Town of Blind River

Asset Management Program Development

SUBMITTED BY:

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Table of Contents

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PURPOSE

This document contains a high-level project plan for data work that will improve the consistency of the Town of Blind River's data, as well as create a new hierarchy for its assets to ensure asset data is up to date and accurate. The Town of Blind River currently hosts its assets within CityWide Asset Manager. As the Town's Asset Management practices grow, CityWide will allow its staff to utilize the collected data for better decision making.

The Town has completed the first requirement of the O.Reg 588-17 in house, which is the Strategic Asset Management Policy. Following this requirement, is Phase 1 of the regulation, due by July 1, 2021, which requires an Asset Management Plan that addresses core infrastructure assets and its lifecycle strategies.

The proposed activities are designed to help the Town prepare so it can reach compliance with the O.Reg 588-17 requirements. As a first step, PSD will provide an Asset Management Strategy that will identify any gaps in the Town's data and will provide a set of recommended activities in order to address data gaps as well as any other necessary actions necessary for an Asset Management Program.

The proposed project will enable the Town to utilize its current Asset Management system to its full capabilities and utilize its data to support asset management. A proposed schedule, requirements and scope will be presented once client requirements, business and operational goals, and constraints are gathered throughout the project.

PSD will undertake an organization-wide process that will build the asset management capacity of the Town, providing staff and the Senior Management Team with tools that will support the development of its Asset Management program. It is the goal of the Town to be able to produce its own Asset Management Plans and will utilize the tools provided by this program to achieve this objective.

This document contains a high-level project plan for Asset Management Planning and capacity building, which includes data work that will improve the consistency of information at the Town of Blind River. Protocols for the collection of information on its assets will be provided to ensure data is gathered in a standardized format. All asset information will be reviewed, to ensure amortization schedules, asset attribute data, and any other information that is relevant for TCA reporting and Asset Management is in good standing.

Active discussions and workshops with the Town of Blind River will identify opportunities and practical work plans to further the municipal objectives. In light of the latest provincial asset management regulation O.Reg. 588/17, under the Infrastructure for Jobs and Prosperity Act, PSD will strive to align all deliverables and plans with the regulation, where applicable and possible.

The Town will also receive a Lifecycle activity framework, that will allow its staff to follow an optimized plan for the lifecycle investment of its assets. PSD will develop a life cycle activity plan based on the data collected from the condition assessments and risk ratings.

P A G E | 3

PSD will also deliver a Levels of Service Framework to aid the Town in establishing guiding principles for the LOS that each service should strive to provide internally to the Town and externally to citizens and regulators. The last stage of the O.Reg 588-17, requires municipalities to provide proposed Levels of Service for its assets. This framework will aid the Town in developing its current Levels of Service so it can begin to gather the necessary data to prepare for the 2024 requirements.

PSD will review existing policies, documents, and frameworks that include established LOS. A review will involve the analysis of accessibility of services, affordability, reliability, safety and regulatory, and sustainability. Building an asset management plan and program requires three critical variables: authoritative expertise in asset management, supplementary qualitative and quantitative research on asset management best practices, and empowering technology.

Finally, PSD will provide the Town with a Risk Framework that will rank overall risk based on parameters that consider economic, social, environmental impacts, as well as all other available data regarding the condition of assets, known operational issues, etc. As part of the development of this rating system, PSD will evaluate risk that is currently associated with the delivery of infrastructure services for the Town. This will allow our consultants to identify what is currently being done to reduce or mitigate risks. PSD will then propose a risk model that will quantify the current risks and therefore initiate analysis and management processes to address possible strategies on how to mitigate these risks.

Project Funding and Workplan

The Town will be able to apply to the MAMCF federal program to aid the efforts of building an Asset Management program. FCM has indicated that municipalities that have applied in the past will be eligible to apply for the second round of funding. Priority will be given to first time applications, and funding is not guaranteed for all municipalities that apply. This proposal has included two pricing options in the event the Town is not successful with the application.

Grant Application

PSD will assist the Town in completing the FCM – MAMCF grant application free of charge. A proposed schedule, requirements and scope will be presented once client requirements, business and operational goals, and constraints are gathered throughout the project. These dates will align with the eleven (11) month completion requirement by FCM.

In 2018-2019, PSD has had a 100% success rate helping over 90 communities across Canada secure the FCM MAMP funding for the development of Asset Management programs. Our team is currently working towards delivering all these programs on schedule to meet the FCM established deadlines.

Workplan

For this project, PSD will develop the workplan to be submitted to FCM which will be reviewed and approved by the Town's staff. This proposal will provide details of each deliverable to be included as part of the MAMCF grant application.

