

ASSET MANAGEMENT AT THE TOWN OF BLIND RIVER

Asset Management Strategy

SUBMITTED TO THE TOWN OF BLIND RIVER
SUBMITTED BY PSD CITYWIDE
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Final Version



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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

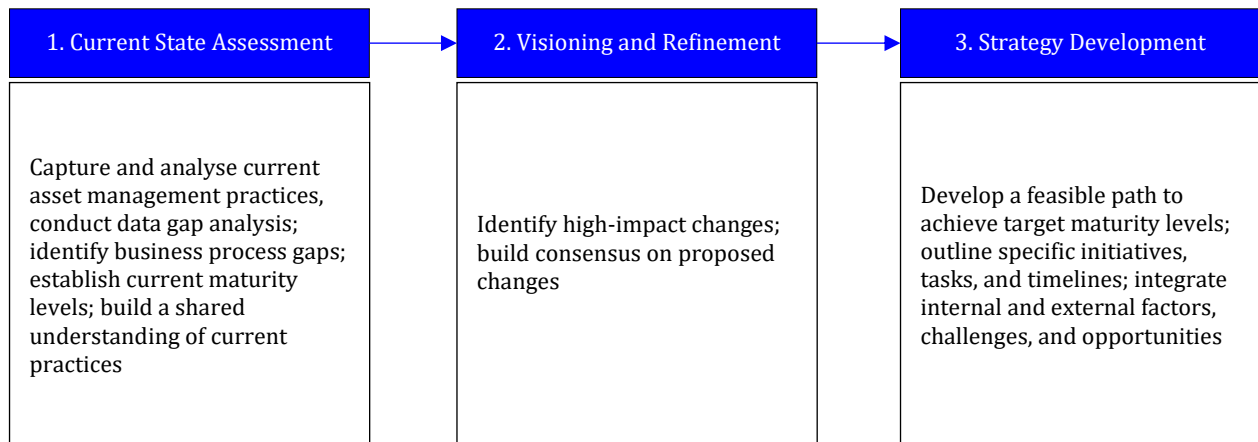
This asset management strategy will serve to guide staff at the Town of Blind River in establishing a high-functioning asset management program. The strategy outlines strategic priority initiatives designed to gradually close critical gaps in people, processes, tools, and build the Town’s overall organizational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

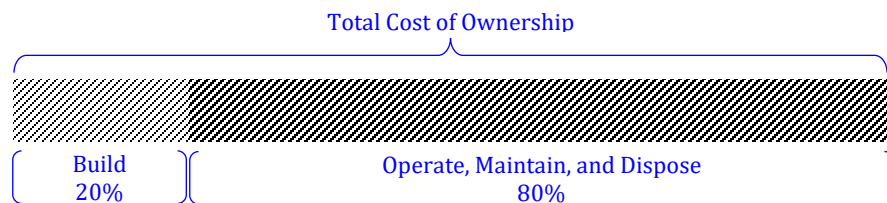
The Rationale for Systematic Asset Management

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.

