority of the Town of Blind River's transportation network is paved roads and the vast majority of replacements costs will be for the replacement of asphalt paved roads.

The age profile of the assets included in this AM Plan are shown in Figure 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value	Average Asset Age
Roads	100, 987.00 m	$188,877,110	43 years
Sidewalks	17, 952.00 m	$1,850,420	43 years
Curbs	5110.90 m	$382,192	43 years
Street Lights	594 each	$955,213	20 years
Street Signs	1,256 each	$323,180	40 years
Bridges	6 each	$8,678,880	19 years
Culverts	3 each	$539,990	28 years
TOTAL		$ 201,606,985	

Table 5.1.1: Road Network Asset Age Summary



All figure values are shown in current day dollars.

The age profile shows a significant investment in transportation network assets in 1960, 2000 and 2012. Periods of significant investment will represent periods of significant required renewal cost as these assets reach the end of their usable life. These renewals do not need to be completed within one year. The renewals

can be spread over a period of years leading to the required renewal/replacement of these assets. This asset management plan has based required renewals on the current assessed condition of assets. Assets can remain in good condition past their estimated usable life through preventative maintenance activities.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there are insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Dawsey Culvert	This culvert has been identified as requiring replacement in the plan period. This culvert is the only connection in the transportation system to northern area of town. Failure of this culvert would greatly reduce access to this area and significantly increase the response time for emergency services to these areas.

The above service deficiencies were identified by road patrol, staff inspection and the annual bridge inspections.

5.1.3 Asset condition

Condition is currently monitored by measuring the pavement condition index (PCI) which is a scale of 0 – 100. Condition is converted to a 1 – 5 grading system[4] as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM Plan results, are translated to a 1 – 5 grading scale for ease of communication. The condition profile of transportation assets is shown in Figure 5.1.3.1 and 5.1.3.2.

Transportation condition ratings and the assessment methodology which supports them can be found in detail in Appendix A.

[4] IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Figure 5.1.3.1: Road Network Asset Condition Profile

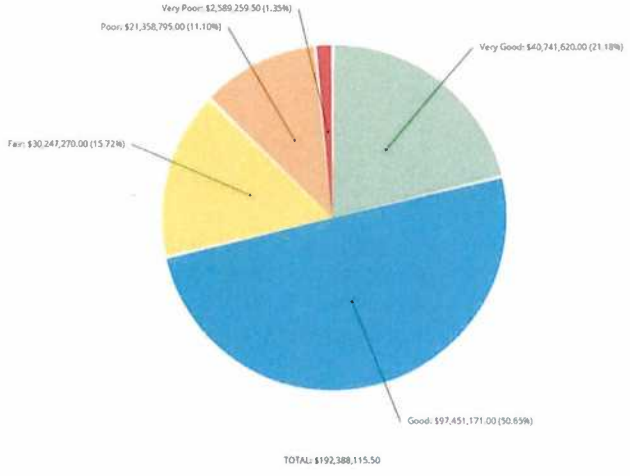
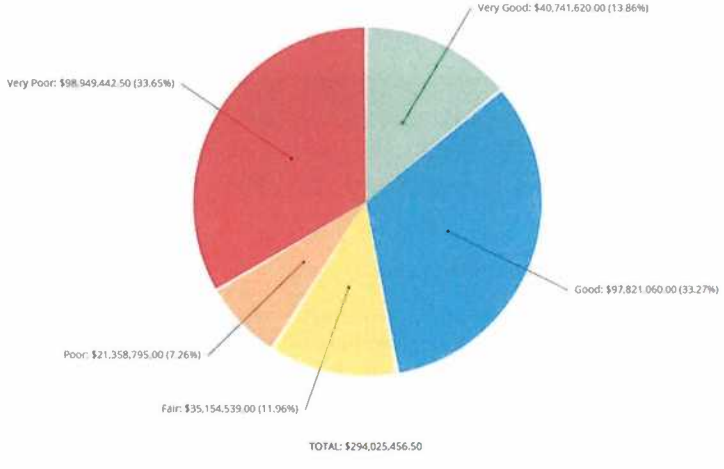


Figure 5.1.3.2: Bridges and Culverts Asset Condition Profile



All figure values are shown in current day dollars.

The majority of assets transportation network assets are currently in good-very good condition. To reduce renewals costs preventative maintenance processes should be introduced to reduce overall renewal costs and extend the usable life of these assets.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets is shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2022	$ 434,070.00
2023	$ 382,450.00
2024	$ 418,250.00

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

Assessment and priority of reactive maintenance is currently undertaken by staff using experience and judgement.

Asset hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for service planning and delivery.

The service hierarchy is shown is Table 5.2.2.

Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Not yet determined	Develop for future iterations of the Transportation network Asset Management Plan

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

The forecasted operation and maintenance costs are not expected to increase based on current day costs as there are no planned acquisitions. These costs will increase due to inflation and related market factors but improvements in efficiency of maintenance and operation processes including the use of new technology are expected to offset this increase. The use of recycled asphalt for pothole repair of paved roads is expected to reduce long term maintenance costs.

Currently preventative maintenance processes like crack sealing and asphalt rejuvenation are not currently being performed. If these processes continue to be deferred the cost of maintenance is expected to increase.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model:

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year)

  OR

- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The town currently uses a combination of both of these methods dependent on the asset class and the robustness of the data available. As our asset management program continues to mature Blind River will fully transition to the use of our asset register to forecast renewals but professional judgement will continue to play a key role in the decision making process.

Typical useful lives of assets were used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on June 14, 2023.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Paved roads (HCB)	20 years
Surface treated roads (LCB)	7 years

The estimates for renewals in this AM Plan were based on an a combination of the asset register and alternate method which forecasted renewals based on PCI, SCI, surface condition assessment and estimated useful life.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- Ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).[5]

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[6]

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Risk	25%

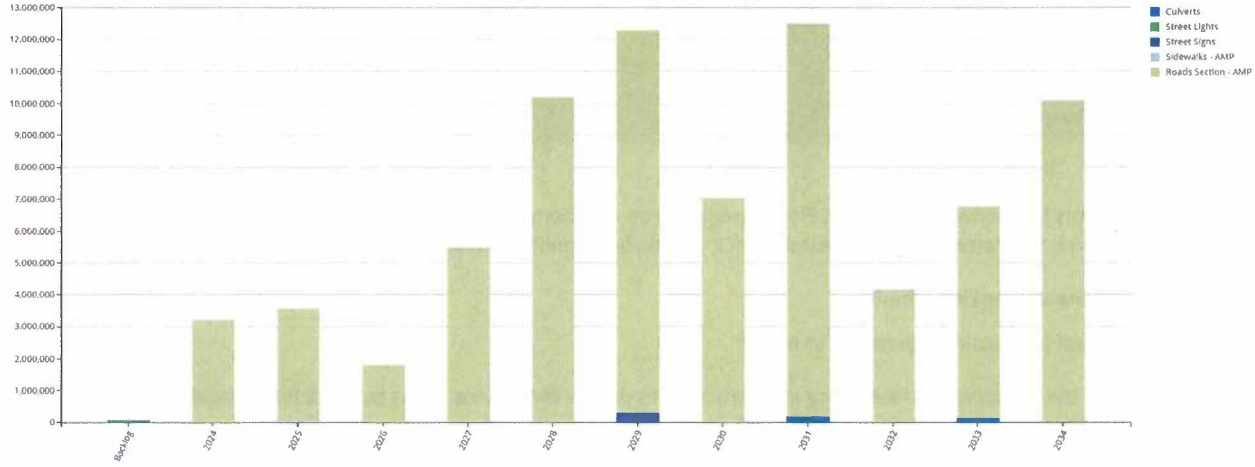
[5] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[6] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Criteria	Weighting
Service Benefit	25%
Financial Benefit	25%
Condition	25%
Total	**100%**

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecasted renewals represent **$72,435,671** during the 10-year planning period or **$7,243,567 annually**.

The forecasted renewals costs are less than what is forecasted using the age-based asset register method. This is a result of some assets being in better condition than what is forecasted by age alone. The planned budget has a spike in renewals 2031 and 2034. There is a significant shortfall of the planned budget with respect to renewals. If this shortfall persists the condition of these assets and the level of service they provide will decline over time.

Deferred renewal (assets identified for renewal and not scheduled in capital works programs) should be included in the risk analysis process in the risk management plan.

5.5 Acquisition Plan

Acquisitions are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Town of Blind River - Transportation network.

5.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and

new works should be reviewed to verify that they are essential to the Town's needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programs. The priority ranking criteria is detailed in Table 5.5.1.

Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Risk	25%
Service Benefit	25%
Financial Benefit	25%
Identified Need	25%
Total	**100%**

Summary of future asset acquisition costs

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity.

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.
No asset acquisitions are forecasted.

There are no forecasted acquisition costs during the plan period.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Any costs or revenue gained from asset disposals are included in the long-term financial plan.
Summary of asset forecast costs

There are no disposals forecasted during the planning period.

5.7 Lifecycle Summary

The total anticipated lifecycle cost including operations, maintenance and renewals is **$7,243,567 annually.** The planned budget is not sufficient to meet the required forecasted costs of maintaining the Town of Blind River transportation network assets. The planned budget is not sufficient to renew the existing roads that are already in poor condition. Under the current budget there is insufficient funds dedicated to the maintenance of roads currently in good condition to extend their usable service life. It is anticipated that there will be a decrease in the levels of service being provided and that risks will increase.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[7].

An assessment of risks[8] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Critical assets are yet to be identified	Unavailable	Unavailable

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets. This is planned to be incorporated into future iterations of the transportation network asset management plan.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

[7] ISO 31000:2009, p 2

[8] Town of Blind River – Risk Management Plan

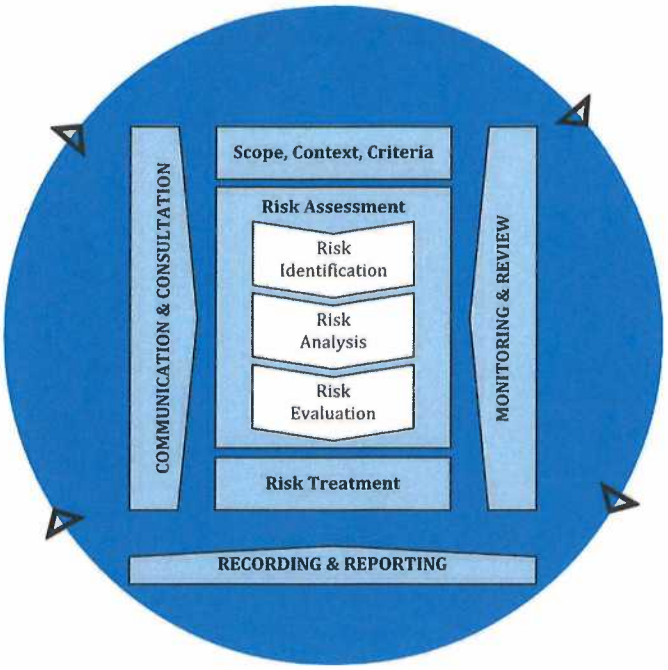


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, the development of a risk rating, the evaluation of the risk and the development of a risk treatment plan for non-acceptable risks.

An assessment of risks[9] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and the Town of Blind River Town Council.

Table 6.2: Risks and Treatment Plan

[9] Town of Blind River – Risk Management Plan

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Paved and Unpaved Roads, Sidewalks	Liability Risk - Legal action taken against the town when an accident or injury occurs	High	Develop a formalized inspection plan ensuring that all roads are inspected at least once per calendar year. These results are to be recorded and reviewed.	Low	15000
Paved and Unpaved Roads, Sidewalks	Liability Risk - Legal action taken against the town when an accident or injury occurs	High	Implementation of an electronic WO system to improve tracking of inspection and mainteance work to ensure accurate and retrievable records.	Low	5000
Paved and Unpaved Roads	Liability Risk - Legal action taken against the town when an accident or injury occurs	High	Development of 5 year forecasted maintenance plans which are reviewed annually and updated as needed.	Low	750
Paved and Unpaved Roads, Sidewalks	Liability Risk - Legal action taken against the town when an accident or injury occurs	High	Implementation of a prioritization plan based on risk after an internal evaluation of current road condition against MTO standards to determine where compliance isn't met.	Low	1000
Paved and Unpaved Roads, Sidewalks	Financial Risk - Underfunding resulting in deferred maintenance and increased repair costs	Very High	Development of a robust asset management plan accurately identifying the infrastructure gap for roads so that the risk of underfunding can be clearly communicated to town council	Medium	30000

Sidewalks	Liability Risk - Legal action taken against the town when an accident or injury occurs	High	Implementation of a prioritization plan based on risk after an internal evaluation of current road condition against MTO standards to determine where compliance isn't met.	Low	1000

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

Resilience recovery planning, financial capacity, climate change risk assessment and crisis leadership.

We do not currently measure our resilience in service delivery. This will be included in future iterations of the AM Plan.

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Implementation of preventative maintenance processes.
- Increase level of service with respect to winter maintenance.
- Meet minimum maintenance standard regulations with respect to paved road maintenance.
- Complete sufficient ditch remediation work to eliminate standing water and maximize all asset lifecycles.
- Complete sufficient inspection of assets to meet upcoming asset management regulatory requirements.

6.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- If forecasted renewal requirements cannot be met, the level of service for users will decline.
- Increased road closures and detours.
- Increase in safety hazards.

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Negative impact to Town of Blind River reputation.
- Increased legal liability for property damage and injury.

- Deteriorating Infrastructure.
- Missed Opportunities for Improvement: Without undertaking necessary maintenance and capital projects, the municipality may miss opportunities for improving the transportation network hindering progress and innovation in the municipality's transportation system.

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AM Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Medium term – 10 year financial planning period

This AM Plan identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is **$7,243,567** average per year.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AM Plan and ideally over the 10 year life of the Long-Term Financial Plan.

7.2 Key Assumptions Made in Financial Forecasts

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM Plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan are:

- **Current replacement costs** of roads were estimated using the following provided by Chris Kirby of Tulloch Engineering.
    - **Road Reconstruction** would be $2,000/m – 600mm new gravel, new asphalt (90mm), remove all existing. 7.5m surface width.
    - **Contingency** – 15% additional.
    - **Engineering (Design & Contract Admin)** – usually in the 10%-12% range, but depends on the project. Surveys, geotechnical, excess soils, design, tendering, CA & inspections.
    - **Surface Treated Roads** – $10.00 sq.m
        - Mill and double layer treatment - $7.35 per sq.m
        - Includes polymer additive - $1.00 per sq.m
        - Includes Fog Seal - $1.15 per sq.m- $10.00 per sq.m
    - **Gravel Road** - Standard road width - does not include cost of ditching, brushing, culverts etc. - $1,325.00/m
    - **Concrete Sidewalk Replacement –** Concrete, minimum width to meet AODA compliance - $550 per sq.m

7.3 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[10] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	C	Based on professional judgement, research, common trends and consultation with other municipalities.
Growth projections	D	Based on Professional judgement
Acquisition forecast	D	Based on Professional judgement
Operation forecast	C	Based on Professional judgement, historical information
Maintenance forecast	C	Based on Professional judgement, historical information
Renewal forecast - Asset values	B	Based on third party condition assessment, collected asset data, internal inspections and professional judgement
- Asset useful lives	D	Based on civil engineering reports, historical data and staff judgement
- Condition modelling	C	Based on third party assessment and internal inspection

[10] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Disposal forecast	D	Based on Professional judgement, historical information

The estimated confidence level for and reliability of data used in this AM Plan is considered to be between low and medium depending on the component of the plan.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[11]

8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is Town of Blind River operating and capital budget and forecasts.

8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is PSD Citywide, NAMS+ and Streetlogix.

8.2 Improvement Plan

It is important that the Town recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Analyze data on accidents on the Town of Blind River maintained roads to improve safety for users.	Director, Public Services	Staff time	3 months
2	Conduct a survey on customer values to align the municipality's service delivery with the values of residents.	Town of Blind River administration staff	Staff time	3 months
3	Identify critical assets	Director, Public Services	Staff time	3 months
4	Measure our resilience in service delivery with respect to transportation network assets	Director, Public Services	Staff time	3 months
5	Componentize the streetlights in asset inventory	Director, Public Services	Staff time and assistance from Citywide staff.	3 months
6	Update useful lives for all transportation system assets	Director, Public Services	Staff time	3 months

8.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition, asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within one year of each Town of Blind River Town council election.

[11] ISO 55000 Refers to this as the Asset Management System

8.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
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- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Town of Blind River Strategic Plan
- Town of Blind River 2024 Operating Budget
- Town of Blind River 2024 Capital Budget
- 2014 Road Needs Analysis – Project No. 14-149, completed by Infrastructure Solutions Inc.
- 2019 Town of Blind River Asset Management Plan, completed by the Town of Blind River

10.0 APPENDICES

10.1 Appendix A

Condition Rating Scale: Roads and Bridges					
Category	Very Good (80-100)	Good (60-79)	Fair (40-59)	Poor (20-39)	Very Poor (0-19)
Roads	Pavement structure is stable with no cracking, no patching, no deformation evident. Streets in this condition are fairly new. Riding qualities are excellent. Nothing would materially improve the condition or service level of the street at this time.	Pavement structure is stable, but may have surface erosion or minor cracking, minor patching and minor deformation. Riding qualities are very good. Some routine maintenance or rejuvenation of the wearing surface is all that is required.	Pavement structure is generally stable with minor areas of structural weakness evident. Cracking is easier to detect. Although riding qualities are good, deformation is more pronounced and easily noticed. Seal coating or nonstructural overlays are required to preserve pavement integrity.	Street has areas of instability, marked evidence of structural deficiency, large crack patterns, alligatoring, heavy and numerous patches, and very noticeable deformation. Riding qualities range from acceptable to poor. Base repair, grinding, and structural overlays may be required.	Cracking and pavement deformation has progressed to the point that pavement is no longer structurally sound. The cost of rehabilitating the existing pavement will likely equal or exceed the cost of complete reconstruction.
Bridges	Minimal, or no defects or maintenance issues noted. No safety concerns identified.	Minor defects and/or maintenance needs identified, e.g., cracks and pot holes with low severity and density. No safety concerns identified.	Moderate repair needs identified; distresses with medium severity and density. Potential minor to moderate safety issues.	Major repairs and defects identified; distresses with medium to high severity and density. Major pedestrian and vehicular safety concerns, including potential trip and fall hazards.	Major repairs needed; distresses with high severity and density. Severe pedestrian and vehicular safety concerns.

Condition Assessment Methodology – Transportation System Assets

Condition Rating Scale: Sidewalks					
Category	Very Good (80-100)	Good (60-79)	Fair (40-59)	Poor (20-39)	Very Poor (0-19)
Sidewalks	New or recent construction; minimal visible distresses identified; minimal weathering of surface, with minimal or no maintenance required Minimal or no distressed or elevated areas between 0-0.5"; primary cross slope ≤2% No more than 10% of sidewalk panels with cracks or spalling of surface, most of which is minor Minimal or no debris/vegetation within sidewalk No ponding Fully functional with minimal observable issues within the pedestrian clearway zone	Some visible distressed, with minor maintenance warranted, e.g., joint and/or crack sealing Limited raised or depressed areas 0-1.0"; minor pop-outs; primary cross slope ≤ 4% and > 2% Up to 20% of panels with cracks and spalling of surface, most of which is minor or moderate Less than 10% of sidewalk covered by debris/vegetation No, or minimal ponding Minor hindrances present within the pedestrian clearway zone Minor reduction in functionality	Distresses, weathering, and aging more evident; surface texturing repairs, partial depth patching, joint repairs, or panel replacements may be warranted Frequent raised or depressed areas 1-2"; primary cross slope ≤ 6% and > 4% Up to 40% of sidewalk panels with cracks or spalling of surface, some of which may be moderate to severe 25% of sidewalk may be covered in debris/vegetation Minor to moderate levels of ponding Noticeable hindrances within the pedestrian clearway zone, particularly to runners, stroller users, and wheelchair users Noticeable limitation in functionality, with some safety concerns	Substantial aging, weathering, and general deterioration of surface, with asset approaching replacement; extensive surface texturing repairs, crack repairs, or panel replacements needed; Frequent raised or depressed areas over 2"; primary cross slope ≤8% and > 6% 40-80% of sidewalk panels with large cracks or severe spalling of surface Moderate to substantial ponding Up to 50% of covered by debris/vegetation; major hindrances to most users Functionality severely compromised; may be unsafe	Reconstruction necessary Frequent raised/depressed areas exceeding 2"; primary cross slope >8% Over 80% severely cracked or with severe spalling of surface Over 80% covered by debris/vegetation Substantial ponding Sidewalk virtually impassible by most users, particularly wheelchair and stroller users; No longer functional in a safe manner

Condition Rating Scale: Curb and Gutter, Signs, Signals, and Streetlights					
Category	Very Good (80-100)	Good (60-79)	Fair (40-59)	Poor (20-39)	Very Poor (0-19)
Curb and Gutter	Newer curb on correct slope and grade. No cracking beyond control joints. No spalls or openings.	On correct slope and grade. Some cracking beyond control joints. No spalls or openings.	On correct slope and grade. Some cracking beyond control joints. Some spalls and openings less than ½ inch.	Some vertical and horizontal move off original grade evident. Some cracking beyond control joints. Some spalls and openings greater than ½ inch.	Some vertical and horizontal movement off original grade with breakage. Cracking, spalling, and openings greater than ½ inch. Areas of curb broken off and/or missing.
Signs	Sign is fully functional and effective in supporting safe pedestrian and vehicular traffic. Relatively new, fully legible, properly oriented, and without any obstructions. Retro reflectivity meets or exceeds standards.	Minor signs of normal wear and weathering due to sunlight and other environmental elements. Remains fully legible, properly oriented, and without obstructions. Reflectivity remains well within standards.	More noticeable signs of wear and weathering due to sunlight and other environmental elements. Potential issues with legibility, orientation, and obstructions. Reflectivity levels approaching minimum standards.	Substantial wear and weathering due to sunlight and other environmental elements. Clear issues with legibility, orientation, and obstructions. Reflectivity may be below minimum levels	Reflectivity below acceptable levels. Sign may require replacement.
Signals	The signal is in new/near new condition. Everything is working properly. Preventive maintenance of the traffic signal cabinet is the major requirement, but examination of the hardware to be sure everything is nominal is the primary preventive maintenance activity for the hardware.	Normally scheduled preventive maintenance will keep the signal operational for the expected design life. Timing should be examined and altered to be sure that it meets the operational needs of the intersection.	The hardware infrastructure needs regular preventive maintenance to keep the signal in operational status. The signal controller is most likely at the end of its useful life, but a change out of the traffic signal cabinet or a partial replacement of the controller is likely to be needed.	The hardware infrastructure is close to the end of its useful design life. Operational failures have increased due to wiring and support hardware problems. Preventive maintenance can't reasonably extend the life much longer.	The hardware infrastructure has reached its intended design life and is in need of replacement. Replacement includes the supporting pole and/or span wire as well as the display hardware and signal wiring.

Condition Rating Scale: Curb and Gutter, Signs, Signals, and Streetlights					
Category	Very Good (80-100)	Good (60-79)	Fair (40-59)	Poor (20-39)	Very Poor (0-19)
Streetlights	The streetlight is in new/near new condition. Everything is working properly. Re-lamping and photocell replacement is the usually the only requirement, but inspection of the pole and control systems should also be performed to confirm that everything is functioning normally.	Scheduled preventive maintenance will keep the streetlight operational for the expected design life.	The luminaire, pole, and control systems require regular preventive maintenance to keep the streetlight in operational status.	The streetlighting system is near to the end of operational design life. Failures have increased due to luminaire, wiring, poles, and/or control system problems. Preventive maintenance will not reasonably extend the life much longer.	The entire streetlighting infrastructure has reached its intended design life and is in need of replacement. Replacement includes the luminaire, supporting arm, pole, wiring, and control systems.

Blind River

TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN

DRINKING WATER SYSTEM

Chris Zagar
Director of Public Services

Document Control		Asset Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	December 2024	Initial Plan	C. Zagar	K. Scott/S. Dent	Council

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 10 year planning period. In the future, the AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Town of Blind River's water distribution system serves a population of approximately 2,500 residents

Table 1.2 Drinking Water Assets

Asset Segment	Asset Count	2024 Replacement Cost ($)
Control Valves	1,212 each	$3,277,186
Hydrants	197 each	$2,557,179
Service Leads	8,536 m	$15,730,290
Treatment Plant	1 each	$16,379,090
Valve Box	1,196 each	$451,500
Water Mains	34,131 m	$100,957,121
Water Treatment Equipment	17.00	$475,232.00
Water Well	5	$2,064,740.00

The above infrastructure assets have replacement value estimated at $141,894,208.00.

1.3 Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of water assets.
- Increased replacement costs.
- Disruption to water service for residents

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in a required increased level of service for water assets.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Drinking water assets are scheduled for replacement after 60 years of service to minimize repairs costs and asset failure. This timeframe can be extended or reduced based on condition assessments.

- Replacements of water assets are completed in conjunction with the replacements of roads, and other underground services.
- Water assets due for replacement will undergo a needs analysis to determine if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Fleet Assets is estimated as **$91,229,790** or **$ 9,122,979** on average per year. However, the Drinking Waster System Asset Management Policy directs the staff to investigate the following factors before deciding on DWS asset replacements:

- The number of historical water lines breaks
- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

1.6 Financial Summary

1.6.1 What we will do

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

Figure 1.6 Forecast Lifecycle Costs

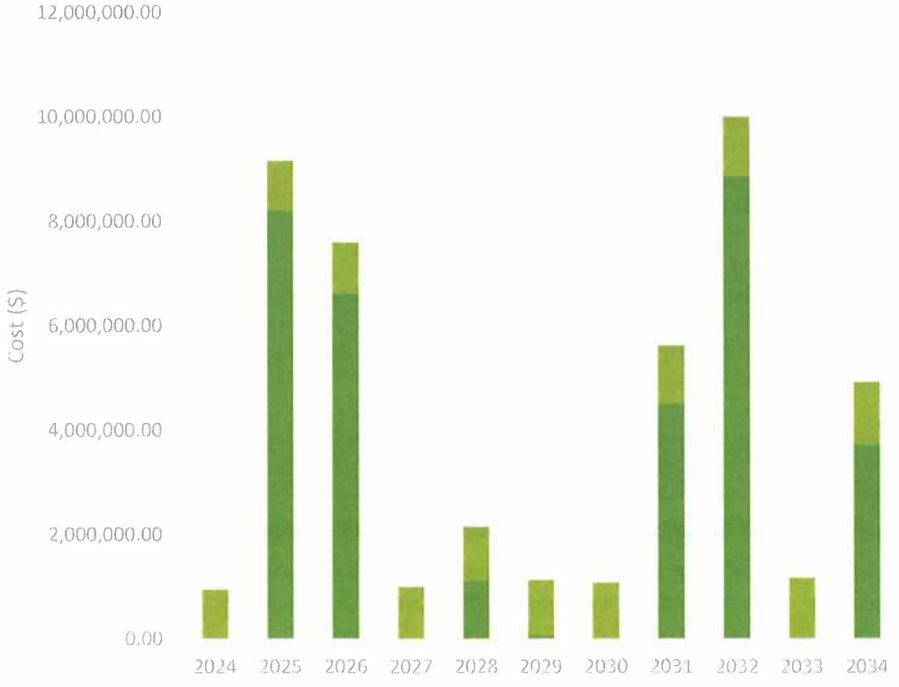


Figure Values are in current dollars.

We plan to provide water asset services for approximately 2,500 residents:

- Maintenance and operation of drinking water assets to ensure clean and safe drinking water is supplied to residents.
- Replacement of drinking water assets before their end of usable life to prevent failure and disruption to the drinking water service
- **The cost of this service is $91,229,790.00 within the 10 year planning period.**

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Replacement of backlogged drinking water assets which have exceeded their usable life
- Forecasted replacement of assets which will reach the end of their usable life during the planning period.

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Reduction in the drinking water service capacity due to insufficient raw water supply caused by gaining wells.
- Disruption of drinking water service to residents due to the break of critical supply mains.
- Loss of water treatment capability due to the loss of critical treatment process components.

We will endeavour to manage these risks within available funding by:

- Completing the Pure Huron project to switch to Lake Huron as our primary water source.
- Rehabilitation of wells as necessary to provide sufficient capacity until the transition to the new water source is complete.
- Prioritization of the replacement of critical supply mains to minimize potential disruption of service to residents.

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Service levels during the planning period will remain consistent with current levels.
- Future budgets will remain close to current funding levels.

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The asset register and was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a low to medium level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Complete rebuild of the water asset register to include material type and GIS information related to water assets.

- Development of a condition assessment tool which will account for the condition of the road surface and other underground assets to prioritize full road reconstructions.
- Modify the estimated useable life of water mains to account for condition to further refine the age based condition assessments.

2.0 Introduction

2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Town of Blind River planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- 2024 Planned Budget

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this AM Plan includes all drinking water system (DWS) assets utilized by the Public Services department. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

These assets are used to provide safe potable drinking water to the residents of Blind River.

The infrastructure assets included in this plan have a total replacement value of $142,864,208.

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Council	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service sustainable.
Clerk's Department	■ Provide leadership with imbedding asset management practices across the organization. ■ Evaluate that adequate resources are available for development and implementation of AM initiatives ■ Ensure consistency of asset management approaches across the Town's Services Areas ■ Approve future plan revisions ■ Suggest budgetary, property tax/rate and Infrastructure Levy to Council.
Management Team	■ Recommends project selection criteria and weightings to Council.
PUC Staff/Public Works Staff	■ Report asset deficiencies and condition through routine inspection and preventative maintenance. ■ Provide replacement recommendations based on condition.

2.2 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a future Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated. This is planned to be developed in 2025.

Key elements of the planning framework are

- State of Local Infrastructure – current condition at the Town and replacement value of DWS assets
- Levels of Service and continuous improvement– specifies the services and levels of service to be provided
- Asset Management Strategies like risk, disposal, lifecycle, and future demand and how this will impact on future service delivery and managing existing and future assets at defined levels of service
- Continuous Improvement and Monitoring – how the plan can be continuously improved and then monitored to ensure objectives are met. This also includes increasing the asset management maturity, identifying emerging technologies like new more resilient materials.

Other references to the benefits, fundamentals principles and objectives of asset management are:

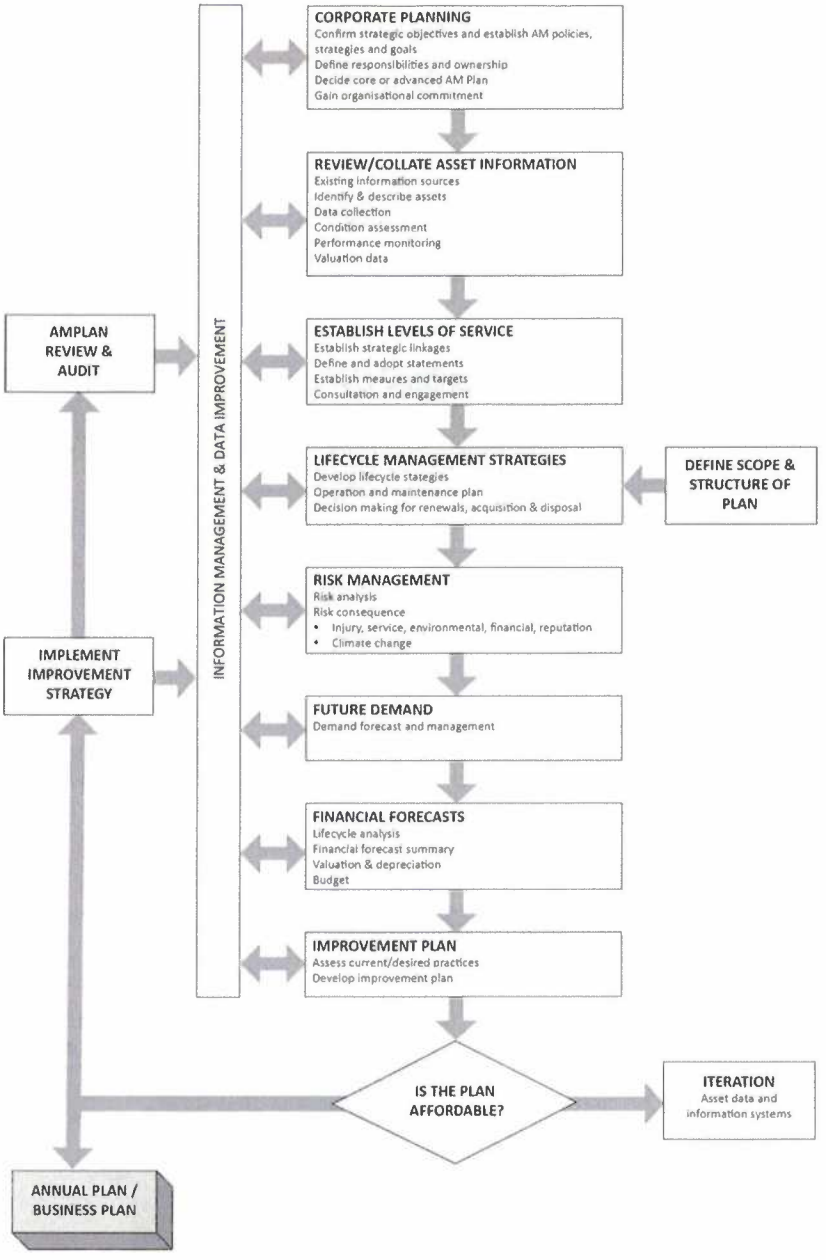
- ISO 55000[1]

A road map for preparing an AM Plan is shown below.

[1] ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 STATE OF THE INFRASTRUCTURE

3.1 Asset Inventory and Valuation

Table 3.2 and Figure 3.2 below present the drinking water asset inventory in terms of 2024 replacement costs. All asset inventories originated from the town's GIS which houses information related to location, materials, installation year, quantities etc. Table 2.1 below provides the replacement cost of each asset presented in this AMP. These were provided by Tulloch engineering based on update construction costs from projects which have taken place in 2024.

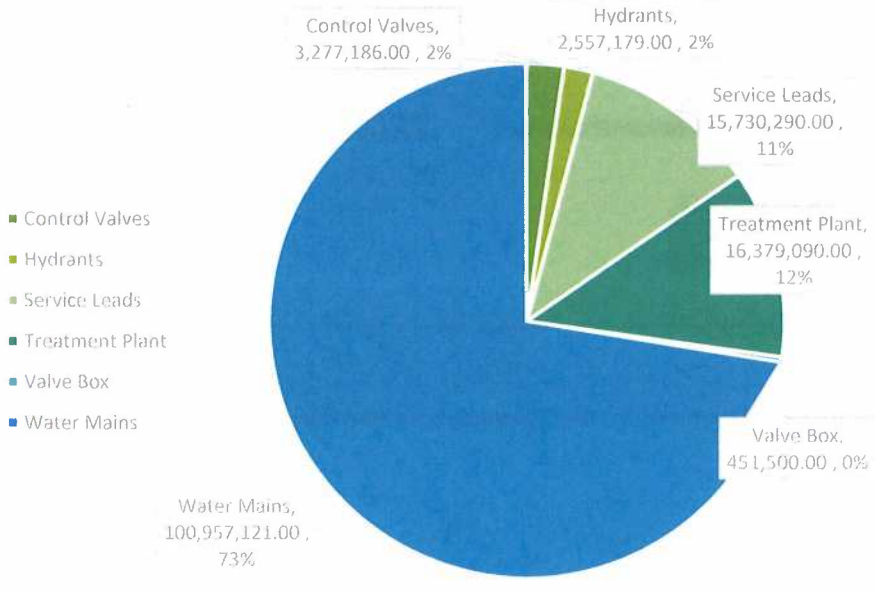
The Town has 4,665 water assets which are maintained by Public Works and PUC which is contracted on behalf of the Town of Blind River. The water assets are broken down into their respective components. This categorization will be used in water system asset management planning and replacement forecasts.

Table 3.2 Drinking Water Assets

Asset Segment	Asset Count	2024 Replacement Cost ($)
Control Valves	1,212 each	$3,277,186
Hydrants	197 each	$2,557,179
Service Leads	8,536 m	$15,730,290
Treatment Plant	1 each	$16,379,090
Valve Box	1,196 each	$451,500
Water Mains	34,131 m	$100,957,121
Water Treatment Equipment	17.00	$475,232.00
Water Well	5	$2,064,740.00

As presented in Table 3.2, watermains are the most valuable assets covered in the Drinking Water System, making up 73% of the total inventory value. There is approximately 34 km of watermains which are owned and operated by the municipality. Table 3.2 also includes the financial valuation for each asset category. These values are based on the cost of replacement and installation at 2024 costs. Figure 3.2 illustrates the value distribution of drinking water assets.

Figure 3.2 Drinking Water Assets Replacement Cost Distribution



3.2 Asset Capacity and Performance

Different asset classes have different design standards that the Town of Blind River must adhere to. Over time these standards improve – for example minimum water service size is now 25mm and lead is no longer permitted for new installations. Services are replaced to meet these updated standards as part of larger reconstruction projects. There are also areas that will require bleeder systems for water quality. A pressures optimization projects is also planned for the medium-term future.

Currently, the largest issue affecting the drinking water system is the lack of raw water capacity which is provided by the current wells.

3.3 Asset Age

Asset age is an important factor in determining condition of some assets as well as when lifecycle interventions are necessary. For example, at the Town of Blind River, water mains are currently replaced when the begin to show signs of failure. A ductile iron watermain has an estimated usable life of approximately 50 years. In the future, we plan to replace water main assets based on the estimated usable life before the asset begins to fail. This approach will allow the municipality to plan the replacement of water assets proactively avoiding costly emergency replacements and repairs.

For drinking water asset categories, age can be used as a proxy for condition where visual condition data is unavailable. For example, visual condition data is difficult and costly to collect for water distribution mains since they are pressurized, small in diameter, and carry potable water which causes concern for contamination. As an alternative, the Public Services department plans to has develop a Condition Analysis Tool (CAT) to estimate the condition of watermains that considers age in combination with material, break history, lead services, shallow infrastructure, frozen services, criticality, and risk.

The series of figures on the following pages provides installation profiles in terms of 2024 replacement costs for watermains, valves, hydrants, and valve boxes and service leads. The transition from cast iron to ductile iron to the current best practice of PVC can be seen through the decades, as well as times when significant investments. Those pipes installed in the 50s, 60s and 70s and the 80s are now more than halfway through their useful lives and may be beginning to deteriorate, resulting in large investments required in the coming years to replace or rehabilitate them.

Valves and hydrants follow a very similar installation profile to each other, with increasing investments decade over decade. Water meters currently aren't captured within the plan but this data will be included in future iterations of the plan.

The average age of all water assets is 44 years. The water asset age distribution is shown in Figure 3.3.1.

Figure 3.3.1 Water Asset Age Distribution

3.4 Asset Condition Profile

The following figures present the current condition of the Water Utility infrastructure in terms of 2024 replacement costs. Condition was determined for watermains using based on the matieral and age of the watermain. In the future, this condition assessment will be further refined with the development of a Condition Analysis Tool which considers age, material, break history, risk, and criticality to calculate a condition score from 1 – 5. This information will be used in conjunction with the history of frozen services and shallow mains to determine condition and prioritize replacement.

In combination with condition scores for water, sanitary, storm and roads; these condition scores play an important role in determining when and where full reconstruction projects should take place and help inform the 10-year Capital Budget. Since hydrants are generally replaced at the same time as watermains, it was assumed that their condition is the same as the mains they are associated with in the asset register.

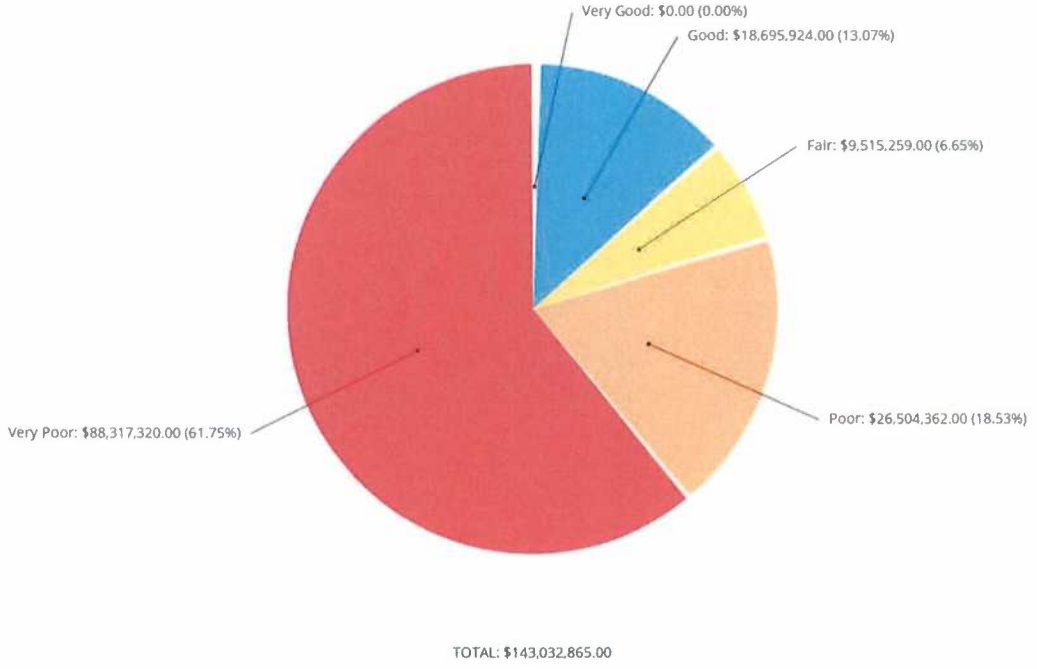
Instances where this would not necessarily apply would be with the replacement of a hydrant that was struck by a vehicle or severely damaged in some other fashion.

Condition of water assets is determined based on their age and estimated remaining service life. Table 3.4 illustrates the relationship between remaining service life% and condition rating. In 2026, the contractor managing the town's water treatment system will be completing a water system leak analysis which will provide additional quantitative condition data.

Figure 3.4.1 Water Asset Age Distribution

The average condition of DWS assets is 1 out of 5 or very poor. The distribution of water asset condition is shown in Figure 3.4.2.

Figure 3.4.2 Water Asset Age Distribution



As seen in figure 3.4.2 the town's water assets are in poor condition. There has been significant infrastructure reinvestment in the last few years which involved water main replacement. These segments would have be renewed to 'Very Good' condition as a result of recent construction but due to a technical issue with out asset register we were unable to update those assets for this iteration of the plan. These recent replacements will be reflected in the 2025 drinking water AMP.

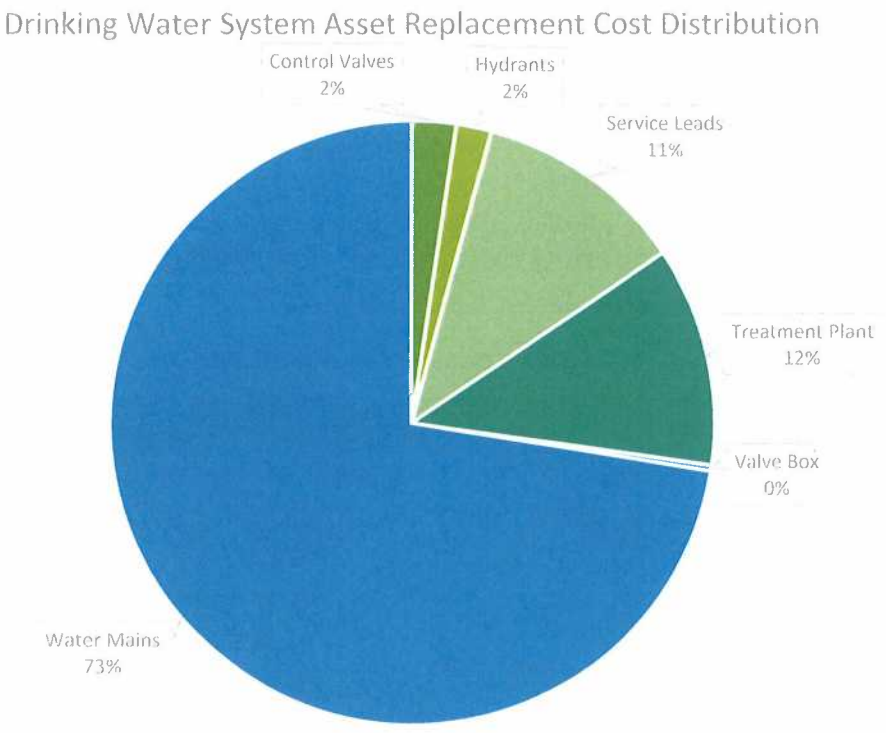
3.5 Forecasted Asset Replacements

The total replacement cost of the DWS assets is **$ 141,892,338.** The forecasted replacement costs during the 10-year planning period of the DWS Asset Management Plan are $ 88,085,481 or $8,808,548 annually over the planning period.