Project Deliverables

PSD will deliver the following items as part of the continuation of the Asset Management program development for the Town. The work will include the following projects:

- ☑ 1. Asset Management Strategy
- ☑ 2. Lifecycle Activity Planning
- ☑ 3. Condition Assessment Protocols and Data Collection Templates
- ☑ 4. Levels of Service Framework
- ☑ 5. O.Reg Compliant Asset Management Plan July 1, 2021 deadline.
- ☑ 6. Risk Framework Development

Asset Management Strategy

The effectiveness of infrastructure service delivery in your organization depends greatly on the quality and comprehensiveness of asset management data and systems and procedures. PSD's experienced asset management and GIS consultants work closely with communities to identify common gaps and deficiencies in their asset data sets and data management processes.

PSD will document the current processes and will give recommendations on improving the Town's current activities, data collection and/or data reporting which will ultimately save costs and improve efficiency by garnering better asset management practices.

The Town will be provided with an Asset Management Strategy (AMS) to fill data gaps and address process deficiencies strategically over time. Through the development of the AMS, PSD will conduct a comprehensive review of the Town's current infrastructure service delivery, identifying opportunities to save costs and improve efficiency through better asset management practices. PSD will also work closely with your organization to ensure that the AMS enables the Town to achieve the goals set out within its Asset Management Plans (AMP).

With better asset data and processes in place, the Town will be able to work more efficiently and effectively on the major components of an AMP, including defining risk, lifecycle strategies and levels of service. Estimated Return on Investment (ROI) – According to industry standard, municipalities can anticipate a **12% ROI** for coordinated road and sewer projects in the field (facilitated by better asset management). Improved lifecycle management can result in a **20-35% ROI.**

According to the Federation of Canadian Municipalities (FCM), the Asset Management Strategy (AMS) "should define how the municipality's context and strategic objectives translate to AM objectives (such as levels of service) and associated decision-making criteria. It defines how the AM system will implement the principles set out in the AM policy and support the delivery of the AM objectives." See FCM's hierarchy of an asset management system below.

Figure 1.2: The hierarchy of an asset management system
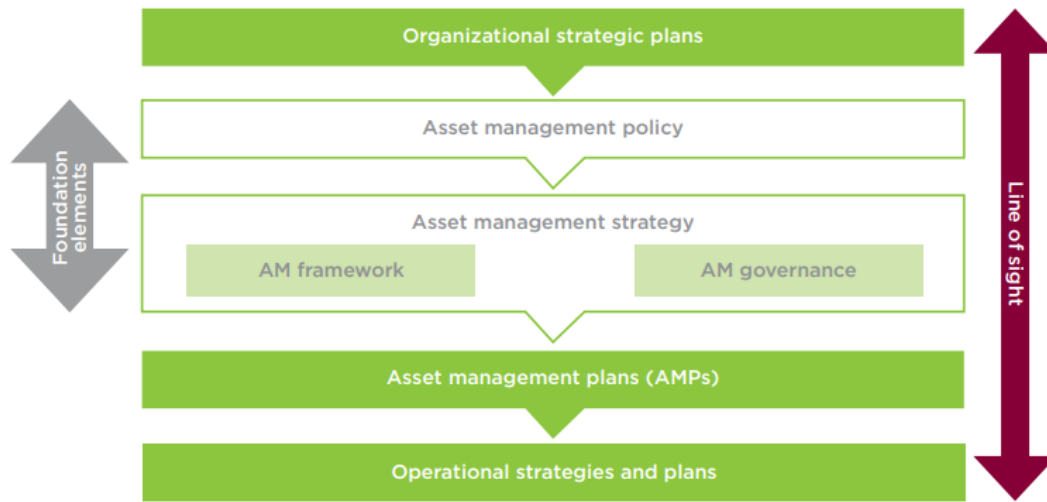
Source: *How to develop an asset management policy, strategy and governance framework*, FCM 2018

Core Components of Asset Management Strategy

The Asset Management Strategy (AMS) will facilitate the development and improvement of the client's current asset management program and practices. The AMS is undertaken in these core phases:

1) Organization and People
2) Asset Data
3) Strategy and Planning
4) Asset Management Decision Making
5) Risk Management
6) Levels of Service
7) Financial Strategy

Throughout the first phase of this process, PSD will work with the client to holistically review current asset management practices through undertaking a gap analysis and data maturity rating, an assessment of current processes and procedures against international best practices, a state of the infrastructure report and a state of maturity workshop. In the second phase, PSD will conduct a comprehensive review of all existing asset management policies and beginning developing the asset management strategy based on the findings from the first phase assessment. In the third phase, PSD will develop a project management plan that will outline the most efficient way to undertake resource management, asset planning and required scheduling and training.