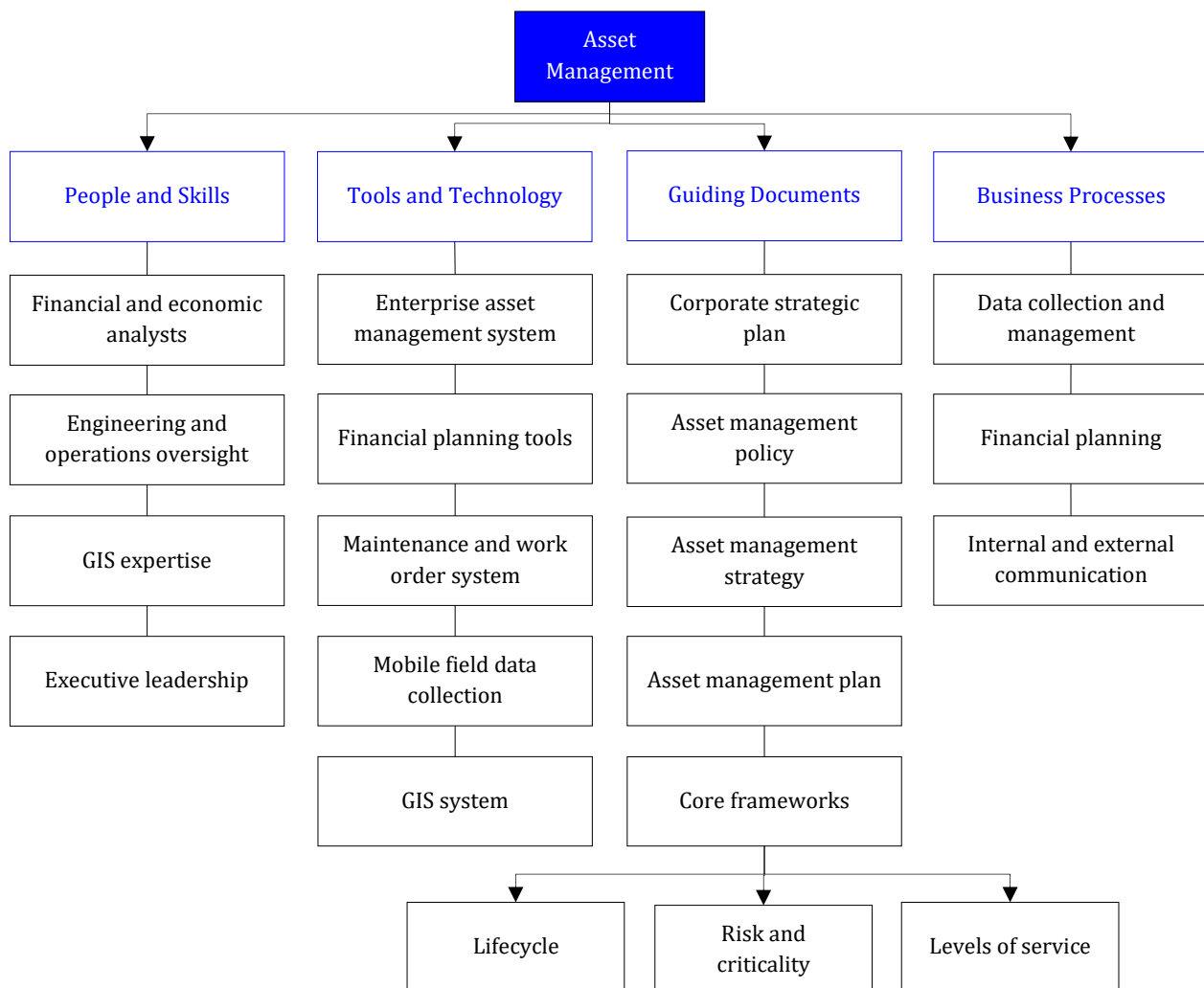
Asset management is the coordinated effort of all relevant departments and stakeholders across an organization to extract the highest value from tangible assets at the lowest lifecycle cost. This relies on selecting the right asset, for the right lifecycle activity, at the right time. All departments 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.

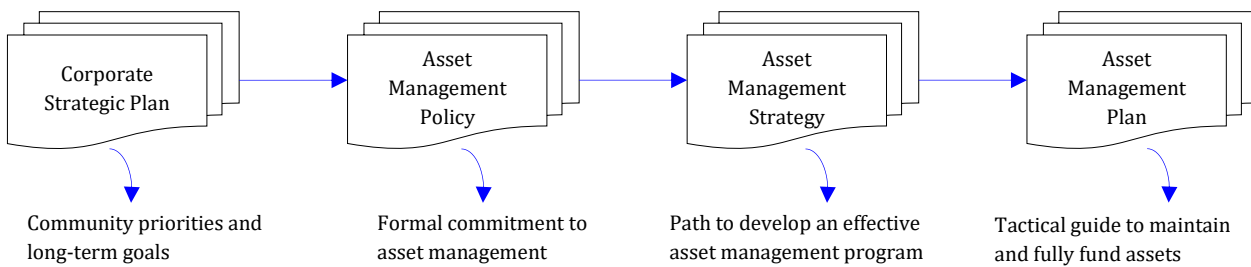
Table 3 Asset Management Strategy vs. Asset Management Plan

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.