In addition to the forecasted replacements there is significant backlog of water assets which have excessed their estimated usable life. These are water assets that should have been replaced in the past but were deferred. The value of the replacement backlog is $58,094,949. It is not feasible to renew the backlogged assets in a single year but these assets should be added to future capital investment to prevent imminent failure. The annual cost over the planned period to service the backlogged asset replacements alone is approximately 5,800,000.

To begin to replace backlogged assets and those forecasted the annual capital budget requirement required would be $9,122,979. These forecasted replacements are displayed in Figure 3.5

Figure 3.5 Fleet Asset Replacement Forecast Distribution by Department



4.0 LEVELS OF SERVICE

4.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Blind River Town Council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Blind River Town Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

4.2 Understand your customers

The Customer is defined as those who use or are impacted by activities associated with providing the DWS services. The customer base for water services is Blind River residents and businesses.

Table 4.2.1 gives a snapshot of stakeholders and customer groups.

Table 4.2.1: Customer Groups and Stakeholders

Stakeholder	*Customer Groups*
Service Users	Blind River Residents
Regulatory Bodies	■ Ministry of the Environment, Conservation and Parks ■ Algoma Public Health ■ Ontario Clean Water Agency
External Stakeholders	Council

4.3 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Town of Blind River vision, mission, goals and objectives.

Our vision is:

Driven by extraordinary volunteers and supported by its community leaders, Blind River is a vibrant and prosperous town that has established itself as a year-round destination and ideal community is which to live and do business.

Our mission is:

Providing quality services and leadership that reflect the social, cultural, environmental and economic needs of the community, while creating regional partnerships and managing resources in a fiscally responsible manner.

Strategic goals have been set by the Town of Blind River Asset Management Strategy. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Good Governance	Ensure the Town maintains the Levels of Service for drinking water assets	Routine inspection and maintenance of water assets in compliance with all regulatory requirements.
Environmental Sustainability	Lead in promoting and preserving our unique physical environment	Endeavour to maintain an environmentally conscious water operations and promote sustainable water usage.

4.4 Legislative Requirements

There are a number of legislative requirements that govern the levels of service provided for the drinking water system. A summary of these is listed in table 4.2.

Table 4.2: Legislated Requirements

Legislation	Requirement
O. Reg. 588/17: ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE	These regulations outline the requirements for the following with respect to municipal road systems: • Inventory and Condition Assessment • Performance Monitoring and Reporting • Lifecycle Planning and Asset Valuation • Risk Assessment and Mitigation • Financial Planning and Budgeting • Stakeholder Engagement and Communication • Continuous Improvement and Review
Safe Drinking Water Act, 2002 (SDWA)	Sets the framework for ensuring the quality of drinking water, requiring regular testing, licensing of drinking water systems, and operator certifications.
Ontario Water Resources Act	Regulates water resource management, including permits for taking water.
Ontario Regulation 170/03: Drinking Water Systems	• Regular testing for microbiological, chemical, and radiological parameters. • Maintenance of treatment equipment and infrastructure. • Reporting of adverse water quality incidents to the Ministry of the Environment, Conservation and Parks (MECP).
Ontario Regulation 169/03: Ontario Drinking Water Quality Standards	Establishes the maximum acceptable concentration (MAC) limits for contaminants in drinking water.
Ontario Regulation 128/04: Certification of Drinking Water System Operators and Water Quality Analysts	Operators must pass certification exams and participate in ongoing professional development.
Clean Water Act, 2006	• Requires development of Source Protection Plans for watersheds. • Identifies and mitigates threats to water sources (e.g., agricultural runoff, industrial pollution).

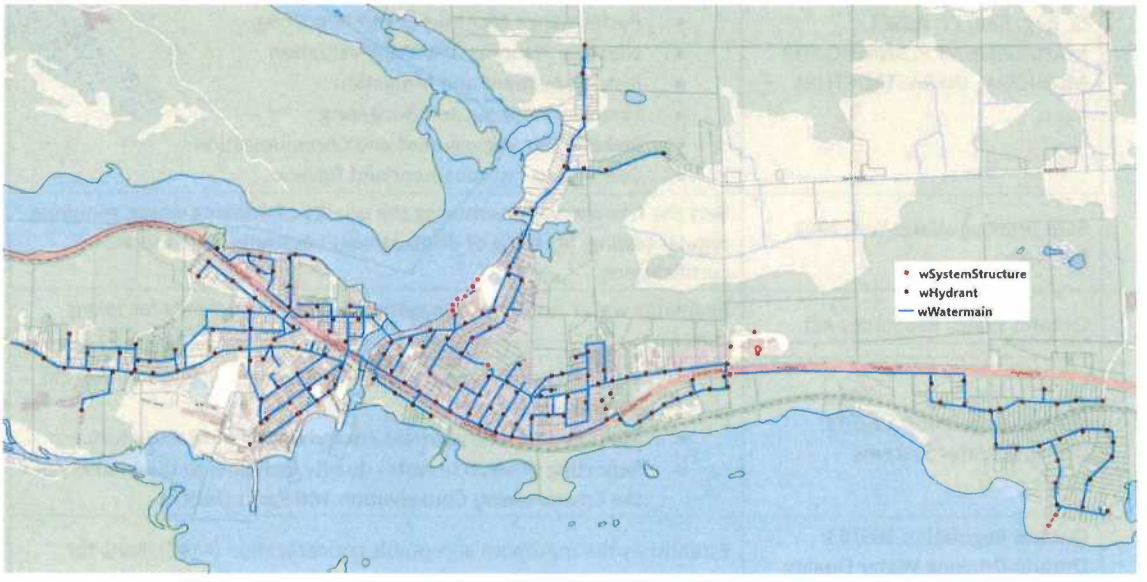
4.5 Community Levels of Service

O.Reg 588/17 – Asset Management Planning for Municipal Infrastructure defines levels of service for core infrastructure classes that must be measured and reported on by all municipalities. Table 4.5.1 and Table 4.5.2 outline those that are included for water assets, adapted from Table 1 in the legislation.

Table 4.5.1: Community Level of Service Measures

Service Attribute	Customer Levels of Service	Current Performance
Scope	Description which may include maps of the user groups are areas of the municipality that are connected to the municipal water system.	See Figure 4.5
Scope	Description, which may include maps, of the user groups or areas of the municipality that have fire flow	All properties on the water system have fire flow available.
Reliability	Description of boil water advisories and service interruptions	No boil water advisories were required to be issued in 2024.

Table 4.5: Water System Service Area



4.6 Technical Levels of Service

Technical Levels of Service – To deliver on the Community Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical Levels of Service apply to internal stakeholders such as staff, or senior management. The Technical LOS (Levels of Service) description is a brief statement summarizing measures related to operation and maintenance of an asset.

Levels of Service for the DWS are the financial sustainability of operating and maintenance (O&M) costs and renewals in the system. The measures are important from the Town's perspective as it aims to understand the cost of the DWS growth and hence the corresponding increase in operations and maintenance cost.

The renewals in the DWS will help Council and Management to understand the resource capacity DWS assets. Also, for the DWS assets to be in a state of good repair, it is important for the staff to know forecasted replacement levels.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

Table 4.7 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 4.5.2: Technical Level of Service Measures

Service Attribute	Technical Level of Service	Current Performance
Scope	% of properties connected to the municipal water system	66%
	% of properties where fire flow is available	100%
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
	# 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 (Reported as total # of main breaks)	2

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

5.0 FUTURE DEMAND

5.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc. Demand drivers affecting DWS are generally triggered by growth in the Town services or responsibilities, technological changes, economic factors and, environmental awareness, etc. Growth in the Town and construction of new housing will trigger a growth in the drinking water system.

5.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

5.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 5.3.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 5.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 5.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Climate Change	No consideration of the impacts of climate change are currently considered in future demand of the drinking water system.	N/A	N/A	N/A
Population Growth	A process doesn't currently exist to monitor and forecast the impacts of growth on service delivery.	Population will increase slowly	The level of service will decrease slowly over time in relation to population growth.	Establish a process for monitoring and forecasting population growth to proactively plan for required expansion of drinking water network
Regulatory Changes	The process of addressing changing regulations proactive.	New regulations related to drinking water will be introduced.	The cost of operation and maintenance of drinking water assets will increase to meet new regulatory requirements.	Monitor industry and regulatory trends, address anticipated changes proactively prior to the ratification of regulatory requirement.

5.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Town of Blind River to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the future long-term financial plan.

5.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

Additionally, the way in which we construct new assets should recognize that there is opportunity to build in resilience to climate change impacts. Climate-resilient assets can accommodate or quickly recover from disruptions caused by severe climate events or chronic climate stresses, reducing the likelihood of a damaging or irreversible impact. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP. The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

5.6 Climate Change Impacts

Climate change impacts specific to the municipality of Blind River and surrounding areas include more extreme weather events and warmer temperatures in the winter. More warm periods through the winter months can result in more frequent and intense freeze/thaw cycles, which can lead to an increase in watermain breaks due to expansion/contraction underground.

Watermains are also more likely to break following colder winters. Relatively cold winters are reflected in the number of breaks that occurred over the winter months, which are much higher than warmer years. Looking to specific months also reveals the influence of temperature on watermain breaks. Recent warmer winters have resulted in a reduction of water main breaks in 2023 and 2024.

6.0 LIFECYCLE MANAGEMENT PLAN

6.1 Lifecycle Management Activities

The lifecycle management plan discussed in the following subsections are the activities undertaken by the Town of Blind River to uphold the levels of service presented in Section 4. These activities can include plan or unplanned work that is done to ensure the water distribution system can meet the demands and expectations of customers. When planned for and executed well, these activities can save money and extend the useful life of an asset.

Different municipalities use different terms to categorize these activities. Table 6.1 below is how Town of Blind River has chosen to define them for water assets. This table also provides examples specific to the Water Utility as well as their average costs from 2020-2024.

Table 6.1: Lifecycle Management Activities

Lifecycle Management Activity	Definition	Examples	5-Year Average Costs
Operations/Maintenance	Regularly scheduled inspections and maintenance or repairs associated with unexpected events.	■ Unidirectional flushing in Spring and Fall ■ Valve cycling program (1/5 of valves annually) ■ Preventative maintenance ■ Hydrant Flow Testing (every 5 years) ■ Hydrant Flushing and inspection ■ Leak detection survey (TBD) ■ Hydrant inspection in the spring and fall including winterization.	$ 919,375.00
Renewal/Replacement	Significant repairs to extend the life of an asset. This includes a replacement of an asset at end of life but does no accommodate a change in service.	■ Valve replacement ■ Watermain replacement ■ Hydrant Replacement ■ Well rehabilitation	$570,300
Acquisition	Activities related to expand the drinking water services network.	■ New development	$0
Disposal	Activities associated with the decommissioning of segments within the drinking water system.	■ No planned decommissioning events	$0

Non-infrastructure Solutions	Actions or policies that lower costs, extend the life of an asset or identify asset needs.	■ Water break reporting process ■ Future revision of water fee structure to encourage large consumers to reduce their consumption.	$0

6.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 6.2.

Table 6.2: Known Service Performance Deficiencies

Asset	Service Deficiency
Water Wells	The water wells have been declining in capacity for years and will soon no longer be able to meet the raw water demands of the system.
GAC Filter	The GAC filter used in the water treatment process to remove organics is longer effective at lower total organic carbon in the water being treated.

The above service deficiencies were identified from the review of water quality and production reports as well as the results of recent well rehabilitation work.

6.3 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets is shown in Table 6.3.1.

Table 6.3.1: Maintenance Budget Trends

Year	Maintenance Budget $
2020	$ 937,500.00
2021	$ 930,075.00
2022	$ 867,250.00
2023	$ 906,500.00
2024	$ 955,550.00

The 5-year average operating budget for DWS maintenance is $ 919,375.00. Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels.

Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Risk Management section of this plan.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

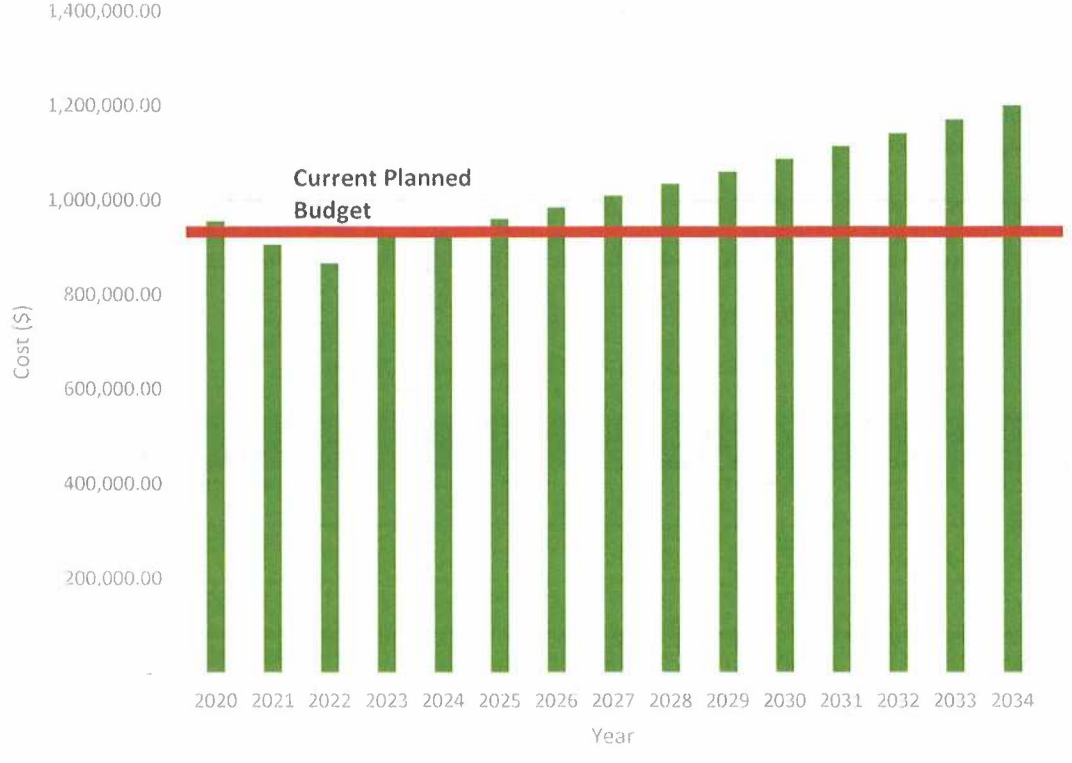
Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the water assets. If additional water assets are acquired, the future operations and maintenance costs are forecasted to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease.

We have seen an approximate negligible change in maintenance despite increased in costs due to inflation and fuel over the last 5 years. This is in part due to a large portion of water system maintenance being performed by PUC staff as part of a long-term contract. An increase in O&M costs is expected to occur when these contracts are renegotiated. In the last year this inflation has normalized to roughly 2.5%[2]. The water system is not expected to see growth over the ten-year planning period so the forecast operation and maintenance costs were based on current inflation rates alone.

Figure 6.2.1 shows the forecast operations and maintenance costs based on proposed operations and maintenance planned budget. The figure shows the total operations and maintenance costs with an increase of 2.5% increase in costs which should be reflective of rising O&M costs, fuel, and costs associated with the expansion of DWS for the next 10 years.

Figure 6.3.1: Operations and Maintenance Summary



[2] Statista Research Department, & 4, D. (2024). Canada: inflation rate and bank rate monthly 2024. Retrieved from https://www.statista.com/statistics/1312251/canada-inflation-rate-bank-rate-monthly/#:~:text=Canada's%20inflation%20rate%20and%20bank,2.5%20percent%20by%20October%202024.

All figure values are shown in current day dollars.

6.4 Maintenance Activities

Maintenance activities are those that maintain the current level of service provided by an asset. These activities ensure that the DWS is reliable and consistently delivers clean, high quality drinking water.

Activities employed under the Public Services Department include a watermain cleaning program, valve operating and various inspections. The watermain cleaning program aids in removing iron and general sediment build up in watermains, naturally occurring in the water supply in Blind River. This sort of work can help limit the number of water quality complaints associated with colour and/or taste. The Town's valve operating program ensures valves are functioning properly, helping to prevent the possibility of prolonged and expanded service interruptions in the event of a watermain break or planned shutdowns.
Other activities include hydrant maintenance and inspections, watermain break response and repairs, and investigations such as those required when a complaint is made regarding water pressure.

6.5 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Linear water infrastructure is planned for replacement in the 10-year capital forecast. Watermain replacements are done as either full reconstruction projects or water only replacement projects.

Full reconstructions include the replacement of water infrastructure along with storm, sanitary and the overlying road. In the near future, these projects are planned according to combined condition scores for all the asset classes in a particular section of road (water – 30%, sanitary – 35%, storm – 20%, roads – 10%).

These scores will be determined using a Condition Analysis Tool (CAT) developed by the Public Services department. This tool will help move away from strictly age-based decision making to a more holistic approach. When a full reconstruction occurs, costs are shared between the three utilities (water – 31%, sanitary – 46%, storm – 23%). The water portion of the costs includes the replacement of watermains, valves, hydrants and a portion of the costs associated with road reconstruction. In areas where the water infrastructure is in poor condition but sanitary and storm remains in good condition, water only replacement projects may be scheduled. The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 6.4. Asset useful lives were last reviewed on December 2024.

Table 6.4: Useful Lives of Assets

Asset (Sub)Category	Useful life
Hydrants	Same as associated water main
Valves	60 years
Water Mains (Iron or Ductile Iron)	60 years
Watermains (PCV or HDPE)	100 years

The estimates for renewals in this AM Plan were based on the asset register the town maintains in PSD Citywide. The asset register currently lacks material information for watermains and the majority of water main assets in the municipality are iron or ductile iron. To adjust for this replacement forecasts in this plan were calculated based on the assumption that the useful life for all existing water main assets is 60 years.

6.6 Summary of future renewal costs

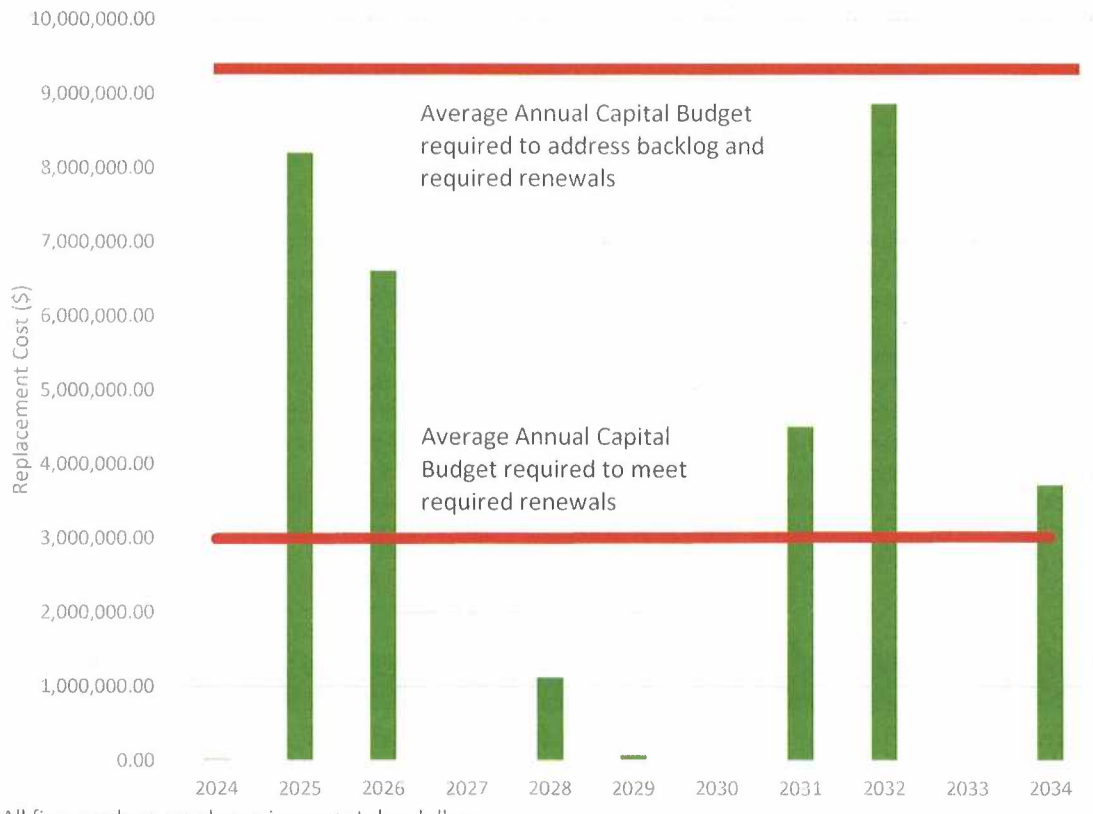
The total replacement cost of the DWS assets is $141,894,208.00. The forecasted replacement costs during the

10-year planning period of the Fleet Asset Management Plan are $33,134,181.00 or 3,134,181 annually over the planning period.

In addition to the forecasted replacements there is significant backlog of water assets which have excessed their estimated usable life. These are water assets that should have been replaced in the past but were deferred. The value of the replacement backlog is $58,094,949. It is not feasible to renew the backlogged assets in a single year but these assets should be added to future capital investment to prevent imminent failure. The annual cost over the planned period to service the backlogged asset replacements is approximately 5,800,000.

To begin to replace backlogged assets and those forecasted the annual capital budget requirement required would be $9,122,979. Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 6.6.

Figure 6.6: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecast renewals vary significantly from year to year with 2025, 2026 and 2032 being very high years of reinvestment.

Recommended best practice would be to adjust the capital budget to meet the forecasted annual requirement during the planned period to address the infrastructure backlog and planned renewals evenly throughout the planned period.

6.7 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs.

There are no acquisitions planned for DWS assets at the current time. In 2026, increased to services may be proposed when the proposed service levels are completed. DWS asset acquisitions may be required to meet the increased levels of service and the proposed budget will need to be increased to reflect these changes.

6.8 Disposal Plan

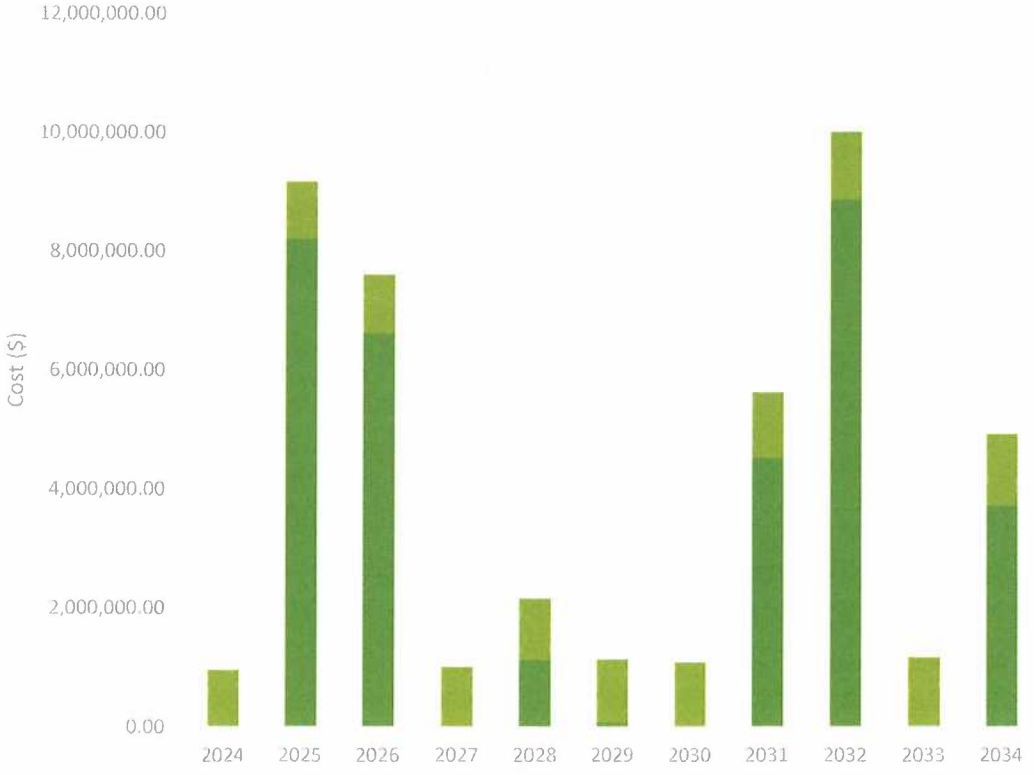
Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. There are currently no assets identified for possible decommissioning and disposal.

6.9 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 6.8.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 6.8.1: Lifecycle Summary



All figure values are shown in current day dollars.

The planned annual budget for water assets will need to meet requirements of the future lifecycle forecasts for these assets to maintain the current level of service that these assets provide to the municipality and the departments who use them. The average annual reinvestment to meet replacements, operation and maintenance costs is $ 9,122,979. The current budget is insufficient to meet the total lifecycle costs of water assets during the planned period.

7.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

7.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 7.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 7.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Water Source - Wells	Well capacity falls too low to provide sufficient raw water to meet treatment requirements.	Usage restrictions placed on the water service. Failure to meet demand.
Treatment Facility	Failure of critical components required for treatment.	Temporary loss of drinking water service.
Critical main break	Main break on sections of main supplying areas without dual supply.	Loss of capability to provide Emergency Services

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

7.2 Risk Assessment

The risk management process used is shown in Figure 7.2.1 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

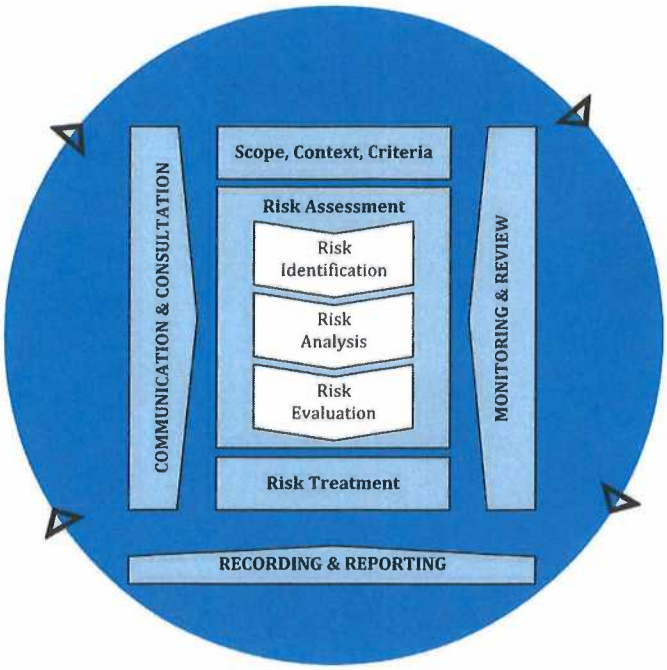


Fig 7.2.1 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

The Town's Asset Management Risk Strategy provides a detailed description of consequence and risk scores which have been incorporated into the Town's Asset Management technology; Citywide. The probability of failure is based on the condition of the assets shown in Figure 7.2.2. The consequence of failure helps in determining the impact if failure does occur as shown in Figure7.2.3. The consequence and probability together provide risk scores for each of the DWS assets. Figure 7.2.4 is the risk matrix for the Town.

Table 7.2.2 Probability of Failure Model

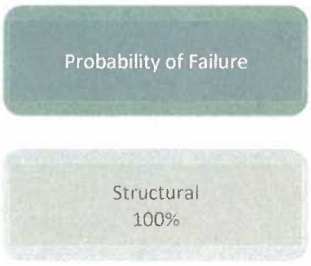
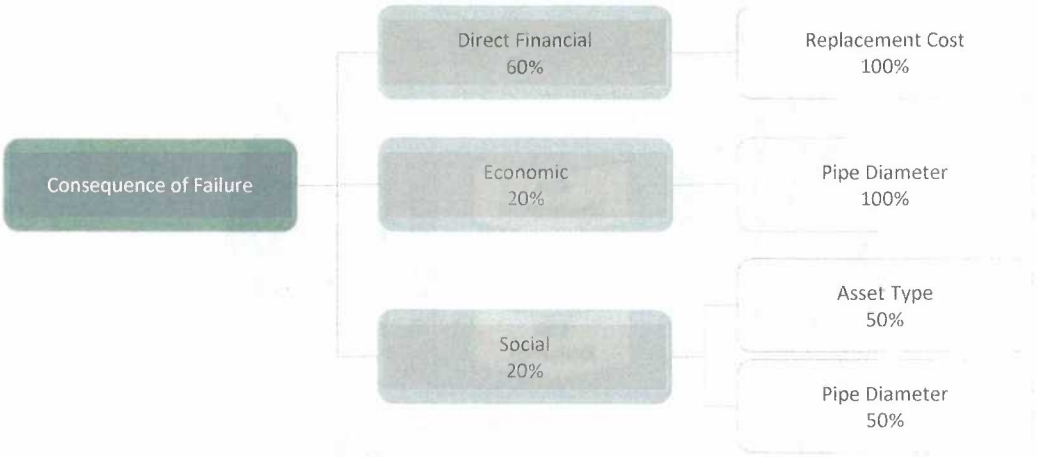
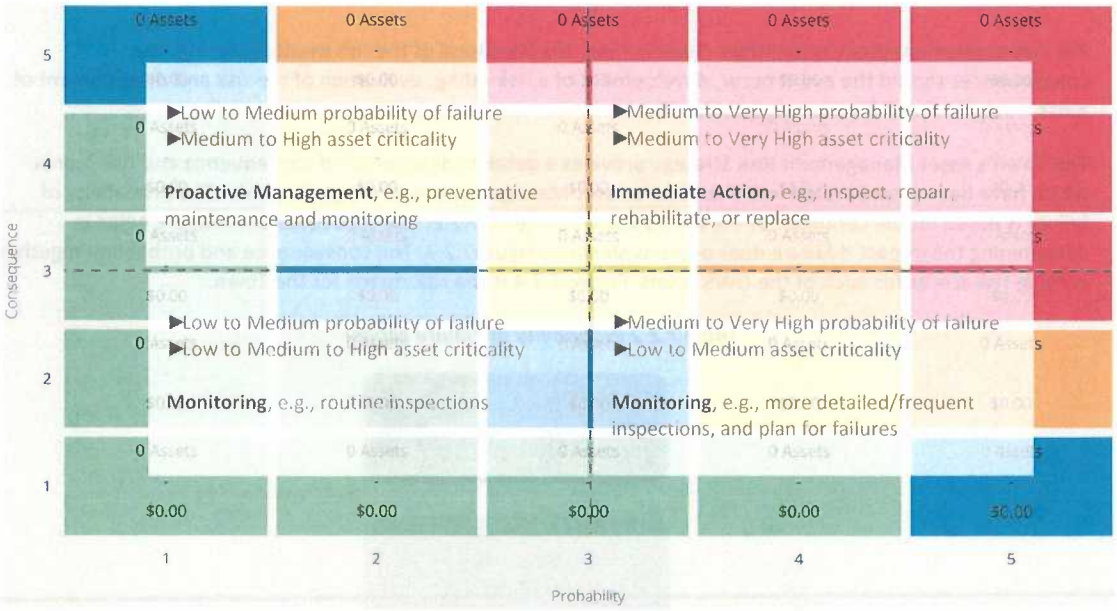


Table 7.2.3 Consequence of Failure Model



An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Table 7.2.4 Risk Matrix



Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in this plan. The residual risk and treatment costs of implementing the selected treatment plan are reported in each plan. It is essential that these critical risks and costs are reported to management and the Town Council. There are currently no High or Very High risks associated with DWS assets.

A complete summary of identified risks will be summarized in future iterations of this plan.

7.3 Infrastructure Resilience Approach

The services provided by water assets can be impacted by the disruption from natural disasters, infrastructure failures, and human threats. The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to withstand a given level of stress or demand, and to respond to possible disruptions, and to ensure continuity of service. The consequences of disruptive events can be minimized by pre-emptively replacing assets at end of life, and utilizing more resilient materials for renewals of water mains.

Our current measure of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organization takes to ensure service delivery resilience. Taking a risk-informed approach to resilience planning allows the Public Services department to proactively protect DWS assets and mitigate damage at the time of emergency or in the aftermath of a disruptive event. Our current measures of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 7.3: Resilience Assessment

Threat / Hazard	Assessment Method
Water main failure resulting in loss of water service	# of breaks pipe material and age
Failure of critical treatment components	Spares or replacement equipment is kept available for all critical equipment within the treatment process
Insufficient raw water for treatment	Work is currently underway to utilize Lake Huron as the raw water source for treatment. The design includes two raw water intakes systems so there is redundancy in the event that one fails.

7.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

Future iterations of the asset management plan will include:

- Incorporation of risk generated from our asset register for each water asset and use this factor for replacement prioritization
- Condition data obtained from a leak inspection survey

7.4.1 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. There are no anticipated service trade-offs that will be required during the planning period.

7.4.2 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. There are no anticipated risk trade-offs that will be required during the planning period.

8.0 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[3] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Demands are forecasted based on future developments
Growth projections	High	Growth is based a recent population and housing report completed by CanCensus
Acquisition forecast	High	There are currently no planned increases to Levels of Service
Operation forecast	Medium	
Maintenance forecast	Medium	
Renewal forecast - Asset values	Low	Significant work is required to rebuild the water asset register to improve forecasted costs and ensure accuracy of replacements.
- Asset useful lives	Medium	Additional information will further refine these in future plans.
- Condition modelling	Low	Condition modelling will be greatly improved by the addition of the material type for linear infrastructure.
Disposal forecast	High	

[3] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be medium – high.

9.0 PLAN IMPROVEMENT AND MONITORING

9.1 Status of Asset Management Practices[4]

9.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is planned budgets and historical expenditures.

9.1.2 Asset management data sources

The source of the data is the town's GIS system as well as the asset register maintained in Citywide.

9.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 9.2.

Table 9.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	The addition of water meters to the asset register.	Director of Public Services	Water asset installation and cost data.	2 months
2	Update material information for all water assets.	Director of Public Services	Replacement of the water asset inventory.	3 months
3	Further expand levels of service beyond what is legislated.	Director of Public Services	N/A	2 months
4	Update O&M forecasts to reflect known contract costs with PUC.	Director of Public Services and Finance	PUC contract financial information from last 5 years.	2 months
5	Assign pipe material to water main segments to further refine condition assessments based on remaining estimated usable life.	Director of Public Services	Update of pipe material	3 months
6	Coordinate water asset inventory with field updates and completed renewals via GIS to ensure accuracy of the asset inventory.	Director of Public Services	Replacement of the water asset inventory.	3 months
7	Update on field condition of water linear assets.	Director of Public Services	Leak inspection information	3 months

9.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets.

[4] ISO 55000 Refers to this as the Asset Management System

These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 1 year of each Town Council election.

9.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the future long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%). This will be review in future iterations of the plan.

10.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Asset Management Strategic Plan 2019
- 2024 Planned Budget

Blind River

TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN
WASTEWATER SYSTEM

Chris Zagar
Director of Public Services

Document Control		Asset Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	December 2024	Initial Plan	C. Zagar	K. Scott/S. Dent	Council

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 10 year planning period. In the future, the AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Town of Blind River's water distribution system serves a population of approximately 2,500 residents.

Table 1.2 Wastewater Assets

Asset Segment	Asset Count	Unit of Measure	2024 Replacement Cost ($)
Fittings	1,477.00	each	123,900.00
Manholes	349.00	each	4,927,438.00
Sanitary Pumping Stations	4.00	each	2,117,700.00
Sewer Lines - Unknown	3.00	each	6,062,132.00
Sewer Lines 100-200mm	9,409.30	length (m)	21,641,390.00
Sewer Lines 201-300mm	15,009.90	length (m)	34,522,770.00
Sewer Lines 301-400mm	1,186.60	length (m)	2,514,720.00
Sewer Lines 401-500mm	707.10	length (m)	1,767,750.00
Sewer Lines 501mm and over	747.90	length (m)	1,869,750.00
Sewer Services	6,835.60	length (m)	11,620,520.00
Wastewater Treatment/Disposal Facility	1.00	each	4,871,510.00

The above infrastructure assets have replacement value estimated at $**92,039,580.00.**

1.3 Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of wastewater assets.
- Increased replacement costs.
- Disruption to wastewater service for residents.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in the a required increased level of service for wastewater assets.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- The biggest component of the wastewater system is the sewer lines which are scheduled for replacement after 40 years of service to minimize repairs costs and asset failure. This timeframe can be extended or reduced based on condition assessments.
- Replacements of wastewater assets are completed in conjunction with the replacements of roads, and other underground services.
- Wastewater assets due for replacement will undergo a needs analysis to determine the if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Fleet Assets is estimated as **$71,988,500** or **$ 7,198,850** on average per year. The following factors are reviewed prior to asset replacements:

- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

1.6 Financial Summary

1.6.1 What we will do

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks. The total forecasted costs of the lifecycle of wastewater assets at current service levels is summarized in Figure 1.6.

Figure 1.6 Forecast Lifecycle Costs

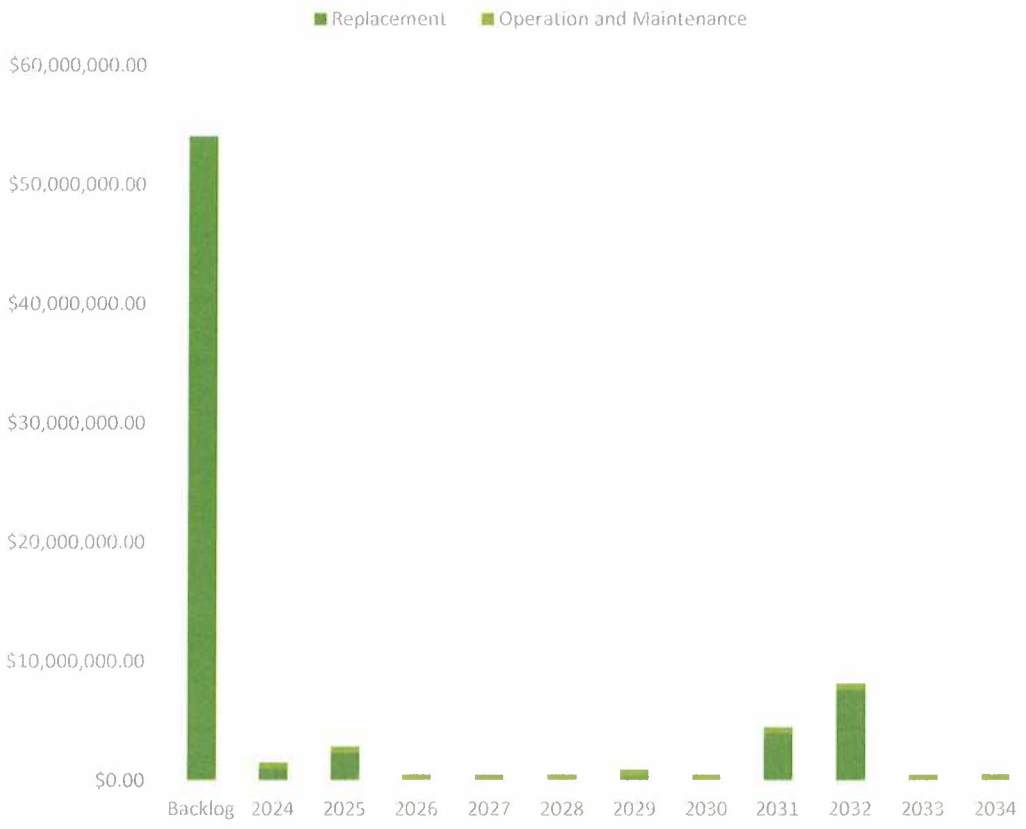


Figure Values are in current dollars.

We plan to provide wastewater asset services for approximately 2,500 residents:

- Maintenance and operation of Wastewater assets to ensure clean and safe disposal and treatment of Wastewater is supplied to residents.
- Replacement of assets before their end of usable life to prevent failure and disruption to the Wastewater service
- **The cost of this service is $71,988,500 within the 10 year planning period.**

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Replacement of backlogged Wastewater assets which have exceeded their usable life
- Forecasted replacement of assets which will reach the end of their usable life during the planning period.

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Reduction in the drinking wastewater service capacity due to insufficient raw wastewater supply caused by gaining wells.
- Disruption of drinking wastewater service to residents due to the break of critical supply mains.
- Loss of wastewater treatment capability due to the loss of critical treatment process components.

We will endeavour to manage these risks within available funding by:

- Completing the Pure Huron project to switch to Lake Huron as our primary wastewater source.
- Rehabilitation of wells as necessary to provide sufficient capacity until the transition to the new wastewater source is complete.
- Prioritization of the replacement of critical supply mains to minimize potential disruption of service to residents.

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Service levels during the planning period will remain consistent with current levels.
- Future budgets will remain close to current funding levels.

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The asset register and was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a low to medium level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Complete rebuild of the wastewater asset register to include material type and GIS information related to wastewater assets.

- Development of a condition assessment tool which will account for the condition of the road surface and other underground assets to prioritize full road reconstructions.
- Modify the estimated useable life of water mains to account for condition to further refine the age-based condition assessments.
- Incorporate field condition data in the condition assessment process.
- Incorporate sewer line material type into the asset register to further refine the estimated useful life based on material.

2.0 Introduction

2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Town of Blind River planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- 2024 Planned Budget

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this AM Plan includes all wastewater system assets utilized to provide waste water collection and treatment to Blind River residents.

These assets are used to provide safe potable drinking water to the residents of Blind River.

The infrastructure assets included in this plan have a total replacement value of **$92,039,580**

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Council	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service sustainable.
Clerk's Department	■ Provide leadership with imbedding asset management practices across the organization. ■ Evaluate that adequate resources are available for development and implementation of AM initiatives ■ Ensure consistency of asset management approaches across the Town's Services Areas ■ Approve future plan revisions ■ Suggest budgetary, property tax/rate and Infrastructure Levy to Council.
Management Team	■ Recommends project selection criteria and weightings to Council.
PUC Staff/Public Works Staff	■ Report asset deficiencies and condition through routine inspection and preventative maintenance. ■ Complete maintenance and repair on the system as required. ■ Provide replacement recommendations based on condition.

2.2 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a future Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated. This is planned to be developed in 2025.

Key elements of the planning framework are

- State of Local Infrastructure – current condition at the Town and replacement value of wastewater assets
- Levels of Service and continuous improvement– specifies the services and levels of service to be provided
- Asset Management Strategies like risk, disposal, lifecycle, and future demand and how this will impact on future service delivery and managing existing and future assets at defined levels of service
- Continuous Improvement and Monitoring – how the plan can be continuously improved and then monitored to ensure objectives are met. This also includes increasing the asset management maturity, identifying emerging technologies like improved materials the provide longer useful lives for assets.

