TOWN OF BLIND RIVER
ASSET MANAGEMENT PLAN
TRANSPORTATION SYSTEM ASSETS

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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
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:

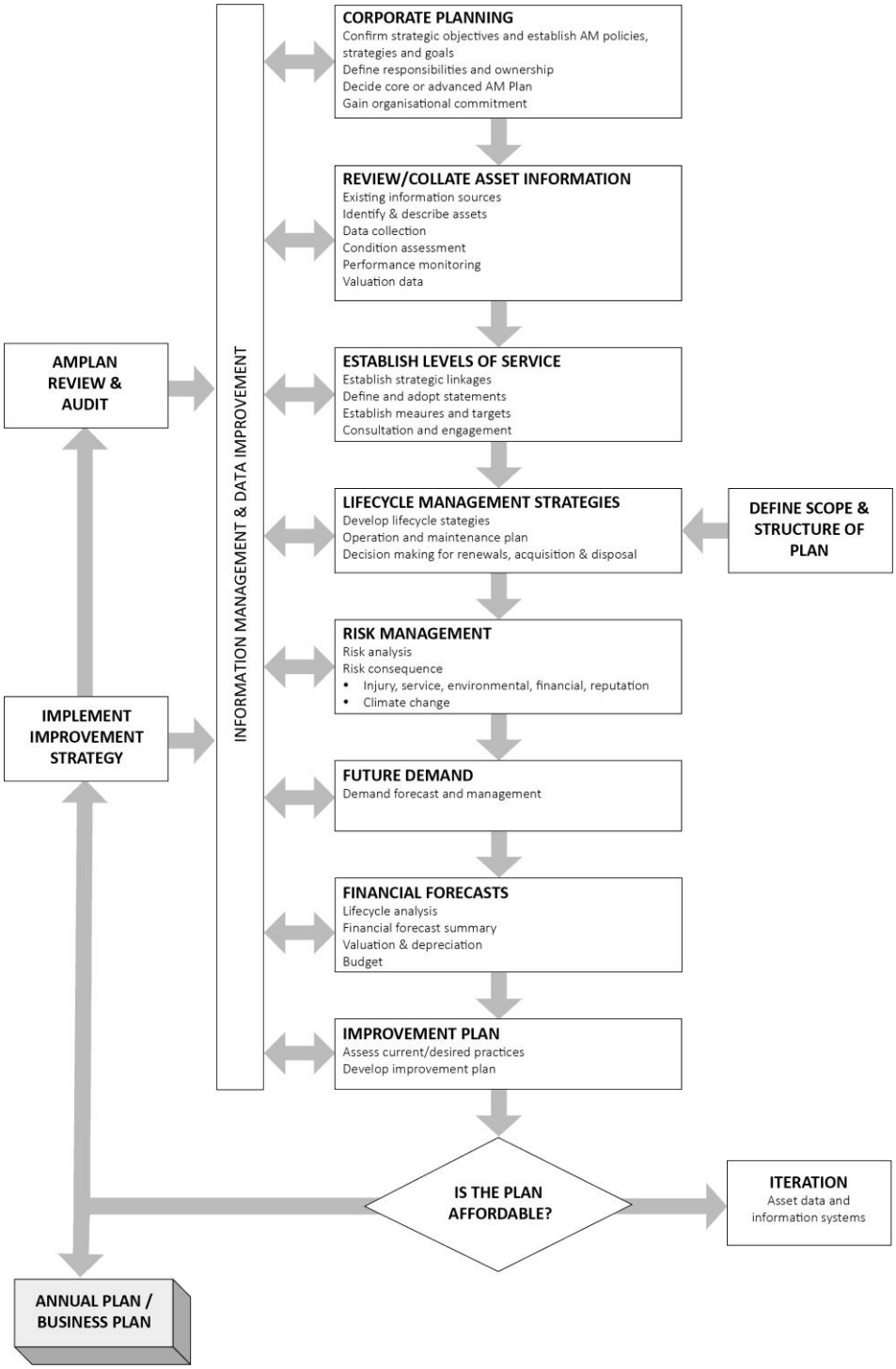
- ISO 55000[1]

[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
	• 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 • 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		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		
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