In the final phase, PSD will deliver the final review and assessment to the Town. The report will contain a set of planned and coordinated actions that will enable its staff to deliver the desired levels of service to residents across all asset classes, in a fiscally sustainable way, at the lowest lifecycle cost, while managing the associated risks.

3. Final Report

PSD staff will provide a final report that will outline the findings of this Review. PSD will also assist the Town in preparing a report back to FCM, to demonstrate the progress achieved throughout this process.

Asset Management Strategy Final Report

To achieve an Asset Management Strategy that can be utilized by the Town going forward, PSD adopts the understanding of asset management as a sophisticated, coordinated, cross-disciplinary effort that considers the performance, risks, and cost associated with infrastructure over its entire lifecycle and the value asset management delivers to the community.

The PSD Final Report will be aligned with key industry standards the Institute of Asset Management and the International Infrastructure Management Manual (IIMM).

Asset Management Strategy Implementation

> In conducting the gap analysis, policy review, and in developing the strategy, PSD will be guided by core elements and competencies of effective asset management throughout this assessment.

Phase 1: Assessment
- ☑ Asset Data Gap Analysis and Data Maturity Rating
- ☑ Assessment of current processes, procedures, and practices
- ☑ State of Maturity Workshop and Report

Phase 2: Asset Management Strategy
- ☑ AM Policy Review
- ☑ AM Strategy Development

Phase 3: Project Management Plan
- ☑ Resource management
- ☑ Scheduling
- ☑ Planning Asset Maintenance
- ☑ Training and Education

Phase 4: Final Report (AMS)
- ☑ Integrated Asset Management Strategy
- ☑ Presentation to Staff
- ☑ Presentation to Council

Step 1: Current State Assessment

PSD staff will work alongside the client's team to assess the current state of asset management maturity against core elements of asset management. In order to accomplish this, PSD will hold a current state assessment workshop. The current state assessment workshop is a structured, collaborative, and educational dialogue with the client, and an opportunity for PSD staff to present the proposed work plan for the development of the deliverables, highlight and discuss key milestones, establish expectations, and build consensus on the approach.

The workshop and the subsequent report will provide the client with a thorough understanding of their existing asset management capacity as assessed against seven core elements of asset management, aligned with industry standards, including the Institute of Asset Management (IAM), and the Asset Management B.C. Framework, which position People, Information, Assets, and Finance as principal components of a strong asset management program.

Step 2: Strategic Document Review

PSD staff will review any existing asset management documents (plans, policies, etc.) and all other organizational strategic documents, in order to get a holistic picture of the client's current asset management processes and procedures.

Step 3: Data Analysis Process

The above approach will allow our team of consultants and advisors to understand the current state of the Town's assets. The Lifecycle Analysis and Strategy that will be created for this project is designed to help the Town understand the cost of lifecycle activities, and analyze which activities are optimal and best contribute to the sustainability of their asset management program. PSD's assessment of the data will be based on seven key questions of asset management as outlined within the National Guide for Sustainable Municipal Infrastructure, listed below:

- ☑ What do you own and where is it? (Inventory)
- ☑ What is it worth? (valuation / replacement cost)
- ☑ What is its condition / remaining service life? (function & performance)
- ☑ What needs to be done? (maintenance, rehab, replace / capital & operating Plans)
- ☑ When do you need to do it? (risk analysis / capital and operating Plans)
- ☑ How much will it cost? (short/long-term financial plan)
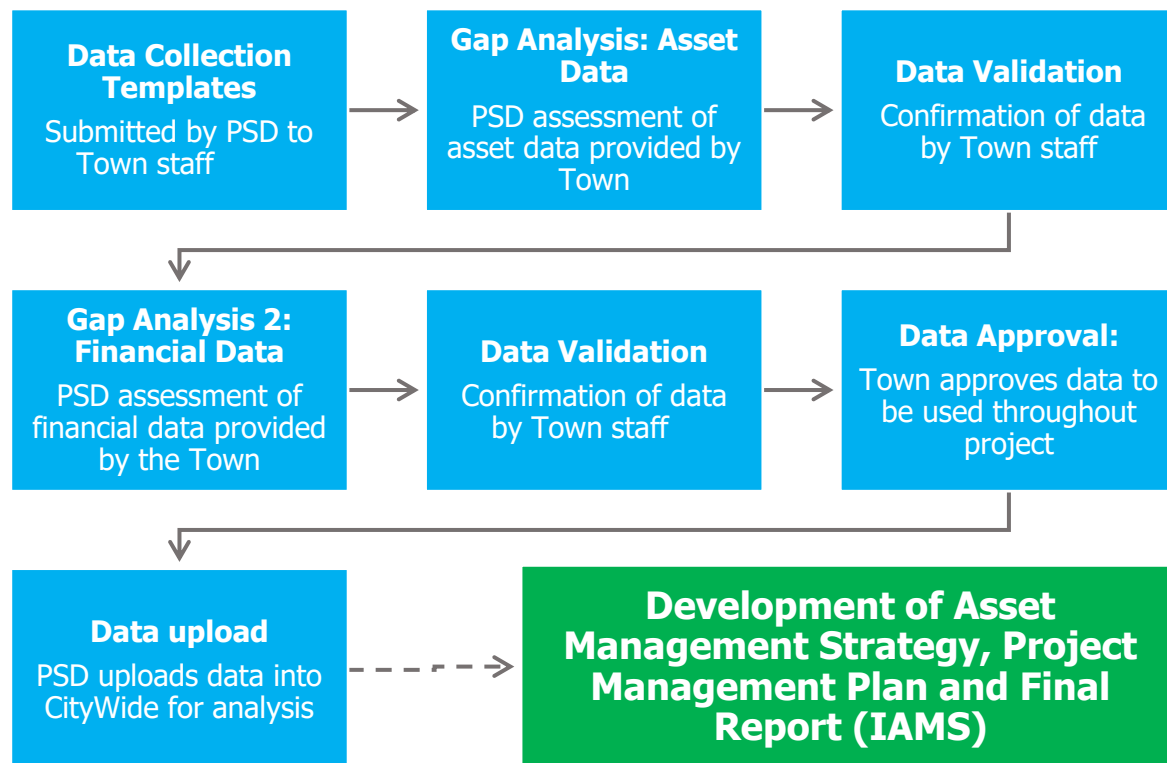- ☑ How do you ensure sustainability? (short- and long-term financial plan)

As a result of the information gathered in this phase, PSD will provide recommendations on how to further develop processes for maintaining consistent and detailed data for future asset management planning, and ensure this Framework complies with applicable regulations for Gas Tax funding.

In addition to The National Guide for Sustainable Municipal Infrastructure (Canada), our gap analysis is based on principles within such key industry best practices as:

- ☑ The International Infrastructure Management Manual (IIMM);
- ☑ The Institute of Asset Management (IAM)
- ☑ The Global Forum on Maintenance and Asset Management (GFMAM)

☑ Building Community Resilience Through Asset Management
☑ The American Society of Civil Engineering Manuals

In addition to a gap analysis of the Town's inventory databases, PSD will also conduct a thorough review of other data sources as available. This 'cross referencing' will provide an augmented understanding of the current state of the Town's infrastructure, its service levels, and data completeness for each asset category. It also assists in determining the optimal lifecycle recommendations based on current funding levels and management practices. Along with the above templates, a summary of the assets in each category will be developed and data pertaining to replacement costs, average age, and condition will be updated with the Town. The diagram below illustrates an abbreviated version of our workflow process for gap analyses between PSD and the Town staff.

Data Collection Templates
Submitted by PSD to Town staff

→

Gap Analysis: Asset Data
PSD assessment of asset data provided by Town

→

Data Validation
Confirmation of data by Town staff

Gap Analysis 2: Financial Data
PSD assessment of financial data provided by the Town

→

Data Validation
Confirmation of data by Town staff

→

Data Approval:
Town approves data to be used throughout project

Data upload
PSD uploads data into CityWide for analysis

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Development of Asset Management Strategy, Project Management Plan and Final Report (IAMS)

Future State Development

Step 4: Asset Management Strategy Draft

PSD staff will use the cumulative actions in the current state assessment to draft an asset management strategy for future state development. This draft will provide recommendations on how the client can best strengthen their overall processes to achieve asset management maturity and find efficiencies and cost savings into the long-term.

Step 5: Project Summary Report

PSD staff will provide the client with a summary report on their findings.

Lifecycle Activity Planning

Lifecycle activity management has two primary indicators: asset condition and estimated useful life. Asset condition refers to the health and physical state of the asset. In general, this correlates directly with asset performance, or the ability of the asset to provide the established level of service. Estimated useful life is a measure of the remaining number of years that an asset is considered useful before its value is fully depreciated and it is no longer able to provide the expected level of service. As asset condition deteriorates so does the estimated useful life.