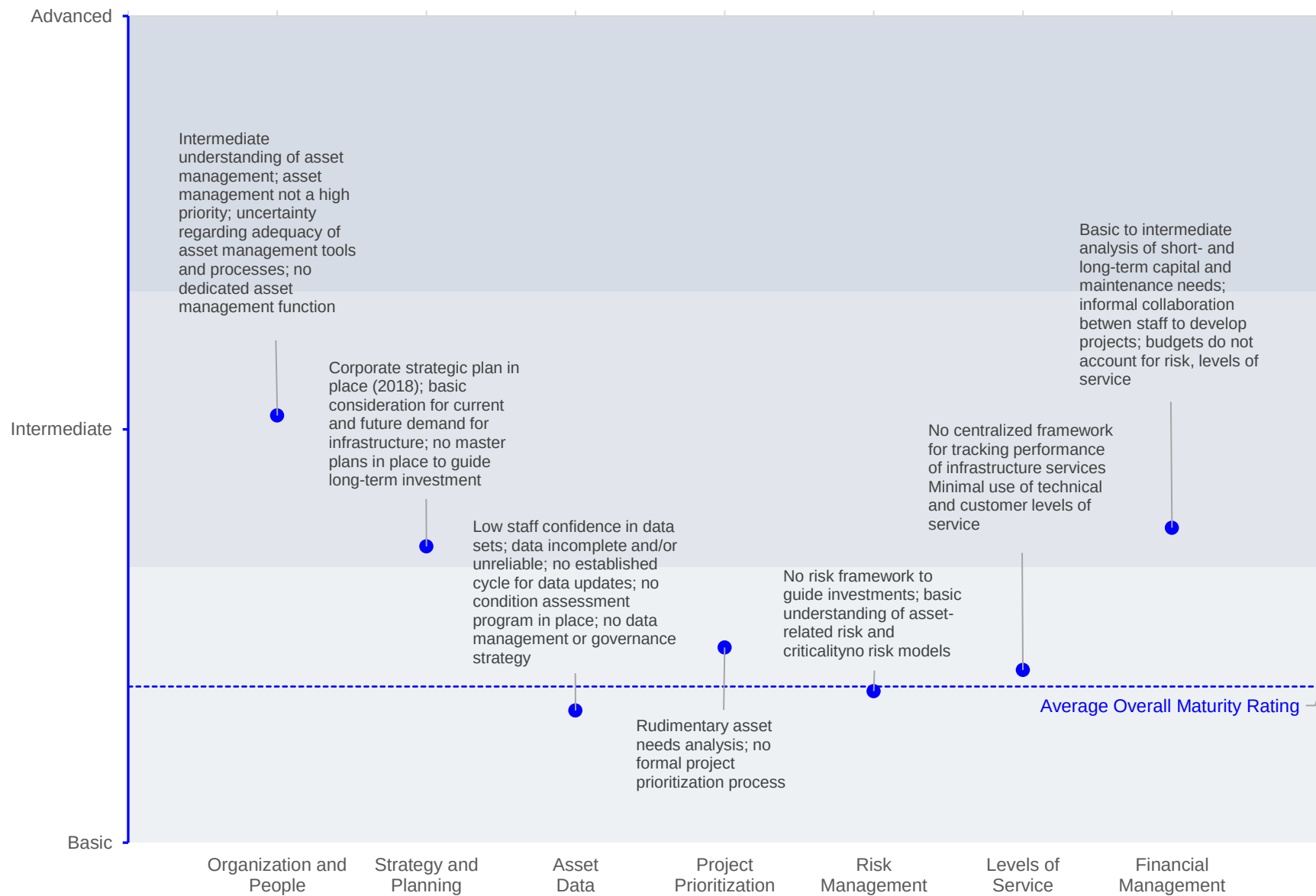
The current state assessment was used to identify capacity, knowledge, and business process gaps, determine high priority areas of improvement, and inform the development of this asset management strategy. In total, we identified 40 overarching gaps across the seven core elements. These form the basis 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., Unifomat 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.

$$\text{Risk} = \text{Probability of Failure} \times \text{Consequence of Failure}$$

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.