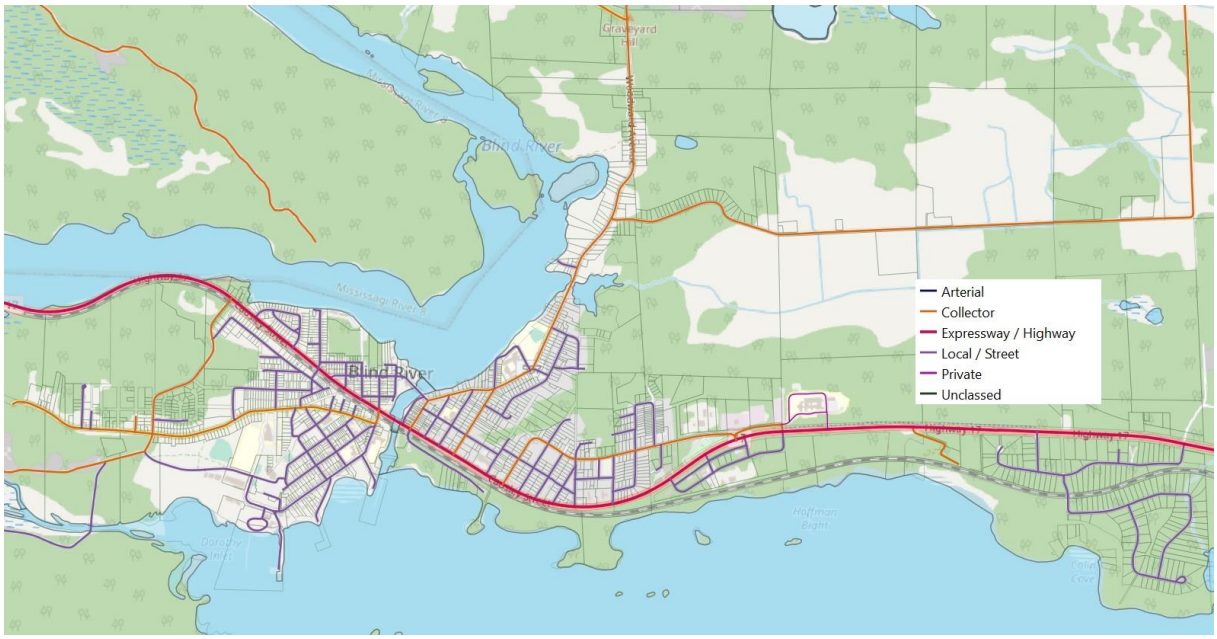
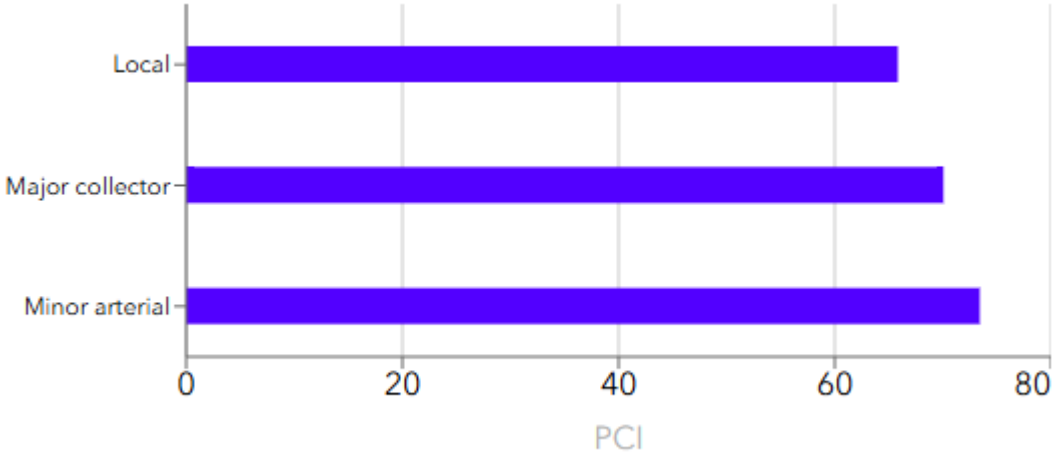


Figure 3.4.1.2 Road Network PCI



3.4.2 Legislated Technical Levels of Service

Service Attribute	Qualitative Description	Current LOS
Road Network		
Scope		**Lane-km 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		**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

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.	
Accessibility	Customer surveys and complaints	A minimal number of complaints were received.	
Reliability and Efficiency	Customer surveys and complaints	A large number of complaints have been received through a variety of sources.	
Comfort and Smoothness	Customer surveys and complaints	A large number of complaints have been received through a variety of sources.	
Cost-Effectiveness	Cost of road/sidewalk maintenance per square metre		
Communication and Engagement	Customer surveys and complaints		
Long-Term Planning	Customer surveys and complaints	Minimal complaints have been received with regards to long term planning of the transportation network.	

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 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%	
	Confidence levels		Medium (Professional judgement with sampled data)	High (Professional judgement with comprehensive data)
	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)
	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.	
	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.