Other references to the benefits, fundamentals principles and objectives of asset management are:

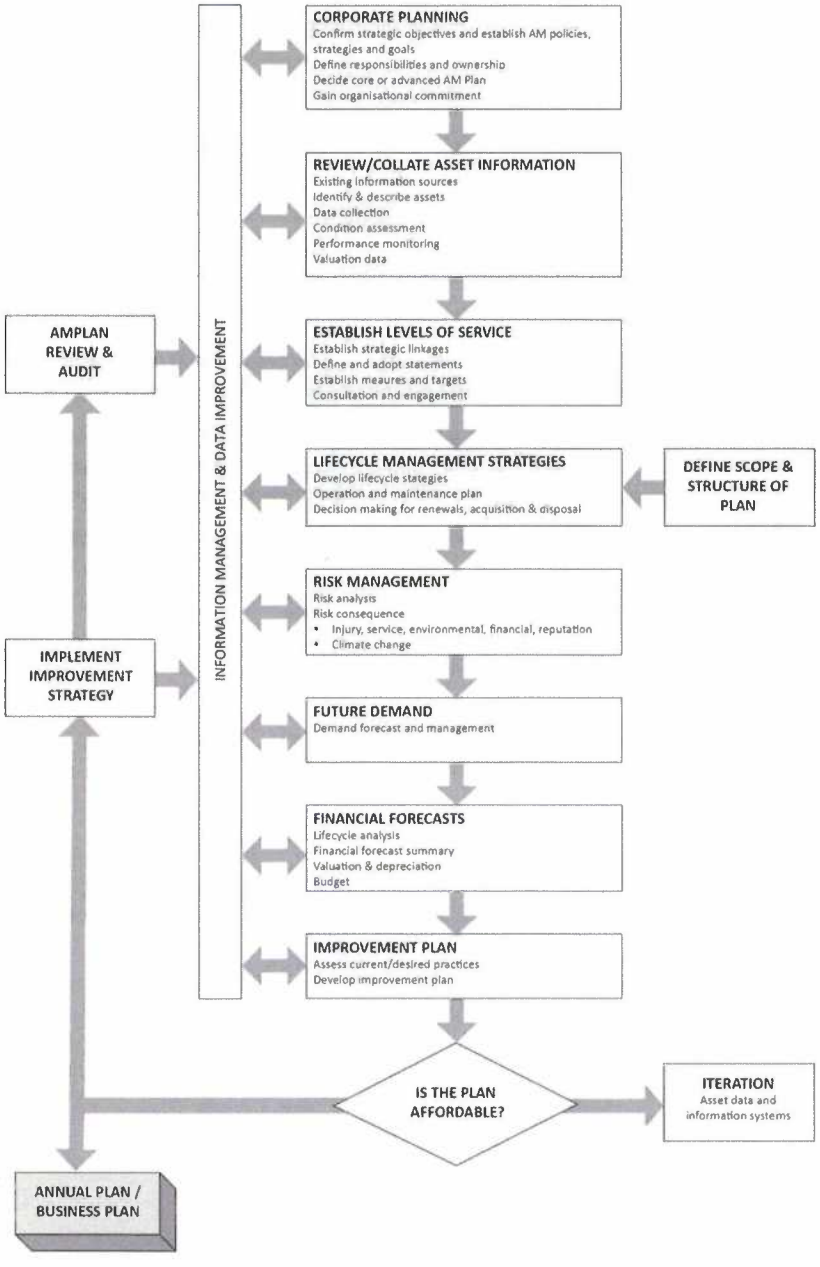
- ISO 55000[1]

A road map for preparing an AM Plan is shown below.

[1] ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 STATE OF THE INFRASTRUCTURE

3.1 Asset Inventory and Valuation

Table 3.2 and Figure 3.2 below present the wastewater asset inventory in terms of 2024 replacement costs. All asset inventories originated from the town's GIS and asset register which houses information related to location, materials, installation year, quantities etc. Table 2.1 below provides the replacement cost of each asset presented in this AMP. These were provided by Tulloch engineering based on updated construction costs from projects which have taken place in 2024.

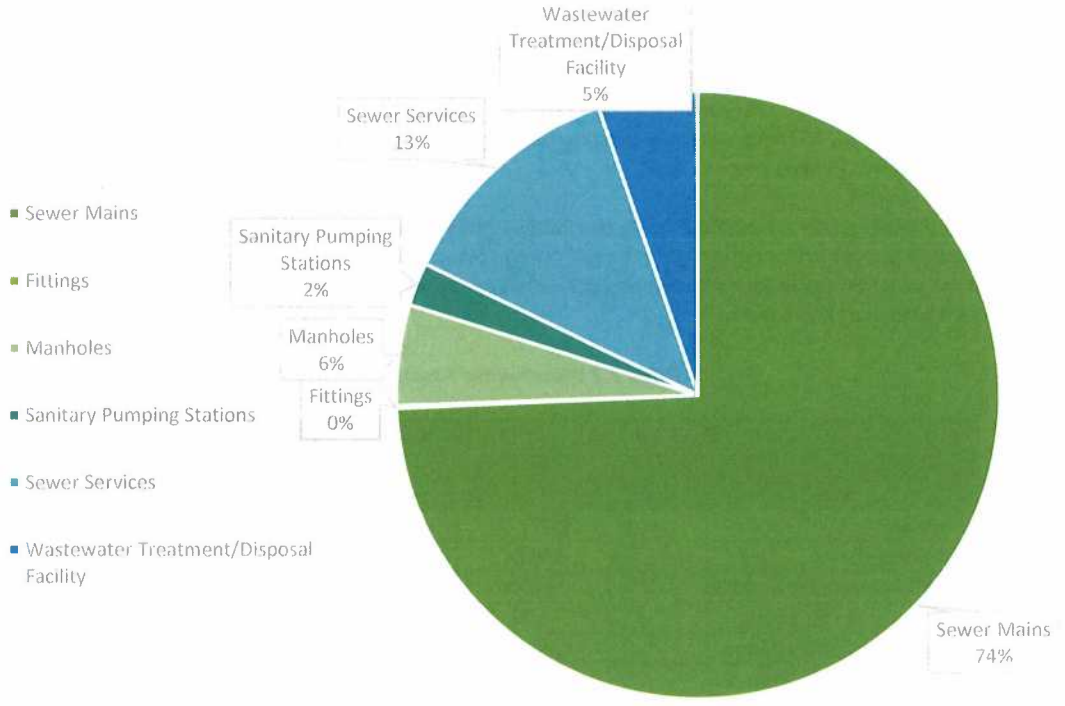
The Town wastewater assets are maintained by the Public Works department and PUC maintains the wastewater treatment which is contracted on behalf of the Town of Blind River. The water assets are broken down into their respective components. This categorization will be used in water system asset management planning and replacement forecasts.

Table 3.2 Wastewater Assets

Asset Segment	Asset Count	Unit of Measure	2024 Replacement Cost ($)
Fittings	1,477.00	each	123,900
Manholes	349.00	each	4,927,438
Sanitary Pumping Stations	4.00	each	2,117,700
Sewer Lines - Unknown	3.00	each	6,062,132
Sewer Lines 100-200mm	9,409.30	length (m)	21,641,390
Sewer Lines 201-300mm	15,009.90	length (m)	34,522,770
Sewer Lines 301-400mm	1,186.60	length (m)	2,514,720
Sewer Lines 401-500mm	707.10	length (m)	1,767,750
Sewer Lines 501mm an over	747.90	length (m)	1,869,750
Sewer Services	6,835.60	length (m)	11,620,520
Wastewater Treatment/Disposal Facility	1.00	each	4,871,510
Total			92,039,580

As presented in Table 3.2, sewer mains are the most valuable assets covered in the Wastewater System, making up 74% of the total inventory value. There is approximately 27 km of sewer lines which are owned and operated by the municipality. Table 3.2 also includes the financial valuation for each asset category. These values are based on the cost of replacement and installation at 2024 costs. Figure 3.2 illustrates the replacement cost distribution of Wastewater assets.

Figure 3.2 Wastewater Assets Replacement Cost Distribution



3.2 Asset Age

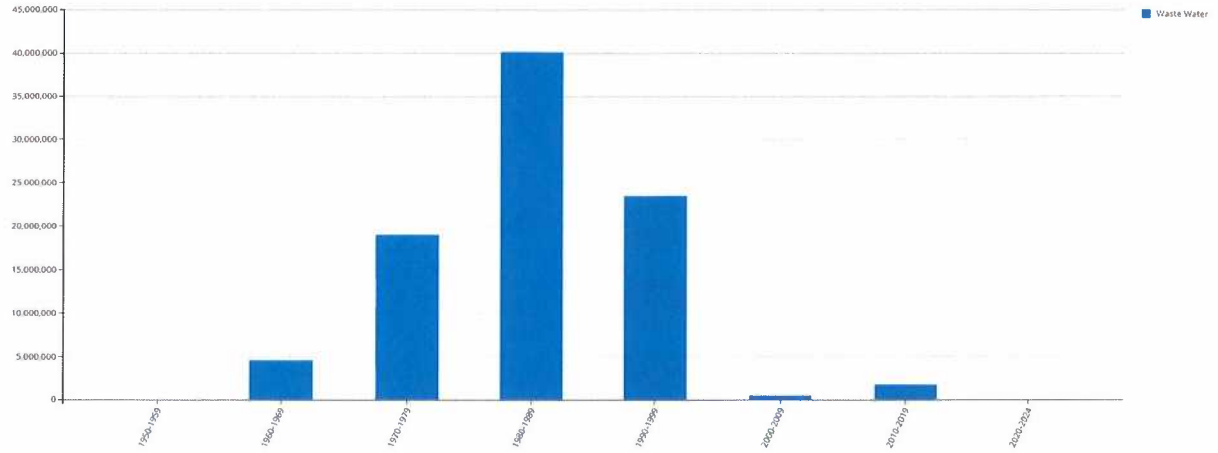
Asset age is an important factor in determining condition of some assets as well as when lifecycle interventions are necessary. For example, at the Town of Blind River, sewer lines are currently replaced when the begin to show signs of failure or poor flow.

For Wastewater asset categories, age can be used as a proxy for condition where visual condition data is unavailable. For example, visual condition data is difficult and costly to collect for water distribution mains since they are pressurized, small in diameter, and carry potable water which causes concern for contamination. As an alternative, the Public Services department plans to has develop a Condition Analysis Tool (CAT) to estimate the condition of watermains that considers age in combination with material, break history. criticality, and risk.

The series of figures on the following pages provides installation profiles in terms of 2024 replacement costs for watermains, valves, hydrants, and valve boxes and service leads. The transition from historical sewer line material to the current best practice of PVC can be seen through the decades, as well as times when significant investments. Those pipes installed in the 50s, 60s and 70s and the 80s are now nearing the end of their useful lives and may be beginning to deteriorate, resulting in large investments required in the coming years to replace or rehabilitate them.

The average age of all wasterwater assets is 40 years. The water asset age distribution is shown in Figure 3.3.1.

Figure 3.2.1 Wastewater Asset Installation Profile



3.3 Asset Condition Profile

The following figures present the current condition of the Water Utility infrastructure in terms of 2024 replacement costs. Condition was determined for watermains using based on the material and age of the watermain. In the future, this condition assessment will be further refined with the development of a Condition Analysis Tool which considers age, material, break history, risk, and criticality to calculate a condition score from 1 – 5. This information will be used in conjunction with the history of frozen services and shallow mains to determine condition and prioritize replacement.

In combination with condition scores for water, sanitary, storm and roads; these condition scores play an important role in determining when and where full reconstruction projects should take place and help inform the 10-year Capital Budget.

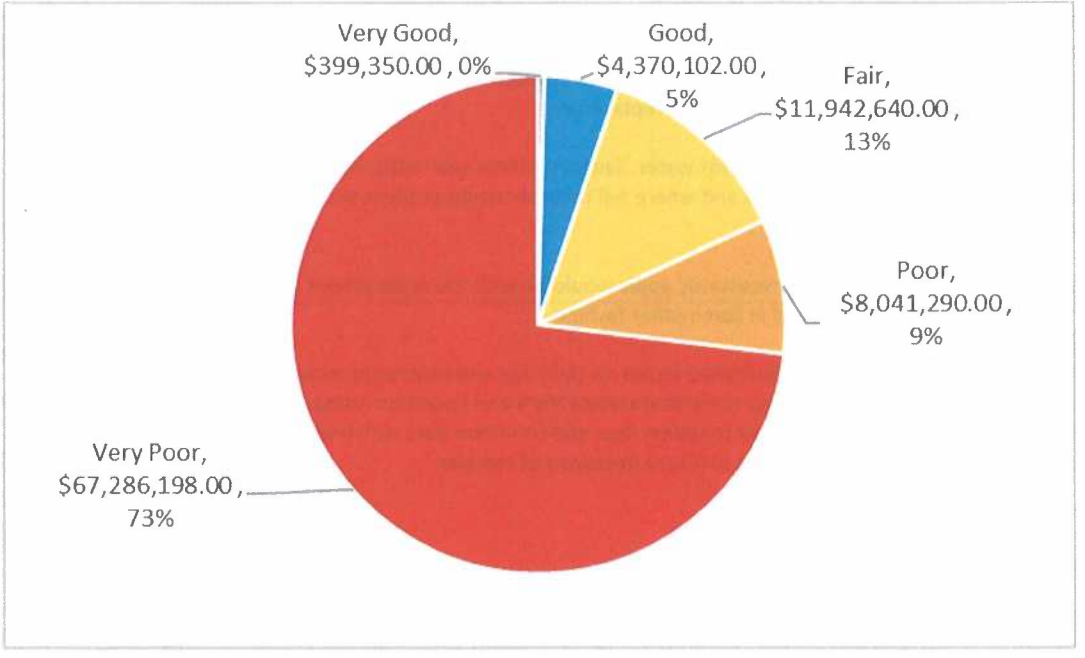
Instances where this would not necessarily apply would be with the replacement of a hydrant that was struck by a vehicle or severely damaged in some other fashion.

Condition of sanitary assets is determined based on their age and estimated remaining service life. Table 3.4 illustrates the relationship between remaining service life% and condition rating. Visual inspections are performed periodically via manholes to obtain flow and condition data which will be integrated into the condition assessment of these assets in future iterations of the plan.

Figure 3.3.1 Water Installation Profile

The average condition of wastewater assets is 1 out of 5 or very poor. The distribution of wastewater asset condition is shown in Figure 3.3.2.

Figure 3.3.2 Wastewater Asset Condition Distribution



As seen in figure 3.3.2 the town's wastewater assets are in very poor condition. There has been significant infrastructure reinvestment in the last few years which involved full sanitary system replacement on Huron Avenue and Woodward Avenue. These segments have be renewed to 'Very Good' condition as a result of recent construction but due to a technical issue with out asset register we were unable to update those assets for this iteration of the plan. These recent replacements will be reflected in the 2025 Wastewater AMP.

4.0 LEVELS OF SERVICE

4.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Blind River Town Council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Blind River Town Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

4.2 Understand your customers

The Customer is defined as those who use or are impacted by activities associated with providing the wastewater services. The Town's sanitary sewer system provides wastewater treatment services to a population of approximately 2,350. The network includes a treatment plant, 27km of sewer lines, four pump stations, and other supportive assets.

Table 4.2.1 gives a snapshot of stakeholders and customer groups.

Table 4.2.1: Customer Groups and Stakeholders

Stakeholder	*Customer Groups*
Service Users	Blind River Residents
Regulatory Bodies	▪ Ministry of the Environment, Conservation and Parks ▪ Algoma Public Health
External Stakeholders	Council

4.3 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Town of Blind River vision, mission, goals and objectives.

Our vision is:

Driven by extraordinary volunteers and supported by its community leaders, Blind River is a vibrant and prosperous town that has established itself as a year-round destination and ideal community is which to live and do business.

Our mission is:

Providing quality services and leadership that reflect the social, cultural, environmental and economic needs of the community, while creating regional partnerships and managing resources in a fiscally responsible manner.

Strategic goals have been set by the Town of Blind River Asset Management Strategy. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Good Governance	Ensure the Town maintains the Levels of Service for Wastewater assets	Routine inspection and maintenance of wastewater assets in compliance with all regulatory requirements.
Environmental Sustainability	Lead in promoting and preserving our unique physical environment	Endeavour to maintain an environmentally conscious wastewater treatment operations continually strive for better performance.

4.4 Legislative Requirements

There are a number of legislative requirements that govern the levels of service provided for the Wastewater system. A summary of these is listed in table 4.2.

Table 4.4: Legislated Requirements

Legislation	Requirement
O. Reg. 588/17: ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE	These regulations outline the requirements for the following with respect to municipal road systems: • Inventory and Condition Assessment • Performance Monitoring and Reporting • Lifecycle Planning and Asset Valuation • Risk Assessment and Mitigation • Financial Planning and Budgeting • Stakeholder Engagement and Communication • Continuous Improvement and Review
Environmental Protection Act (EPA)	• Regulates pollutants, including those discharged into wastewater systems. • Provides enforcement mechanisms for illegal discharges and spills. • Governs the storage and handling of materials that could affect wastewater.
Ontario Water Resources Act	• Requires approvals (e.g., Environmental Compliance Approvals) for constructing and operating sewage works. • Prohibits the discharge of pollutants into water bodies without authorization. • Regulates stormwater management and industrial wastewater discharges.
Clean Water Act	• Requires source protection plans that can influence wastewater management practices. • Addresses threats from wastewater discharges near drinking water sources.
Safe Drinking Water Act (SDWA)	• Indirectly impacts wastewater by enforcing strict standards on the quality of water sources.
Lakes and Rivers Improvement Act	• Requires approvals for activities that might impact natural water systems, including wastewater effluent.
Wastewater Systems Effluent Regulations (WSER)	• Sets effluent quality standards for municipal and industrial wastewater systems across Canada.

4.5 Community Levels of Service

O.Reg 588/17 – Asset Management Planning for Municipal Infrastructure defines levels of service for core infrastructure classes that must be measured and reported on by all municipalities. Table 4.5.1 and Table 4.5.2 outline those that are included for water assets, adapted from Table 1 in the legislation.

Table 4.5.1: Community Level of Service Measures

Service Attribute	Customer Levels of Service	Current Performance
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system	Map provided
Reliability	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes	TBD
	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	There are no know incidents of this type of overflow in the Town of Blind River
	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Stormwater can enter into sanitary sewers due to cracks in sanitary mains or through indirect connections (e.g., weeping tiles). In the case of heavy rainfall events, sanitary sewers may experience a volume of water and sewage that exceeds its designed capacity. In some cases, this can cause water and/or sewage to overflow or backup into homes. The disconnection of weeping tiles from sanitary mains and the use of sump pumps and pits directing storm water to the storm drain system can help to reduce the chance of this occurring.
	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to stormwater infiltration	The municipality follows a series of design standards that integrate servicing requirements and land use considerations when constructing or replacing sanitary sewers. These standards have been determined with consideration of the minimization of sewage overflows and backups.

Reliability	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent refers to water pollution that is discharged from a wastewater treatment plant, and may include suspended solids, total phosphorous and biological oxygen demand. The Environmental Compliance Approval (ECA) identifies the effluent criteria for municipal wastewater treatment plants.

Table 4.5: Wastewater System Service Area

4.6 Technical Levels of Service

Technical Levels of Service – To deliver on the Community Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical Levels of Service apply to internal stakeholders such as staff, or senior management. The Technical LOS (Levels of Service) description is a brief statement summarizing measures related to operation and maintenance of an asset.

Levels of Service for wastewater are the financial sustainability of operating and maintenance (O&M) costs and sustainability of providing this service.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),

- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

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

Table 4.5.2: Technical Level of Service Measures

Service Attribute	Technical Level of Service	Current Performance
Scope	% of properties connected to the municipal water system	66%
Reliability	# of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system	0.0018 (2 events over 1,120 properties)
	# of connection-days per year having wastewater backups compared to the total number of properties connected to the municipal wastewater system	0
	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system	0.0009 (1 effluent violation over 1,120 properties)

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

5.0 FUTURE DEMAND

5.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc. Demand drivers affecting wastewater assets are generally triggered by growth in the Town services or responsibilities, technological changes, economic factors and, environmental awareness, etc. Growth in the Town and construction of new housing will trigger a growth in the Wastewater system.

5.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

5.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 5.3.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 5.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 5.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Climate Change	No consideration of the impacts of climate change are currently considered in future demand of the Wastewater system.	N/A	N/A	N/A
Population Growth	A process doesn't currently exist to monitor and forecast the impacts of growth on service delivery.	Population will increase slowly	The level of service will decrease slowly over time in relation to population growth.	Establish a process for monitoring and forecasting population growth to proactively plan for required expansion of wastewater network
Regulatory Changes	The process of addressing changing regulations proactive.	New regulations related to Wastewater will be introduced.	The cost of operation and maintenance of Wastewater assets will increase to meet new regulatory requirements.	Monitor industry and regulatory trends, address anticipated changes proactively prior to the ratification of regulatory requirement.

5.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Town of Blind River to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the future long-term financial plan.

5.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

Additionally, the way in which we construct new assets should recognize that there is opportunity to build in resilience to climate change impacts. Climate-resilient assets can accommodate or quickly recover from disruptions caused by severe climate events or chronic climate stresses, reducing the likelihood of a damaging or irreversible impact. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP. The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

5.6 Climate Change Impacts

Climate change impacts specific to the municipality of Blind River and surrounding areas include more extreme weather events and warmer temperatures in the winter. These extreme weather events in the Blind River area have resulted in an increase in short duration-high volume precipitation events which stress the treatment capacity of our existing facility. A preliminary design of upgrades to address treatment capacity restraints has been completed and an application for grant funding to fund this issue.

6.0 LIFECYCLE MANAGEMENT PLAN

6.1 Lifecycle Management Activities

The lifecycle management plan discussed in the following subsections are the activities undertaken by the Town of Blind River to uphold the levels of service presented in Section 4. These activities can include plan or unplanned work that is done to ensure the water distribution system can meet the demands and expectations of customers. When planned for and executed well, these activities can save money and extend the useful life of an asset.

Different municipalities use different terms to categorize these activities. Table 6.1 below is how Town of Blind River has chosen to define them for water assets. This table also provides examples specific to the Water Utility as well as their average costs from 2020-2024.

Table 6.1: Lifecycle Management Activities

Lifecycle Management Activity	Definition	Examples	5-Year Average Costs
Operations/Maintenance	Regularly scheduled inspections and maintenance or repairs associated with unexpected events.	▪ MaintenanceMain flushing is completed on an annual basis, with rodding as required. ▪ The cost of flushing is estimated to be $200 per metre, and represents a significant operating cost to the municipality. ▪ Repair of leaks and minor breaks	$ 473,174
Renewal/Replacement	Significant repairs to extend the life of an asset. This includes a replacement of an asset at end of life but does no accommodate a change in service.	▪ . Rehabilitations and replacements are guided by CCTV inspections, site-specific e.g., blockage events, and opportunities to coordinate with roadway projects. ▪ The service life of mains and type of material also provide guidance on the timing of any replacement activities.	$ 482,100
Non-infrastructure Solutions	Actions or policies that lower costs, extend the life of an asset or identify asset needs.	▪ Sewer line break/back-up reporting process ▪ Future revision of water/sewer fee structure to encourage large	$1,000

		consumers to reduce their consumption of water which correlates to a reduce in wastewater production.	

6.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 6.2.

Table 6.2: Known Service Performance Deficiencies

Asset	Service Deficiency
Wast Water Treatment Facility	The facility currently does not have sufficient capacity to handle peak flow events. These evens result in a bypass of secondary treatment.
Hanes Sanitary Line	The sewer line under the train tracks on Hawkins has been identified to have failed and requires repair/replacement.

The above service deficiencies were identified from the review of sewer camera inspection and routine field inspection.

6.3 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include, uni-directional flushing, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets is shown in Table 6.3.1.

Table 6.3.1: Maintenance Budget Trends

Year	Maintenance Budget $
2020	$ 420,000
2021	$ 436,000
2022	$ 476,020
2023	$ 488,075
2024	$ 545,775

The 5-year average operating budget for wastewater system maintenance is **$ 473,174**. Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. **The required maintenance budget is expected to increase until the renewal budget of wastewater assets is increased to meet the forecasted requirements.**

Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Risk Management section of this plan.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the water assets. If additional wastewater assets are acquired, the future operations and maintenance costs are forecasted to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease.

We have seen a 30% increase in maintenance costs of the waste waster system over the last 5 years. This increase is likely slightly reduced due to a large portion of wastewater system operations being performed by PUC staff as part of a long-term contract. An increase in O&M costs is expected to occur when these contracts are renegotiated. In the last year this inflation has normalized to roughly 2.5%[2]. The water system is not expected to see growth over the ten-year planning period but the cost of maintenance is expected to increase as waste waster asset condition continues to deteriorate.

6.4 Maintenance Activities

Maintenance activities are those that maintain the current level of service provided by an asset. These activities ensure that the waste water system is reliable and consistently delivers waste collection and treatment.

6.5 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Linear wastewater infrastructure is planned for replacement in the 10-year capital forecast. Sewer line replacements are done as either full reconstruction projects or wastewater only replacement projects.

Full reconstructions include the replacement of wastewater infrastructure along with storm, sanitary and the overlying road. In the near future, these projects are planned according to combined condition scores for all the asset classes in a particular section of road (water – 30%, sanitary – 35%, storm – 20%, roads – 10%).

These scores will be determined using a Condition Analysis Tool (CAT) developed by the Public Services department. This tool will help move away from strictly age-based decision making to a more holistic approach. When a full reconstruction occurs, costs are shared between the three utilities (water – 31%, sanitary – 46%, storm – 23%). The water portion of the costs includes the replacement of sewer lines, appurtenances and a portion of the costs associated with road reconstruction. In areas where the waste water infrastructure is in poor condition but water and storm remain in good condition, sewer only replacement projects may be scheduled. The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 6.4. Asset useful lives were last reviewed on December 2024.

[2] Statista Research Department, & 4, D. (2024). Canada: inflation rate and bank rate monthly 2024. Retrieved from https://www.statista.com/statistics/1312251/canada-inflation-rate-bank-rate-monthly/#:~:text=Canada's%20inflation%20rate%20and%20bank,2.5%20percent%20by%20October%202024.

Table 6.4: Useful Lives of Assets

Asset (Sub)Category	Useful life
Sewer Lines	40 years
Sewer Services	80 years
Treatment and Disposal Equipment	20 years
Manholes	25 years
Fittings	40 years

The estimates for renewals in this AM Plan were based on the asset register the town maintains in PSDCitywide. The asset register currently lacks material information for sewer line material. The construction material of the sewer line can greatly impact the useful life of that segment. The sewer line material will be incorporated into the asset register and useful lives further refined in future iterations of this asset management plan.

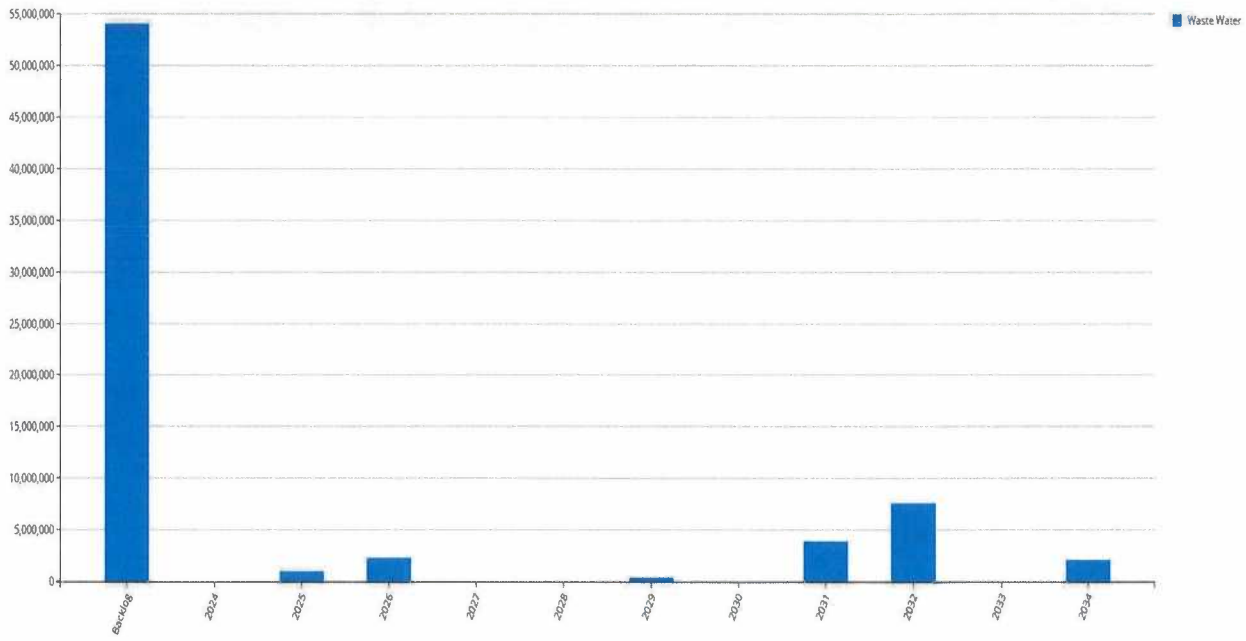
6.6 Summary of future renewal costs

The total replacement cost of the wastewater assets is $ **$92,039,580**. The forecasted replacement costs during the 10-year planning period of the Wastewater Asset Management Plan are **$ 66,530,753 or $6,653,075** annually over the planning period.

In addition to the forecasted replacements there is significant backlog of water assets which have excessed their estimated usable life. These are water assets that should have been replaced in the past but were deferred. The value of the replacement backlog is **$51,560,175**. It is not feasible to renew the backlogged assets in a single year but these assets should be added to future capital investment to prevent imminent failure.

These forecasted replacements are displayed in Figure 6.6

Figure 6.6: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecast renewals vary significantly from year to year with 2031 and 2032 and 2032 being high years of reinvestment.

Recommended best practice would be to adjust the capital budget to meet the forecasted annual requirement during the planned period to address the infrastructure backlog and planned renewals evenly throughout the planned period.

6.7 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs.

There are no acquisitions planned for wastewater assets at the current time. In 2026, increases to services may be proposed when the proposed service levels are completed. Wastewater asset acquisitions may be required to meet the increased levels of service and the proposed budget will need to be increased to reflect these changes.

6.8 Disposal Plan

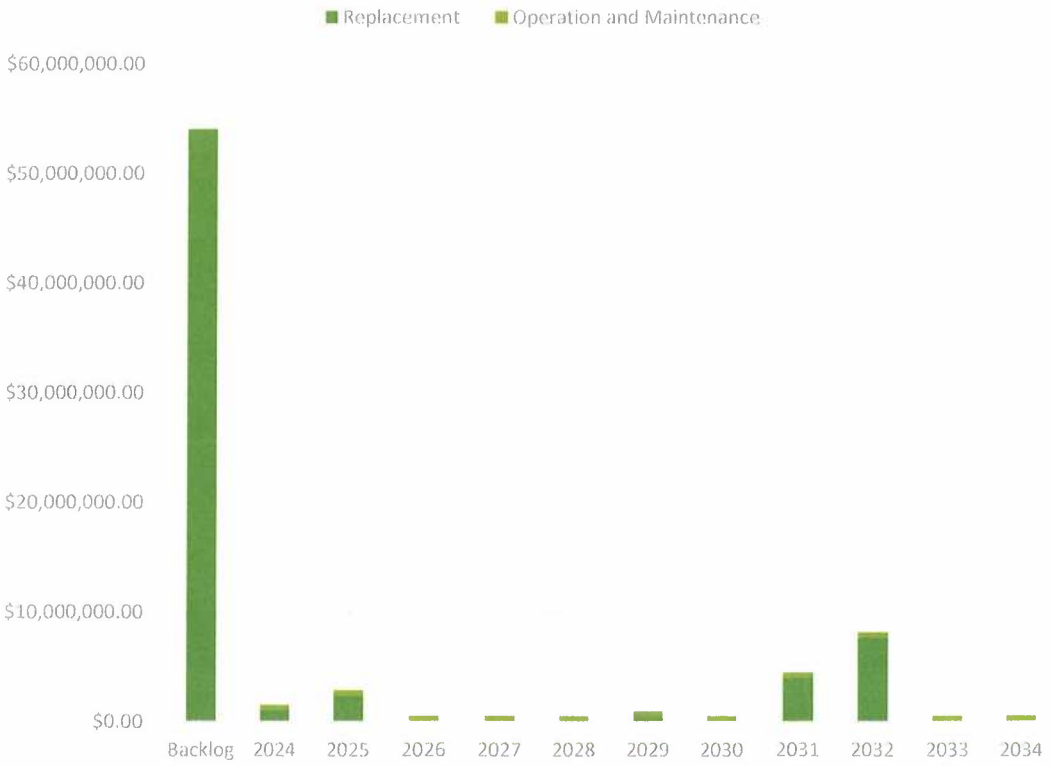
Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. There are currently no assets identified for possible decommissioning and disposal.

6.9 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 6.8.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 6.8.1: Lifecycle Summary



All figure values are shown in current day dollars.

The planned annual budget for water assets will need to meet requirements of the future lifecycle forecasts for these assets to maintain the current level of service that these assets provide to the municipality and the departments who use them. The average annual reinvestment to meet replacements, operation and maintenance costs is **$ 7,197,850**. The current budget is insufficient to meet the total lifecycle costs of wastewater assets during the planned period.

7.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

7.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 7.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 7.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Treatment Facility	Failure of critical components required for treatment.	Temporary loss of Wastewater service.
Critical main break	Main break on sections of main servicing areas without dual supply.	Loss of waste collection service

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

7.2 Risk Assessment

The risk management process used is shown in Figure 7.2.1 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

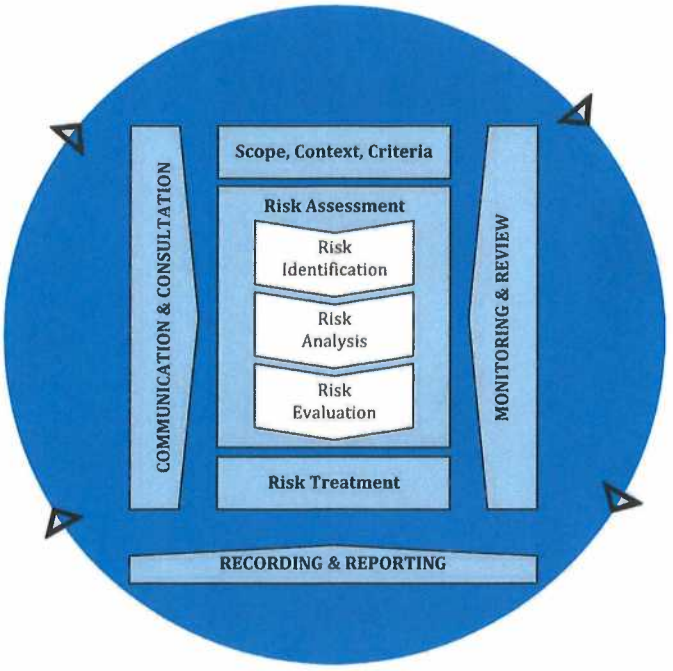


Fig 7.2.1 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

The Town's Asset Management Risk Strategy provides a detailed description of consequence and risk scores which have been incorporated into the Town's Asset Management technology; Citywide. The probability of failure is based on the condition of the assets shown in Figure 7.2.2. The consequence of failure helps in determining the impact if failure does occur as shown in Figure7.2.3. The consequence and probability together provide risk scores for each of the wastewater assets. Figure 7.2.4 is the risk matrix for the Town.

Table 7.2.2 Probability of Failure Model

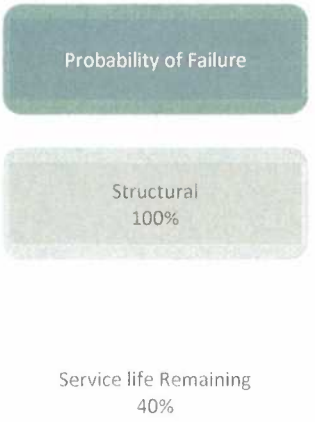
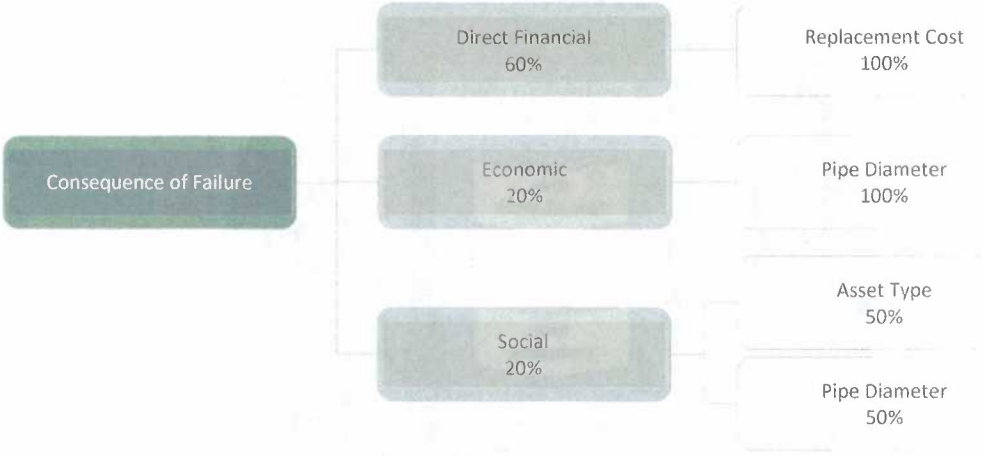
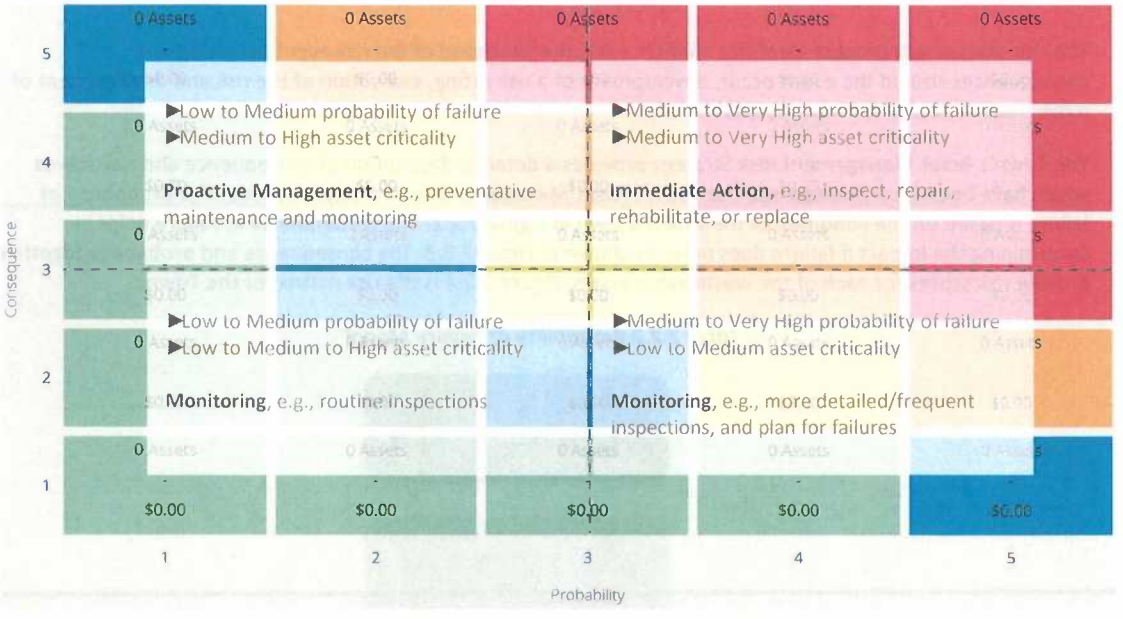


Table 7.2.3 Consequence of Failure Model



An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Table 7.2.4 Risk Matrix



Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in this plan. The residual risk and treatment costs of implementing the selected treatment plan are reported in each plan. It is essential that these critical risks and costs are reported to management and the Town Council. There are currently no High or Very High risks associated with wastewater assets.

A complete summary of identified risks will be summarized in future iterations of this plan.

7.3 Infrastructure Resilience Approach

The services provided by water assets can be impacted by the disruption from natural disasters, infrastructure failures, and human threats. The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to withstand a given level of stress or demand, and to respond to possible disruptions, and to ensure continuity of service. The consequences of disruptive events can be minimized by pre-emptively replacing assets at end of life, and utilizing more resilient materials for renewals of water mains.

Our current measure of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organization takes to ensure service delivery resilience. Taking a risk-informed approach to resilience planning allows the Public Services department to proactively protect wastewater assets and mitigate damage at the time of emergency or in the aftermath of a disruptive event. Our current measures of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 7.3: Resilience Assessment

Threat / Hazard	Assessment Method
sewer line failure resulting in loss of wastewater collection service	# of breaks pipe material and age
Failure of critical treatment components	Spares or replacement equipment is kept available for all critical equipment within the treatment process
Insufficient capacity for treatment	Work is currently underway to increase the capacity at the WWTP to handle peak flows.

7.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

Future iterations of the asset management plan will include:

- Incorporation of risk generated from our asset register for each wastewater asset and use this factor for replacement prioritization
- Improved understanding of asset criticality in each department through the organization wide implementation of Maintenance Manager (CMMS)

7.4.1 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. There are no anticipated service trade-offs that will be required during the planning period.

7.4.2 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. There are no anticipated risk trade-offs that will be required during the planning period.

8.0 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[3] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Demands are forecasted based on future developments
Growth projections	High	Growth is based a recent population and housing report completed by CanCensus
Acquisition forecast	High	There are currently no planned increases to Levels of Service
Operation forecast	Medium	
Maintenance forecast	Medium	
Renewal forecast - Asset values	Low	Significant work is required to rebuild the water asset register to improve forecasted costs and ensure accuracy of replacements.
- Asset useful lives	Medium	Additional information will further refine these in future plans.
- Condition modelling	Low	Condition modelling will be greatly improved by the addition of the material type for linear infrastructure.
Disposal forecast	High	

The estimated confidence level for and reliability of data used in this AM Plan is considered to be medium – high.

[3] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

9.0 PLAN IMPROVEMENT AND MONITORING

9.1 Status of Asset Management Practices[4]

9.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is planned budgets and historical expenditures.

9.1.2 Asset management data sources

This AM Plan utilises asset register data. The source of the data is the field collected data, the town's GIS system and the asset register maintained in Citywide.

9.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 9.2.

Table 9.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Refine lifecycle forecasts to include the cost of annual camera inspection.	Director of Public Services	Staff time	2 months
2	Further expand levels of service beyond what is legislated.	Director of Public Services	N/A	2 months
3	Update O&M forecasts to reflect known contract costs with PUC.	Director of Public Services and Finance	PUC contract financial information from last 5 years.	2 months
4	Assign pipe material to sewer line segments to further refine condition assessments based on remaining estimated usable life.	Director of Public Services	Update of pipe material	3 months
5	Coordinate wastewater asset inventory with field updates and completed renewals via GIS to ensure accuracy of the asset inventory.	Director of Public Services	Replacement of the water asset inventory.	3 months
6	Update on field condition of wastewater linear assets.	Director of Public Services	Sewer inspection reports, staff time.	3 months

9.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

[4] ISO 55000 Refers to this as the Asset Management System

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 1 year of each Town Council election.

9.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the future long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%). This will be review in future iterations of the plan.

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TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN
STORM WATER SYSTEM

Chris Zagar
Director of Public Services

Document Control		Asset Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	December 2024	Initial Plan	C. Zagar	K. Scott/S. Dent	Council

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 10 year planning period. In the future, the AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Town is responsible for owning and maintaining a stormwater network of 6km storm sewer mains, catch basins, and other supporting infrastructure.

Table 1.2 Stormwater Assets

Asset Segment	Asset Count	Unit of Measure	2024 Replacement Cost ($)
Catch Basin Leads	564	length (m)	123,900.00
Catch Basins	164	each	4,927,438.00
Culverts	274	each	2,117,700.00
Manholes	82	each	6,062,132.00
Storm Sewer Lines - Unknown	4	length (m)	21,641,390.00
Storm Sewer Lines 200-300mm	4,789	length (m)	34,522,770.00
Storm Sewer Lines 301-400mm	355	length (m)	2,514,720.00
Storm Sewer Lines 401-500mm	613	length (m)	1,767,750.00
Storm Sewer Lines 501mm and over	318	length (m)	1,869,750.00

The above infrastructure assets have replacement value estimated at $ **17,522,825.**

1.3 Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased maintenance and repairs costs of stormwater assets.
- Increased replacement costs.
- Disruption to stormwater service.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth and future housing development. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Regulatory changes which will result in a required increased level of service for stormwater assets.

- Climate change and extreme precipitation events may require the storm water system capacity to be upgraded to accommodate these events.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Replacements of stormwater assets are completed in conjunction with the replacements of roads, and other underground services.
- Stormwater assets due for replacement will undergo a needs analysis to determine the if the replacement can be completed in conjunction with the replacement of other assets to minimize the cost.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast over the 10 years planning period, which for Stormwater Assets is estimated as **$ 14,446,720** or $**1,444,672** on average per year.

The following factors are reviewed prior to asset replacements:

- Condition and Usability determined through routine inspections and preventative maintenance by public works staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

1.6 Financial Summary

1.6.1 What we will do

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks. The total forecasted costs of the lifecycle of stormwater assets at current service levels is summarized in Figure 1.6.