All the information collected about assets will be entered in the CityWide Asset Manager module, where replacement and maintenance event strategies will be developed for the category of Roads and Water. As part of this stage of the project, PSD will set up the information housed within the CityWide system and will instruct staff on how to properly maintain the software going forward. This will help ensure that staff properly maintains the central repository for all the Asset Management data, which will allow the Town to carry on and further implement its Asset Management program.

Developing a Lifecycle Activity Strategy

PSD will develop a lifecycle activity strategy to help staff decide what activities to perform, and when, to maximize estimated useful life at an optimal cost. There are a range of field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: preventative maintenance, rehabilitation and reconstruction. Figure 1 shows an example of a lifecycle activity strategy for a road.

Depending on the initial maintenance strategies implemented, asset performance can be sustained through a combination of preventative maintenance and rehabilitation events, but at some point, reconstruction or replacement may be required. Understanding what effect these activities will have on the lifecycle of an asset and the cost associated with performing them will enable the Town to make better decisions about caring for its assets.

Lifecycle Planning Workshop

PSD will conduct a workshop with the Town staff to determine lifecycle activities and costs to maintain proposed levels of service. This workshop will also go over lifecycle planning, condition assessment, risk analysis, levels of service, and project prioritization moving forward.
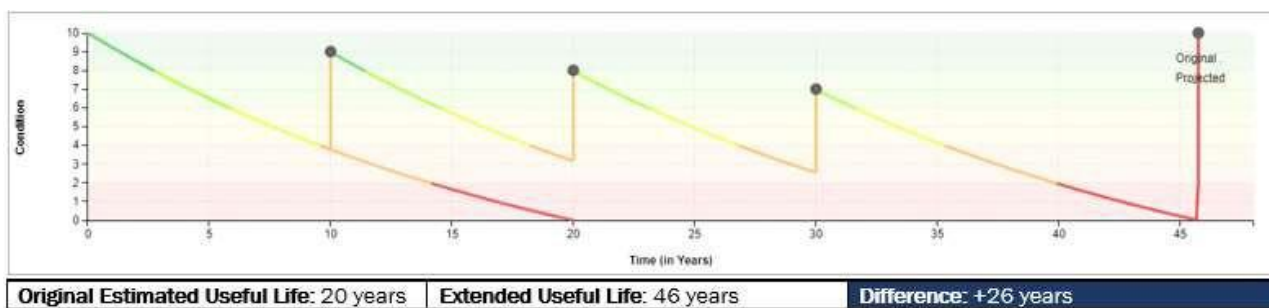
Lifecycle Management Strategy

For each asset category a best practice industry review will be undertaken to determine the optimal lifecycle activities and options available, to ensure the long-term viability of the Municipality's infrastructure and general capital while achieving the lowest total cost.

The following will be reviewed:
- Ongoing Maintenance activities and costs
- Renewal/Replacement activities, service thresholds and costs
- Rehabilitation activities, service thresholds and costs
- Disposal activities and costs

P A G E | 10

This information will enable a lifecycle projection analysis. For each asset category the lifecycle events will be developed in CityWide Asset Manager, which will produce a listing of what assets will require work in which timeframe, the type of activity that should be undertaken, and the cost for the work. This analysis will also have the options to discount costs and/or add inflation and will provide an overall asset need projection for each category.

Once the asset inventory data has been compiled and verified, the detailed information gathered will allow for the establishment of an approach that enables the Town to make informed decisions about asset operations, maintenance, renewal, replacement and decommissioning based on full lifecycle costs, risks and benefits. This approach will include a discussion of the use of lifecycle planning and modelling by asset type, and asset deterioration curves (sample pictured below for LCB/Surface treated roads) for each asset category, the development of which will be outlined in the Phase 2 Implementation Plan.

Original Estimated Useful Life: 20 years	Extended Useful Life: 46 years	Difference: +26 years

 Once selected, PSD can compile results in a Lifecycle Analysis and Activity Report to help the Town understand the cost of lifecycle activities, and analyze which activities best contribute to the sustainability of their asset management program, generating a maintenance plan.

Within the Framework, for each asset category, a best practice industry review will be undertaken to determine the optimal lifecycle activities and options available, to ensure the long-term viability of the Town's infrastructure and general capital while achieving the lowest total cost. To further enhance the Town's asset management programming, the following will also be reviewed:

- ☑ Ongoing maintenance activities and costs
- ☑ Renewal/replacement activities, service thresholds and costs
- ☑ Rehabilitation activities, service thresholds and costs
- ☑ Disposal activities and costs

Condition Assessment Protocols and Data Collection Tools

The value of condition assessments cannot be overstated. While age-based data can serve as useful starting point for asset management programs, actual field data remains an essential element of effective asset management. In 2015, PSD partnered with the Association of Municipalities of Ontario (AMO) to produce the State of Ontario's Roads and Bridges – An Analysis of 93 Municipalities.