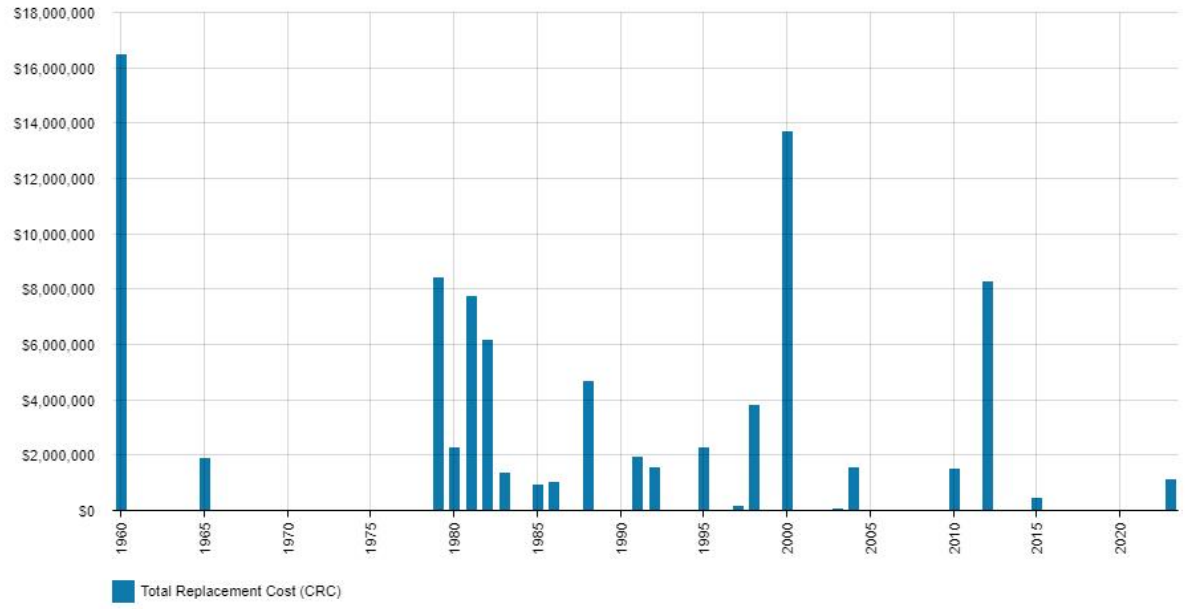
The majority of the Town of Blind River's transportation network is paved roads and the vast majority of replacements costs will be for the replacement of asphalt paved roads.

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

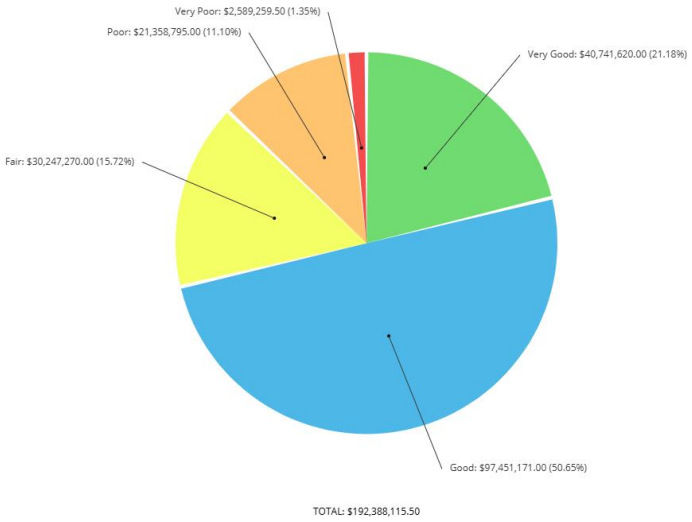
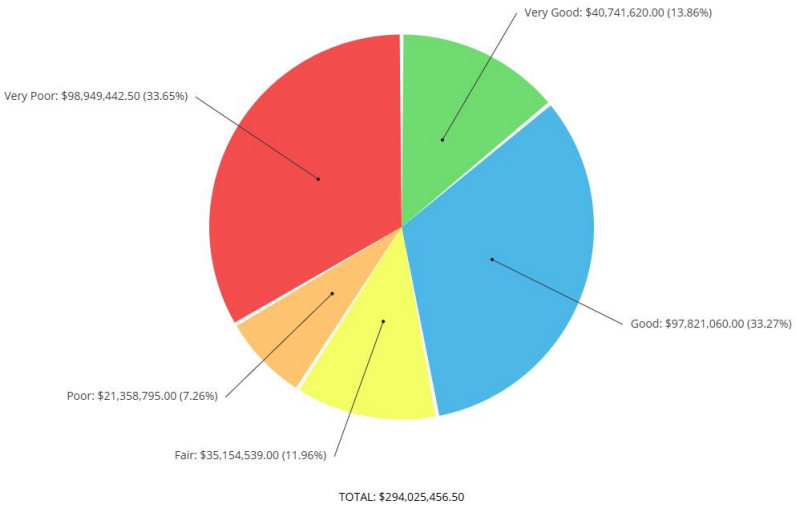