Figure 1.6 Forecast Replacement Costs

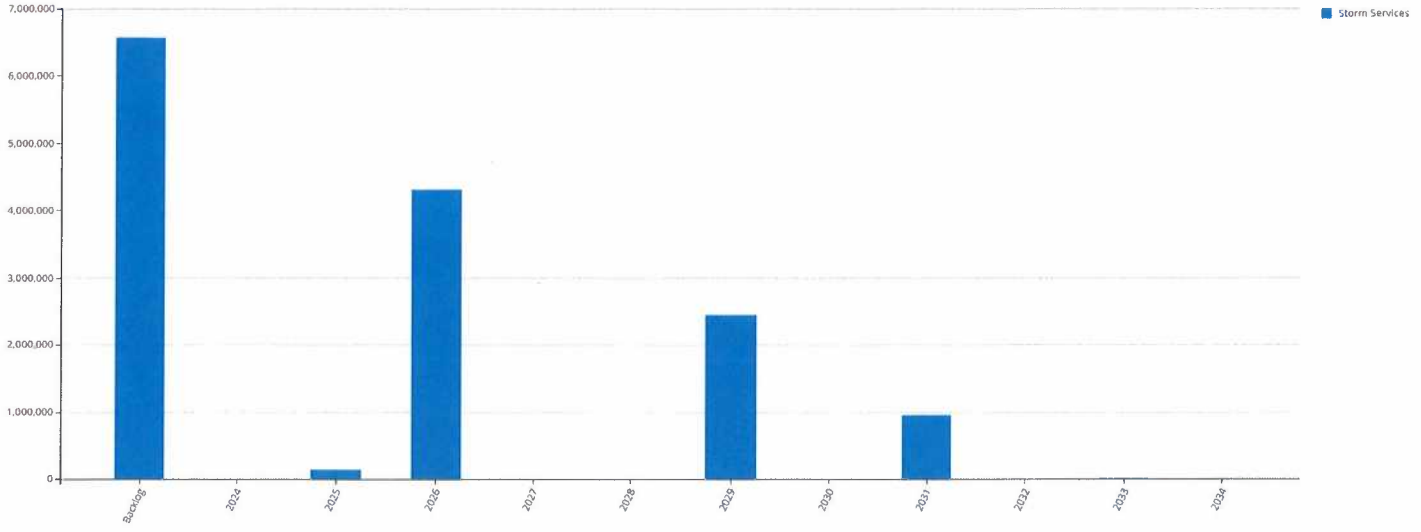


Figure Values are in current dollars.

We plan to provide stormwater asset services for the Town of Blind River

- Maintenance and operation of stormwater assets to ensure clean and safe collection and conveyance of storm water is supplied to residents.
- Replacement of assets before their end of usable life to prevent failure and disruption to the storm water system service
- **The total annual cost of this service is $ $17,911,825 including operation, maintenance and forecast replacements within the 10 year planning period.**

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Replacement of backlogged stormwater assets which have exceeded their usable life
- Forecasted replacement of assets which will reach the end of their usable life during the planning period.

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Flooding and damage to public and private property
- Excessive storm flows entering the sanitary system and overwhelming the capacity of the Wastewater treatment facility.

We will endeavour to manage these risks within available funding by:

- Completing the Pure Huron project to switch to Lake Huron as our primary wastewater source.
- Rehabilitation of ditches as necessary to provide sufficient capacity.
- Prioritization of the replacement of storm sewer lines to minimize potential disruption of service to residents.

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Service levels during the planning period will remain consistent with current levels.
- Future budgets will remain close to current funding levels.

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The asset register and was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a low to medium level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Complete rebuild of the stormwater asset register to include material type and GIS information related to wastewater assets.
- Development of a condition assessment tool which will account for the condition of the road surface and other underground assets to prioritize full road reconstructions.
- Revise the estimated useable life of storms sewer assets to account for condition to further refine the age-based condition assessments.
- Incorporate field condition data in the condition assessment process.
- Incorporate storm sewer line material type into the asset register to further refine the estimated useful life based on material.

2.0 Introduction

2.1 Background

The Town is responsible for owning and maintaining a stormwater network of 6km storm sewer mains, catch basins, and other supporting infrastructure.

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Town of Blind River planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- 2024 Planned Budget

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this AM Plan includes all stormwater system assets utilized to provide storm water collection and disposal.

The infrastructure assets included in this plan have a total replacement value of **$17,522,825**

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Council	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service sustainable.
Clerk's Department	■ Provide leadership with imbedding asset management practices across the organization. ■ Evaluate that adequate resources are available for development and implementation of AM initiatives ■ Ensure consistency of asset management approaches across the Town's Services Areas ■ Approve future plan revisions ■ Suggest budgetary, property tax/rate and Infrastructure Levy to Council.
Management Team	■ Review department fleet replacements and acquisitions to ensure a collaborative approach to asset usage whenever possible. ■ Recommends project selection criteria and weightings to Council.
PUC Staff/Public Works Staff	■ Report asset deficiencies and condition through routine inspection and preventative maintenance. ■ Complete maintenance and repair on the system as required.

Key Stakeholder	Role in Asset Management Plan
	▪ Provide replacement recommendations based on condition.

2.2 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a future Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated. This is planned to be developed in 2025.

Key elements of the planning framework are

- State of Local Infrastructure – current condition at the Town and replacement value of fleet assets
- Levels of Service and continuous improvement– specifies the services and levels of service to be provided
- Asset Management Strategies like risk, disposal, lifecycle, and future demand and how this will impact on future service delivery and managing existing and future assets at defined levels of service
- Continuous Improvement and Monitoring – how the plan can be continuously improved and then monitored to ensure objectives are met. This also includes increasing the asset management maturity, identifying emerging technologies in fleet like greening of fleet by including electric and hybrid fleet, charging stations and related infrastructure.

Other references to the benefits, fundamentals principles and objectives of asset management are:

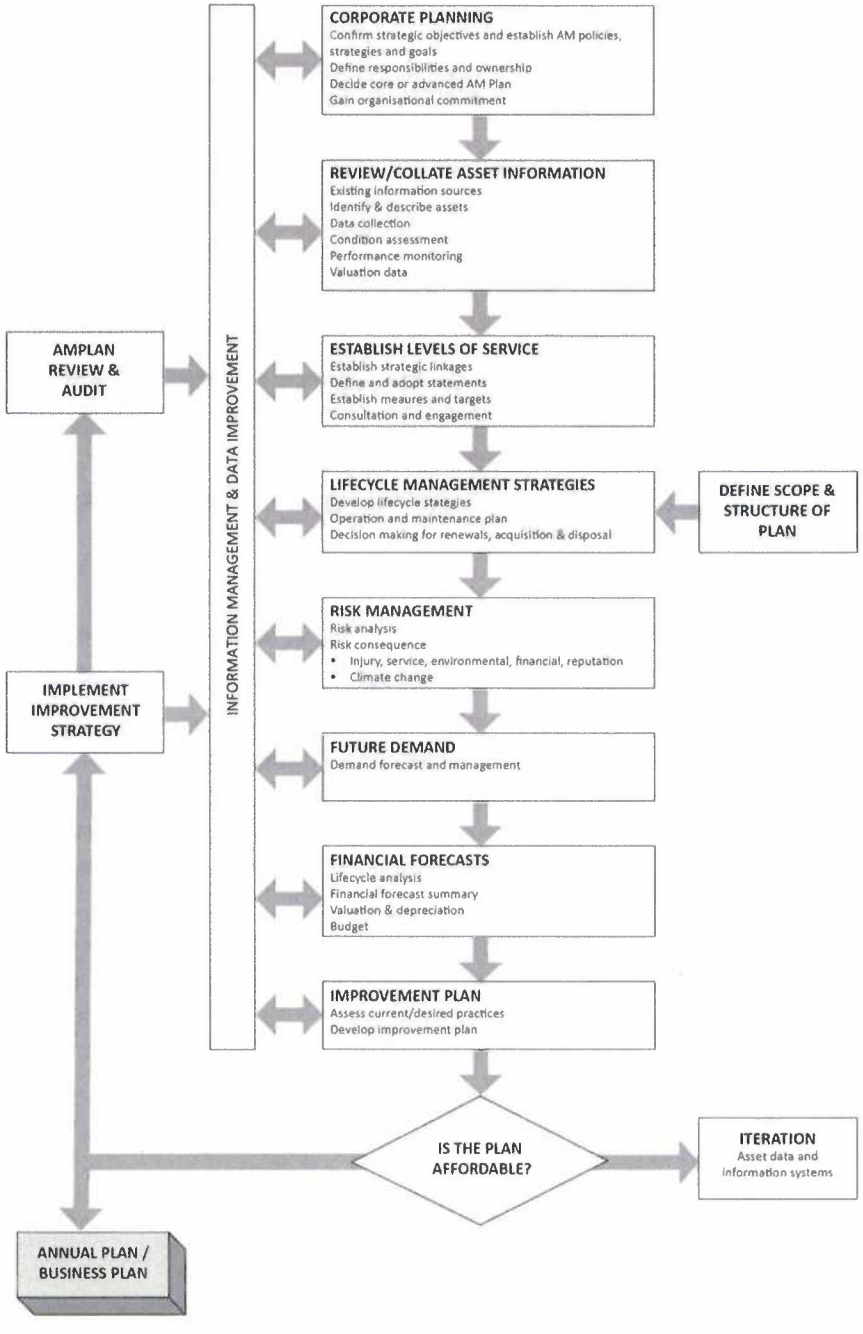
- ISO 55000[1]

A road map for preparing an AM Plan is shown below.

[1] ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 STATE OF THE INFRASTRUCTURE

3.1.1 Asset Inventory & Replacement Cost

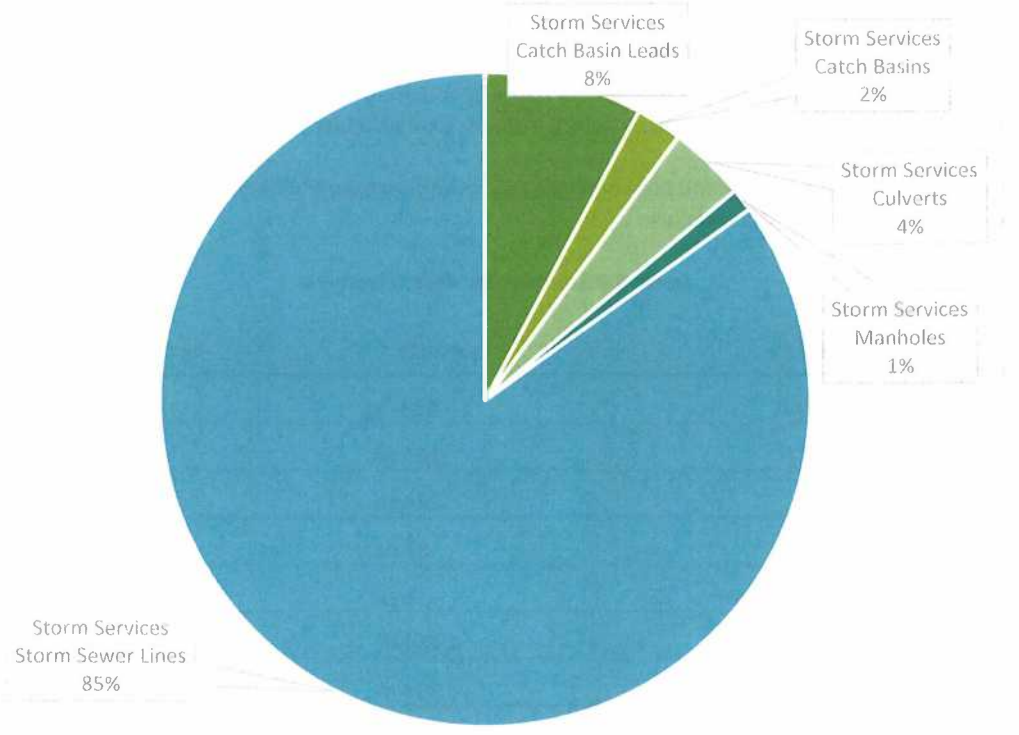
The table below includes the quantity, replacement cost method and total replacement cost of each asset segment in the Town's Stormwater Network inventory, which includes 6km of sewer lines.

The Town is responsible for owning and maintaining a stormwater network of 6km storm sewer mains, catch basins, and other supporting infrastructure.

Table 3.2 Stormwater Asset Overview

Asset Segment	Quantity	Total Replacement Cost
Catch Basin Leads	564 m	$ 941,048
Catch Basins	164 ea	$ 770,800
Culverts	274 ea	$ 728,610
Manholes	82 ea	$ 1,154,321
Storm Sewer Lines - Unknown	4 ea	$ 1,773,246
Storm Sewer Lines 200-300mm	4,789 m	$ 9,579,400
Storm Sewer Lines 301-400mm	355 m	$ 711,600
Storm Sewer Lines 401-500mm	613 m	$ 1,227,600
Storm Sewer Lines 501mm and over	318 m	$ 636,200
	Total	$ 17,522,825

3.2 Stormwater Replacement Cost Distribution Overview

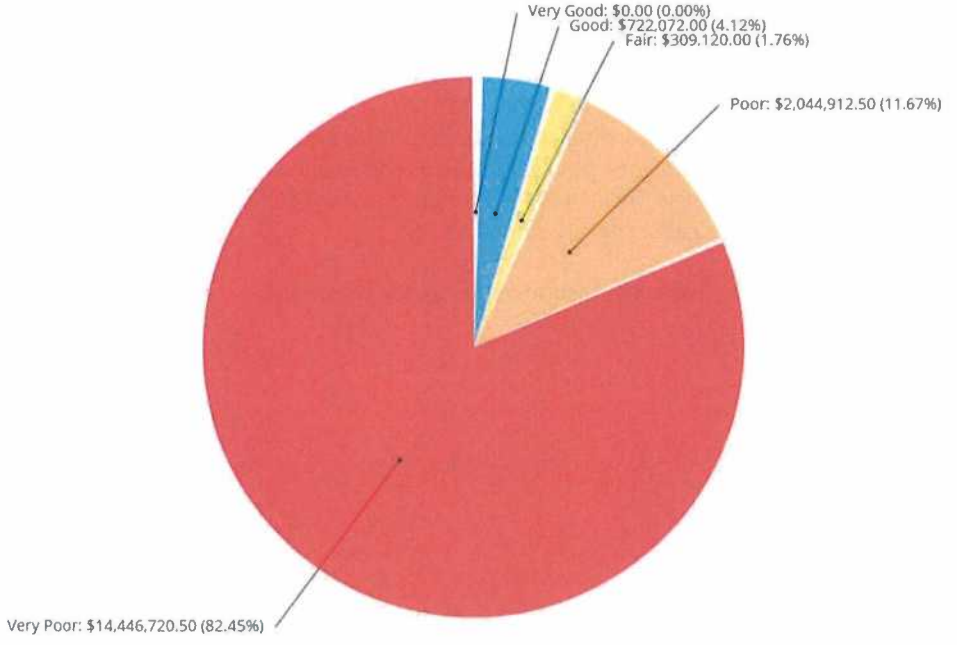


3.1.2 Asset Condition

The figure below summarizes the replacement cost-weighted condition of the Town's storm network and associated capital assets. Based primarily on age, the vast majority of the Town's storm infrastructure is aging and in poor or worse condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

The figure below provides further detail on the storm network, by asset type. Most assets are in poor or worse condition, based on age.

Table 3.2 Stormwater Asset Overview



TOTAL: $17,522,825.00

To ensure that the Town's Stormwater Network continues to provide an acceptable level of service, the Town 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 Stormwater Network.

4.0 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:

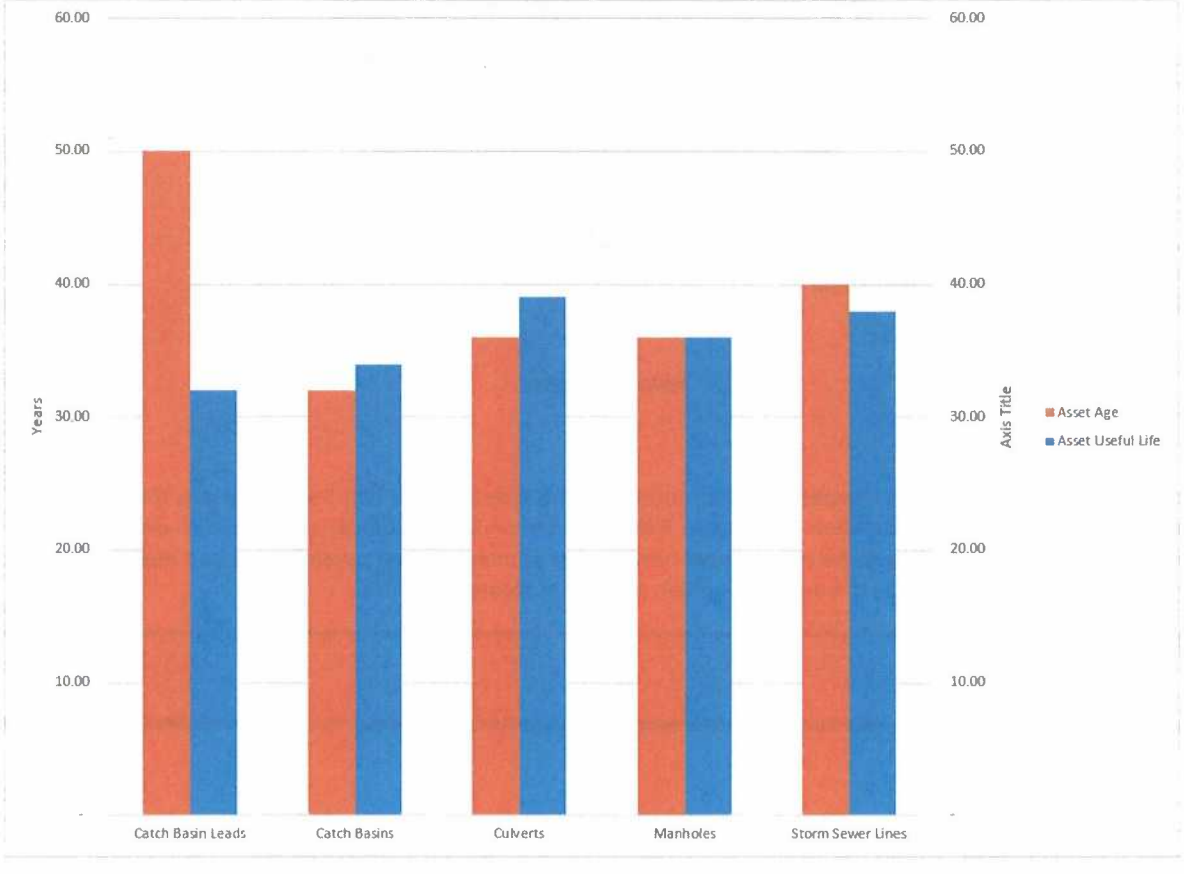
- Staff are working on developing an annual inspection program for all catch basins.
- Some condition assessments are conducted on an annual basis.

4.1.1 Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the recommended or industry-standard serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently.

As assets age, their performance diminishes, often more rapidly as they approach the end of their design life. EULs can vary significantly within an asset category, from several years to many decades. The graph below illustrates the average useful life of each major asset segment, and the average current age of assets within the segment. Both values are weighted by replacement cost to ensure comparability.

Table 4.1.1 Stormwater Age Vs. Useful Life



The average age of stormwater system assets is 36 years

The age profile shows that most storm asset have either exceeded their service life, or are in the latter stages of their lifecycle and may begin to show further signs of disrepair and degradation. However, the service life for sewer lines may be understated. Currently, no material data is available for storm lines with a replacement cost of nearly $13 million, making it difficult to assign estimated useful lives. Periodically, each asset's EUL should be reviewed to better align with actual, in-field performance.

5.0 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 Town's current lifecycle management strategy.

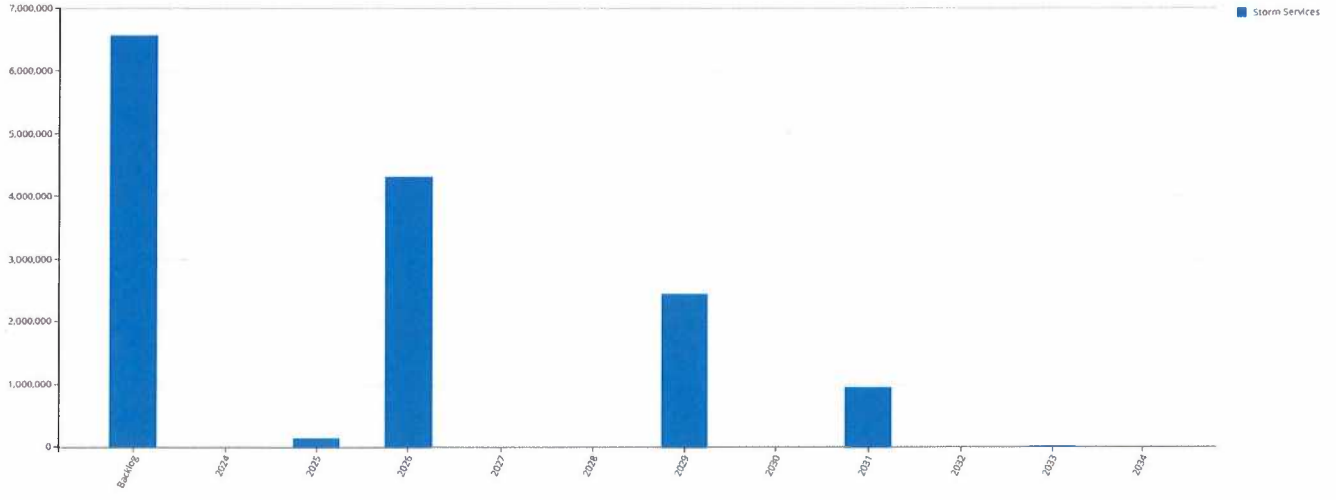
Activity Type	Description of Current Strategy
Maintenance	Maintenance activities, including flushing, catch basin cleaning, and cover adjustments are completed. These are implemented as required; however staff are working on developing an annual inspection program for catch basins that may extend their useful life by five years. The cost for flushing is estimated at $500 per metre.
Rehabilitation	Trenchless re-lining has the potential to reduce total lifecycle costs but would require a formal condition assessment program to determine viability. Currently, renewal and rehabilitation treatments are triggered by site-specific events, and can cost $1,000 per metre.
Replacement	Without the availability of up-to-date condition assessment information replacement activities are purely reactive in nature and driven by site-specific events.

5.1.1 Forecasted Capital Requirements

The figure below illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the Town's storm network assets. On average, $0.4 million is required each year to remain current with capital replacement needs.

Age-based replacement needs will peak in the next decade, totalling more than **$ 14,446,720**. This represents an annual budget requirement of $1,444,672. Given the long lifespan of sewer lines, capital replacements are expected to remain steady through 2060.

Table 3.1.5 Stormwater Asset Replacement Forecast

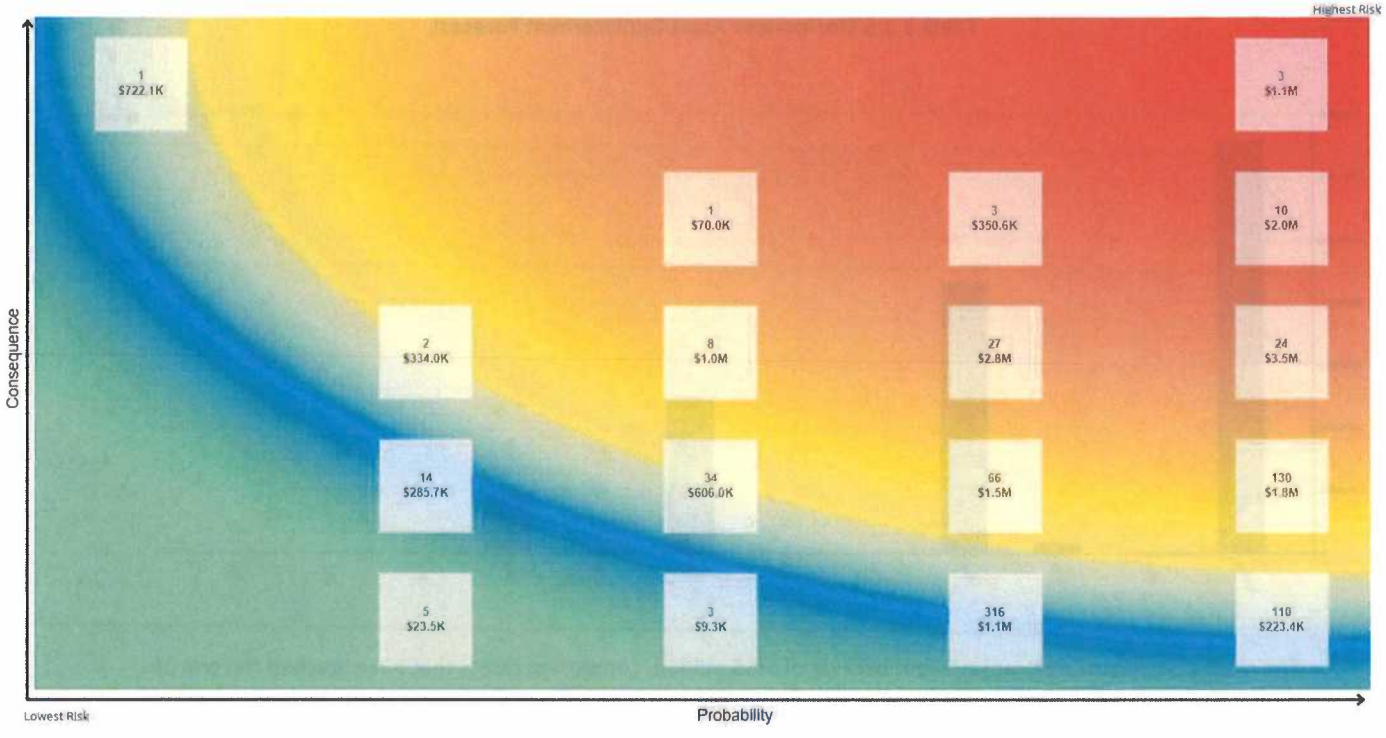


The chart also illustrates a replacement backlog of **$6.5 million**, comprising assets that have reached the end of their estimated useful life but remain in service. Condition data may indicate that these assets are still capable of delivering acceptable service standards, in a safe and efficient manner. However, both age and condition will be incorporated into future plans and used to forecast replacement needs and refine capital expenditure estimates.

5.1.2 Risk Matrix: Storm Network

The preliminary risk matrix below is generated using available asset data. It classifies assets based on their probability of failure and the consequence of failure. The Town is in the process of developing comprehensive risk frameworks for each of its asset classes and major segments. These frameworks will allow the Town to build more robust risk models to refine how risk ratings are established for different asset segments.

Table 3.1.6 Stormwater Asset Risk Matrix



In addition to asset level risk, the municipality may also face risk associated with not executing key lifecycle activities, including repairs, rehabilitation, and replacement of critical assets. These include:

- Missed opportunities for cost savings and increases in lifecycle costs
- Deferral of vital projects, or further lending and borrowing
- Accelerated asset deterioration and premature failure, which may lead to public health and safety hazards, and disruption of services to the Town's residential and commercial base.
- Failure of stormwater assets can be particularly detrimental, causing excessive flooding, erosion, backups, road and bridge closures, environmental damage, and substantial property damage. Water quality may also be jeopardized, further exacerbating public health and safety challenges. Increased frequency of extreme weather events has made some communities even more vulnerable to flooding. These events can also create legal liabilities for the municipality.
- A decline in public satisfaction with the Town's service standards and the resulting reputational damage

An asset's criticality rating, determined by the nature and magnitude of the consequences of its potential failure should be used to prioritize projects, particularly lifecycle management strategies. Using risk in conjunction with levels of service, and the recommended treatment options can assist in optimizing limited funds.

6.0 Levels of Service

The following tables identify the Town's current level of service for Stormwater 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 Town has selected for this AMP.

6.1 Community Levels of Service

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

Service Attribute	Qualitative Description	Current LOS
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	TBD

6.2 Technical Levels of Service

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

Service Attribute	Technical Metric	Current LOS
Scope	% of properties in municipality resilient to a 100-year storm	75%
	% of the municipal stormwater management system resilient to a 5-year storm	95%

7.0 PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is planned budgets and historical expenditures.

7.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is the 2024 fleet forecast as well as the asset register maintained in Citywide.

7.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 9.2.

Table 9.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Integrate condition assessment data with the Town's asset management register to ensure alignment between systems and capital budget development.	Director of Public Services	Staff time	2 months
2	Identify material for storm mains to improve age profile analysis and capital replacement forecasts.	Director of Public Services	N/A	2 months
3	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.	Director of Public Services and Finance	Staff time	2 months
4	Review risk models on a regular basis and adjust according to an evolving understanding of the probability and consequences of asset failure.	Director of Public Services	Staff time	3 months
5	Document and review lifecycle management strategies for the stormwater network on a regular basis to achieve the lowest total cost of ownership while maintaining adequate service levels.	Director of Public Services	Staff time	3 months
6	Work towards identifying proposed levels of service as per O. Reg. 588/17 and identify the strategies that are required to close any gaps between current and proposed levels of service.	Director of Public Services	Staff time	3 months

7.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets.

These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 1 year of each Town Council election.

7.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the future long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%). This will be review in future iterations of the plan.

8.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Asset Management Strategic Plan 2019
- 2024 Planned Budget

Blind River

TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN
FLEET ASSETS

Chris Zagar
Director of Public Services

Document Control		Asset Management Plan			
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	December 5, 2024	Initial Plan	C. Zagar	K. Scott/S. Dent	Council

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This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 10 year planning period. In the future, the AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provide fleet support to the Town's services. The Town has 34 fleet in its inventory. This includes fire apparatus which are also covered in the Fire AMP. The Fleet network is classed by:

- Class 1 - Light Duty Fleet
- Class 2 - Medium Duty Fleet
- Class 3 - Heavy Duty Fleet

The above infrastructure assets have replacement value estimated at $8,485,128.

1.3 Levels of Service

The allocation of funding in the planned budget is will dictate the performance of these assets and whether they continue providing existing services at current levels for the planning period.

The main service consequences of an insufficient Planned Budget are:

- Increased downtime of fleet assets.
- Increased repair costs for fleets assets.
- A reduction in service that the Town can provide.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Growth in fleet due to demand for other services. These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand.
- Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Preventative Maintenance (PM) of Fleet using a work order system called Citywide Maintenance Manager
- The Fleet Forecast and development of a Fleet Management Policy as a driver for fleet replacement.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Fleet assets are scheduled for replacement after 10 years of service to minimize repairs costs and maximize return on trade when purchasing a replacement. This timeframe can be extended or reduced based on the condition assessment and recommendation of mechanic staff as well as other factors.
- Requests for the addition of fleet assets are reviewed for approval by the Director of Public Services.
- Fleet assets due for replacement will undergo a needs analysis to determine if replacement is necessary or if the asset's service can be fulfilled within the existing fleet.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for Fleet Assets is estimated as **$2,805,814 or $ 280,581** on average per year. However, the Fleet Asset Management Policy directs the staff to investigate the following factors before deciding on fleet replacements:

- Usage through mileage/ Hours vs Expected, and these readings are tracked using Citywide Maintenance Manager
- Condition and Usability determined through routine inspections and preventative maintenance by mechanic staff.
- Annual operating and repair costs taken from budget and in the future Citywide Maintenance Manager
- Age/Year of asset vs expected lifecycle

1.6 Financial Summary

1.6.1 What we will do

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

Forecast Lifecycle Costs and Planned Budgets

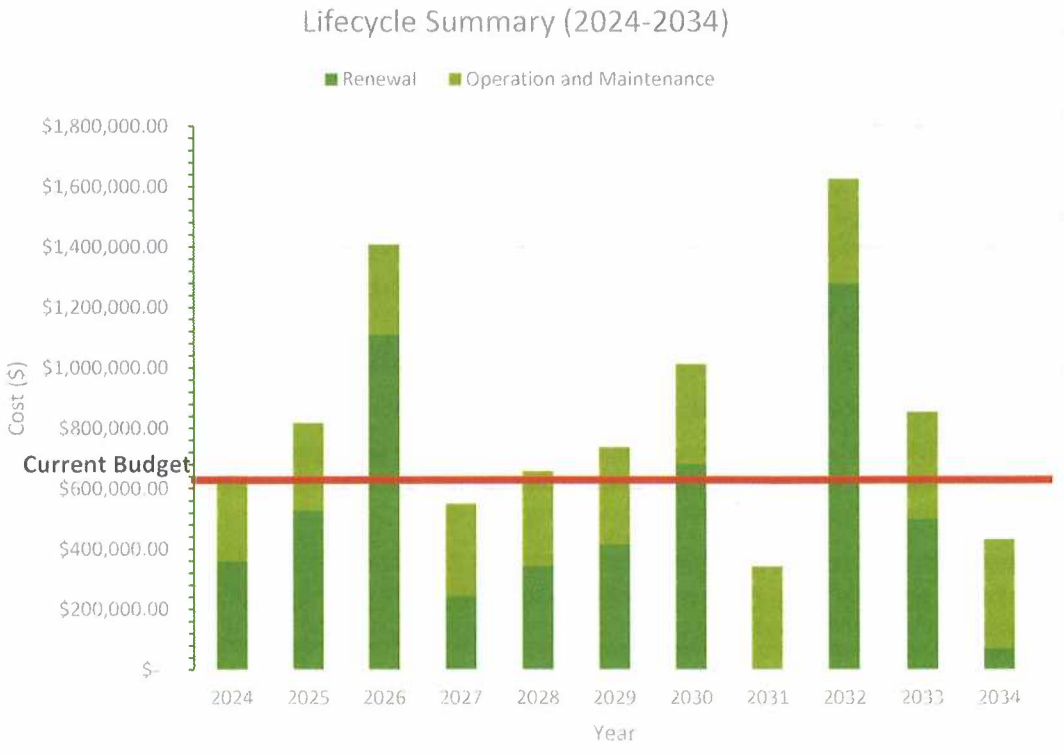


Figure Values are in current dollars.

We plan to provide fleet asset services for the following:

- Operation, maintenance, renewal and acquisition of light, medium and heavy duty vehicles to meet service levels set by Town Council in annual budgets.
- $$2,805,814 within the 10 year planning period.

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Future planned fleet asset renewals

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Impact to service of critical services (transportation, water and wastewater services)
- Loss of the arena service and maintenance of recreational spaces
- Loss of fire services

We will endeavour to manage these risks within available funding by:

- Routine inspection and preventative maintenance
- Forecasted proactive fleet replacement
- Repurposing of fleet assets whenever possible.

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Service levels during the planning period will remain consistent with current levels.
- Future budgets will remain close to current funding levels.

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The asset register and 2024 fleet forecast was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a medium to high level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Improved fleet maintenance tracking using a computerized maintenance management system. This will greatly refine the costs of each asset withing the fleet.
- Increased preventative maintenance scheduling. This will vehicle downtime and long-term maintenance costs.
- Development of an organization wide fleet management plan which will standardize our approach to fleet acquisitions and replacements. This will ensure we are looking at every opportunity for efficiency within our current fleet.

2.0 Introduction

2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Town of Blind River planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- 2024 Fleet Forecast
- Fleet Service List
- 2024 Planned Budget

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this AM Plan include light, medium and heavy duty assets utilized by the Parks and Recreation, By-law, Fire and Public Works departments. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

These assets are used to provide transportation, maintenance, construction, by-law enforcement and emergency response services.

The infrastructure assets included in this plan have a total replacement value of $8,485,128.

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Council	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service sustainable.
Clerk's Department	■ Provide leadership with imbedding asset management practices across the organization. ■ Evaluate that adequate resources are available for development and implementation of AM initiatives ■ Ensure consistency of asset management approaches across the Town's Services Areas ■ Approve future plan revisions ■ Suggest budgetary, property tax/rate and Infrastructure Levy to Council.
Management Team	■ Review department fleet replacements and acquisitions to ensure a collaborative approach to asset usage whenever possible. ■ Recommends project selection criteria and weightings to Council.
Mechanic Staff	■ Track fleet asset condition through routine inspection and preventative maintenance.

Key Stakeholder	Role in Asset Management Plan
	■ Provide replacement recommendations based on condition.

2.2 Asset Hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the fleet asset class and department that is used to determine fleet prioritization and estimated usable life. The Town has 39 fleet assets of which the Public Works Department owns the largest fleet. The fleet hierarchy is broken down into Light, Medium, Heavy Duty and Fire Fleet. This categorization will be used in the Fleet Replacement Policy as well developing Fleet Reserves.

Table 2.1.1 Fleet Assets by Department

Department	Fleet Asset Count
Protective Services	
Fire	6
By-law Enforcement	1
Community Services and Facilities	
Parks and Recreation	6
Public Services	
Public Works	22
Total Assets	**34**

2.3 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated. This is planned to be completed in 2025.

Key elements of the planning framework are

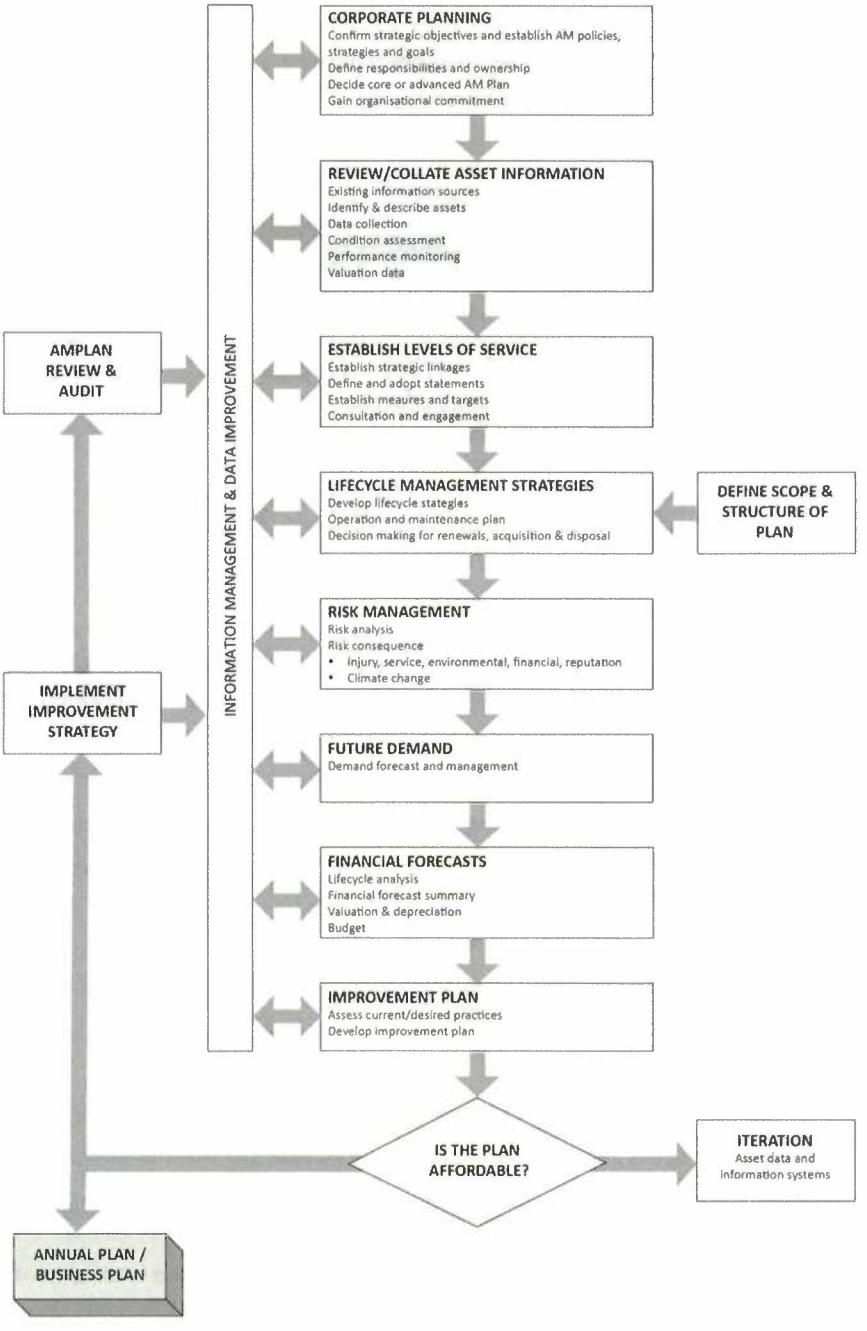
- State of Local Infrastructure – current condition at the Town and replacement value of fleet assets
- Levels of Service and continuous improvement– specifies the services and levels of service to be provided
- Asset Management Strategies like risk, disposal, lifecycle, and future demand and how this will impact on future service delivery and managing existing and future assets at defined levels of service
- Financial summary – what funds are required to provide the defined services and funding availability through provision of adequate reserves.
- Continuous Improvement and Monitoring – how the plan can be continuously improved and then monitored to ensure objectives are met. This also includes increasing the asset management maturity, identifying emerging technologies in fleet like greening of fleet by including electric and hybrid fleet, charging stations and related infrastructure.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- ISO 55000[1]

A road map for preparing an AM Plan is shown below.

Road Map for preparing an Asset Management Plan
Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



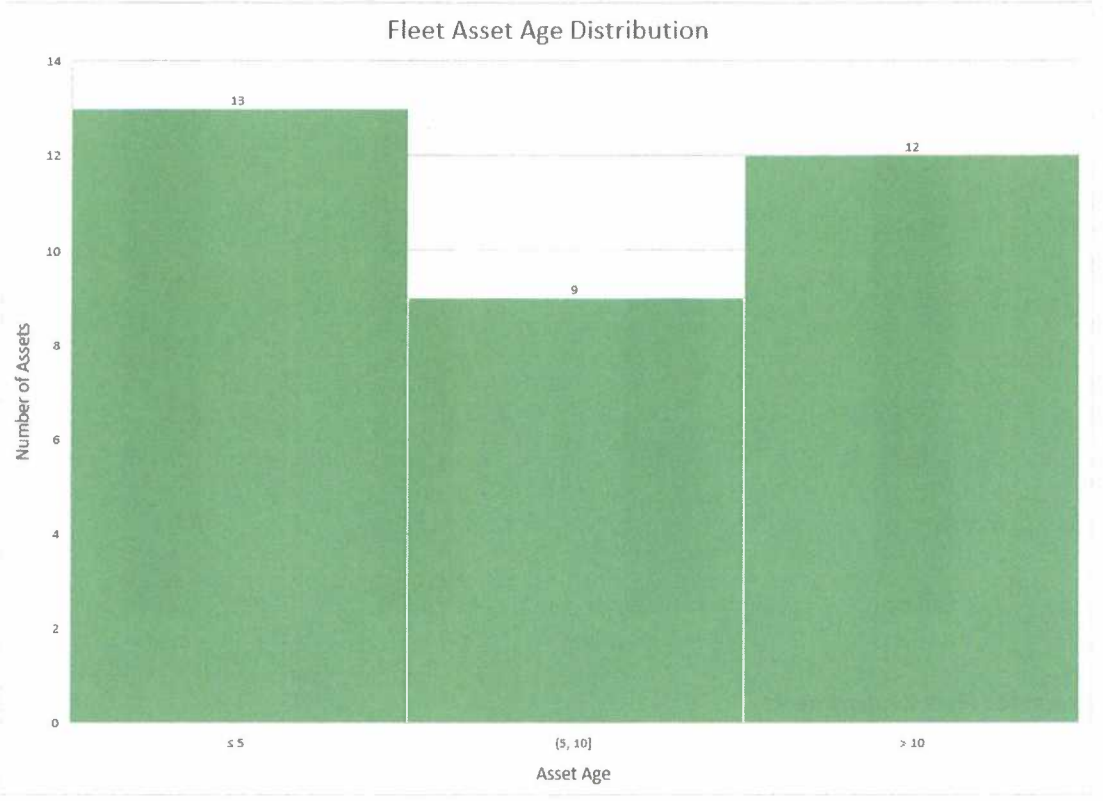
[1] ISO 55000 Overview, principles and terminology

3.0 STATE OF INFRASTRUCTURE

3.1 Fleet Asset Age

The average age of fleet assets by department is 10 years. This age is skewed slightly by the presence of a 33 year old fleet asset and the secondary fire apparatus. The fleet asset age distribution is shown in Figure 3.1.1.