The report found that age-based data can understate asset conditions by as much as 30%. However, with limited resources, it is not possible to conduct condition assessments on every asset—nor is it necessary. PSD's condition assessment strategy optimizes available funds and reinforces risk mitigation.

P A G E | 11

PSD will then provide the Town with an overview of industry-proven condition assessment guidelines, as well as recommendations on how Town staff may best collect, structure, and further maintain condition assessment data for all required infrastructure to complete the framework.

Key benefits of PSD's holistic condition assessment strategy	
1	Improvement of the Town's understanding of overall network condition, contributing to better management practices and financial planning
2	Enabling of the prevention of future failures and provision of liability protection;
3	Enabling future establishment of proactive repair schedules and preventative maintenance and rehabilitation programs;
4	Allowing for the extension of asset service life, therefore, improving level of service at lower costs;
5	Enabling accurate asset reporting which, in turn, enables better decision-making

PSD will guide Town staff on how to prioritize condition assessments, and the appropriate field methods for assessing each asset category, either via an internal assessment process or through a third party (external assessment).

In this way, Town staff will have a clear understanding of how they can assess the performance and condition of their assets. This will be pivotal in building a strong and robust asset management Framework in a way that validates management decisions on future expenditures and field activities.

Available condition assessment guidelines by asset type will be reviewed, including the type of capture, the assessment cycle or continued timeline for capture of the field condition data, along with the reporting format used for capture. The Town will receive a detailed section of the Framework labelled Internal Assessment: Condition & Data Collection Tools. This will provide an overview of condition data collection specifications, facilitating the capture of current and accurate inventory and condition assessments of the organization's infrastructure and assets, thereby acquiring required data to supplement existing data.

Using our data collection tools ensures that the Town can collect asset condition data efficiently and in-line with the data structure maturity assessment developed above. PSD will make recommendations on the type of training Town staff should undertake prior to conducting field work.

Each asset category is reviewed in order to develop recommendations for how asset attributes should

P A G E | 12

be defined within the Town 's asset inventory. Recommendations are provided according to a data hierarchy in order to help the client prioritize their data collection activities. The Town will be able to utilize this asset data hierarchy framework to enforce their data governance going forward.

Data Collection Templates - Assess the Current State of Assets and Inventory Listings

High data quality is the foundation of intelligent decision-making. Generally, there are two primary causes of poor decisions: inaccurate or incomplete data, and the misinterpretation of data used. The process of data analysis used by PSD is designed to ensure maximum confidence in raw data, or other project components, used to develop our analysis and ultimately, the application of the strategies outlined in the final document.

PSD will gather financial and asset management information via templates from the Town and calculate/forecast other information that is not provided such as estimated replacement date, estimated replacement costs, and condition (age-based if no assessed condition is known). All information will be loaded and calculated using CityWide Asset Manager, and in the event that software is not purchased, an export of information from the software will be provided back to the Town . This excel spreadsheet export will then be used by the Town to track data collection for its assets.

PSD will carry out an initial assessment thorough a gap analysis to determine where the Town should focus its efforts to develop a strong asset management program. The results of this analysis will allow our team to identify any missing data on assets to ensure that all attributes required for asset management are appended to each asset.

Throughout this analysis, all the information housed in the Town 's current asset inventories will be reviewed by each applicable asset category. In this stage, information that is important for asset management and TCA such as estimated useful life, age, installation or acquisition dates, accounting costs, accumulated amortization, netbook value, identifier numbers, amortization rates, department, valuation, etc. will be gathered and reviewed.

To ensure that the Town is able to use this data for asset management purposes, our team will aid the Town in updating all the asset inventories using the TCA register with new asset management information. At this point, PSD will be able to identify what is necessary to create a consistent structure throughout each asset category.

Ongoing training and workshops will be provided throughout each task, and at this stage, the Town staff will be provided training on how to develop processes for maintaining consistent and detailed data for asset management planning moving forward. This will cover what data to collect for different asset types and incorporating that into systems management. In order to fully utilize the inventory databases, PSD will provide Town staff with templates that are designed to collect data in a standardized form to ensure the right information is being collected, and to manage data collection processes. Below is an example of a data collection form.