Figure 5.1.3.2: Bridges and Culverts Asset Condition Profile



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%

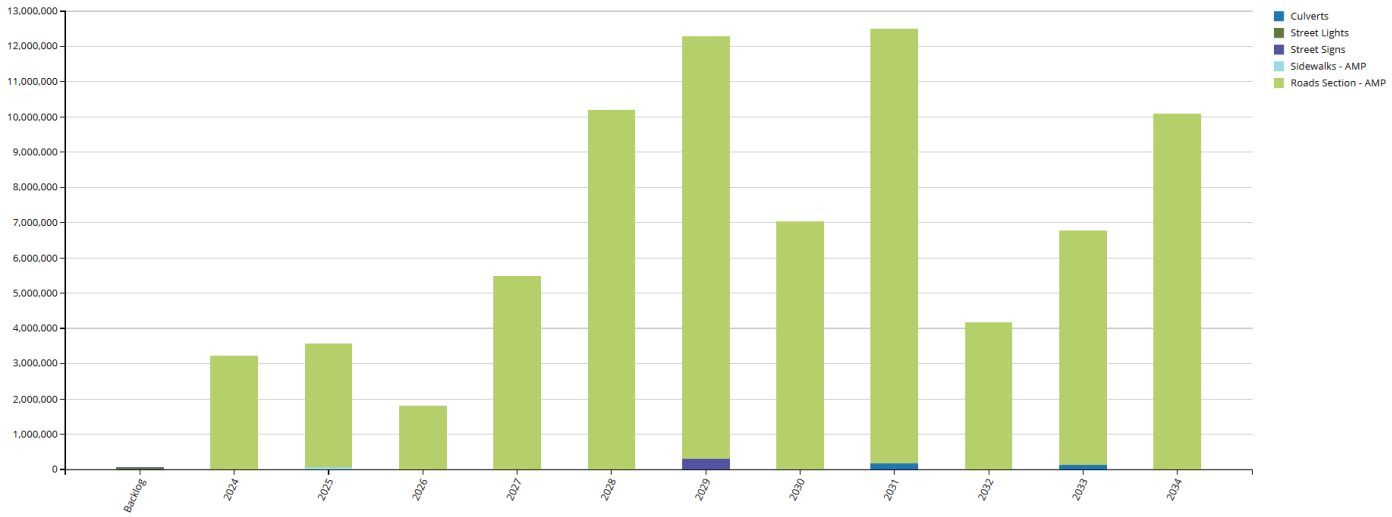
[5] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[6] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

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

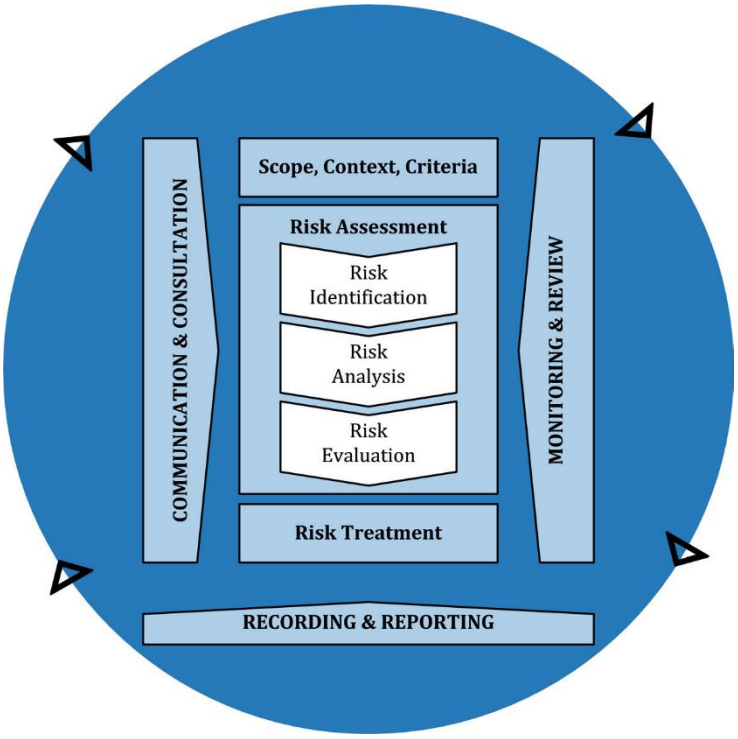


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

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	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	
			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		

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	
B. High	
C. Medium	
D. Low	
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

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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.