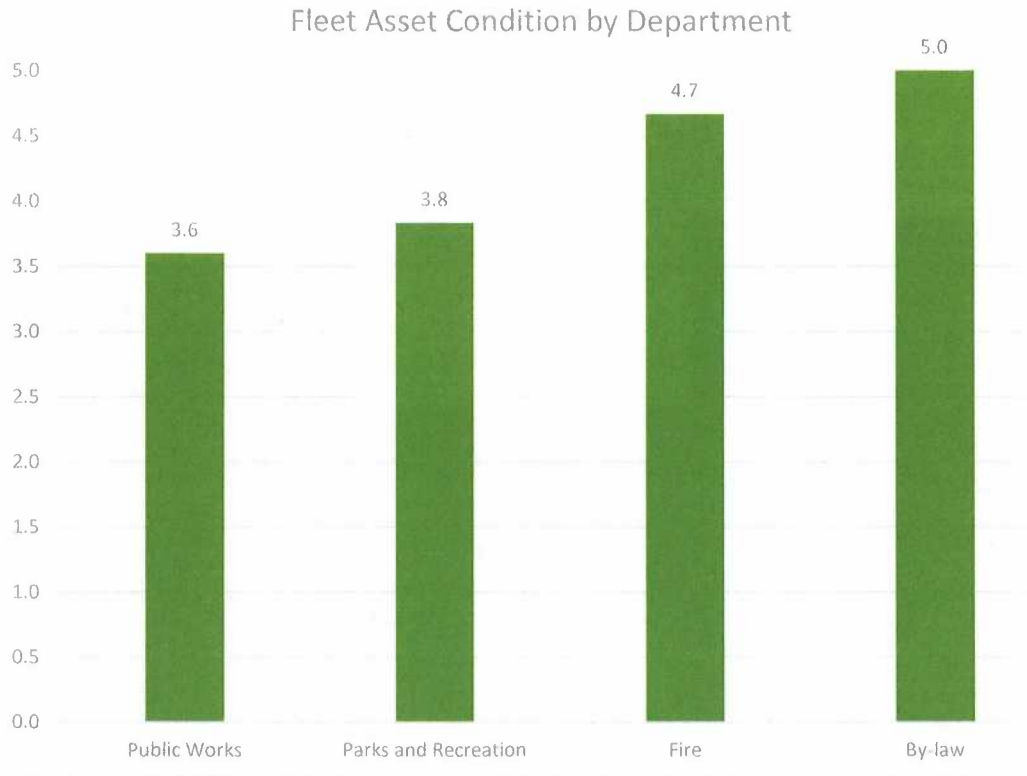
Figure 3.1.1 Fleet Asset Age Distribution



3.2 Fleet Asset Condition

The average condition of fleet assets is 4 out of 5. The distribution of fleet asset condition is shown in Figure 3.2.1.

Figure 3.2.1 Average Fleet Asset Condition by Department



3.3 Forecasted Fleet Replacements

The total replacement cost of the fleet assets is $8,485,128. The forecasted replacement costs during the 10-year planning period of the Fleet Asset Management Plan are $5,300,000. These forecasted replacements are broken down by department in Figure 3.3.1 and Figure 3.3.2.

Figure 3.3.1 Fleet Asset Replacement Forecast

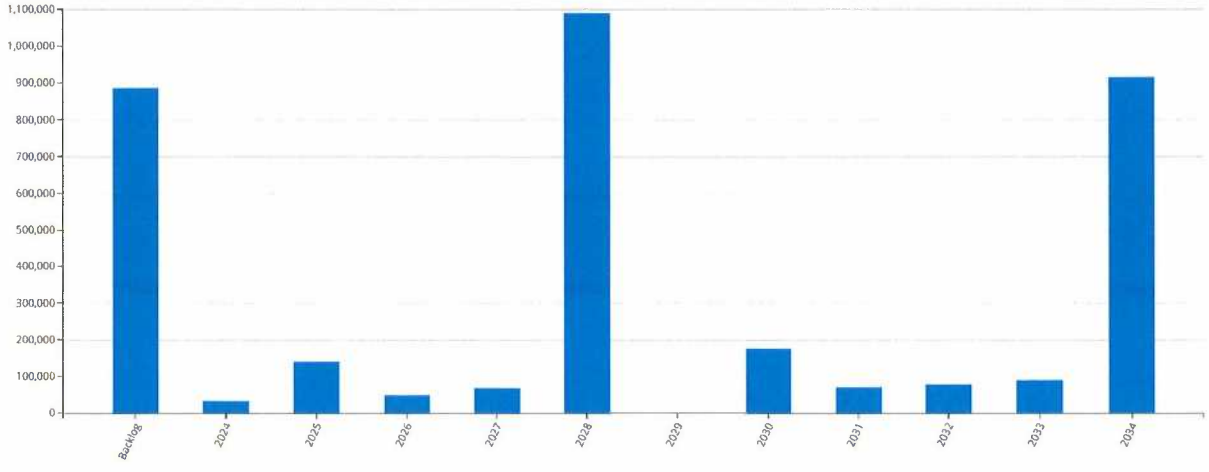
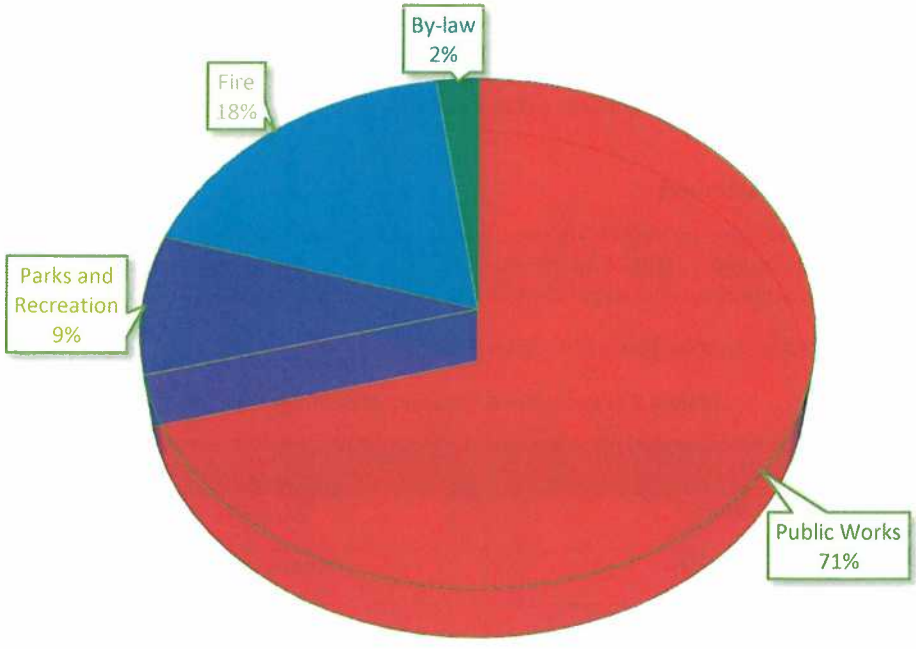


Figure 3.3.2 Fleet Asset Replacement Forecast Distribution by Department (2024 – 2034)



4.0 LEVELS OF SERVICE

4.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Blind River Town Council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Blind River Town Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

4.2 Understand your customers

The Customer is defined as those who use or are impacted by activities associated with providing the fleet services. The fleet service supports various departments and, in the Town, and the services they deliver. The customer base for fleet is primarily other department in the Town used to provide services for the residents.

Table 4.2.1 gives a snapshot of stakeholders and customer groups.

Table 4.2.1: Customer Groups and Stakeholders

Stakeholder	*Customer Groups*
Service Users	*Town Departments*
Regulatory Bodies	*Ministry of Transportation*
External Stakeholders	*Council*

4.3 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Town of Blind River vision, mission, goals and objectives.

Our vision is:

Driven by extraordinary volunteers and supported by its community leaders, Blind River is a vibrant and prosperous town that has established itself as a year-round destination and ideal community is which to live and do business.

Our mission is:

Providing quality services and leadership that reflect the social, cultural, environmental and economic needs of the community, while creating regional partnerships and managing resources in a fiscally responsible manner.

Strategic goals have been set by the Town of Blind River Asset Management Strategy. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Good Governance	Ensure the Town maintains the Levels of Service for Fleet assets	Routine inspection and maintenance of fleet using Maintenance Manager work orders and inspections for all Town fleet
Environmental Sustainability	Lead in promoting and preserving our unique physical environment	Endeavour to maintain an environmentally conscious fleet whenever possible by opting for the equipment which is not over-sized to meet our needs and electric or hybrid vehicles when applicable in the future both of which have less impact on environment.

4.4 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Fleer Asset service are outlined in Table 4.4.

Table 4.4: Legislative Requirements

Legislation	Requirement
Compliance with MTO (Ministry of Transportation)	Drivers Licensing and MTO requirements for general and CVOR license for the Town fleet
Ontario Regulation 555/06	Compliance of "Hours of Service" on use of Towns fleet
HIGHWAY TRAFFIC ACT, R.S.O. 1990, C. H.8	These regulations outline the key requirements for the following with respect to municipal road systems: • Traffic Control Devices • Speed Limits • Parking Regulations • Enforcement of Traffic Offenses • Road Closure and Temporary Traffic Control • Road Maintenance and Repair Compliance with Provincial Regulations
O. Reg. 588/17: ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE	These regulations outline the requirements for the following with respect to municipal road systems: • Inventory and Condition Assessment • Performance Monitoring and Reporting • Lifecycle Planning and Asset Valuation • Risk Assessment and Mitigation • Financial Planning and Budgeting • Stakeholder Engagement and Communication Continuous Improvement and Review

4.5 Customer Values

Service Levels are defined in three ways, customer values, customer Levels of Service and technical Levels of Service.

Customer Values indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision

Table 4.5: Community Values

Service Objective: To maintain a safe, efficient and reliable fleet.		
Compliance	Compliance of MTO, Highway Traffic Act, Town of New Tecumseth Fleet Management Policy	All Fleet
Safety and Condition	Ensure fleet assets are in Fair to Very Good condition	All Fleet
Conformance	Ensure conformance of MTO guidelines	All Fleet
Environmental Sustainability	% of fleet of commercial fleet which meet emissions testing requirements.	All Fleet

4.6 Community Levels of Service

The Customer Levels of Service as shown in Table 4.6 is reflected under each of the service measures types (, Compliance, Safety and Condition, Conformance, Environment Sustainability). There is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation. These are measures of fact related to the service delivery outcome (e.g. Percentage of Town's fleet meeting the MTO guidelines or proportion of fleet by condition percentages) to provide balance in comparison to the customer perception that may be more subjective. The Figure 4.6 shows the condition of fleet by asset class and table 4.6 represents the Service Levels at the current state of funding and corresponding performance measures.

Figure 4.6: Average Condition of Fleet Assets by Department

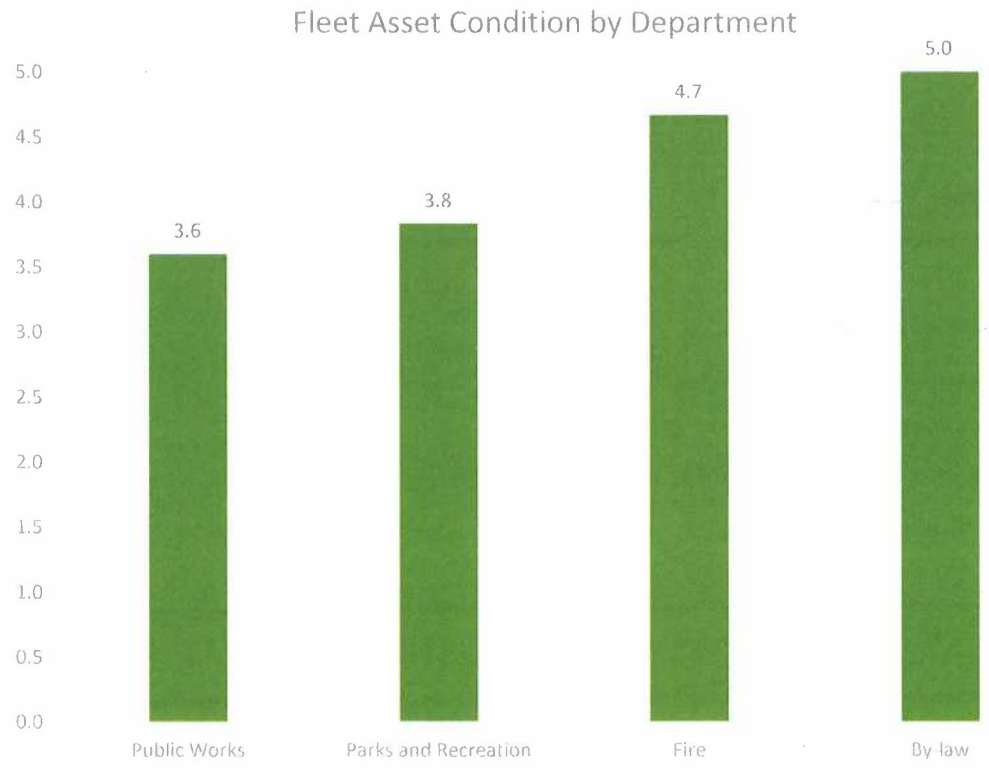


Table 4.6: Community Level of Service Measures

Service Attribute/ Customer Values	Customer Levels of Service	Current Performance	Expected Trend Based on Planned Budget
Compliance	Meeting compliance set by the MTO guidelines	Compliant with Ontario Regulation	This is not expected to change.
Compliance	Compliance with Town's Fleet Management Policy	This policy is planned to be developed to support the 2025 AMP.	This is expected to improve the cost effectiveness of this service moving forward.
Safety and Condition	Condition of Fleet – >85% of fleet assets with condition between Fair to Very Good.	89%	This is expected to remain consistent if the planned budget follows the fleet forecast.
Conformance	Number of Fleet or % age of Fleet that meets the MTO standards	100%	This is not expected to change.
Environment sustainability	% of fleet of commercial fleet which meet emissions testing requirements	100%	This is not expected to change.

4.7 Technical Levels of Service

Technical Levels of Service – To deliver the Community Values, and impact the achieved Community Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical Levels of Service apply to internal stakeholders such as staff, or senior management. The Technical LOS (Levels of Service) description is a brief statement summarizing measures related to operation and maintenance of an asset.

Town of Blind River Management implement and control technical Service Levels to influence the service outcomes. Table 4.7 shows the activities expected to be provided under the current 10-year planned budget allocation, and the forecast activity requirements being recommended in the Fleet AMP. The current technical Levels of Service for fleet are the financial sustainability of operating and maintenance (O&M) costs and renewals in fleet. The measures are important from the Town's perspective as it aims to understand the growth of fleet and hence the corresponding increase in operations and maintenance cost. The renewals in fleet will also help Council and Management to understand the resource capacity in department fleet assets. Also, for the fleet assets to be in a state of good repair, it is important for the staff to know the fleet utilization and replacement levels.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

Table 4.7 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 4.7: Technical Levels of Service

Service Attribute	Technical Levels of Service	2020	2021	2022	2023	2024
Financial Sustainability	Average annual spending on Operations and Maintenance for Fleet.	$164,550	$167,650	$173,050	$212,050	$239,000
Reliability	Number of new fleets assets acquired annually.	0	0	0	0	1
	Number of fleet assets replaced annually	3	1	5	3	1

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

5.0 FUTURE DEMAND

5.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc. Demand drivers affecting fleet are generally triggered by growth in the Town services or responsibilities, technological changes, economic factors and, environmental awareness, etc. With the growth in the Town and acquisition of assets like new roads or parks will trigger a growth in the fleet to support these services.

5.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

5.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 5.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 5.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Climate Change	No consideration of the impacts of climate change are considered in the maintenance of fleet assets	Increased regulations related to emissions could result in an increased cost to meet compliance.	If additional funding is not allocated the level of service will decrease.	• Evaluate fleet replacements to look evaluate the use of electric vehicles and equipment where able. • Allocate additional funds towards these activities.
Population Growth	A process doesn't currently exist to monitor and forecast the impacts of growth on service delivery	Population will increase slowly	The level of service will decrease slowly over time in relation to population growth.	Establish a process for monitoring and forecasting population growth to proactively plan for required expansion/acquisitions to the Fleet network.
Regulatory Changes	The process of addressing changing regulations is reactionary.	New regulations related to vehicle maintenance standards and environmental sustainability will be introduced	The cost of operation and maintenance of the fleet will increase to meet new regulatory requirements.	Monitor industry and regulatory trends, address anticipated changes proactively prior to the ratification of regulatory requirement.

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Public Expectations and Service Levels	Complaints from the public are tracked through an online reporting portal.	Public requests will result in the provision of additional services and additional fleet assets will be required to meet these services.	The operation/ maintenance and replacement costs will increase proportionately to the increase in service	Citizen surveys should be introduced to determine their expectations and involve residents in Asset Management discussions to ensure are aware of the cost to deliver services.
Technological Advancements	No consideration of the impacts of technological advancements are considered in the maintenance/renewa l of the road network.	Advancements in transportation technology, such as electric vehicles (EVs) will alter the demands related to the fleet.	The long-term resident expectations will change resulting in a required change to technical levels of service.	• EV charging infrastructure may need to be installed.
Increasing Fuel Costs	Minimal consideration is currently given to the continuous rise in fuel costs.	The cost of fuel will continue to increase along with the operation of fleet assets.	This will result in continually increasing costs to deliver the same levels of service.	• Whenever possible the fleet assets will be repurposed to minimize the size of the fleet as much as possible. • Speeding and idling are tracked on vehicles via telematics and infractions are followed up on to ensure fuel efficient usage.

5.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Town of Blind River to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the future long-term financial plan.

5.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

Climate change may have a significant impact on the assets we manage and the services they provide. Future initiatives within the Fleet AMP aim to reduce the greenhouse gas emissions by making an effort to have an environmentally friendly fleet. A lower impact to the environment can be also be achieved by considering electric or hybrid vehicles in place of a standard gas fleet. Greening the fleet consists of the following objectives:

- Reduce greenhouse gas emissions through direct purchase of "cleaner" vehicles/equipment and through operational policies/procedures such as anti-idling, speed enforcement and preventative maintenance.

- Improve overall fuel efficiency of the Towns Fleet through purchase of fuel-efficient vehicles, "right sizing" fleet assets, anti-idling policy, speed management and preventative maintenance.
- Review new technologies and initiatives in Green Fleet Management and implementation of proven initiatives by the Fleet Business Unit.
- Recycle, reuse, recover and reduce, wherever possible, including fleet assets, components, fluids, etc.

Additionally, the way in which we renew existing and acquire new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

6.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the the Town of Blind River plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

6.1 Background Data

6.1.1 Physical parameters

The assets covered by this AM Plan are shown in Table 6.1.1.

Blind River's fleet assets are categorized in 3 categories: light, medium and heavy duty.

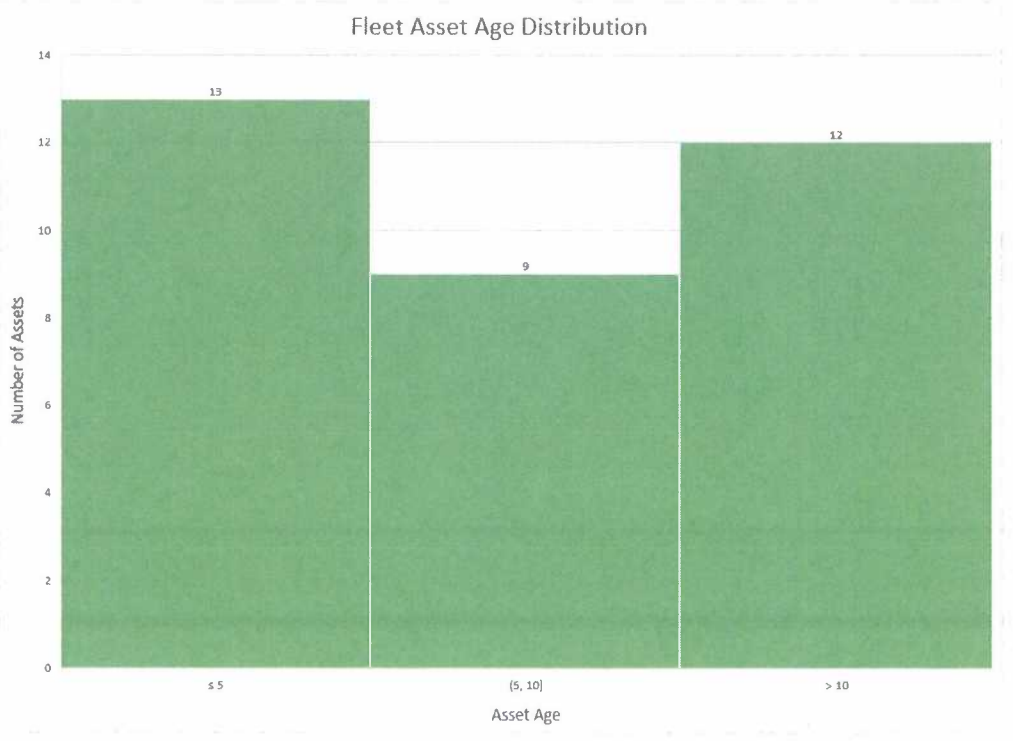
The age profile of the assets included in this AM Plan are shown in Figure 6.1.1.

Table 6.1.1: Assets covered by this Plan

Asset Category	Dimension
Light Duty	13
Medium Duty	2
Heavy Duty	19
TOTAL	34

*All figure values are shown in current day dollars.

Figure 6.1.1: Fleet Asset Age Profile



The general service life for fleet assets is 10 years but replacements evaluate age, service delivered and condition when deciding on the appropriate time to replace an asset. Fire Services assets have a longer

estimated useful life which is further outlined in the Fire Services AMP. The majority of Blind River's fleet assets (65%) are less than 10 years in age.

Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 6.1.2.

Table 6.1.2: Known Service Performance Deficiencies

Asset	Service Deficiency
Public Works - Water Truck Fleet #1	This vehicle has greatly surpassed its usable life due to its minimal usage. However, due to its age it faces imminent failure and is unlikely to meet updated inspection practices.
Parks and Recreation – Light Duty Pick-up Trucks Fleet numbers PR-33 and PR-53	The vehicles have greatly surpassed their service life and are in poor condition with a high likelihood of imminent failure.

The above service deficiencies were identified from the 2024 Fleet Forecast

6.1.2 Asset condition

Condition is currently monitored through routine annual or bi-annual inspections

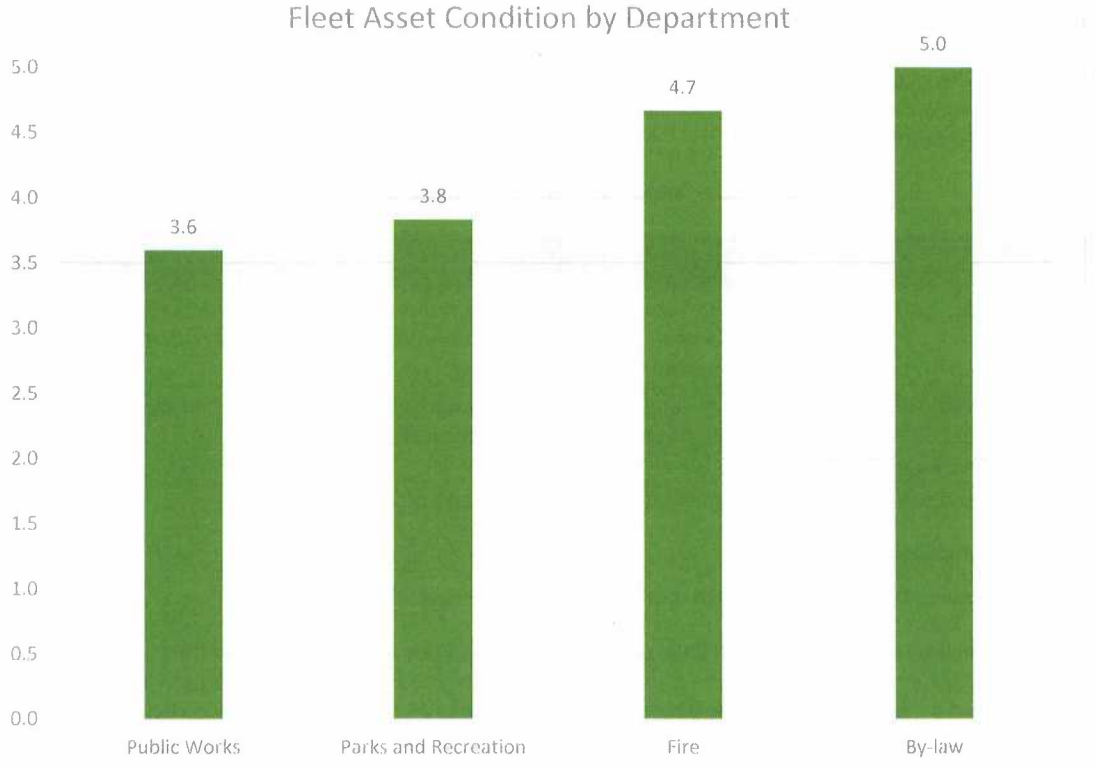
Condition is measured using a 1 – 5 grading system as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

Table 6.1.3: Condition Grading System

Condition Grading	Description of Condition
5	**Very Good**: free of defects, only planned and/or routine maintenance required
4	**Good**: minor defects, increasing maintenance required plus planned maintenance
3	**Fair**: defects requiring regular and/or significant maintenance to reinstate service
2	**Poor**: significant defects, higher order cost intervention likely
1	**Very Poor**: physically unsound and/or beyond rehabilitation, immediate action required

The condition profile of our assets is shown in Figure 6.1.3.

Figure 6.1.3: Asset Condition Profile



Fleet asset condition is currently reported by the mechanic staff through routine inspection of fleet assets and is also based on the frequency of repair. In 2025, this will be further enhanced through the tracking of fleet maintenance using the computerized maintenance management system (CMMS) Citywide Maintenance Manager.

All figure values are shown in current day dollars.

6.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets is shown in Table 6.2.1.

Table 6.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2020	$199,750.00
2021	$197,250.00
2022	$199,350
2023	$253,150.00
2024	$284,200.00

The 5-year average operating budget for fleet maintenance is $226,740.00. Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Risk Management section of this plan. The Operations and Maintenance costs varies each year based on new fleet acquisitions and replacements. The average cost between 2020 and 2024 is $226,740.00 for the existing fleet.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the fleet stock. If additional fleet assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Fleet stock has varied of late due to supply chain and demand issues worldwide.

We have seen an approximate 10% average increase in maintenance costs due to inflation and fuel over the last 5 years. In the last year this inflation has normalized to roughly 2.5%[2]. The fleet is not expected to see growth over the ten-year planning period so the forecast operation and maintenance costs were based on current inflation rates alone.

Figure 6.2.1 shows the forecast operations and maintenance costs based on proposed operations and maintenance planned budget. The figure shows the total operations and maintenance costs with an increase of 2.5% increase in costs which should be reflective of rising O&M costs, fuel, and costs associated with the expansion of fleet for the next 10 years.

[2] Statista Research Department, & 4, D. (2024). Canada: inflation rate and bank rate monthly 2024. Retrieved from https://www.statista.com/statistics/1312251/canada-inflation-rate-bank-rate-monthly/#:~:text=Canada's%20inflation%20rate%20and%20bank,2.5%20percent%20by%20October%202024.

Figure 6.2.1: Operations and Maintenance Summary

All figure values are shown in current day dollars.

6.3 Maintenance Plan

As demands for maintenance of roads, parks, water, and other assets increase in the Town it is necessary to enlarge the Fleet to provide support to these services. Today's fleet maintenance has become more complex due to advancements in vehicle technology, increased connectivity, environmental initiatives and legislation. Fleet maintenance organizations, whether municipal, commercial, or industrial, must have a way to ensure that vehicles receive the maintenance they need, when they needed it. Deferring or ignoring even minor repairs can indirectly affect the longevity or future maintenance costs of the assets. With any fleet it is necessary to track when vehicles are due for maintenance.

The Town's Fleet has preventative maintenance programs built into the work order system called Maintenance Manager. A proactive fleet maintenance program will reduce reactive maintenance of fleet and unscheduled down time. The Public Works supervisor will send a notification to respective departments when scheduled maintenance is required. A "preventative maintenance checklist" is built into each maintenance interval. This checklist must be reviewed by the fleet technicians to be considered complete. These tasks can include tire depth check, cab checks, road test checks, lubrication and engine services, cab/body inspection, wheel end and brake checks, exhaust/suspension/ steering component inspection, fuel system inspection and engine/transmission checks. Each checklist is different and is based on the manufacturer's specification for each fleet asset. In addition, fleet with 4,600 kg Gross Vehicle Weight Rating (GVWR) are required to have annual MTO inspections performed. Fire and Emergency fleet are subjected to NFPA 1911 standards.

6.4 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

Currently, we use a combination of both methods. The asset register projects replacements based on age which prompts directors to review their assets with the fleet manager and determine the suitability for replacement.

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 6.4. Asset useful lives were last reviewed on October 2024.

Table 6.4: Useful Lives of Assets

Asset (Sub)Category	Useful life
Light Duty	10 years
Medium Duty	10 years
Heavy Duty	10 years
Fire Apparatus	15-25 years
Trailers	15-20 years (based on condition)

The estimates for renewals in this AM Plan were based on the asset register and 2024 Fleet Forecast.

6.4.1 Renewal ranking criteria

Asset renewal is typically undertaken by fleet prioritization for the fleet when the asset is nearing or at end-of-life is done by analysing the details pertaining to each unit in the following order:

- Economic Lifecycle Analysis
- Mileage/Hours of the Asset
- Condition/Usability of the Asset
- Annual operating/repair costs of the asset (i.e., one-year retention costs exceed the estimated value of vehicle/equipment.)
- Age or Year of Asset

The ranking criteria and weighting used to determine the priority of identified renewal proposals in the Fleet Management Policy is detailed in Table 5.3.6.2.

Table 6.4.1: Renewal Priority Ranking Criteria

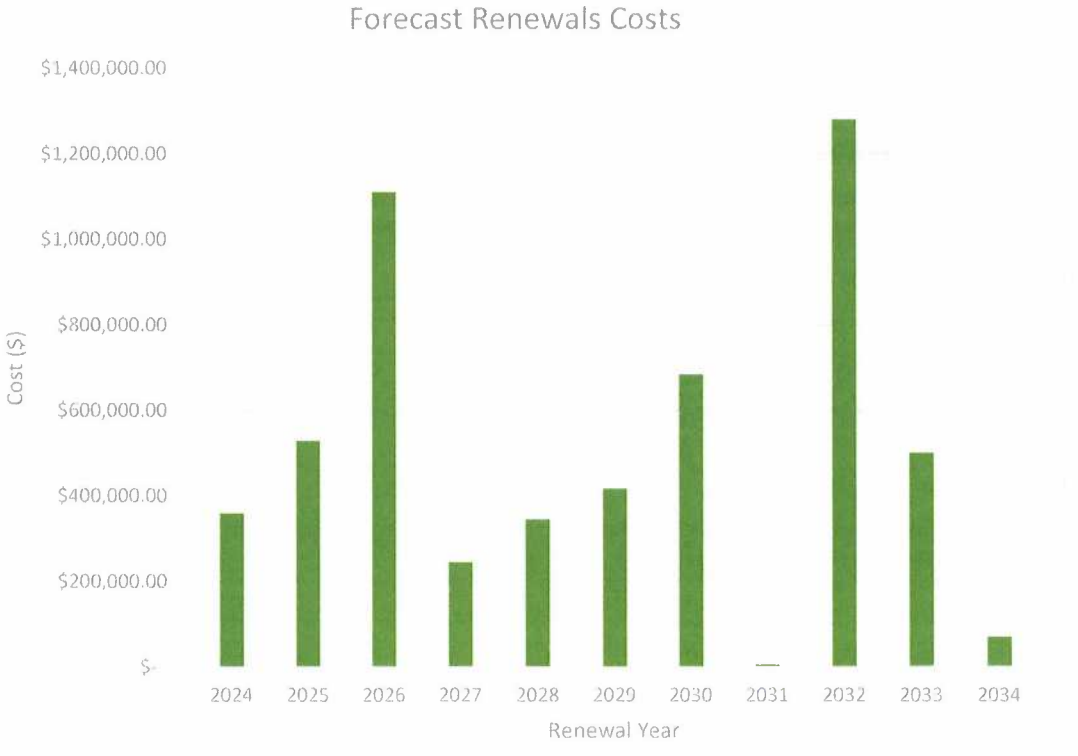
Criteria	Weighting
Mileage/ Hours vs Expected	20%
Condition/Usability	40%
Annual Maintenance Costs vs Estimated Value	30%
Year of Asset purchased vs Expected Lifecycle	10%
Total	100%

The estimated service life schedule was developed based on fleet management best practice and historical data. This service life schedule will continue to be refined as we gain data additional data on the maintenance costs of the fleet assets through the use of our CMMS.

6.5 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 6.5.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 6.5.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecast renewals vary significantly from year to year with 2026 and 2032 being very high years of reinvestment ($1,000,000). The average annual renewal cost is $554,550. Renewals scheduled in 2026 and 2032 could be deferred based on condition or renewed early to reduce the replacement costs in those years. $554,550 will need to be budgeted each year at a minimum to maintain the future renewals and ensure operation and maintenance costs stay as low as possible. When possible, fleet assets may be renewed through

grant funding at a reduced cost. A grant for the accessible transit bus has been approved, when this funding is received this will further reduce the renewal costs in 2026.

6.6 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Town of Blind River.

6.6.1 Selection criteria

Acquisition of fleet are new assets that did not previously exist or works which will upgrade or improve an existing fleet beyond its existing capacity. They may result from growth, demand, social or environmental needs. New fleet acquisitions are budgeted in their service departments (not the Fleet Department). The growth of fleet will depend on the demand for services or change in service levels. Fleet acquisition expenditures on new assets are forecasted in the future Long-Term Financial Plan.

There are no acquisitions planned for fleet assets at the current time. In 2026, increased to services may be proposed when the proposed service levels are completed. Fleet aqusitions may be required to meet the increased levels of service and the proposed budget will need to be increased to reflect these changes.

6.7 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 6.7. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 6.7: Assets Identified for Disposal

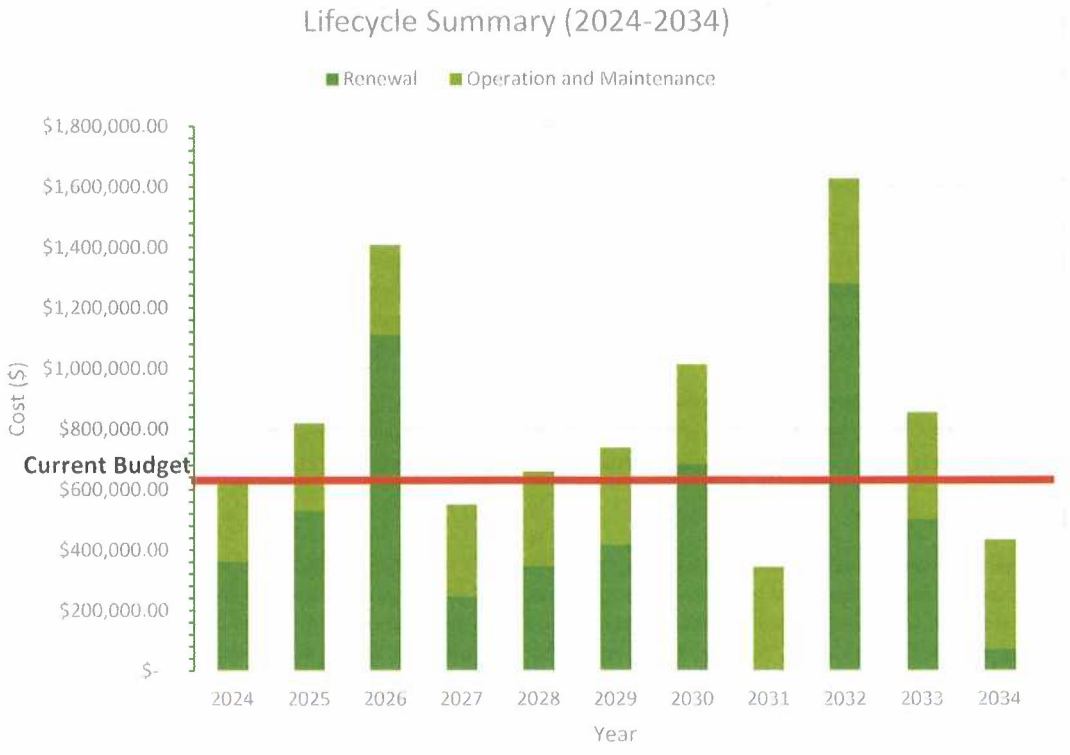
Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
#1 1991 GMC C85 (Water Truck)	We are looking to renew and asset with equipment that will also fill this assets service level.	2025	0	Approximately $8,000.00

6.8 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 6.8.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 6.8.1: Lifecycle Summary



All figure values are shown in current day dollars.

The planned annual budget for fleet assets will need to meet requirements of the future lifecycle forecasts for these assets to maintain the current level of service that these assets provide to the municipality and the departments who use them. The current budget is insufficient to meet the lifecycle costs of fleet assets in 7 of the 10 years within the planning period.

7.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

7.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 7.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 7.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Public Works Fleet	Accidents, breakdowns	Diminished capability to maintain essential services < Transportation and waster/wastewater distribution
Facilities Fleet – Ice Resurfacers	Accidents, breakdowns	Complete loss of service for the arena.
Fire Fleet	Accidents, breakdowns	Loss of capability to provide Emergency Services

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

7.2 Risk Assessment

The risk management process used is shown in Figure 7.2.1 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

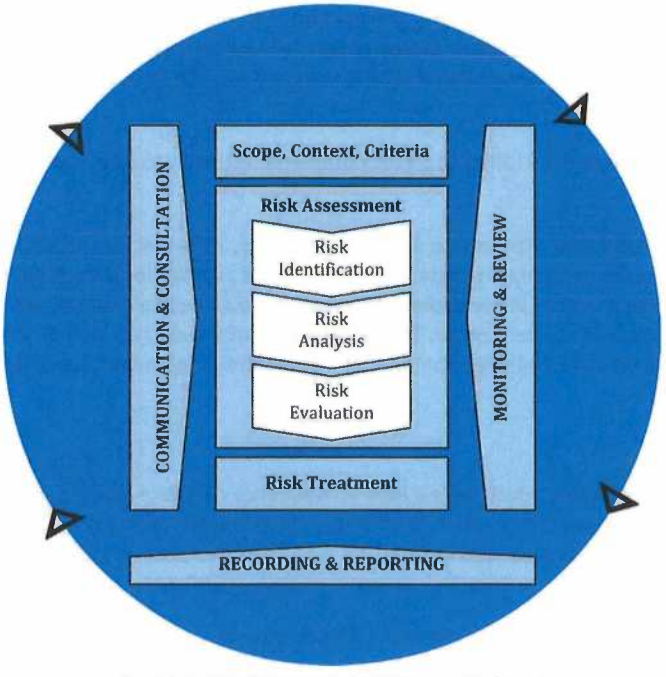


Fig 7.2.1 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

The Town's Asset Management Risk Strategy provides a detailed description of consequence and risk scores which have been incorporated into the Town's Asset Management technology; Citywide. The probability of failure is based on the condition of the assets shown in Figure 7.2.2. The consequence of failure helps in determining the impact if failure does occur as shown in Figure7.2.3. The consequence and probability together provide risk scores for each of the fleet assets. Figure 7.2.4 is the risk matrix for the Town.

Table 7.2.2 Probability of Failure Model

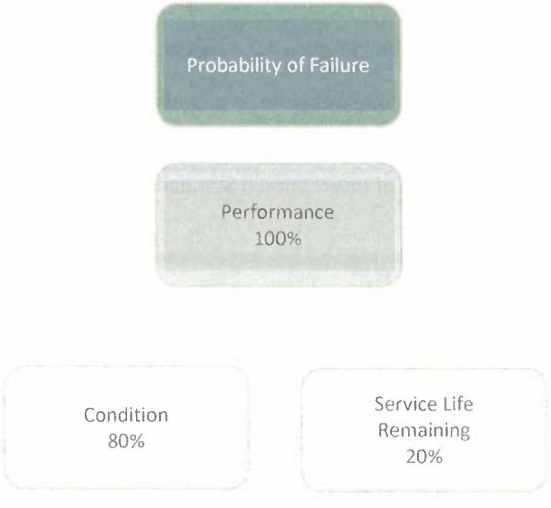
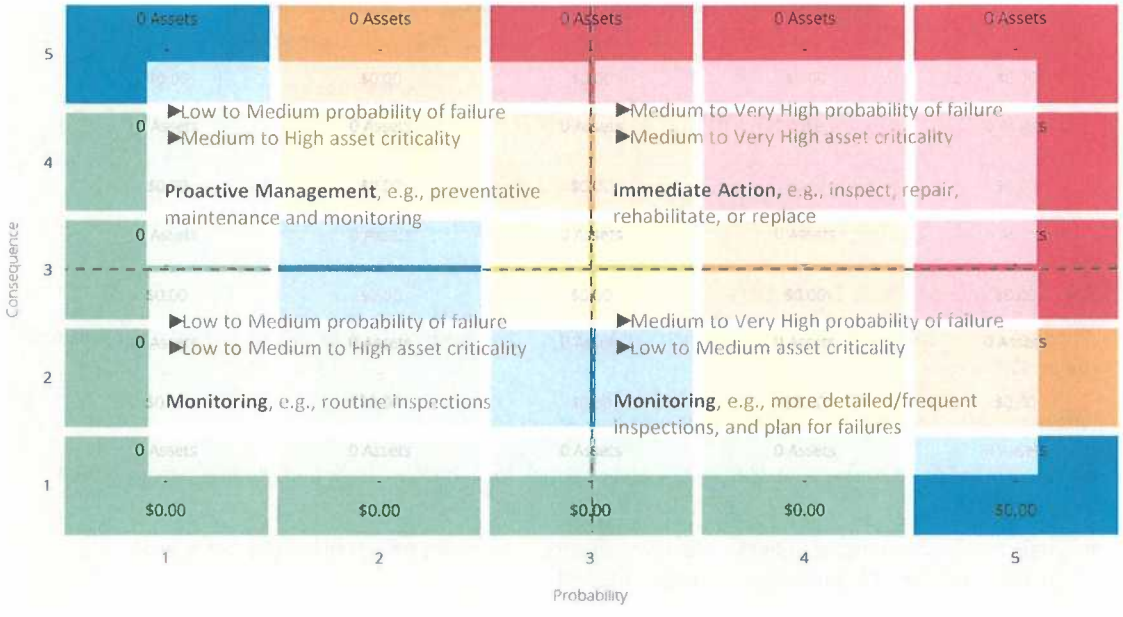


Table 7.2.3 Consequence of Failure Model

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Table 7.2.4 Risk Matrix



Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in this plan. The residual risk and treatment costs of implementing the selected treatment plan are reported in each plan. It is essential that these critical risks and costs are reported to management and the Town Council. There are currently no High or Very High risks associated with fleet assets.

7.3 Infrastructure Resilience Approach

The services provided by fleet can be impacted by the disruption from natural disasters, infrastructure failures, and human threats. The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to withstand a given level of stress or demand, and to respond to possible disruptions, and to ensure continuity of service. The consequences of disruptive events can be minimized by pre-emptively safeguarding vehicles, fuel availability, and infrastructure and by providing back-up power to fueling stations and maintaining a ten-day supply of fuel in case of emergencies.

Our current measure of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organization takes to ensure service delivery resilience. Taking a risk-informed approach to resilience planning allows the Public Services department to proactively protect fleet assets and mitigate damage at the time of emergency or in the aftermath of a disruptive event. Directors can play a role in securing fleet vehicles, and transportation infrastructure from theft or damage. Our current measures of resilience is shown in Table 7.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 7.3: Resilience Assessment

Threat / Hazard	Assessment Method
Accidents	Number of accidents involving the fleet
Breakdown	Number of reactive maintenance events and incidents of vehicle damage.
Fuel Unavailability	Record of incidents where fuel tanks reach 30% or lower.

7.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

Future iterations of the asset management plan will include:

- Incorporation of risk generated from our asset register for each fleet asset and use this factor for fleet prioritization
- Improved understanding of fleet utilization in each department through the organization wide implementation of Maintenance Manager (CMMS)

7.4.1 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. There are no anticipated service trade-offs that will be required during the planning period.

7.4.2 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. There are no anticipated risk trade-offs that will be required during the planning period.

8.0 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[3] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Demands are built on commonly demands on municipal infrastructure
Growth projections	High	Growth is based a recent population and housing report completed by CanCensus
Acquisition forecast	High	There are currently no planned increases to Levels of Service
Operation forecast	Medium	
Maintenance forecast	Medium	
Renewal forecast - Asset values	High	[Enter comment on reliability of data in AM Plan]
- Asset useful lives	Medium	Additional information will further refine these in future plans.
- Condition modelling	Medium	The addition of the CMMS will provide additional data on repair costs which will improve condition modelling.
Disposal forecast	High	

[3] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be medium – high.

9.0 PLAN IMPROVEMENT AND MONITORING

9.1 Status of Asset Management Practices[4]

9.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is planned budgets and historical expenditures.

9.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is the 2024 fleet forecast as well as the asset register maintained in Citywide.

9.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 9.2.

Table 9.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Development of a Fleet Management Plan	Director of Public Services		3 months
2	Add the condition assessment to all fleet assets to the asset register	Director of Public Services		2 months
3	Consolidate departments across the vehicle assets.	Director of Finance and Public Services		2 months
4	Make names and descriptions of assets consistent amongst all assets and to include fleet #.	Director of Public Services		2 months
5	Update replacement costing in asset register	Director of Public Services		2 months
6	Segregate the costs of fleet maintenance from the overall Shop and Yard budget using maintenance manager	Director of Finance		Ongoing

9.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 1 year of each Town Council election.

[4] ISO 55000 Refers to this as the Asset Management System

9.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the future long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

10.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Asset Management Strategic Plan 2019
- 2024 Planned Budget

Buildings & Facilities Asset Management Plan Version 1

Blind River

Contents

1. Executive Summary

1.1. Purpose

Asset management is the systematic and coordinated activities and practices of an organization to deliver on its service objectives optimally and sustainably through cost-effective lifecycle management of assets.

The Buildings and Facilities Asset Management Plan provides details of the building and facility portfolio including the actions required to provide the current level of service while outlining the associated risks of asset ownership. The plan defines the current services provided, how the services are provided and what funds are required to maintain the services over a ten-year planning period.

1.2. Asset Management Strategy

The lifecycle intervention strategies for Buildings and Facilities discussed within this report include best practice activities. Best practices for the management of vertical infrastructure elements, and the equipment, furnishings and appliances are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- Preventative maintenance and inspection program protocols;
- Document issues identified from asset users;
- Adhere to the manufacturer's scheduled maintenance;
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset;
- Monitor the condition of assets on a regular basis, monthly and annually depending on the asset.

1.3. Failure Prediction and Risk Management

A risk framework has been developed and implemented with each individual asset assigned a risk score based on a calculated probability and consequence of failure.

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The consequence of failure is an estimate of the effect or outcomes if an asset fails. Under the Buildings and Facilities portfolio infrastructure assets are prioritized for renewal or replacement with the output of the risk assessment. The parameters of the risk assessment are discussed in further detail within the plan.

Additionally, a Facility Condition Index has been prepared for each facility. The Facility Condition Index is an industry standard that may be forecasted into the future to analyze the expected useful life and performance of facility.

1.4. State of the Infrastructure

The scope of the plan encompasses the buildings and facilities (vertical infrastructure) owned and operated by the Town of Blind River, including: the building elements, equipment, and furnishings required to operate the buildings and deliver municipal services. This asset management plan encompasses all Town facilities with the exception of Water and Wastewater facilities that are included in the Water-Wastewater Asset Management Plan and Fire Facilities which are included in the Fire Asset Management Plan.

The building and facility infrastructure portfolio has a replacement value of $59,989,268.

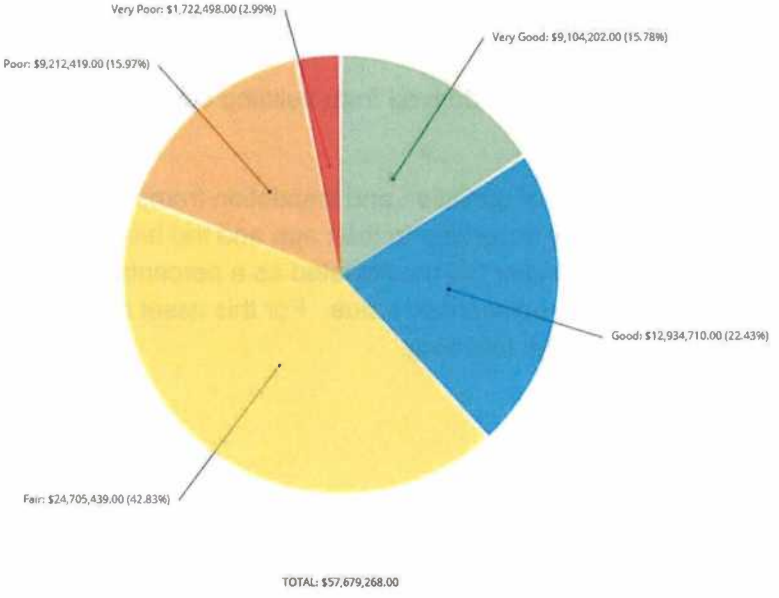
Information utilized to develop the plan is derived from building condition assessments and asset management software.

The details behind the development of condition and inspection frameworks are attached in Appendix A. Facility Conditions vary according to their age and the historical investment and are described with a Facility Condition Index (FCI) calculated as a percentage using the deferred investment requirements by facility replacement value. For this asset management plan the Town has categorized the FCI into the following:

VERY GOOD	80% +
GOOD	60% - <80%
FAIR	40% - <60%
POOR	20% - <40%
VERY POOR	0% - <19%

Figure 1 outlines the condition ratings of the Building and Facilities Inventory as they relate to their replacement costs.

Figure 1: All Facilities Condition (Buildings Only) *excludes Fire, Water, and Waste Water



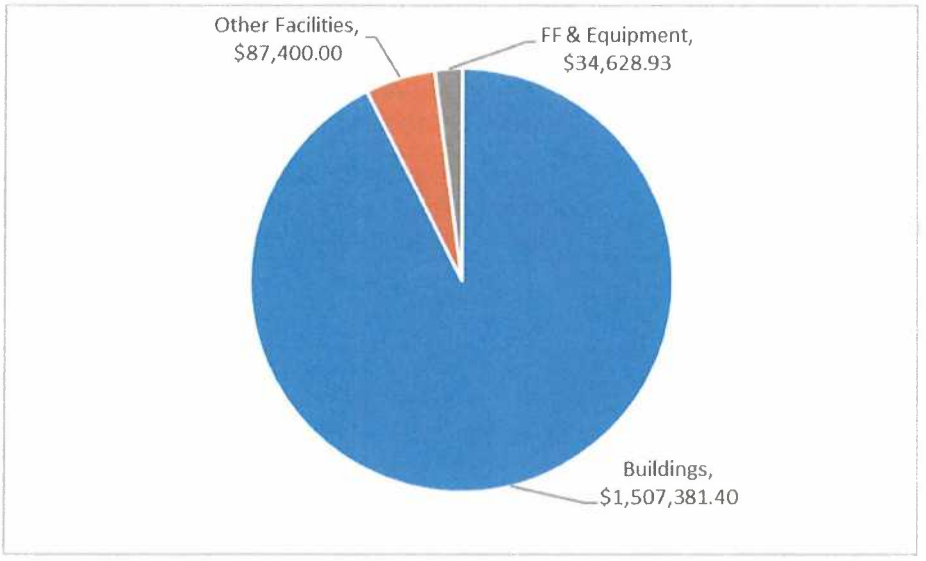
1.5. Level of Service

Levels of Service (LoS) are used to define the extent that the Town is currently delivering services and the extent that the Town will aim to deliver services to the community. They provide a direction for a particular service area against which performance can be measured. Levels of Service are imperative to establish reasonable expectations while taking into consideration the risks associated with service delivery and the affordability of delivering a service. Following the approval by Council of the Buildings and Facilities Asset Management Plan, staff will work towards defining level of service targets for Council review, consideration, and approval and are discussed further in this plan.

1.6. Long-Term Need

Figure 2 details the 50-year average annual reinvestment requirement (AAR_{50}) by asset class. The AAR_{50} represents the estimated annual amount of capital the Town requires to reinvest in the Buildings and Facilities inventory. Investment was analyzed on a 50-year period to capture the theoretical useful life of Buildings and Facilities. The 50-year annual average reinvestment requirement for all Buildings and Facilities assets is $1.63M.

Figure 2: 50-Year Average Annual Reinvestment Requirement



1.7. Future Demand

The Town's buildings and facilities are monitored for future demand requirements. The most significant future demand drivers for Buildings and Facilities infrastructure are population health, growth, and climate change and energy efficiency. The Town has implemented preventative measures in anticipation of the demand drivers.

1.8. Climate Change

Council continues to address climate change through a variety of measures. These include rehabilitating existing infrastructure, updating equipment to be more efficient, as well, focusing on insulation, on-demand heating, and back-up power sources.

1.9. Next Steps

Table 1 identifies the next steps that emerged during the development of the plan.

Table 1: Next Steps		
Section	**Category**	**Action Item**
State of the Infrastructure	Inventory	• Monitor and refine the building and facility asset inventory to reduce the quantity of data assumptions • Develop and implement an updated asset identification standard for all buildings and facilities • Perform audits on building and facility site conditions at five (5) year intervals
Level of Service	Asset Level of Service	• Develop target service levels for Council review

Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the risk framework for buildings and facilities as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

2. Introduction

The Town of Blind River owns a building inventory consisting of 28 buildings and facilities that equates to 131,050M square feet. The building inventory is managed across several areas including Public Works, Cemetery Services, Administration Services, Emergency Services, Environmental Services, Community and Recreation Services, Library, Culture and Heritage Services. The buildings and facilities that make up the water/waste water portfolio and Emergency Services are included in the Water, Waste Water Asset Management Plan and the Fire and Emergency Asset Management Plan respectively.

3. Asset Management Strategy

Best practices for the management of buildings and facilities assets are applied with intervention decisions to strive for the lowest lifecycle cost. In addition, facility condition data is collected and involved in maintaining level of service contemplations and in the asset lifecycle intervention strategies for buildings and facilities.

3.1. Maintain or Adjust Level of Service

Departments manage their buildings and facilities to maintain existing levels of service.

Best practices include but are not limited to:

- Continue to collect and report on performance measures currently tracked, while developing collection and reporting strategies for newly identified performance measures
- Perform annual inspections and certification as per NFPA standards
- Inspection and maintenance of plants and systems

Following the approval by Council of the Buildings and Facilities Asset Management Plan, staff will work towards defining level of service targets for Council review, consideration, and approval. The process of reviewing and setting target levels of service will involve Council and Department Leads to introduce the appropriate targets that can be sustained financially through capital infrastructure spending. To set targets, Council will be provided with the risks associated with the target options.

Future versions of the Building and Facilities Asset Management plan will include the target levels of service as defined by Council at the appropriate time. The targets will include an explanation of why the targets are suitable for Greater Sudbury by explaining the associated risks and funding strategies to achieve the targets over time.

3.2. Lifecycle Management Plan

Best practices for the management of Buildings and Facilities assets are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- The Facility Condition Assessment program protocols discussed in Section 3.4 Asset Useful Life;
- Document issues identified from asset users;
- Adhere to the manufacturer's scheduled maintenance;
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset;
- Monitor the condition of assets annually.
- Maintenance activities are standard operating procedures across the Facility Maintenance portfolio. They are required to meet legislated requirements, approved serviced levels, and to optimize asset lifecycles. Non infrastructure solutions are considered in all stages of the planning process to identify opportunities to optimize asset lifecycles and reduce asset related service delivery costs through optimizing asset use, monitoring asset condition, and assessing asset specific risk to service.

4. State of the Infrastructure

4.1. Asset Data Inventory

A detailed asset inventory is a key component in understanding what assets the Town owns to develop and implement an asset management plan that provides a vision, strategy, and disciplined approach to achieve sustainable, efficient, and resilient facilities.

Achieving a complete inventory can be a time-sensitive and costly effort, but one that can provide invaluable to future operational needs. An inventory that is up to date can feed many other initiatives. With a complete data set, it is easier to frame the structure of future condition assessments and define capital replacement needs. Concise asset inventories are also used to establish preventative maintenance programs.

Recently The Town of Blind River has developed a standardized and very detailed inventory of all the buildings and facilities owned and operated by Town staff. The Town has significantly advanced the asset management program as it relates to buildings and facilities.

The asset inventory is updated regularly and is managed using an industry leading asset management software solution. This software has capabilities to not only provide a complete data inventory of the Town of Blind River's building and facilities, but also provides robust reporting and analytical tools for innovative decision support.

4.2. Estimated Asset Value

The information provided to describe asset condition reflects the best available data and professional judgment. The value of the building and facility infrastructure is determined through a combination of site reviews and assessments, appraisals, and estimating.

The estimated replacement value of the Town's Buildings and Facilities is $59.99M.

Also considered within this asset management plan are the furniture, fixtures, and equipment (FF&E) that are critical to support the service delivery provided by The Town of Blind River from its buildings and facilities. For the purposes of defining what is FF&E as opposed to part of the facility, FF&E items are not permanently affixed to a building and are consequently easily removable from their respective locations.

4.3. Asset Useful Life and Asset Condition

As part of the Building Facilities asset management data repository, Building Condition Assessments (BCA) will be routinely updated at five-year intervals as a means of reporting on the Town's Vertical infrastructure. By adhering to the building inspection and monitoring program that the Town has recently adopted, Blind River can confidently report on conditions, regulatory compliance, and identify changes such as advanced deterioration that will impact the remaining useful life the asset inventory.

Building condition assessments are produced based on the actual on-site condition of the building, the individual building elements and components, and the building site. The condition assessments identify the physical adequacy of construction, material, and equipment, and outline the life cycle of all building components. It is a planning tool intended to facilitate the provision of adequate funds as required to address routine capital replacements.

Most BCA's are completed with life cycle intervention needs for ten-year intervals, which help clearly identify the building elements, and estimated timeframe for repair or replacement. Also indicated is the life expectancy of all major building components, including general states of repair, conditions, quantities, unit replacement costs and current replacement costs. Once the BCA's are uploaded to the Town's Asset Management and Capital Planning Tool, the building and its elements are lifecycle modeled for the remainder of their expected service lives to facility longer term financial planning.

Building Condition Assessments (BCA) are important because they determine the extent to which a facility can meet its intended purpose. Essentially, a BCA is a risk analysis for physical resources and assets.

The condition of an asset is a measure of its physical state and provides indication as to whether service levels are being attained. Building Condition Assessments are demanding to the overall health of a mature facility operation. The outcomes of an BCA can be multifaceted;

they can inform you of conditions and prioritization of needed repairs but also predict timing of capital renewal requirement.

Elements of a comprehensive FCA include:

- Date of Installation
- Condition rating.
- Remaining Useful Life (RUL) as determined by current condition and lifecycle expectation.
- Immediate issues including poor maintenance conditions or effects to operability or access.
- Pictures
- Replacement value
- Repair strategies and associated costs
- Performance characteristics

When working with BCA's it is crucial to remember that asset conditions do not remain stagnant and that an BCA is only a timestamp of condition. It is best practice to complete a comprehensive BCA every five years, while revisiting aging assets and critical equipment intermittently.

In addition to capital planning, Blind River implements a series of routine activities to perform planned maintenance intervention of building elements. In general, maintenance management uses a facility maintenance program consisting of these protocols:

- Regular scheduled preventative maintenance as per manufacturer recommendations and best practices.
- Maintenance work orders are prioritized to ensure that critical assets are dealt with prior to less critical assets to minimize the impact on service delivery and to prevent further depreciation due to neglect.
- As some facilities are operational 24/7 or may have a higher volume of usage, Maintenance programs are suited to accommodate these facilities with more frequent inspection and maintenance schedules. One example is police facilities which operate 24/7 and are critical emergency services.
- Visual inspections and documentation of conditions.
- Legislated and safety inspections and certifications.
- Discussions with the asset users, operators, and stakeholders regarding the performance of an asset.

4.4. Current Asset Condition

The primary measurement used to evaluate a buildings current state of repair is a Facility Condition Index (FCI). This is an industry standard that provides a benchmark to compare a constructed asset's condition at the current point in time. An FCI is assigned to all buildings and facilities within the Town's inventory. These FCI's were determined during a comprehensive building condition assessment review.

The Facility Condition Index of the asset inventory is provided in Table 4.

***It is important to note that the FCI is an overall rating and that the various components within each facility all have been individually rated on the scale of very good to very poor. ***

***Individual charts are located in Appendix A

The Buildings and Facilities Asset Management Plan also considers the condition of the assets within the facilities themselves that are included as part of furniture, fixtures, and equipment (FF&E) which are critical in supporting service delivery.

Table 2: Facility Condition Index (FCI)

Service Area	Asset Type	FCI	Condition
Community Development	Arena/Community Centre	62.45%	Good
	Bea Jensen Gazebo	98.71%	Very Good
	Cemetery	66.91%	Good
	Farmers Market	77.37%	Good
	Golf-Club house	61.16%	Good
	Golf- Storage building	55.09%	Fair
	Golf-Turf building	72.60%	Good
	Sidock Pavilion	61.20%	Good
	Marina/ Museum	64.57%	Good
	Museum/ Dog Pound	60.12%	Good
	Marina Pavilion	98.19%	Very Good
	Library	53.74%	Fair
	Tennis Washroom	70.24%	Good
	Info Centre	64.12%	Good
	Sellers Washroom	84.78%	Very Good
Corporate Services	Public Works Cold Storage	87.55%	Very Good
	Public Works Garage	78.32%	Good
	Public Works Pole Barn	33.14%	Poor
	Public Works Salt/ Sand Building	86.24%	Very Good
	Town Hall	42.97%	Fair
	Communications Tower	95.00%	Very Good

5. Levels of Service

The levels of service discussed in this plan outline the current service levels with the current funding levels. Further development of the Building and Facilities Asset Management Plan will provide opportunities for Council to review alternatives to the current levels of service. These future alternatives will be evaluated considering various levels of acceptable condition, risk, and financial alternatives.

The review of target levels of service will provide insight to establishing the criticality of assets and the long-term financial stability of the various options and impacts of proceeding with or deferring capital expenditures.

Consultation with staff, review of current activities and review of financial data have all been used in the preparation of the level of service framework. The current levels of service are described below.

5.1 Community:

Levels of service are high level qualitative descriptions which indicate what the Town currently strives to achieve through community, stakeholder, and individual expectations. Community levels of service for buildings and facilities can be described as follows:

- maintain an acceptable level of cleanliness and in a state of good repair to avoid service interruptions
- provide a safe and secure environment
- are accessible and equipped to meet the needs of users
- user concerns are promptly addressed
- meet legislative, regulatory, and code standards and are available to meet service programming needs
- efficient and cost effective
- have appropriate security provisions in place

- site access is provided to emergency services
- appropriate parking is provided
- ensure all regulatory requirements are met

5.2 Strategic: Qualitative and Quantitative measures that describe what is being provided to the community. Examples of how this can be defined can include reliability, legislative compliance, quantity, quality, and safety.

The strategic levels of service indicated below support the community levels of service. Buildings and Facilities are maintained in accordance with Building Code Act, 1992, Ontario Regulation 332/12.

For specific facilities the Town of Blind River has recognized that certain provisions are necessary to measure what is recommended for the municipality and what is currently being offered.

- Buildings and Facilities General:
    - The facilities provide security in public spaces
    - Plan for the opportunity to provide enhancements to accessibility
    - Develop a connection between facilities and opportunities to provide sustainability features and reduce greenhouse gas emissions (GHG) caused by human activity to as close to zero as possible and removing remaining emissions from the atmosphere, by working towards set goals.
    - Develop a connection between facilities and opportunities to design new facilities and refurbish existing facilities through the elements of Crime Prevention Through Environmental Design Principles (CPTED)
- Arena Facilities: The Town of Blind River operates and maintains 2 ice pads across 2 municipal arenas. Arenas provide opportunities for citizens to access physical recreation and leisure activities. They also provide economic benefits through sporting events, tournaments, concerts, conferences, and other tourism events.

  Municipalities have been the traditional provider for arena facilities.

5.3 Asset (Technical) – Key Performance Indicators (KPI)

Buildings and Facilities Existing Level of Service, outlines the levels of services that are currently being offered by facilities within the Town of Blind River. This current level of service is the condition of the facility as a percentage based on the current and deferred investment requirement by the Facility replacement value in current dollars.

- Facility condition state = % of facilities in various condition state, by Current Replacement Value
    - % of facilities in poor or very poor condition = 18.96%
    - % of facilities in fair condition = 42.83%
    - %of facilities in good or very good condition = 22.43%
- 100% of Buildings and Facilities have Facility Condition Assessments completed.
- Facility Condition Assessments completed at 5-year intervals for all Buildings and Facilities.

6. Failure Prediction and Risk Management

Risk management is a major component of asset lifecycle management. The Town's risk management goals involve identifying, understanding, and managing the potential for infrastructure assets to meet planned service objectives.

Risk assessment is applied to prioritize and optimize capital spending and decision making. The Town evaluates both the Probability of Failure (PoF) and the Consequence of Failure (CoF) when prioritizing for the capital budget. This helps clarify and build a shared understanding about the risk associated with a decision to not engage in a project. A customized risk management framework that analyzes the PoF and CoF of building and facility system and individual elements has been developed and implemented.

6.1. Probability of Failure (PoF)

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The PoF for Buildings and Facilities has been derived from building element condition.

6.2. Consequence of Failure (CoF)

The consequence of failure is an estimate of the effect on outcomes if an asset fails. The consequences of failure could range from a service interruption to a catastrophic result depending on the asset criticality.

To determine the CoF of the elements and systems required for a facility to operate and meet service objectives, Town of Blind River has prepared and implemented a weighted framework that considers the categories and parameters outlined in Table 6.

Table 3: Consequence of Failure (CoF) for Buildings and Facilities	
CoF Categories	**CoF Parameters**
Legislation	Consideration of various codes including but not limited to: Ontario Building Code, Accessibility for Ontarians with Disabilities, Electrical Safety Authority, Technical Standards and Safety Authority, and Fire and Life Safety.
Health and Safety	Consideration of various Health and Safety issues including but not limited to potential for injury, known event such an injury, security, mold, designated substances, and non-conformance to Occupational Health and Safety Act.
Shutdown or Service Level	Consideration of various scenarios should a building element/system fail including but not limited to tenant's and residence, service level provided such as an essential service, partial shutdown, complete shutdown, and redundancy and mitigation.
Urgency	Consideration for prioritized building systems including but not limited to life safety systems, accessibility, HVAC system, electrical system, operational enhancement, and aesthetics.
Operation, Maintenance, and Energy	Consideration for four (4) parameters of impacts on building operation, maintenance, energy consumptions, and emissions.
Climate Change Vulnerability	Consideration for five (5) parameters of impacts on the environment, and of the environment and climate change on building elements.
Risk of Deferral	Consideration for three (3) parameters of risk of deferral.

Each of the categories and parameters described within Table 6 are weighted within a consequence of failure framework to calculate situation specific CoF's. Blind River has recently made significant strides to collect and analyze the data required to generate outputs from the CoF framework. However, the Town acknowledges there is still work to be done as the framework and feeder data will continue to improve.

6.3. Risk Assessment and Exposure

The probability and consequences of failure allow the corporation to focus on assets that have the greatest impact on service delivery. The following formula demonstrates the PoF and CoF are multiplied to determine risk exposure.

Risk Exposure = Probability of Failure x Consequence of Failure

The risk exposure for all the Town's Buildings and Facility infrastructure is monitored and implemented for prioritizing projects related to reactive maintenance duties and Blind River's annual capital budget.

6.4. Failure Prediction

Failure prediction is performed to assess the potential for an asset to deliver an expected level of service over time. Current and historical condition and performance data is analyzed to determine the current position of an asset within its lifecycle. This information informs a judgment about how much remaining service life is available. For this asset management plan, failure prediction and the remaining life of Buildings and Facilities have been determined with the Facility Condition Index.

Further to the discussion about Facility Condition Index (FCI) in Section 4.4, the FCI can be forecasted with a lifecycle model. The lifecycle model is a complex model used to forecast and analyze the most recent existing site conditions and how the existing conditions are anticipated to depreciate over time. The depreciation curve is used to estimate the appropriate type, cost, and timing for building system lifecycle intervention. The type of lifecycle intervention can range from a study to a repair, or a complete building element or system replacement. The Town's asset management and capital planning database for Buildings and Facilities keeps lifecycle models current. However, it is industry standard to perform on-site audits of Facility Condition Assessments at 5-year intervals to ensure the data being modeled accurately reflects on-site conditions.

6.5. Risk Response

The Town's operating departments have risk response built into daily operations. Risk response includes contingency plans and mitigation strategies that have been developed with the experience of delivering levels of service to the community.

The steps to eliminate or avoid risk by reducing the probability and consequences of failure vary by department. Typical mitigation includes additional back-up facilities or facilities that can produce multiple uses and services. Examples of risk response planning to reduce the disruption of service delivery includes:

- Facility Maintenance works with the operating departments to plan and schedule maintenance. For example, load testing emergency power generators, changing oil and filters of equipment, housekeeping, and the five-year updates to conduct condition audits.
- Some of the buildings and facilities that provide services to residents are multi-use facilities such as libraries that can also serve as Citizen Service Centers or warming and cooling centers. Often where maintenance or refurbishment is required at some facilities, service delivery can be conducted without disruption.

7. Long-Term Needs

The capital need detailed below is based on lifecycle modeling of Blind River's building and facility inventory. For this asset management plan, the lifecycle analysis represents the capital investment needed to rehabilitate and replace assets; the cost of operational maintenance is not included. Operational maintenance costs will be included in future updates to the asset management plan as part of full lifecycle cost analysis.

Detailed below is a 50-year average annual reinvestment requirement (AAR_{50}) which is the mean annual capital investment required over a 50-year period. The AAR_{50} is useful for defining the required rate of funding to maintain service levels based on the investment profile. It is recognized that spending will vary from year to year, however this value provides a benchmark upon which to measure whether buildings and facilities are being renewed at a rate that is financially sustainable. With the average annual reinvestment requirement value, the Town may either benchmark infrastructure investment against the metric while monitoring the variability year to year or contribute to reserves in years where the annual investment is short of the average annual reinvestment requirement value.

It is anticipated that a significant quantity of infrastructure investment need will be captured in an expenditure backlog. The risk-based lifecycle model discussed in Section 6 has been projected to determine upcoming investment requirements of buildings and facilities.

The 50- year annual average reinvestment requirement in this scenario (AAR_{50}) for all buildings and facilities is $1.63M.

50- Year Capital Need Assumptions

The long-term needs for buildings and facilities are based on the following assumptions:

- Buildings and Facilities assets are being refurbished and/or replaced with elements that are in similar function;
- 50-year average annual reinvestment requirement does not consider service expansion or reduction;
- Calculated in 2024 Canadian Dollars where actual costs vary with currency fluctuations.

7.1. Infrastructure Reinvestment Financing Strategy

Historical investments within the Buildings and Facilities portfolio have fallen short of the 50- year average annual investments of $1.63 Million which is an estimate to strive to keep assets in a State of good repair (SoGR). The SoGR is the condition that an asset can operate at a full level of performance. The Building and Facilities Asset Management Plan in conjunction with the annual capital budget proposes and prioritizes the Town's infrastructure investment requirements according to their respective financing sources.

In Table 7 the 50-year average annual reinvestment requirement is compared to historical expenditure from a period of 5 years to demonstrate the financial risk associated with asset ownership. The variance is the unfunded capital value of infrastructure renewal needs in the current year. It is important to note that additional expenditure from the operating budget helps to further reduce the funding gap.

Table 4 Funding Gap (Capital)

Asset Class	5 Yr Expenditure (Avg)	AAR_{50}	Funding Gap
Buildings and Facilities	$827,225	$1,630,000	$802,775

The above example of the funding shortfall will be addressed in future reiterations of the Asset Management Plan with financing strategies per O. Reg. 588/17.

7.2. Sustainability Strategy

The existing level of service for buildings and facilities detailed in Section 4 Levels of Service drive the reinvestment forecasts in the asset management plan. Levels of service are based on regulation, standards, and Council approved service levels. Following the asset management roadmap, Council will be provided with the opportunity to determine level of service targets to manage infrastructure within the Town to renew and maintain assets and accept the associated risk.

7.3. Next Steps

Ensuing Council approval of the Building and Facilities Asset Management Plan, target level of service options will be prepared for Council review, discussion, and approval. The target level of service framework may require additional key performance indicators and will be the main driver of the sustainability strategy. When target level of service is reviewed, Council will have the option to select service levels that lead to either a reduction or an increase of assets that are in-service and require financing.

Table 8 identifies the next steps that emerged during the development of the asset management plan.

Table 5: Next Steps		
Section	**Category**	**Action Item**
State of the Infrastructure	Inventory	• Monitor and refine the buildings and facilities asset inventory to reduce the quantity of data assumptions • Continue to implement the digital solution to track, monitor and analyze buildings and facilities • Continue to conduct building condition assessments at the five-year intervals.
Level of Service	Asset Level of Service	• Develop target service levels for Council review
Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the deterioration model for buildings and facilities assets as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

Amendments to the Asset Management Planning for Municipal Infrastructure regulation (O.Reg. 588/17) are as follows:

July 1, 2024 (previously July 1, 2023): Date for municipalities to have an approved asset management plan for all municipal infrastructure assets that identifies current levels of service and the cost of maintaining those levels of service.

July 1, 2025 (previously July 1, 2024): Date for municipalities to have an approved asset management plan for all municipal infrastructure assets that builds upon the requirements set out in 2024. This includes an identification of proposed levels of service, what activities will be required to meet proposed levels of service, and a strategy to fund these activities.

The Level of Service and the Long-Term Needs will be addressed in the next version of the Building and Facilities AMP in 2025.

8. Future Demand

8.1. Demand Drivers

Drivers affecting demand include parameters such as population, legislation, demographics, seasonal factors, technological advancement, economic, environmental awareness, and Council directed service revisions.

8.2. Demand Forecasts and Impact on Assets

The present position and projections for demand drivers that may impact future service delivery and use of assets.

8.3. Demand Management Plan

The Town will regulate the demand on assets through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Further opportunities will be developed in future versions of the asset management plan.

9. Climate Change

Global climate models for The Town of Blind River geographic area are available though various online resources, namely:

- Climatedata.ca, undertaken with the support of Environment and Climate Change Canada;
- Climateatlas.ca, undertaken with the support of Environment and Climate Change Canada, Public Health Agency of Canada, and Health Canada.

The lessons learned through Town building retrofit processes will be transferable to retrofit efforts in other sectors. Municipal building retrofits can start in the near-term and will be a medium-term endeavor.

Appendix A: Individual Facilities Condition

Figure 1: Arena Condition Graph

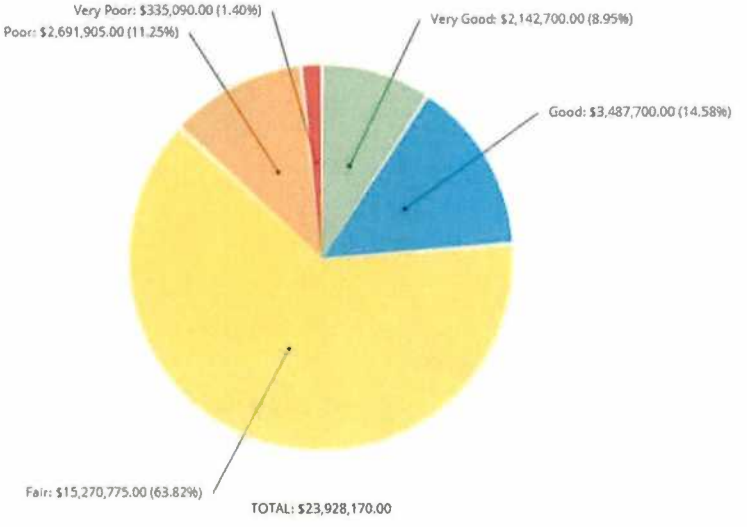


Figure 2: Bea Jensen Pavilion Condition Graph

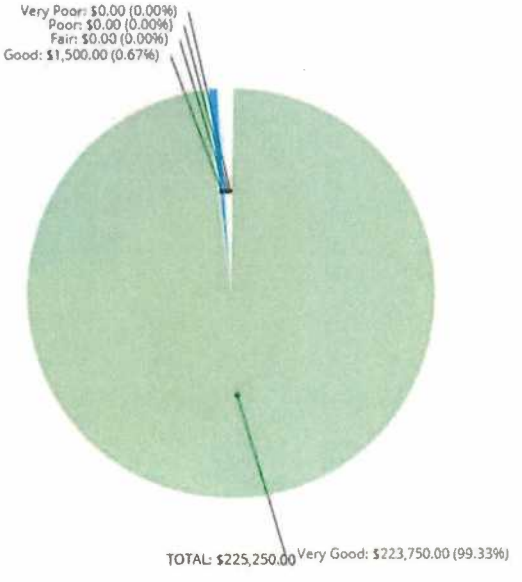


Figure 3: Cemetery Building Condition Graphic

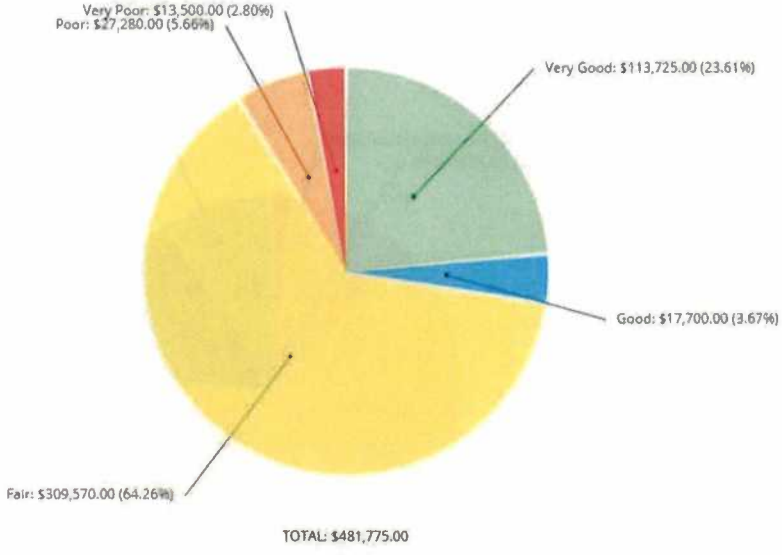


Figure 4: Dog Pound Condition Graphic

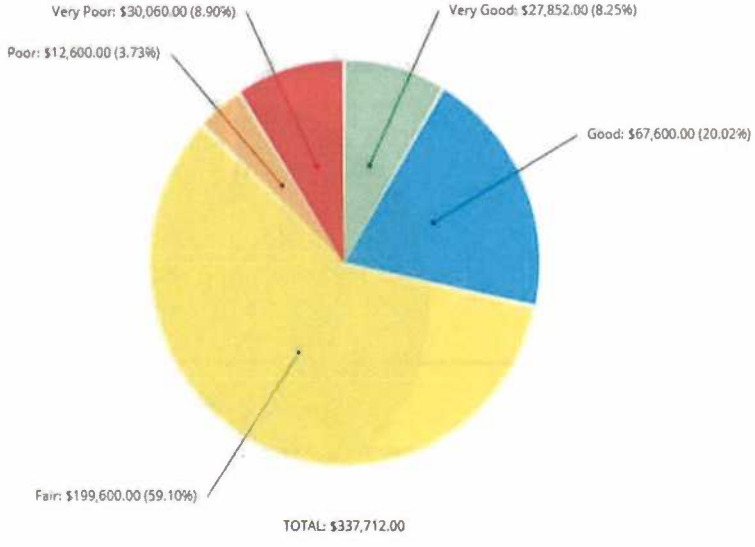


Figure 5: Farmer's Market Condition Graphic

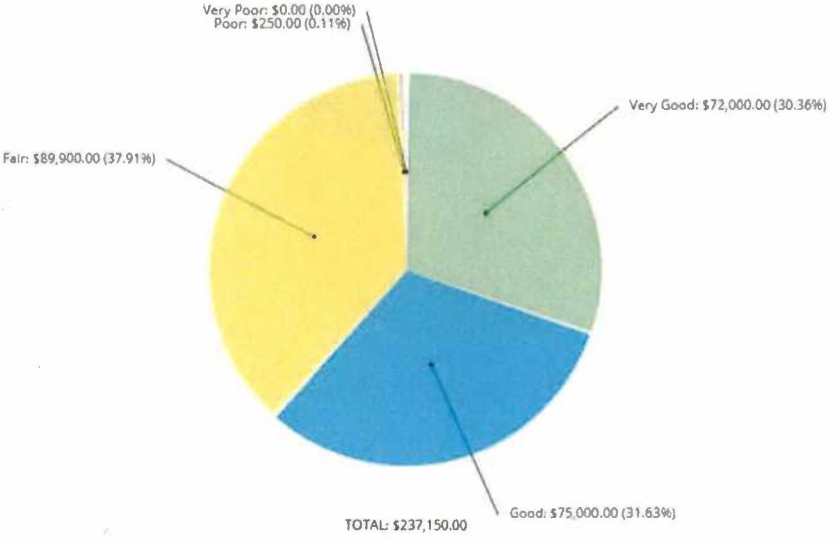


Figure 6: Golf Course Club House Condition Graphic

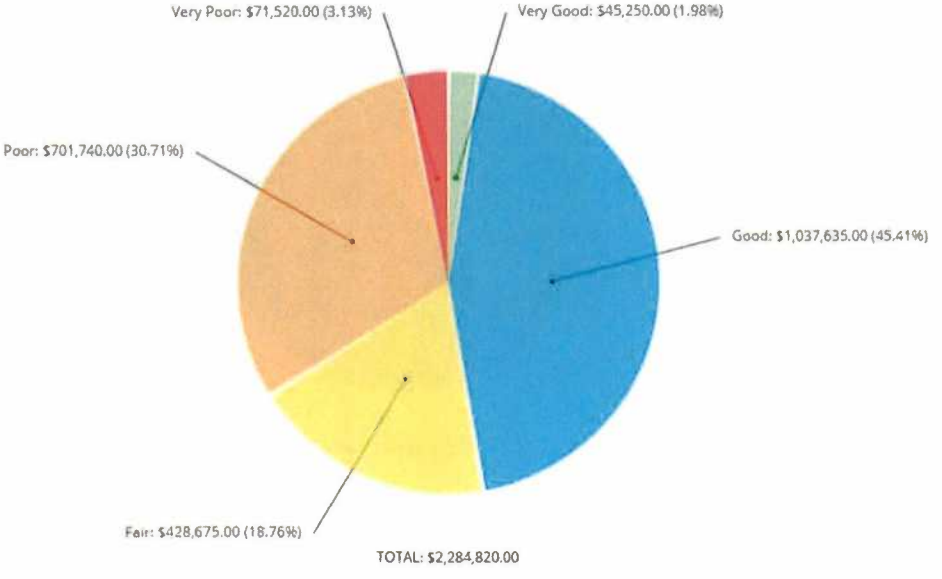


Figure 7: Golf Course Storage Building Condition Graphic

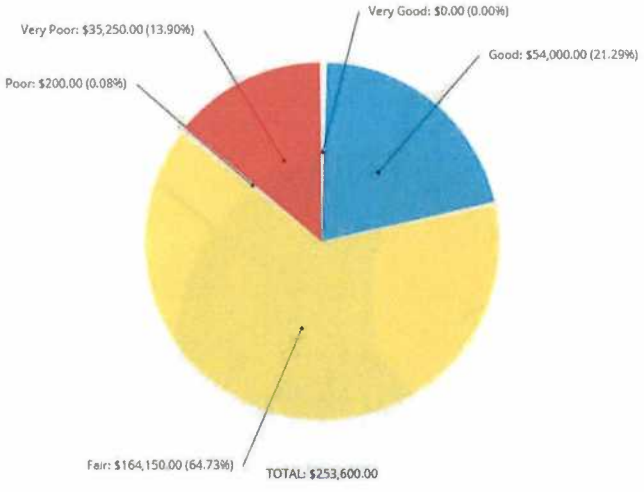


Figure 8: Golf Course Turf Building Condition Graphic

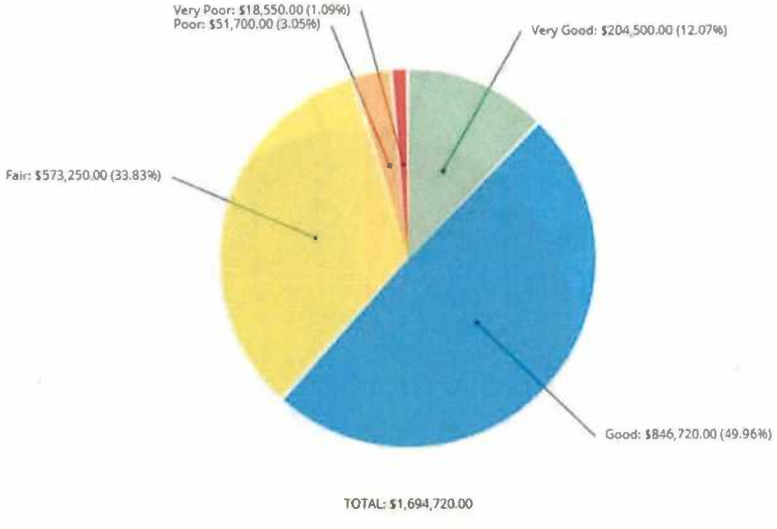


Figure 9: Library Condition Graphic

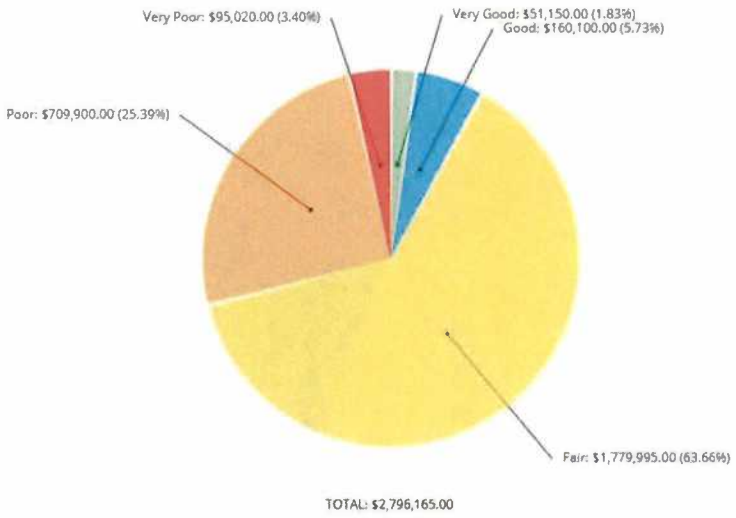


Figure 10: Marina Pavilion Condition Graphic

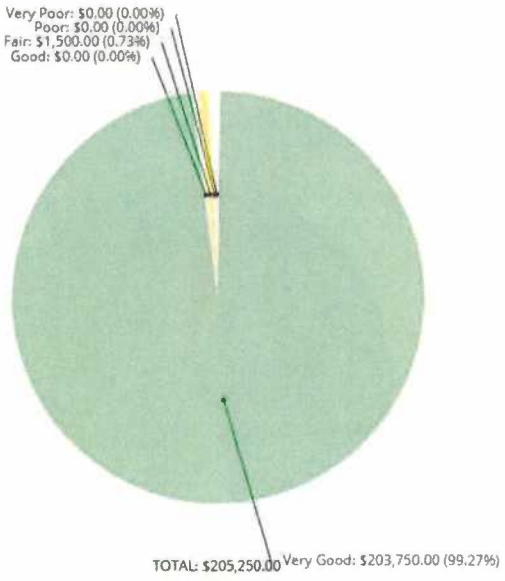


Figure 11: Marina-Museum Condition Graphic

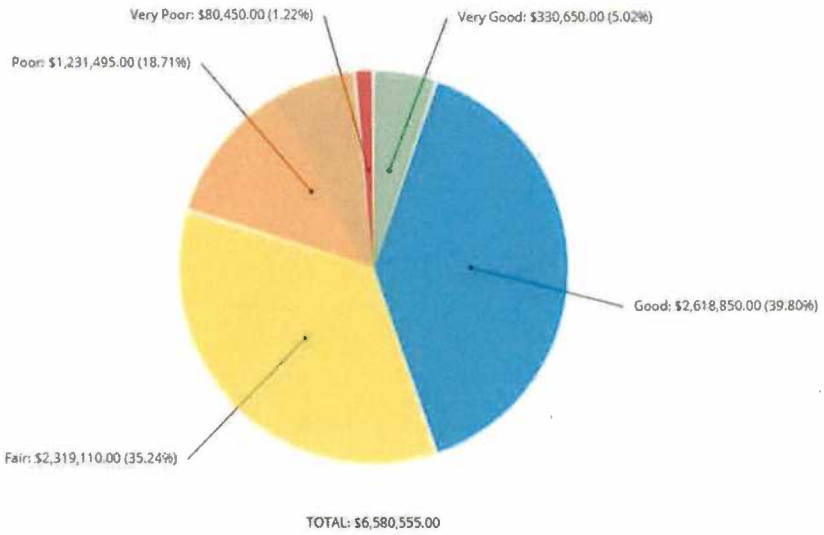


Figure 12: Public Works Cold Storage Condition Graphic

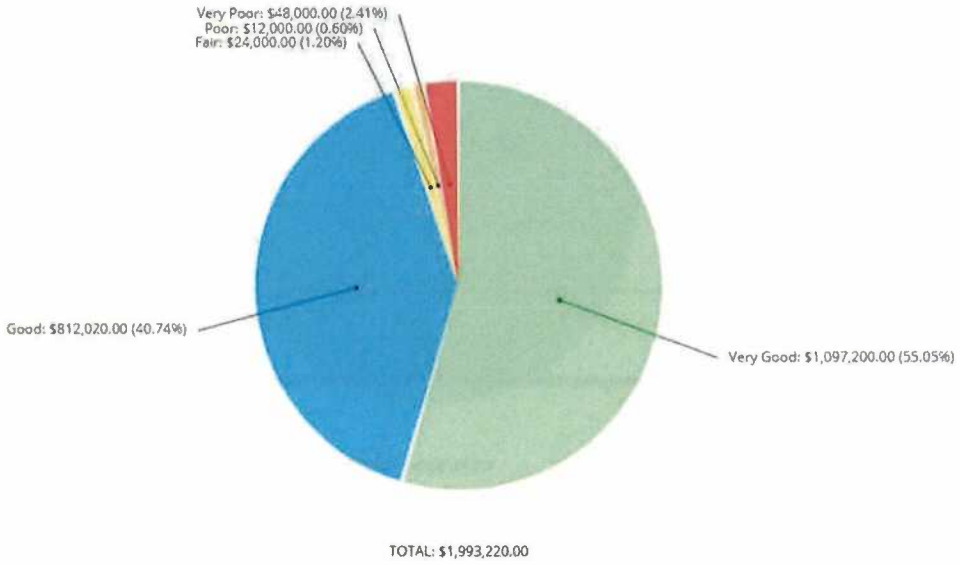


Figure 13: Public Works Garage Condition Graphic

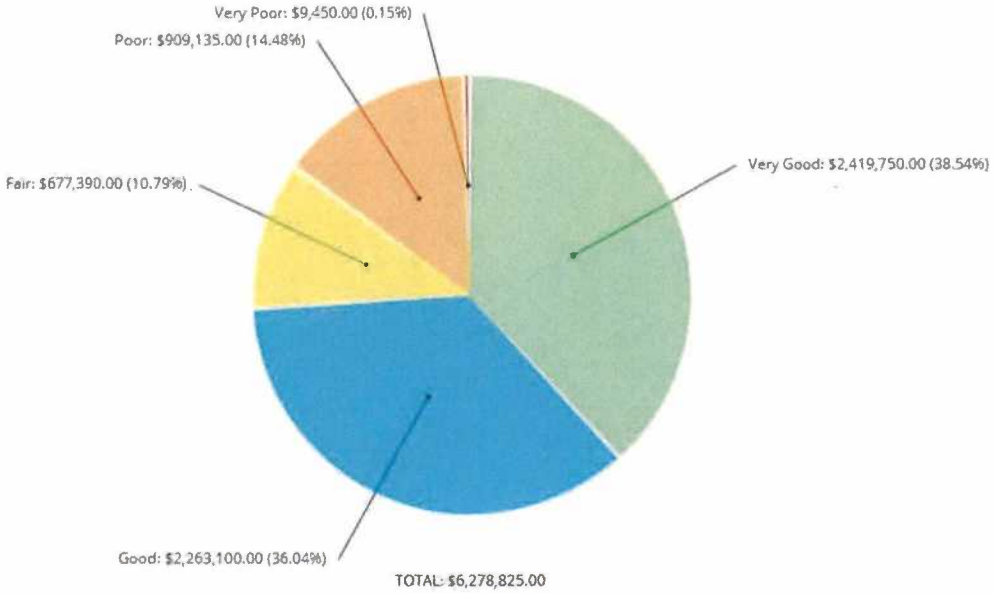


Figure 14: Public Works Pole Barn Condition Graphic

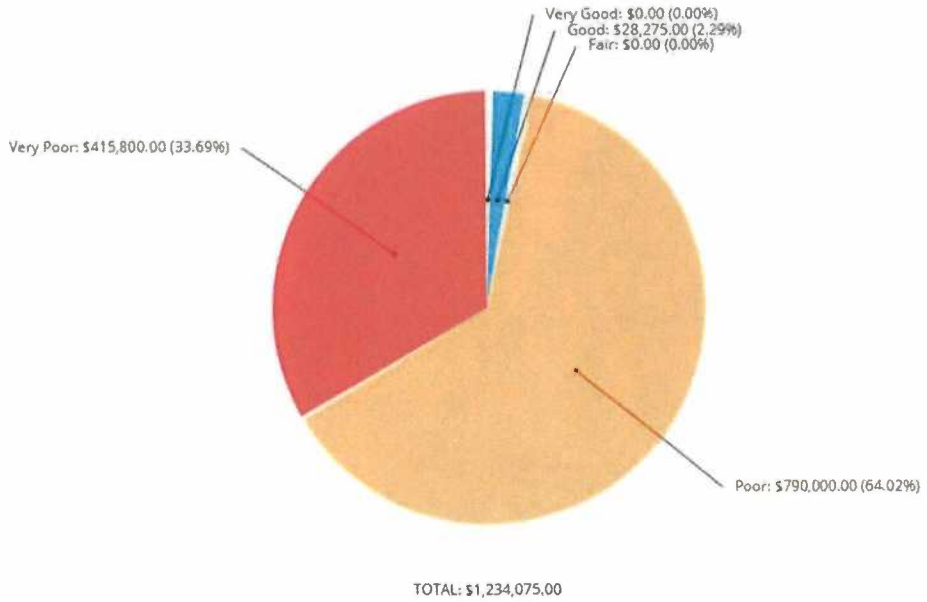
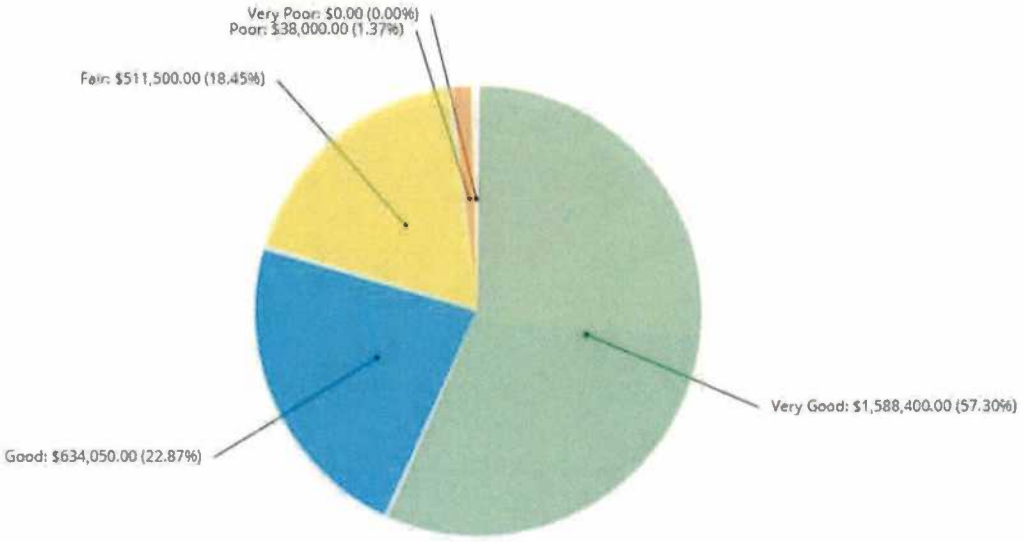
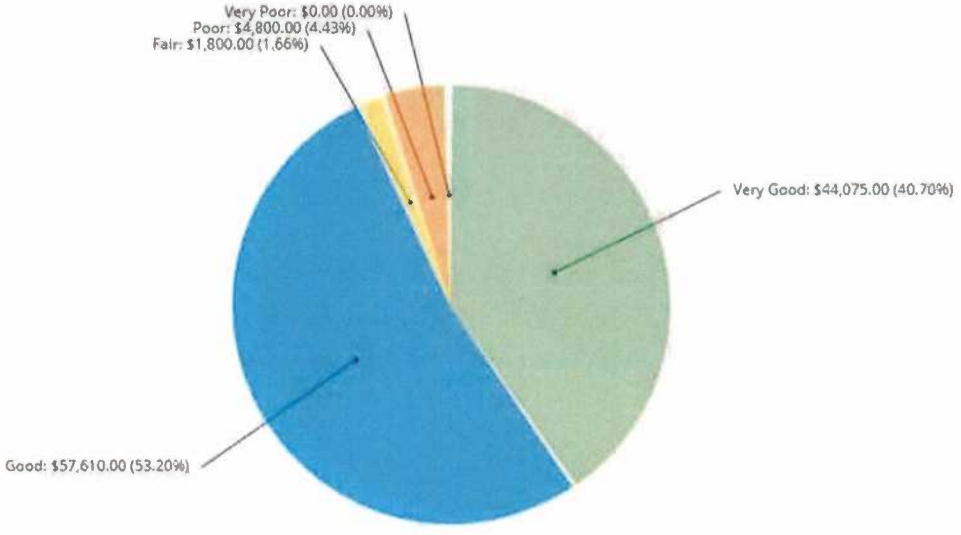


Figure 15: Public Works Sand-Salt Storage Condition Graphic



TOTAL: $2,771,950.00

Figure 16: Sellers Washroom Condition Graphic



TOTAL: $108,285.00

Figure 17: Sidock Pavilion Condition Graphic

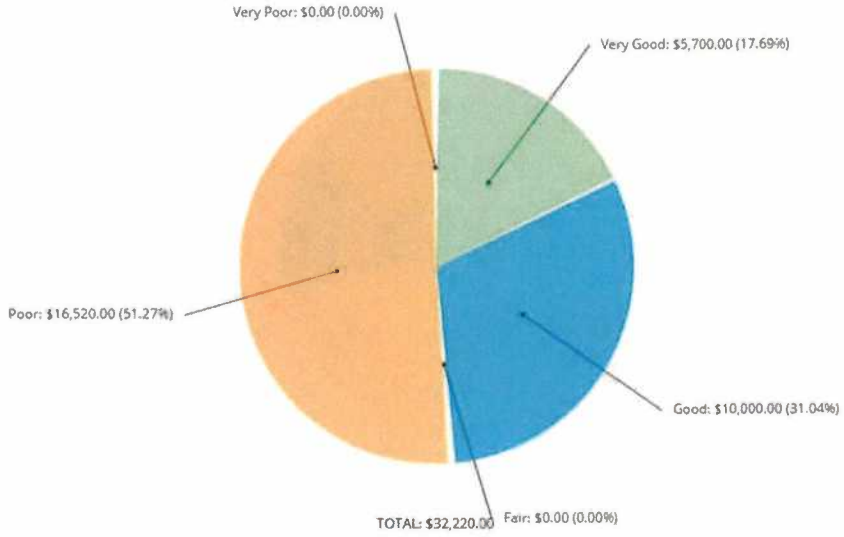


Figure 18: Tennis Restroom Condition Graphic

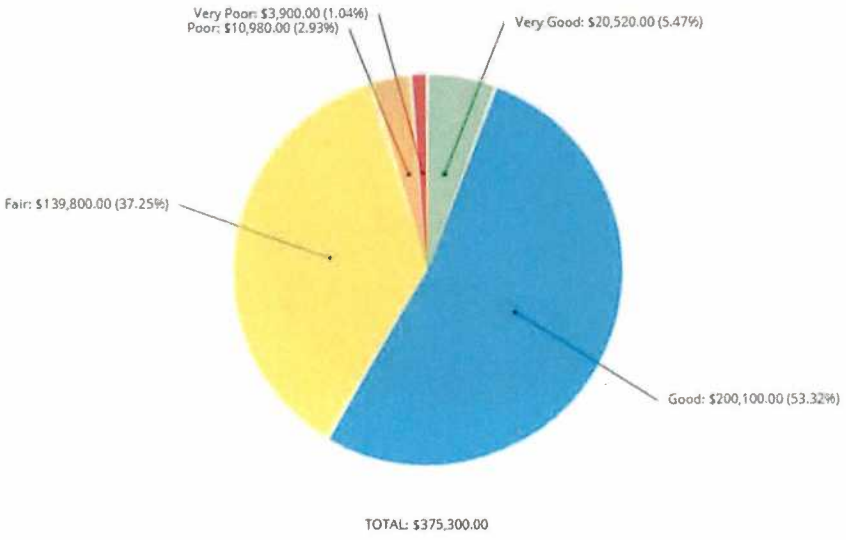


Figure 19: Visitors Centre Condition Graphic

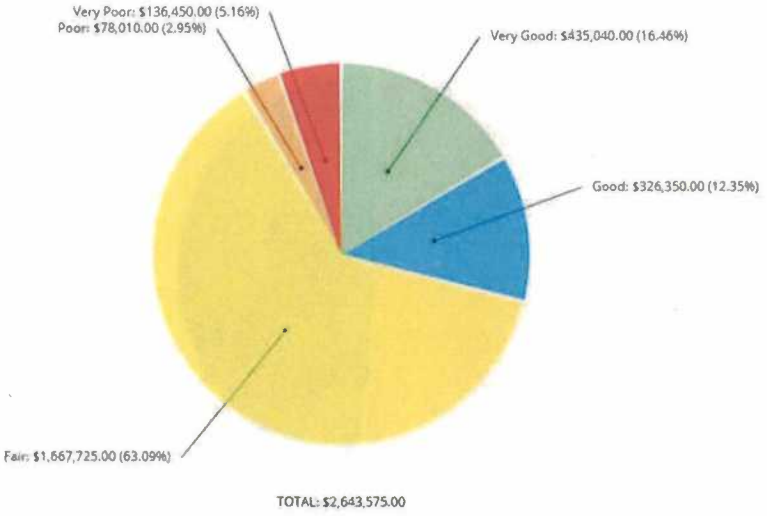
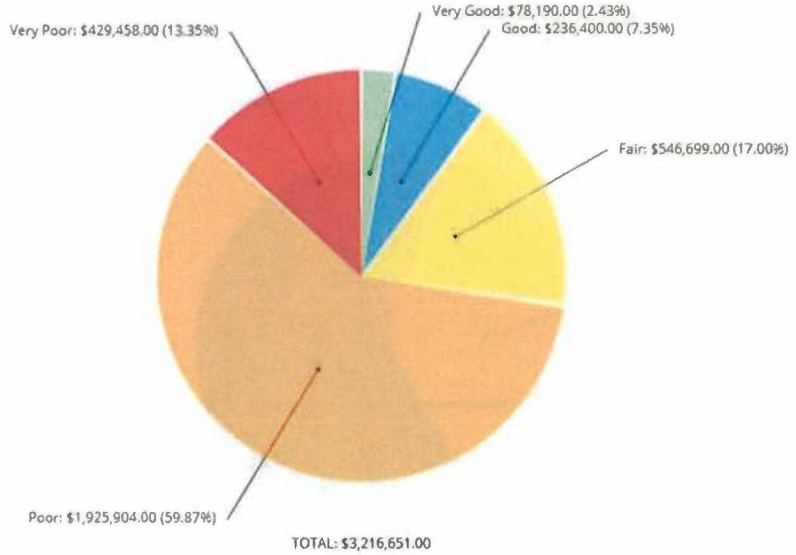
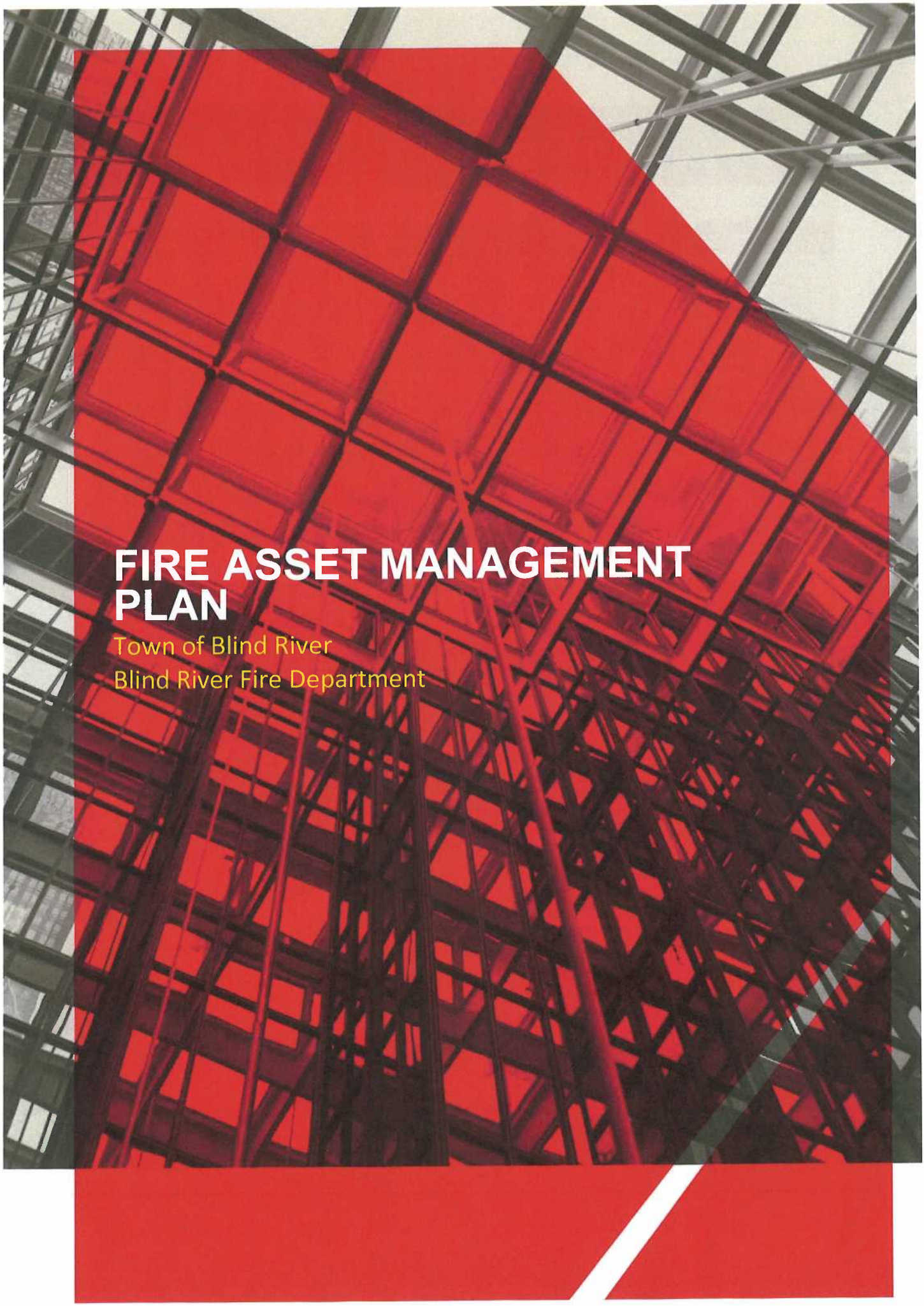


Figure 20: Town Hall Condition Graphic





FIRE ASSET MANAGEMENT PLAN

Town of Blind River

Blind River Fire Department

Document Control	Asset Management Plan

Document ID :

Rev No	Date	Revision Details	Author	Reviewer	Approver
	NOV 2024	Creation	Ryan Belair		

This Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

Contents

1.0 EXECUTIVE SUMMARY

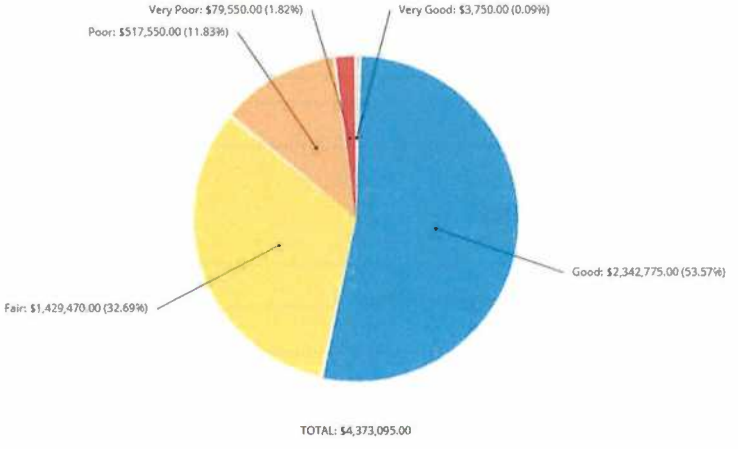
1.1 The Purpose of the Plan

This Fire Asset Management Plan (FAMP) details information about Fire Department assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2024-2034 year planning period. The FAMP will link to a Long-Term Financial Plan which typically considers a 10-year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provide fire services provided from the assets. The Fire Asset Management Plan includes assets that are comprised of:

- Fire apparatus, which are vehicles and response units: This can vary, but typically includes Pumpers, Ladders, Rescues. Tankers and Command vehicles. Many of these specialized fleet units take time to order and ship, including repair parts, which can affect readiness if they are not available.
- Firefighting gear and equipment: Every firefighter has access and training in the use of all firefighting personal protective equipment, such as bunker gear and Self-Contained Breathing Apparatus. Fire stations also maintain specialized tools for specific situations like wildland fires, motor vehicle collisions, etc... A well-equipped fire station maintains a healthy stock of firefighting hose, ladders, extrication equipment and other mission specific equipment that are critical to tactical and strategic priorities.
- The fire station itself has a replacement value estimated at $4,373,095.00 and a current overall condition rating of good. However, it is important to realize that the various components within the fire hall can range from very poor to very good as identified in the following chart.



1.3 Levels of Service

The allocation in the planned budget is sufficient to continue providing existing services at current levels for the planning period. That being said, the Ontario Fire Marshal's Office has mandated additional levels of services for all Municipal Fire Departments, which would impose additional costs in training and equipment. For example, all firefighters shall meet NFPA 1072 Hazmat Awareness, and NFPA 1006 Technical Rescue Vehicle Extrication Awareness. All firefighters shall also meet NFPA 1001 Firefighter I and II, these seals are the professional designation for firefighters.

The main service consequences of the Planned Budget are:

- Mandated requirements from the Ontario Fire Marshall
- Recruiting and retention
- Climate change potentially causing an increase in Wildland Fire risks

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Ontario Fire Marshall
- Climate change
- Increase in vehicle and equipment costs

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Develop levels of service and performance measures for Fire Services
- Using the Town's work order system Citywide to track maintenance costing

1.5 Lifecycle Management Plan

What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. The Fire Services is projected to cost $358,000 on average per year.

1.6 Financial Summary

1.6.1 What we will do

The 5-year historical budget has averaged $357,000 per year. This is 100% of the cost to sustain the current level of service at the lifecycle cost. The infrastructure reality is that only what is funded in the budget can be provided. The Informed decision making depends on the FAMP emphasizing the consequences of Planned Budgets on the service levels provided and risks.

The Fire Asset Management Plan considers the following:

- Operation, maintenance, renewal, acquisition and disposal of fire apparatus and equipment to meet service levels set by the Town in annual budgets.

- Prioritization and forecasting of fire equipment and fleet renewal within the 10-year planning period based on the age of the equipment, maintenance costing and abiding by NFPA codes.

1.6.2 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Wildland Fires
- Recruiting and retention
- Fire prevention

We will endeavour to manage these risks within available funding by:

- Continuing with public education, speaking to fire safety, Firesmart and such
- Ensure lessons are learned from Departments facing recruiting and retention issues
- Continuing to work with local stakeholders, landlords and property owners to ensure fire codes and standards are met, to prevent fires and/or minimize damages caused by them.

1.7 Asset Management Planning Practices

Fire has a robust inventory of their assets with replacement value which assists in evaluating the assets. Fire assets requiring renewal are identified from the asset register. The timing of capital renewals is based on the age of the fire equipment. The Asset Register was used to forecast the renewal lifecycle costs for the FAMP. This FAMP is based on a 90% confidence level, highly reliable, and very certain level of confidence information.

1.8 Monitoring and Improvement Program

The next steps resulting from this FAMP to improve asset management practices are:

- Developing reports about asset failures for fire apparatus and maintenance programs for fire equipment in the Asset Management technology, CityWide for informed decisions on asset replacements.
- Use of CityWide work orders and inspections to track PM programs and reactive maintenance and capture the O&M costs as another factor for fleet replacement.
- Continue to identify assets that should be captured within the FAMP.

2.0 Introduction

2.1 Background

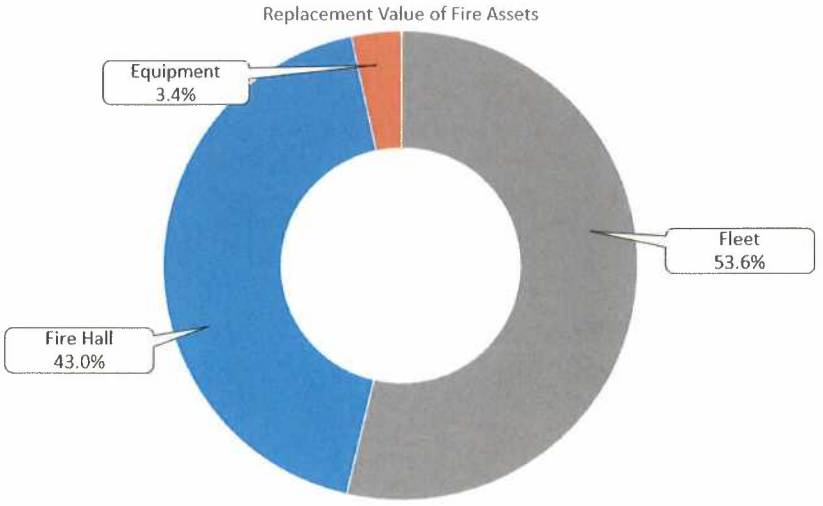
This Fire Asset Management Plan (FAMP) communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The FAMP is to be read with the Community Risk Assessment and By-Law 23-16 Establish a Fire Department. This should include the Asset Management Policy and Asset Management Strategy and the annual budget, where developed.

Blind River Fire Department has one full-time Fire Chief, 17 volunteer firefighters and 7 probationary volunteer firefighters that operate from one fire station located at 241 Causley Street.

The assets covered by this AM Plan include the Fire Hall, equipment, bunker gear and fire vehicles. The composition of the fire assets are:

- Fire Hall 43.0%
- Equipment and bunker gear 3.4%
- Vehicles 53.6%



These assets are used to provide fire and rescue services.

The assets included in this plan have a total replacement value of $10,179,500.00.

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Town of Blind River Council	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service sustainability.
Executive Leadership Team	■ Provide leadership with imbedding asset management practices across the organization. ■ Recommend project selection criteria and weightings to Council. ■ Make budgetary and property tax/rate and infrastructure levy setting recommendation to the Council ■ Ensures that adequate resources are available for development and implementation of AM initiatives ■ Approves future revisions
Director of Protective Services	■ Provide support to AM team on new acquisitions and replacements for fire equipment and fire apparatus. ■ Create Fire Master Plan ■ Update Community Risk Assessment ■ Create Community Wildfire Protection Plan ■ Provide information to support AM goals, review condition of fire assets, etc... ■ Assist in capital planning for Fire Services during pre-budget discussions such as reviewing condition of fire assets. ■ Provide level of service information

2.2 Goals and Objectives of Asset Ownership

Our goal for managing fire department assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of fire department asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

- Levels of service – specifies the services and levels of service to be provided,

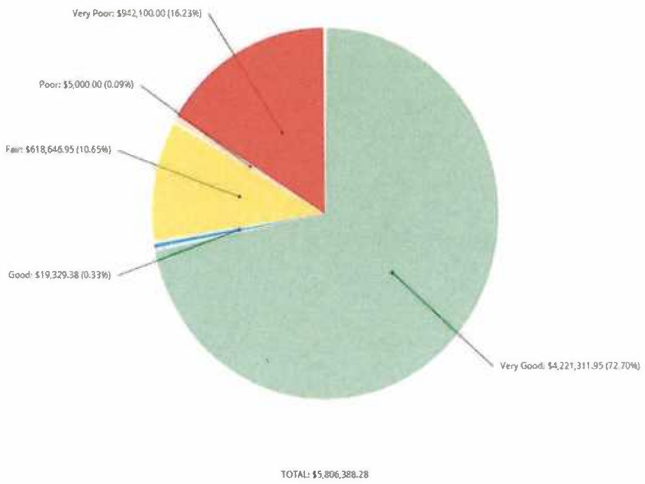
- Risk Management,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

3.0 STATE OF THE BLIND RIVER FIRE DEPARTMENT

3.1 Fire Services

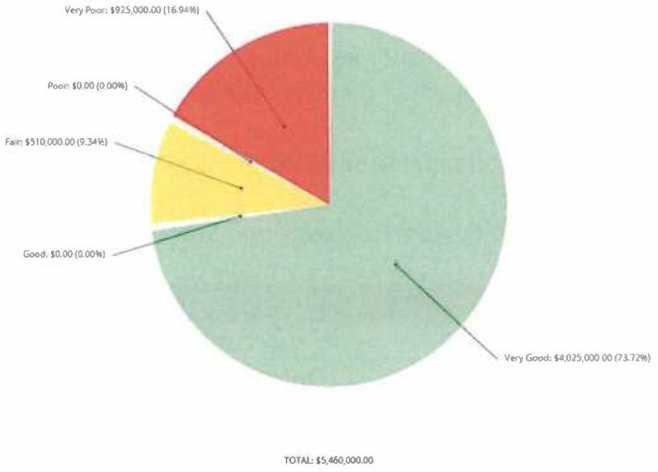
The total replacement value of the assets grouped under the Fire Services is $10,179,500.00. The table 3.1 breaks down the Vehicles and Equipment illustrating an overall cost distribution. The very poor condition of the fire apparatus in the graph is Truck 1, which is in overall good condition considering the age of this vehicle, but the NFPA standard for fire apparatus dictates that Truck 1 must be replaced.

Chart 3.1.1 Vehicles and Equipment



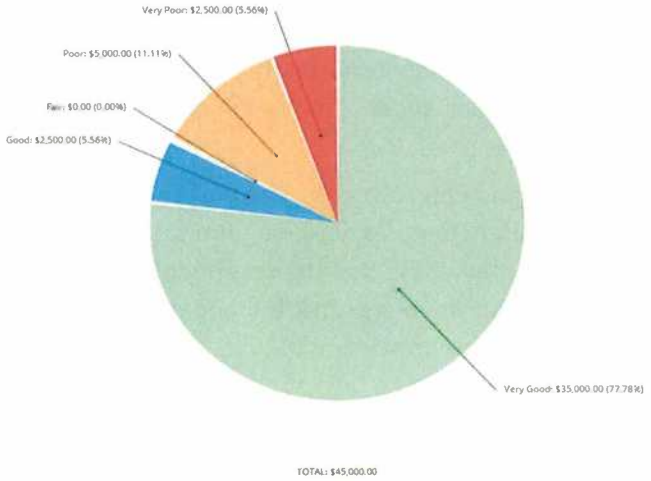
The replacement value for all Fire vehicles is approximately $5,460,000.00 encompassing 53.6% of the total service replacement value. Approximately 83% are rated at Fair to Very Good condition. Our minimum service level for Fire apparatus is Fair as the critical nature of these assets do not suggest acceptance of poor assets. The condition of the assets is generally age-based with all fire apparatus inspected as per the National Fire Prevention Association (NFPA) requirements. Any ageing assets that are shown as poor assets are scheduled to be replaced.

Chart 3.1.2 Vehicles



The replacement value for the bunker gear is approximately $45,000.00 encompassing less than 1% of the total service replacement value. Approximately 83% are rated Fair to Very Good Condition. The condition of these assets is governed by NFPA requirements.

Chart 3.1.3 Bunker Gear



4.0 LEVELS OF SERVICE

4.1 Customer Research and Expectations

This FAMP is prepared to facilitate consultation prior to adoption of levels of service by Council. Future revisions of the FAMP will incorporate customer consultation on service levels and costs of providing the service. This will assist Council and stakeholders in matching the level of service required, service risks and consequences with the customers' ability and willingness to pay for the service.

4.2 Understand your customers

The Customer is defined as those who use or are impacted by activities associated with providing the Fire Services. The customer base for Fire are residents, business groups, Council, consultants, contractors and higher levels of governments. Dispatch services are currently provided by the Central Algoma Communications Centre.

Table 4.2 gives a snapshot of stakeholders and customer groups.

Table 4.2: Customer Groups and Stakeholders

Stakeholder	Customer Groups
Residents	Service providers
Regulatory Bodies	Ontario Fire Marshall, NFPA
External Stakeholders	Council, Provincial Government, Ontario Provincial Police

The Office of the Fire Marshal, Ontario (OFM) has developed the Comprehensive Fire Safety effectiveness Model. The model identifies "three lines of defense" that can be utilized in responding to local community needs. The three lines of defense include:

- Public Education and Prevention- Educating residents of Blind River on means for them to fulfill their responsibilities for their fire safety is a proven method of reducing the incidence of fire. For example, notifying residents on testing of smoke alarms and installing carbon monoxide alarms at homes, warning on fire pits and dry weather are some of the instances of public education and prevention.

- Fire Safety Standards and Enforcement – Ensuring that buildings have required fire protection systems, safety features, including fire safety plans and that these systems are inspected and maintained, so that the severity of fires may be minimized. The NFPA and FPPA has set up standards that is mandated for all bunker gears, apparatus, and communication systems.

- Emergency Response – Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting

the lives and safety of residents. The emergency response is the failsafe for those times when fires occur despite prevention efforts.

Table 4.2.1: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the FAMP
Good Governance	Ensure the Town meets the levels of service for Fire assets	Ensure safety of residents, impart education on fire safety and emergency preparedness
Community Engagement	Improve community engagement within the Town through enhanced customer service and communication	Endeavour to impart Smoke Alarm program to residents and achieve compliance for provincial requirements like installation of early detection systems like smoke alarms, CO alarms, heat detectors, testing of fire alarms at home and public education on fire safety hazards

4.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. There are also Town specific bylaws on fire safety. The legislative requirements that impact the delivery of the fire service are outlined in Table 4.3.

Table 4.3: Legislative Requirements

Legislation	Requirement
Compliance with NFPA regulations	Compliance with NFPA codes on fire suppression, fire safety and fire education.
Fire Protection and Prevention Act	Compliance on public education related to fire safety, prevention and fire protection services to residents of the Town of Blind River
Ontario Fire Marshall	Compliance to OFM monitor and review of fire protection services
Town of Blind River By-Laws	Fire regulations on prevention, spreading of fires, open air fires, establishing times during which open fires can be set.

4.4 Levels of Service

Levels of Service (LOS) are defined using two terms, customer levels of service and technical levels of service.

Customer LOS: measure how the resident receives the service and measure of value provided.
Technical LOS: technical measures of performance relating to the resources of service activities to achieving the desired outcomes and demonstrate effective performance.

- **Operations** – ongoing activities, day-to-day operations

- **Maintenance** – activities enabling an asset to provide service for its planned life
- **Renewal** – activities that return the service capability to near original capacity
- **Upgrade** – activities that provide a higher LOS

For the purposes of this report and because residents' expectation of a Fire Department is quite simple, for the purposes of this AMP, only Technical LOS have been included.

The current and expected Technical Levels of Service detailed in Table 4.4 shows the expected levels of service based on resource levels. Organizational objective measures are measures of fact related to the service delivery outcome.

Table 4.4 Technical Levels of Service

Service	Service Objective	Objective Measure	Current Performance	Desired Outcome
Operations **$124,340 Average Budget**	Safe and reliable equipment and equipment training to facilitate prompt fire response times	Firefighters are trained to use and regularly exercise equipment during practice times to ensure proper function at fire scenes	Trucks and equipment checked bi-weekly on training nights. Fire hoses checked annually	All equipment aside from hoses are checked bi-weekly.
Maintenance **$14,280 Average Budget**	Reliable and consistent fire services without interruption or delay of service	Regular maintenance and condition assessments	Regular annual inspections on major equipment and vehicles as per NFPA 1911	Complete condition assessments using an established system to coordinate with AM Plan
Renewal **No Renewal Budget**	Fire Services assets meet needs to provide quality services to customers	Renewals are performed where required, without sacrifice to quality when upgrade is a more suitable option Equipment and apparatuses are safe and in good running order	Although equipment and vehicles are currently safe and in good running order, replacing Trucks 6 and 8 in the near term would ensure we meet NFPA codes and standards	Aging equipment and vehicles to be replaced before they fail, leading to delays or interruption in services expected.
Upgrade/New **$250,000 budgeted per year 2023-2027 to reserve for future fleet replacements**	Newer fire apparatus for reliable service delivery	Fire apparatuses are following the Fire Underwriters Survey guidelines compliance measures	The next fire apparatus is due in the near-term, however, another vehicle may not be budgeted for 10 years. BRFD to apply for exception with FUS to keep Truck 1 as an option for water shuttle relays	All fire apparatus are budgeted and replaced within the timeline specified by the Fire Underwriters Survey

It is important to monitor the service levels provided regularly as these will change as regulations and expectations change. The current performance is influenced by work efficiencies, technology, and

Fire Underwriters Survey regulations that will change over time. Review and establishment of the agreed position that achieves the best balance between service, risk and cost is essential.

4.5 Required Replacements

The Fire Underwriters Survey (FUS) dictates replacement schedules for fire apparatuses. Table 4.5 shows the guidelines for First Line, Second Line, and Reserve. Based on population, Blind River is designated as a Medium Size community and as such is required to adhere to these guidelines to retain recognition. One consequence in the loss of recognition would result in a large spike in residential fire insurance rates. While First and Second Line have a maximum age on the chart, apparatuses can be up to 25 years old in these positions. In addition, only one apparatus per department can be applied to have an age exception applied; only special circumstances will allow for two apparatuses being considered for exception. Leniency for these rules may change in the future but for the purposes of this AMP, a maximum apparatus age of 25 was applied in order to determine replacement dates and contribution levels.

Table 4.5 - Fire Underwriters Survey Fire Apparatus Age Guidelines

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First Line	First Line	First Line
16 – 20 Years	Reserve	2nd Line	First Line
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading *or* *Reserve* [2]	No Credit in Grading *or* *2nd Line* [2]
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading *or* *Reserve* [2]	No Credit in Grading *or* *Reserve* [2]
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

[1] *All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition. (NFPA 1071)*

[2] *Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.*

[3] *Major Cities are defined as an incorporated or unincorporated community that has:*
- *a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND*
- *a total population of 100,000 or greater.*

[4] *Medium Communities are defined as an incorporated or unincorporated community that has:*
- *a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND/OR*
- *a total population of 1,000 or greater.*

[5] *Small Communities are defined as an incorporated or unincorporated community that has:*
- *no populated areas with densities that exceed 200 people per square kilometre; AND*
- *does not have a total population in excess of 1,000.*

5.0 ASSET MANAGEMENT STRATEGIES

5.1 Demand Drivers

Drivers affecting demand for fire are generally regulations related to fire safety, education and fire prevention, population and demographic related growth, public expectations, technological changes, and environmental awareness.

5.2 Demand Impact and Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets and following the NFPA 1720 standards where the response time includes the combined turnout and travel of the fire department's response to incidents. Table 5.1.1 shows the NFPA 1720 first response standard and minimum resources for different demand zones in the Town.

Table 5.1.1. NFPA 1720 Demand Zones, Resources and Response Time

Table B2: NFPA 1720

Demand Zones	Demographics	Minimum # of Firefighters Responding	Response Time (Turnout + Travel) in Minutes
Urban Area	>1000 people per square mile	15	9
Suburban Area	500-1000 people per square mile	10	10
Rural Area	<500 people per square mile	6	14
Remote Area	Travel Distance + or – 8 miles	4	Dependent upon travel distance
Special Risks	To be determined by Fire Department	To be determined by Fire Department	Determined by Authority Having Jurisdiction

5.3 Climate Change Adaptation

Global climate change has a significant impact on temperature and precipitation, and these are influencing the frequency of extreme climatic events and requiring large-scale emergency preparedness and response. Flooding due to rainfall and destruction of property during tornadoes and wildfires, communities are experiencing immediate danger to life, property, and long-term public health threats. It is important that fire service should incorporate climate change to prepare for and mitigate future disasters. How climate change impacts on assets in the Town will vary depending on the location. Locations close to wildland urban intermix or interface will increase the risks associated with wildland fires.

Firefighters are first responders who are on the front lines, handling the devastation that comes along with extreme weather, increase in fire severity due to fires as well as the other changes due to climate change, like longer fire seasons or drier terrain. These changes add up to create an even more challenging environment to the fire fighters. When we fail to address these added risks, we are failing to protect the public, and those who are responding to the events. The Town will consider how to manage our existing assets given potential climate change impacts. Risk and opportunities identified to date are shown in Table 5.3

Table 5.3 Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Wildland Fires	High temperature and dry weather conditions	Significant impact on service delivery	Provide fire education to residents, fire hazards, fire prevention and emergency management
Tornados	Significant precipitation and heavy rainfall, storm and flooding	Significant impact on service delivery	Provide fire rescue education to residents, fire prevention and emergency management

The fire service will use previous experience and insight, preventative efforts, community engagement and functional preparation for resiliency. The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this FAMP.

5.4 Maintenance Strategy

The maintenance activities for Fire Services in the Town are generally the activities involved in maintaining the fire apparatus and equipment. Most of these activities are regulated by the NFPA standards like NFPA 1915 for fire apparatus preventive maintenance. Some routine maintenance activities on fire apparatus is performed by the fleet department, others such as annual pump testing is completed by CMAX.

The NFPA 1851 enforces routine inspections on bunker gear like inspection of garments after each use looking for soiling, contamination, physical damage, damaged trim, and hardware. Advanced inspection is also performed on the bunker gear like moisture barrier and seam sealing integrity, material integrity, reflective trim and Velcro integrity and any loss or shift in thermal liner material. This testing is completed by Inservus.

5.5 Lifecycle Management Strategy

The lifecycle management plan details how the fire services in the Town are managed and operated to meet the agreed levels of service while managing life cycle costs. The following are the different stages of lifecycle for the assets:

- **Acquisition** – the activities to provide a higher level of service (e.g., upgrade of an existing fire apparatus) or a new service that did not exist previously in asset registry

- **Operation** – the regular activities to provide services (e.g., salaries and administration costs to run a fire Station, fire prevention and emergency management activities)

- **Maintenance** – the activities necessary to retain an asset to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g., routine maintenance of fire equipment, maintenance activities contracted to third party as regulated by NFPA 1915)
- **Renewal or replace** – the activities that return the service capability of an asset up to that which it had originally provided or replace an existing asset (e.g., fire apparatus replacement and replacement of bunker gear and communication equipment or replacement due to change in regulations related to fire equipment)

Table 5.5 provides a brief snapshot of some of the asset activities that fall into the different lifecycle activities.

Table 5.5: Fire Lifecycle Activities

Lifecycle Activity	Examples
Non-Infrastructure Solutions	- Fire Master Plan in the future, 2025 - Predictor modeling, demonstrating long-range needs for Fire by reviewing Community Risk Assessment, historical data such as call volume, call types.
Operations and Maintenance	- Preventative Maintenance and inspections of fire equipment and apparatus. - Fire Equipment and Apparatus maintenance as regulated by NFPA 1915. - Salaries, training and administration costs of fire chiefs, fire fighters and administration staff.
Acquisition	- Acquisition of new fire apparatus and fleet - Acquisition of bunker gear and communication
Replacement Activities	- Fire equipment and apparatus replacement
Disposal Activities	- Disposal or trade in of fire apparatus and bunker gear
Expansion Activities	- Upgrade of fire apparatus due to potential change in service levels

5.5.1 Background Data

Physical Parameters

The assets covered by this FAMP are shown in Table 5.3.1. The age profile of the assets included in this FAMP is reflected in the asset inventory. Most of the smaller value assets are replaced within 10 years while larger fire apparatus has a lifespan of 20 to 25 years.

Table 5.5.1 Assets covered by this Plan

Asset Category	Count	Replacement Value
Fire apparatus and Fleet	6	$5,460,000
Fire Equipment	Pooled	$346,388.28
Fire Hall	1	$4,373,095.00
TOTAL		$10,179,483.28

5.5.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. The Fire Master Plan will provide all details on service locations, resources available, response time and demand zones that will help us decide on asset capacity and performance for Fire Services.

5.5.3 Asset Condition

Condition is currently monitored by age. Fire equipment like bunker gear and equipment have a shorter life span than fire apparatus. The fire apparatus is lifespan aged between 20 to 25 years. The condition, though age-based is reviewed annually for replacement. Condition is measured using a 1-5 grading system as detailed in Table 5.5.3.

Table 5.5.3: Condition Grading System

Condition Grading	Description of Condition
1	**Very Good**: Typically, new or recently replaced. Very few elements show general signs of deterioration that require attention
2	**Good**: Some elements show general signs of deterioration that require attention. A few elements exhibit significant deficiencies
3	**Fair**: Shows general signs of deterioration and requires attention. Some elements exhibit significant deficiencies.
4	**Poor**: Mostly below standard, with many elements approaching end of service life. A large portion of the system exhibits significant deterioration.
5	**Very Poor**: Unacceptable condition with widespread signs of advanced deterioration. Many components exhibit signs of imminent failure, which is affective service.

5.5.4 Operations and Maintenance Plan

Operations include regular activities to provide services. Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Typical maintenance activities are performed for bunker gear and communication equipment. The total operating costs for Fire Services adds up to an average of $196,308.60 annually over the past 5 years with budget for general focused on the department's administration function and firefighting budget focused on firefighters. The trend in operating budgets is shown in Table 5.5.4. The operating expenses are $196,308.60 on average with the annual volunteer firefighter wages accounting for only $25,000. Additional costs include cost-of-service delivery, facility costs, professional services, debenture interest and administration expenses. The contracted services include dispatch fees, equipment inspections such as SCBA annual bench testing and bunker gear hydrostatic testing annually. The specialized maintenance of fire apparatus and equipment is performed by third party CMAX Fire Solutions.

Table 5.5.4: Operating and Maintenance Budget Trends

Year	Total Operating Budget
2019	$239,703.00
2020	$156,850.00
2021	$139,560.00
2022	$232,565.00
2023	$212,915.00

5.5.5 Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the fire inventory. If additional fire equipment assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Fire inventory is subject to supply chain and demand issues experienced throughout the World's economy. Additionally, with the increased demands from the Ontario Fire Marshall as it pertains to NFPA 1001, additional funds will be added for training hours.

5.5.6 Replacement Plan

Replacement of fire apparatus and bunker gear at the fire station is major capital investment. Replacement of these assets will significantly alter the original service provided by the asset, and restores or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs. The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.5.6.

Table 5.5.6: Useful Lives of Assets

Asset Class	Useful Life
Fire apparatus & Fleet	10-25 years (Light Fleet 10 years, Apparatus 15-25 years)
Bunker Gear	10 Years

Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g., Ensure the fire apparatus or equipment meets the service requirements and change in service level or change in NFPA standards or fire regulations)
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g., condition of a fire equipment and requirement to meet the NFPA standards).

It is possible to prioritize renewals by identifying assets or asset groups that:

- Have a high consequence of failure, (e.g., poor condition of the fire equipment or wear and tear of equipment gear and boots)
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, (e.g., rising cost to maintain an old fire truck)
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service. (e.g., Replacing an older fire apparatus or equipment with a new apparatus and or equipment that require minimum maintenance)

5.5.7 Selection Criteria

The likelihood of a new fire facility within the next 10 years is very low and therefore no acquisitions for fire assets have been forecasted in the Long-Range Financial Plan.

The Ontario Association of Fire Chiefs OAFC's Industry Committee has informed the Fire Services to consider concerns like rising costs, supply chain issues when seeking to purchase new equipment or apparatus. Fire equipment and apparatus manufactures are facing new challenges at nearly every step of the process. From increased costs and difficulties for sourcing products and materials, to delays in receiving shipping container products is causing considerable delay in supply chain of assets for fire services. The industry is seeing price increases up to 30% from manufacturers which need to be accounted for during the budget process.

5.5.8 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. The Town's Critical assets have been identified along with their typical failure outcome or mode and the impact on service delivery. Failure modes may include physical failure, or essential service interruption. Fire assets are highly critical to service delivery.

Table 5.5.8 Critical Assets

Critical Assets	Failure Mode	Impact
Bunker Gear	Poor condition of gear	Non-conformance of NFPA standards, safety of firefighters
Fire Fleet	Physical failure such as breakdowns	Service delivery and essential service interruption

A Firefighter's turnout gear has a heat-rating index (thermal protective performance rating) that measures the ability of your thermal protective material to protect you from high thermal exposure. Turnout gear will decrease the risks of harm from heat and flame, body fluids, cuts and abrasions, liquid splash from fireground chemicals, and other hazardous materials. The bunker gear is subjected to numerous tests, and they must pass to be NFPA 1971 certified. In addition to heat resistance thresholds, the gear should also comply with tear resistance, corrosion resistance, retro-reflectivity, breaking strength are just a few of the other tests to be complied. Fire apparatus like pumpers, tankers, and aerials have specialized equipment which are critical to the service delivery of fire services.

The maintenance of fire apparatus as per NFPA 1915 puts emphasis on the following maintenance:

- Chassis maintenance to include fluid and filter changes, lubrication, and inspection

criteria and engine

- Air filtration cleaning and replacement
- Line voltage electrical systems like ignition and charging systems

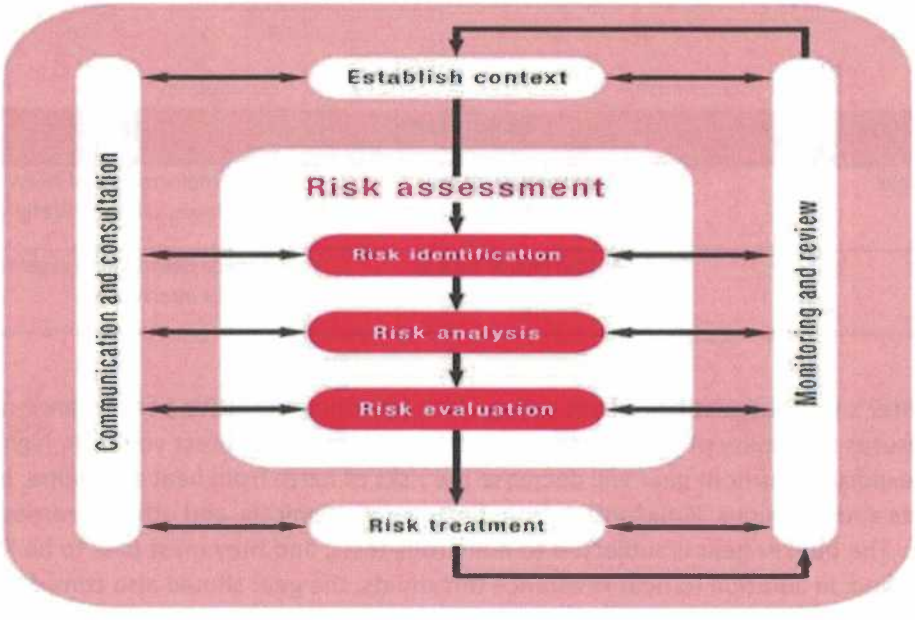
- Inspection, cleaning, and lubrication of aerial components
- Pump maintenance
- Cooling system maintenance

By identifying critical assets and failure modes the Town can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

5.5.9 Risk Assessment

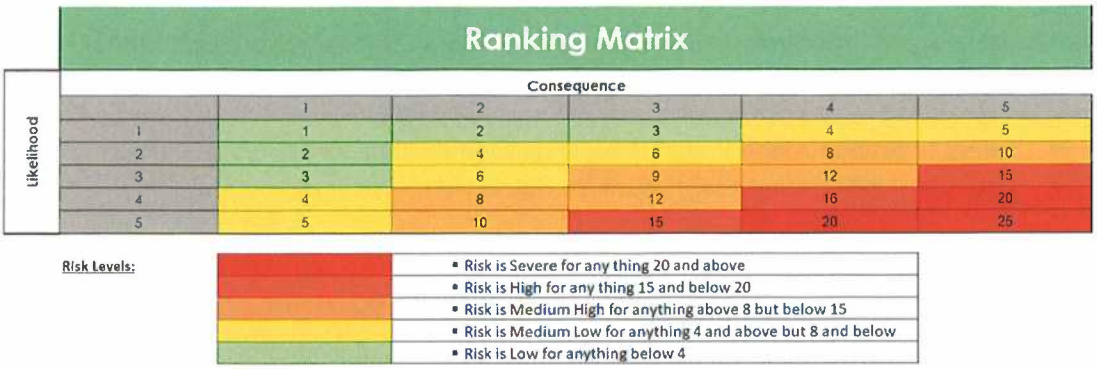
The risk management process used is shown in Figure 5.5.9 below. It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks. The process is based on the fundamentals of International Standard ISO 31000:2018.

Figure 5.5.9 Risk Management Process



The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks. An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, operational and environmental impacts, a financial hardship, reputational impacts, or other consequences. The likelihood of failure is based on the condition of the structures and storm elements while there a consequence matrix helps in developing the risk scores for the storm structures and storm elements. Figure 5.5.9.1 is the risk matrix for the Town.

Figure 5.5.9.1 Risk Matrix for the Town of Blind River



Ranking Matrix

Likelihood \ Consequence	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Risk Levels:

- Risk is Severe for any thing 20 and above
- Risk is High for any thing 15 and below 20
- Risk is Medium High for anything above 8 but below 15
- Risk is Medium Low for anything 4 and above but 8 and below
- Risk is Low for anything below 4

Critical risks are those assessed with Very High (requiring immediate corrective action) and High (requiring corrective action) risk ratings. Most of the fire assets are critical to service delivery and are mandated by NFPA standards and follow a regular preventive maintenance program to reduce risks.

Service and Risk Trade-Offs

The decisions made in adopting this FAMP are based on the objective to achieve the optimum benefits from the available resources.

What we currently do

The Town currently replaces fire assets by both condition and age and prioritizes asset management across all fire assets. The proper care and maintenance of bunker gear is a responsibility borne both by the firefighter and the department. The NFPA 1851 has set specific requirements for fire to ensure minimum procedures for the inspection, cleaning, repair, storage, and retirement of fire turnout clothing. Bunker gear is carefully examined every time the firefighter has been exposed to fireground contaminants or encountered other hazardous substances. Also, an inspection, and testing is done on the fire apparatus, as well as testing on communication equipment. As a result, the Fire Services evaluate asset priorities based on age and historic practices of asset investment and availability of budget to service critical initiatives.

Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Safety to residents, and firefighters/first responders
- Legal, property damage and liability issues
- Compliance issues with NFPA standards

- Environmental issues due to fire

Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Safety to residents, and firefighters/first responders Impact on service delivery
- Potential liabilities and rising insurance claims from residents

Disposal Strategy

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition, or relocation. Deciding when bunker gear must be removed from service is difficult and requires the judgment of experienced persons. The general rule of thumb is that bunker gear should be retired when it's considered unsafe, cannot be effectively cleaned, or decontaminated, or the cost of repairs is more than half of the original purchase price. The lifespan of protective clothing is entirely dependent upon the types of exposures, frequency of wear and the care and maintenance that has been provided. The estimated service life of bunker gear can be drastically shortened if they are extensively used, worn, and exposed to fire. Assets identified for possible decommissioning and disposal on a periodic basis for fire are generally the bunker gear (10-year max.), apparatus. Fire apparatus like pumpers, tankers when aged are evaluated for use as a reserve apparatus or training apparatus before final disposal. Any revenue gained from fire apparatus disposals is included in the trade-in of fire apparatus.

6.0 PLAN IMPROVEMENT AND MONITORING

6.1 Status of Asset Management Practices[1]

6.1.1 Accounting and financial data sources

This Asset Management Plan utilizes accounting and financial data. The source of the data is from the previous five year operating and maintenance budget and actuals as well as the capital budget. The FIRs and Tangible capital assets from finance was the source of information for depreciation, net book value and accumulated depreciation.

6.1.2 Asset management data sources

This FAMP also utilizes asset management data from the inventory provided by Fire Services. Currently all fire inventory is in CityWide.

6.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making.

6.3 Monitoring and Review Procedures

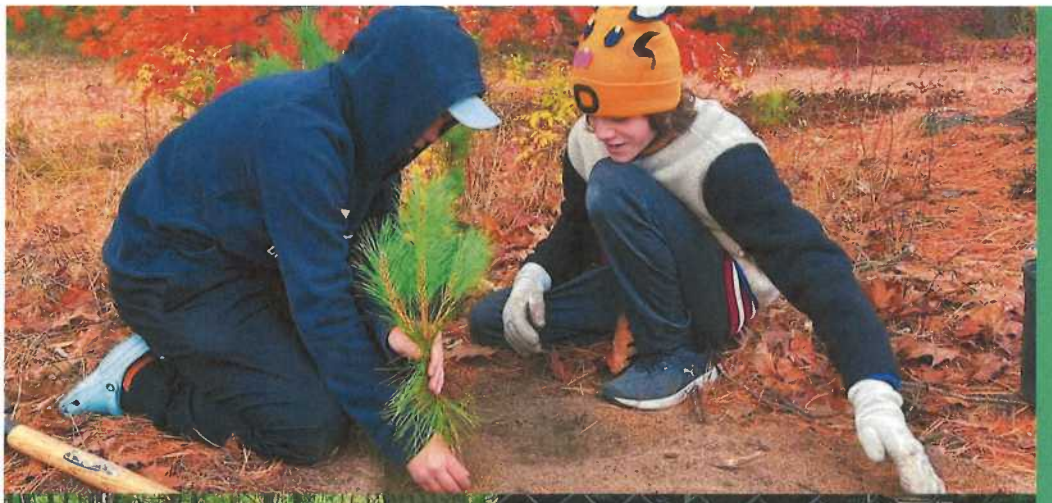
This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

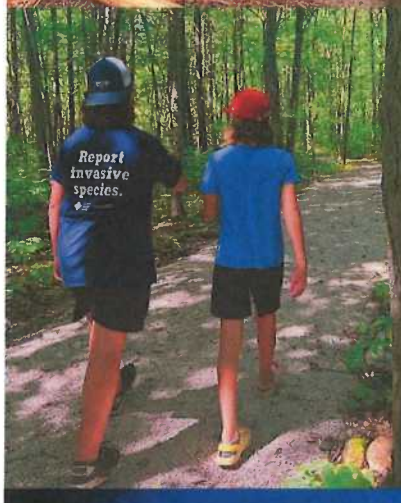
The AM Plan will be reviewed and updated regularly to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets.

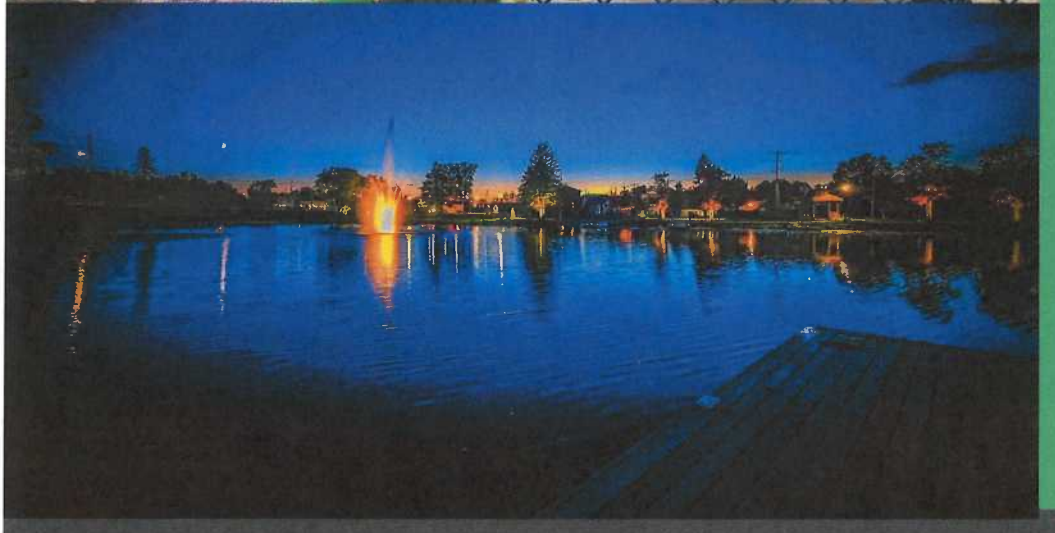
6.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).







Parks & Recreation Asset Management Plan Version 1

Blind River

Blind River

Contents

1. Executive Summary

1.1. Purpose

Asset management is the systematic and coordinated activities and practices of an organization to deliver on its service objectives optimally and sustainably through cost-effective lifecycle management of assets.

The Parks and Recreation Asset Management Plan provides details of the parks and recreation portfolio including the actions required to provide the current level of service while outlining the associated risks of asset ownership. The plan defines the current services provided, how the services are provided, and what funds are required to maintain the services over a 20-year planning period.

1.2. Asset Management Strategy

The lifecycle intervention strategies for parks and recreation discussed within this report include best practice activities. Best practices for the management of parks and recreation assets are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- Parks and recreation Inspections of grounds, activity structures as well as courts and playing fields.
- Document issues identified from asset users.
- Adhere to the manufacturers scheduled maintenance.
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset.
- Monitor the condition of the assets annually.

1.3. Failure Prediction and Risk Management

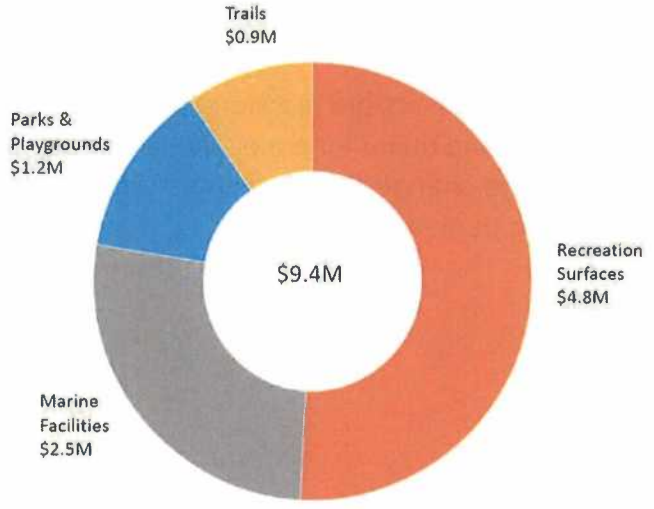
A risk framework was developed and implemented, and each individual asset is assigned a risk score based on a calculated probability and consequence of failure.

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The consequence of failure is an estimate of the effect on outcomes if an asset fails. Under the parks and recreation portfolio infrastructure assets are prioritized for renewal or replacement with the output of the risk assessment. The parameters of the risk assessment are discussed in further detail within the plan.

1.4. State of the Infrastructure

The scope of the plan encompasses the parks, playground and all outdoor recreation spaces owned and operated by the Town of Blind River. All building and building elements, equipment, and furnishings required to operate the buildings are captured under the Building and Facilities Asset Management Plan. The fleet and equipment required to maintain and operate the parks and recreation spaces are captured within the Fleet and Equipment Asset Management Plan.

Figure 1: Replacement Value Distribution of Parks and Recreation Infrastructure



The parks and recreation assets have a replacement value of $9,441,756.

The data analyzed to develop the plan is integrated from Blind River's tangible capital asset database and data spreadsheets.

1.5. Level of Service

The Town's objective is to deliver services to the community. Levels of service (LoS) are used to define the extent that the Town is currently delivering services and the extent that the Town will aim to deliver services to the community. They provide a direction for a particular service area against which performance can be measured.

Levels of service are imperative to establish reasonable expectations while taking into consideration the risks associated with service delivery and the affordability of delivering a service. Following the approval by Council of the Parks and Recreation Asset Management Plan, staff will work towards defining level of service targets for Council review, consideration, and approval.

1.6 Long-Term Need

The Average Annual Reinvestment Requirement represents the estimated annual amount of capital the Town requires to reinvest in the parks and recreation inventory. Investment was analyzed on a 20-year period to capture the theoretical useful life of parks and recreation assets. The 20-year annual average reinvestment requirement for all parks and recreation assets is $495,000.

1.7 Future Demand

The Town's parks and recreation assets are monitored for future demand requirements. The most significant future demand driver for parks and recreation are population demographics as well as climate change. The Town has implemented preventative measures in anticipation of the demand drivers.

1.8 Next Steps

Table 1 identifies the next steps identified during the development of the asset management plan.

Table 1: Next Steps		
Section	**Category**	**Action Item**
State of the Infrastructure	Inventory	• Monitor and refine the parks and recreation asset inventory to reduce the quantity of data assumptions • Implement a digital solution to track, monitor and analyze parks and recreation data
Level of Service	Asset Level of Service	• Develop target service levels for Council review
Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the deterioration model for Parks and Recreation assets as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

2. Introduction

The Town of Blind River's parks and recreation assets are essential contributors to the quality of life to all residents. Each asset provides meaningful opportunities for social engagement and physical activity to residents, tourists, individual groups, young and old, and people of all abilities.

Individuals, households, and entire communities all benefit greatly from the assets that make up the parks and recreation portfolio, such as: physical benefits (health and wellness, social benefits, environmental benefits (from protection of open spaces), as well as the economic benefits made possible through the attraction of sport tourism and new residents due to the high quality of life that parks and recreation provide.

The Town of Blind River has invested considerably in its recreation infrastructure between 2018-2024. Most items, if this study was completed in 2018, would rate POOR/FAILURE, however the majority hover between GOOD/VERY GOOD.

The Town of Blind River recreation system spans over 520.6 km^2 (128643.06 Acres) and contains extensive infrastructure that ranges significantly in terms of type and value. Primarily, the park systems are categorized as either maintained parkland or natural parkland. Maintained parkland includes hectares where the municipality is responsible for the direct cost to maintain the space and ensure the space is safe and available for public use. Natural parkland includes forests, meadows, storm water management buffer areas above the waterline, available for public use.

The total area of all Crown lands in Town, including Matinenda, North Shore Channel Inshore Waterway, Blind River, and Little White River Provincial Parks and the Mississagi Delta Provincial Reserve, represents almost 70% of the entire municipal land area. The Crown lands are located throughout the Town, although principally in the six northern geographic Townships. The future use of these Crown lands will therefore have a major impact on the character of the Town.

The Official Plan assumes that the high quality of life now enjoyed by the Town's residents can be maintained and enhanced if Blind River's existing strengths and attributes can be promoted and developed. This Plan, in conjunction with The Official Plan, aim to provide Council with a set of policies to manage future growth and change while protecting Blind River's unique character, natural heritage features and ensuring its continued economic vitality.

3. Asset Management Strategy

Best practices for the management of parks and recreation assets are applied with intervention decisions to strive for the lowest lifecycle cost. In addition, condition data

is collected and involved in maintaining level of service contemplations and in the asset lifecycle intervention strategies for parks and recreation.

3.1 Maintain or Adjust Level of Service

Departments manage the parks and recreation assets to maintain the existing levels of service. Best practices include but are not limited to:

- Continue to collect and report on performance measures currently tracked, while developing collection and reporting strategies for newly identified performance measures.
- Perform annual inspection and certification as per legislation.

Following the approval by Council of the Parks and Recreation Asset Management Plan, staff will work towards defining level of service target for Council review, consideration, and approval. The process of reviewing and setting target levels of service will involve Council and Department Leads to introduce the appropriate targets that can be sustained financially through capital infrastructure spending. To set targets, Council will be provided with the risks associated with the target options.

3.2 Lifecycle Management Plan

Best practices for the management of parks and recreational assets are applied with intervention decisions to strive for the lowest lifecycle cost. These best practices include:

- Asset inspection program protocols.
- Document issues identified by users.
- Adhere to manufacturers scheduled maintenance.
- Retain certified asset users when applicable and provide additional training to address proper use and maintenance for each asset;
- Monitor the condition of assets annually;
    - Regular maintenance activities are standard procedure across the parks and recreation portfolio. They are required to meet legislated requirements, approved service levels, and to optimize asset lifecycles. Non infrastructure solutions are considered in all stages of the planning process to identify opportunities to optimize asset lifecycles and reduce asset related service delivery costs through optimizing asset use,

monitoring asset condition, and assessing asset specific risk to service.

4. State of the Infrastructure

4.1. Asset Data Inventory

The services provided through parks and recreational assets includes the maintenance of all municipal parks, playgrounds, applicable beaches, trails, sporting fields and courts enjoyed by community members across the Town of Blind River. This inventory is stored within excel spreadsheets and the tangible capital asset database.

Achieving a complete inventory can be a time-sensitive and costly effort, but one that can provide invaluable to future operational needs. An inventory that is up to date can feed many other initiatives. With a complete data set, it is easier to frame the structure of future condition assessments and define capital replacement needs. Concise asset inventories are also used to establish preventative maintenance programs. **Table 2** outlines an asset inventory of parks and recreation assets within the Town of Blind River.

Table 2: Parks and Recreation Inventory

Service Area	Asset Type	Quantity
Parks and Recreation	Basketball Courts	2
	Boat Launches*	5
	Tennis Courts	3
	Trails**	4
	Outdoor Rink	1
	Playgrounds	5
	Skate Park	1
	Soccer/Football Field	1
	Softball/Baseball Diamonds	2
	Volleyball Court	1
	Walking Track	1
	Pickleball Courts	4
	Public Docking***	2
	Golf Course	1
	Downtown Boardwalk	2
	Grand Total	**35**

*Boat Launches include MOU Agreement(s)

**Total of maintained trails (km) = 10

***Total dock length = 2854ft number of boats fluctuates based on vessel size

4.2 Estimated Asset Value

The value of the parks and recreation infrastructure is determined through a combination of site reviews and assessments, appraisals, and estimating.

A Summary of the Town's parks and recreation value is provided in table 3.

Table 3: Parks & Recreation Replacement Value

Service Area	Asset Type	Replacement Cost
Parks and Recreation	Basketball Courts	$200,000
	Boat Launches	$387,348
	Tennis Courts	$796,332
	Trails	$900,000
	Outdoor Rink	$1,200,000
	Playgrounds (fixtures and surface)	$858,100
	Skate Park	$200,000
	Soccer/Football Field	$210,000
	Softball/Baseball Diamonds	$169,176
	Volleyball Court	$25,000
	Walking Track	$150,000
	Pickleball Courts	$500,000
	Public Docking	$1,700,000
	Golf Course	$1,700,000
	Downtown Boardwalk	$445,800
	Grand Total:	**$9,441,756**

The estimated replacement value of the Town's parks and recreation assets is **$9,441,756**.

4.3 Asset Useful Life and Asset Condition

As part of the parks and recreation data repository, annual inspection checklists will be routinely updated as a means of reporting on the condition of assets. By adhering to these inspections, the Town can confidently report on conditions, regulatory compliance, and identify changes such as advanced deterioration that will impact the remaining useful life of the asset inventory.

Inspection checklists are produced based on the actual on-site condition of the parks and recreation assets, using professional judgement and industry standards. The visual inspection checklist can identify any physical defects, the general state of repair, quantities, potential hazards, and required reactive maintenance.

The main purpose of the on-site inspection is to provide the Town of Blind River with a condition survey of all assets and to create a replacement schedule for key

components.

In addition to capital planning, Blind River's parks and recreation section implements a series of routine activities to perform planned maintenance intervention of parks and recreation assets. In general, maintenance management uses an asset maintenance program consisting of these protocols:

- Regular scheduled preventative maintenance as per manufacturer recommendations and best practices. Blind River has adopted and adheres to preventative maintenance schedules with planned interventions. The maintenance work order system also allows Town staff to be made aware of upcoming maintenance duties so that staff resourcing can be utilized efficiently and to ensure that assets are being inspected and maintained on a timely basis.

- Maintenance work orders are prioritized to ensure that critical assets are dealt with prior to less critical assets to minimize the impact on service delivery and to prevent further depreciation due to neglect.

- Visual inspections and documentation of conditions.

- Legislated and safety inspections and certifications.

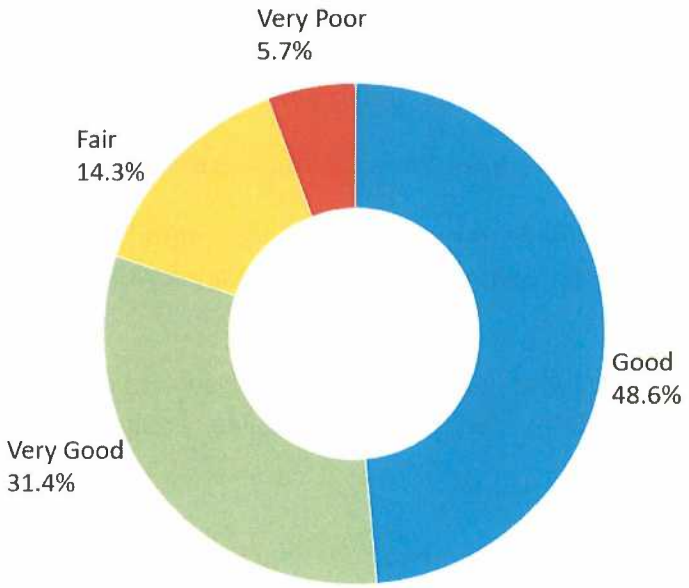
- Discussions with the asset users, operators, and stakeholders regarding the performance of an asset.

4.4 Current Asset Condition

Condition ratings have been implemented to provide a benchmark to compare an asset's condition at a current or projected point in time. Condition ratings are based on the on visual inspections and the remaining useful life of assets and have been assigned to all parks and recreation assets within the Town's inventory.

The average condition of the Town's parks and recreational assets are provided in table 4 below.

Table 4: Asset Condition Index Rating		
Service Area	**Asset Type**	**Mean Condition**
Parks & Recreation	Basketball Courts	Fair
	Boat Launches	Good
	Tennis Courts	Fair
	Trails	Good
	Outdoor Rink	Good
	Playgrounds (Equipment & Surface)	Good
	Skate Park	Good
	Soccer/Football Field	Fair
	Softball/ Baseball Diamonds	Good
	Volleyball Court	Fair
	Walking Track	Fair
	Pickleball Courts	Very Good
	Public Docking	Very Good
	Golf Course	Good
	Downtown Boardwalk	Very Good



5. Levels of Service:

Further development of the Parks and Recreation Asset Management Plan will provide opportunities for Council to review alternatives to the current levels of service. These future alternatives will be evaluated considering various levels of acceptable condition, risk, and financial alternatives.

The review of target levels of service will provide insight to establishing the criticality of assets and the long-term financial stability of the diverse options and impacts of proceeding with or deferring capital expenditures.

5.1 Community: Levels of service are high level qualitative descriptions which indicate what the Town currently strives to achieve through community, stakeholder, and individual expectations. Community levels of service for parks and recreation can be described as follows:

- Providing activities, parks, and facilities that are close to one's home.
- Extending and connecting the system of trails and bike paths (and providing marked signage).
- Promote and advertise activities and assets (including online mapping of trails).
- Continue to provide a broad and evolving range of recreational services. For example, community gardens, skate parks and pickleball courts.
- Maintain an acceptable level of cleanliness and maintenance of parks and recreation for summer playground programs, trail maintenance, sport, and tourism.
- Provide a safe and secure environments that are efficient and cost effective.
- Compliance with legislative, regulatory, and code standards to meet service programming needs; for example, the *Accessibility for Ontarians with Disabilities Act.*
- Appropriate training of staff, to ensure customer service and regulatory requirements are appropriately implemented (e.g., accessibility requirements).
- Appropriate parking is provided.

5.2 Strategic: Qualitative and quantitative measures that describe what is being provided to the community. Examples of how this can be defined can include reliability, legislative compliance, quantity, quality, and safety. The strategic levels of service indicated below support the community levels of service.

Blind River recognizes the importance of monitoring service delivery through key performance indicators (KPI).

Parks and Recreation General:

- Plan for the opportunity to provide enhancements to accessibility standards per the Accessibility for Ontarians with Disabilities Act, 2005.
- Sustain annual reforestation efforts already in place.
- Parks and recreation continue to look for opportunities to design new assets or refurbish existing assets.

Ball Diamonds:

- Blind River Minor Baseball operates approximately May-June
- Senior Men's Ball operates approximately May-September
- Main usage consists of passive play for youth July-October

Outdoor Basketball Courts:

- One located within Town Park
- One located behind Community Centre

Outdoor Rinks:

- One located at Blind River Community Centre
- Natural Ice

Playground (Structures):

- Playgrounds
- Combined tot and youth layouts

Soccer Fields:

- 1 Field

Walking Track:

- 1 Oval

Tennis and Pickleball courts:

- Tennis Courts
- Pickleball Courts

Boat Launches:

- MOU or ownership of 5 launches

Docking:

- Total dock length = 2854ft number of boats fluctuates based on vessel size

Trails:

- 10 km of trails maintained

5.3 Parkland: The Town of Blind River Park System spans over 520.6 km^2 (128643.06 Acres) and contains extensive infrastructure that ranges significantly in terms of type and value.

5.4 Asset (Technical) Level of Service and Key Performance Indicators (KPI)

An asset level of service is a quantitative measure that defines the performance expectations for a given asset to produce the desired levels of service. These services are measured and can include asset conditions, responsiveness, expenditure, and asset value.

Levels of service can be evaluated by measures that consider customer complaints, customer surveys, community engagement, technical data, or discussions with municipal staff familiar with service operations.

The key performance indicators currently included in the asset levels of service are indicated below.

- Asset data collection and Inspections completed on an annual basis
- Asset condition breakdown
    - % of assets in poor or very poor condition = **6%**
    - % of assets in fair condition = **14%**
    - % of assets in good or very good condition = **80%**

6. Failure Prediction and Risk Management

Risk management is a major component of asset lifecycle management. The Town's risk management goals involve identifying, understanding, and managing the potential for infrastructure assets to meet planned service objectives.

Risk assessment is applied to prioritize and optimize capital spending and decision making. The Town evaluates both the Probability of Failure (PoF) and the Consequence of Failure (CoF) when prioritizing for the capital budget. This helps clarify and build a shared understanding about the risk associated with a decision to not engage in a

project. A customized risk management framework that analyzes the PoF and CoF of parks and recreation infrastructure has been developed and implemented.

6.1 Probability of Failure (PoF)

The probability of failure is an estimate of the likelihood of an asset is to not meet its service expectations. The PoF for parks and recreation has been derived from asset condition. Table 5 demonstrates the rationale to determine the PoF of parks and recreation assets.

Table 5: Probability of Failure (PoF) Parks and Recreation			
Asset Condition translates to → Likelihood and PoF			
Condition		Likelihood	PoF
F (Very Poor)	Less than 20	Almost Certain: 80% of Greater	**P5**
D (Poor)	20 - 39	Likely: 60 – 79%	**P4**
C (Fair)	40 - 59	Possible: 40 – 59%	**P3**
B (Good)	60 - 79	Unlikely: 20 – 39%	**P2**
A (Very Good)	80 - 100	Rare: Less than 20%	**P1**

6.2 Consequence of Failure (CoF)

The consequence of failure is an estimate of the effect on outcomes if an asset fails. The consequences of failure could range from a service interruption to a catastrophic result depending on the asset criticality.

An example of this could be the Town's green assets such as green space and parks. The Town of Blind River's vast inventories of green assets help transform a neighborhood into an inviting, exciting place to live, work and play. The consequences of such assets failing could temporarily reduce recreation space or recreational opportunities. Overgrowth and lack of maintenance on these and similar green assets could reduce the desire for residents to spend time in outdoor recreational areas. If green assets are not maintained, especially in the first few years, the vegetation is likely to fail.

Urban heat islands happen when tightly packed buildings and paved surfaces amplify and trap heat far more effectively than natural ecosystems and rural areas, which are often shaded by trees and vegetation and cooled by evaporating moisture. Failing vegetation diminishes the heat island reduction by way of trees and other infrastructure that cools the area by shading.

6.3 Risk Assessment and Exposure

The probability and consequences of failure allow the corporation to focus on assets that have the greatest impact on service delivery. The following formula demonstrates

the PoF and CoF are multiplied to determine risk exposure.

Risk Exposure = Probability of Failure x Consequence of Failure

The risk exposure for all the Town's parks and recreation infrastructure is monitored and implemented for prioritizing projects related to reactive maintenance duties and Blind River's annual capital budget.

6.4 Failure Prediction

Failure prediction is performed to assess the potential for an asset to deliver an expected level of service over time. Current and historical condition and performance data is analyzed to determine the current position of an asset within its lifecycle. This information informs a judgment about how much remaining service life is available. For this asset management plan, the remaining life of Parks and Recreation assets have been determined by condition.

6.5 Risk Response

The Town's operating departments have risk response built-in to daily operations. Risk response includes contingency plans and mitigation strategies that have been developed with the experience of delivering levels of service to the community.

Over time the risk associated with any given asset will change but there are also ways to reduce the risk associated with an asset. Adding redundancy, monitoring, providing routine and preventive maintenance, developing a spare parts inventory, replacing an asset early and requiring specialized training are all ways overall risk can be reduced. Some of these approaches reduce the likelihood of failure of a given asset and some of these approaches reduce the consequence of failure of a given asset. Reducing either of these components reduces the risk associated with the asset.

Examples of risk response planning to reduce the disruption of service delivery includes:

Risk can be reduced by having redundant assets. Redundancy involves the use of duplicate assets in critical areas to provide a backup in the event of failure, as well as to allow for operational flexibility during day-to-day operations. If an asset fails, there is another asset that can operate in its place without causing downtime. The Town's playgrounds are a good example of redundancy with the number of strategically placed playgrounds, should one fail, another nearby site can be used in the interim.

Routine and preventative maintenance will reduce the likelihood of failure of assets. Regular scheduled maintenance is being used on most assets based on a calendar year or use of the asset. Some examples of this type of maintenance would be the annual inspection per Ontario Regulation 126/16, s. 18 (2). Preventative maintenance is conducted to maintain the current operating condition and to help prevent unexpected

failure. This type of maintenance requires monitoring and an awareness of asset condition. Wherever possible, departments try to perform routine maintenance on all assets and focus on preventative maintenance on the moderate to higher risk assets.

Spare parts are a great approach to help minimize the risk of consequences of failure by minimizing the downtime of an asset that has failed and needs repair. The Town of Blind River strives to keep an inventory of common and often used parts for maintenance and refurbishment.

Monitoring assets through regular condition assessment or visual inspections ensure that the assets are functioning properly and can help to identify early signs of deterioration and the potential for failures. The Town effectively monitors the asset inventory through the annual inspection checklists.

7. Long-Term Needs

The capital need detailed below is based on lifecycle modeling of Blind River's parks and recreation inventory. For this asset management plan, the lifecycle analysis represents the capital investment needed to rehabilitate and replace assets; the cost of operational maintenance is not included. Operational maintenance costs will be included in future updates to the asset management plan as part of full lifecycle cost analysis.

Detailed below is a 20-year average annual reinvestment requirement (AAR20) which is the mean annual capital investment required over a 20-year period. The AAR20 is useful for defining the required rate of funding to maintain service levels based on the investment profile. It is recognized that spending will vary from year to year, however this value provides a benchmark upon which to measure whether parks and recreation assets are being renewed at a rate that is financially sustainable. With the average annual reinvestment requirement value, the Town may either benchmark infrastructure investment against the metric while monitoring the variability year to year or contribute to reserves in years where the annual investment is short of the average annual reinvestment requirement value.

It is anticipated that a significant quantity of infrastructure investment need will be captured in an expenditure backlog. The risk-based lifecycle model has been projected to determine upcoming investment requirements of parks and recreation assets.

Figure 4 below provides the 20-year average capital reinvestment need for parks and recreation assets to maintain the parks and recreation inventory at the existing condition. This represents the estimated amount of capital the Town is required to reinvest in the parks and recreation inventory to maintain a FAIR level of service condition. The 20-year annual average reinvestment requirement in this scenario (AAR20) for parks and recreation assets is **$495,000.**

Twenty-Year Capital Need Assumptions

The long-term needs for parks and recreation are based on the following assumptions:

- Parks and recreation assets are being refurbished and/or replaced with elements that are in similar function;
- 20-year average annual reinvestment requirement does not consider service expansion or reduction;
- Calculated in 2024 Canadian dollars where actual costs vary with currency fluctuations.

7.1 Infrastructure Reinvestment Financing Strategy

State of good repair (SoGR) is the condition that an asset can operate at a full level of performance. To maintain the Town's infrastructure assets in a state of good repair, capital work is financed through tax supported capital reserve and utility rate supported capital reserve. The Parks and Recreation Asset Management Plan in conjunction with the annual capital budget proposes and prioritizes the Town's infrastructure investment requirements according to their respective financing sources.

The 20-year average annual reinvestment requirement is compared to historical expenditure from a period of 5 years to demonstrate the financial risk associated with asset ownership known as a funding gap. The funding gap is the unfunded capital value of infrastructure renewal needs that require attention as of the current year. It is important to note that additional expenditure from the operating budget helps to further reduce the funding gap.

Table 6 Funding Gap (Capital)

Asset Class	5 Yr. Expenditure (Avg)	AAR20	Funding Gap
Parks and Recreation	**$658,400**	**$495,000**	**($163,400)**

7.2 Sustainability Strategy

The existing level of service for parks and recreation drives the reinvestment forecasts in the asset management plan. Levels of service are based on regulation, standards, and Council approved service levels. Following the asset management roadmap, Council will determine level of service targets to manage infrastructure within the Town to maintain assets and accept the associated risk.

7.3 Next Steps

Ensuing Council approval of the Parks and Recreation Asset Management Plan, target level of service options will be prepared for Council review, discussion, and approval. The target level of service framework may require additional key performance indicators and will be the main driver of the sustainability strategy. When target level of service is reviewed, Council will have the option to select service levels that lead to either a reduction or an increase of assets that are in- service and require financing.

Table 7 identifies the next steps that emerged during the development of the asset management plan.

Table 7: Next Steps

Section	Category	Action Item
State of the Infrastructure	Inventory	• Monitor and refine the parks and recreation asset inventory to reduce the quantity of data assumptions • Continue to implement the digital solution to track, monitor and analyze parks infrastructure • Continue to conduct condition assessments at appropriate intervals
Level of Service	Asset Level of Service	• Develop target service levels for Council review
Asset Management Strategy	Lifecycle Management Plan	• Review and refine strategies as necessary
Failure Prediction Risk Management	Risk Assessment and Exposure	• Monitor and refine the deterioration model for parks and recreation assets as necessary
Long-Term Needs	Funding Sources	• Develop a sustainability strategy to achieve target levels of service for Council review, discussion, and approval. • Determine funding source for infrastructure need.

8. Future Demand

8.1 Demand Drivers

Drivers affecting demand include parameters such as population, legislation, demographics, seasonal factors, technological advancement, economic, environmental awareness, and Council directed service revisions.

8.2 Demand Forecasts and Impact on Assets

The present position and projections for demand drivers that may impact future service

delivery and use of assets were identified.

8.3 Demand Management Plan

The Town will regulate the demand on assets through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand.

9. Climate Change

The Town is beginning to monitor the effects of climate change on its infrastructure assets. The data identifies that there will be an increase in precipitation and an overall increase in mean temperature for the municipality. The increase in mean temperature within the area will result in a decrease of freeze-thaw days, additional summer days, more extremely hot days, and additional tropical nights.

10. Improvement Opportunity

The Town will take the following steps towards sustainability:

- Maintain full compliance with legislation;
- Increase the emphasis on consistent initiative-taking maintenance and lower the volume of reactive maintenance;
- Environmentally sustainable initiatives;
- Monitor asset lifecycles for scheduled replacements;
- Monitor scheduling of equipment as it relates to operating department service level needs;
- Monitor Parks and Recreation usage and optimize assets via utilization;
- Advance technologies and maintain in house expertise;
- Look for opportunity to improve training and departmental workforce depth.
- Council will be provided with the opportunity to adjust the level of service provided to the community.

Appendix A

Table 1: Consequences of Failure (CoF) for Parks and Recreation		
CoF Categories	**CoF Parameters**	**Weighting**
Sustainable Service Delivery	Ensures that current service needs, and those services are delivered in a socially, economically, and environmentally responsible manner. Does not compromise the ability of future generations to meet their own needs. Communities build and maintain infrastructure to provide services that support our quality of life, protect our health and safety, and promote social, economic, and environmental well-being.	20%
Strategic, Legislation and Environmental	Assets acquired, maintained, and disposed of strategically and in line with the Town's strategic goals while following all legislation set forth by Federal, Provincial and Municipal bodies. Asset Management decisions are made in line with the environmental impacts	20%
Social Repercussions	When an asset fails, there may be minor or major impacts or inconveniences to the community. Social consequences can relate to safety, public health, service outages, or the public's ability to use or enjoy a park and recreation asset. Inconveniences may appear insignificant, but to members of the community, the inconvenience may be extremely important and may affect how they feel about the asset class in general. More consequential social costs include impacts related to public health and safety.	20%
Economic and Financial Losses	A framework for the clear value of infrastructure planning and maintenance, while adjusting economic factors. Decision-making and investment planning best practices transform complex and technical material into non-technical principles and guidelines for decision making and facilitate the realization of adequate funding over the life cycle of the infrastructure. Examples include protocols for determining costs and benefits associated with desired levels of service; and strategic benchmarks, indicators or reference points for investment policy and planning decisions.	20%
Redundancy and Mitigation	Redundancy involves the use of duplicate assets in critical areas to provide a backup in the event of failure, as well as to allow for operational flexibility during day-to-day operations. If an asset fails, there is another asset that can operate in its place without causing downtime.	20%