The detailed information gathered will allow for lifecycle protocols, lifecycle models by asset type, and asset deterioration curves to be developed for each asset category.

Levels of Service Framework

Levels of service (LOS) define and measure the how well capital assets perform their intended functions and meet community expectations. LOS rely on both qualitative and quantitative inputs. Public expectations, regulatory requirements, and technical parameters inform how each community defines its levels of service, as do considerations of risk management and financial affordability.

Collectively, 'Levels of Service' is a core asset management competency and will form the next part of PSD's Asset Management Self-Assessment Tool and the State of Maturity analysis. LOS drive asset management strategies, which in turn drive funding strategies and short- and long-term budgets. This should be reflected by aligning strategic organizational objectives with desired service outcomes, monitoring actual asset performance against key performance indicators, and reporting results to key stakeholders such as Council and the public.

Based on the AMSAT results, the Town will be assigned a maturity rating relative to the many municipalities across Canada and assigned a maturity level. PSD will consider the Town's existing Strategic Plans, outlining high-level goals and objectives for the community and recommend how they can provide a solid foundation upon which to build a levels of service framework that supports Council's long-term goals and objectives as well as metrics to gauge success. Below is a sample of comparative results that form part of the evaluation:

Framework Element: Levels of Service		
Component	**Maturity Level**	**National Average**
Strategic Plan (Infrastructure Goals)	**INTERMEDIATE**	**INTERMEDIATE**
Current Levels of Service Analysis	**BASIC**	**BASIC**
Legislative and Regulatory Requirements	**BASIC**	**INTERMEDIATE**
Levels of Service Framework Development	**BASIC**	**BASIC**

The Framework will identify the roles and responsibilities of various stakeholders, resources required to complete the action, target dates, and performance indicators for each strategic action under every focus area, such as the provision of status reports to Council on an as needed basis.

This, in combination with the legislated community and technical metrics for core infrastructure, and staff knowledge of other legislative and regulatory requirements, provides an excellent foundation for staff and Council to build a robust levels of service framework. Aggregating this into the formal framework will enable the Town to comply with legislation and provide meaningful information to the community while building support for a sustainable asset management program.

Current levels of service can be defined as a description of the service output for an activity or service area against which performance may be measured. PSD will work with Town staff to establish current levels of service being provided for each asset class. This will be conducted through workshops and/or teleconferencing. Depending on the Town's needs, service levels can be based on community expectations, strategic and corporate goals, legislative requirements, design standards and codes of practice. PSD will also incorporate the impact of future growth within the Town on the current level of service. The process of establishing the current level of service is:

Core Values

- **Definition:** A description of the service outcome expected by the public
- **Process:** Establish and define core values based on expectations of stakeholders from the delivery of municipal services
- **Example:** Accessible & Reliable

LOS Statement

- **Definition:** A high-level statement that aligns with organizational objectives and describes the desired service output
- **Process:** Use the core values to develop level of service statements for each asset class or service area
- **Example:** Road Network - "The road network is convenient and available to the whole community with minimal service disruptions; service requests are responded to promptly"

Technical LOS

- **Definition:** A key performance indicator measured internally that indicates how an organization is performing in relation to the level of service
- **Process:** Choose technical levels of service that best measure whether the service that is being provided is consistent with the level of service statement
- **Example:** Lane-km of arterial roads per land area in the municipality (km/km^2)

Community LOS

- **Definition:** A simple, plain language description of what the customer receives
- **Process:** Choose community levels of service that describe technical levels of service in terms that easily and effectively communicate the service being provided by the municipality
- **Example:** Description, which may include maps, of the road network in the municipality and its level of connectivity

A defined level of service is tracked through performance measures which supply targets and timeframes to establish progress. PSD will assist the Town in establishing current levels of service through the incorporation of three key factors: cost, performance, and risk. Any decision to increase or decrease the provided levels of service will have an impact on each factor.
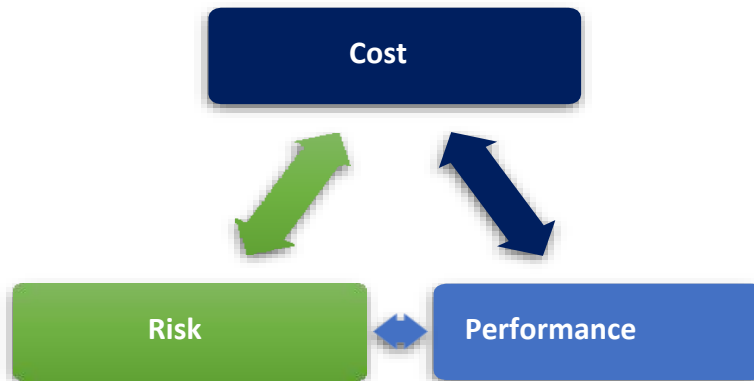
Levels of Service are used:

- ☑ To inform customers of the proposed type and level of service to be offered
- ☑ To identify the costs and benefits of the services offered
- ☑ To assess suitability, affordability and equity of the services offered
- ☑ As a measure of the effectiveness of the asset management plan
- ☑ As a focus for the AM strategies developed to deliver the required level of service

Key Performance Indicators

Depending on the Town's needs, service levels can be based on community expectations, strategic and corporate goals, legislative requirements, design standards and codes of practice. A suggested method in establishing an effective level of service framework, is the incorporation and usage of well- defined key performance indicators (KPIs).

The KPIs incorporate specific, measurable, achievable, relevant, and time-bound (SMART) criteria. The Town will be equipped with the necessary tools to collect data on their performance using the KPIs listed and establish targets that reflect its current fiscal capacity, corporate and strategic goals, and feasible changes in demographics that may place additional demand on their various asset categories. Recommendations will be given to the Town so that infrastructure classes follow appropriate KPIs. Guidelines will also be given to the Town so that staff can track their progress on an annual basis.

The LOS objectives are typically supported by many performance indicators that help quantify the services to be delivered such as how much, how frequently, and of what nature. Below are some examples of KPIs that PSD has developed for municipalities in the past.

The level of service objectives are typically supported by many performance indicators that help quantify the services to be delivered such as how much, how frequently, and of what nature. Below are some examples of KPIs that PSD has developed for municipalities in the past.

Performance Measures	Description
Strategic Indicators	• Percentage of reinvestment vs. value of asset category • Completion of strategic plan objectives (related to infrastructure)
Financial Indicators	• Annual revenues vs. annual expenditures • Total cost of borrowing vs. Total cost of service • Annualized depreciation (replacement value) vs. annualized expenditures • Lost revenue from system outages
Asset Health Indicators	• Percent of network rehabbed/reconstructed annually • Annual overall condition index vs. desired condition index • Annual adjustment in condition index (up or down) • Annual number of large system outages • Percent of asset value spent on ops and maintenance annually
Operational Indicators	• Number of water main breaks per Km of pipe network • Percent of network inspected • Percent of pipes flushed and cleaned annually • Percent of hydrants flow tested annually • Cost of material for pot hole patching annually • Water main breaks will be repaired within x hours • Legislated requirements will be met

Risk Analysis and Management

PSD will develop a risk framework, which will rank overall risk based on parameters that consider economic, social, environmental impacts, as well as all other available data regarding the condition of assets, known operational issues, etc.

Risk and criticality models and analysis are a key element of good asset management practices and programs. They are now recognized nationally and internationally as best practice. Through their use, an asset manager can determine which infrastructure is critical to the organization and can also rank and rate the level of business risk associated with all of the infrastructure stock. This can be achieved at the organizational level, the asset category level, the individual asset level and the asset component level.

This becomes extremely useful when limited internal resources are being used to try and address a significant number of fields needs or priorities.

As part of the development of this rating system, PSD will evaluate risk that is currently associated with the delivery of infrastructure services for the Town. This will allow our consultants to identify what is currently being done to reduce or mitigate risks. PSD will then propose a risk model that will quantify the current risks and therefore initiate analysis and management processes to address possible strategies on how to mitigate these risks.

This risk model will assist with the prioritization of available resources and it will:

- Ensure vital services are available
- Prioritize and streamline inspection and condition assessment programs
- Prioritize and optimize operations and maintenance programs
- Prioritize and optimize capital budget processes and program delivery
- Ensure that available money and resources are applied to the right asset at the right time
- And will assist in establishing attainable levels of service.

Approach and Parameters:

As stated above, infrastructure needs will typically exceed available resources and therefore project prioritization parameters will be developed to ensure the right projects come forward into the short and long-range budgets for the Town. An important method of project prioritization is to rank each project, or each piece of infrastructure, based on how much risk it represents to the organization. As a best practice within the infrastructure industry risk has been defined by the following equation:

RISK = PROBABILITY OF FAILURE (POF) x CONSEQUENCE OF FAILURE (COF)

Probability of Failure (POF)

The probability of failure (POF) relates to the current state of each asset, whether they are new or old, or in excellent, good, fair or poor condition, as this is a good indicator regarding their future risk of failure. Additional parameters can also contribute to the future POF of an asset such as the average daily traffic count on specific roads within the road network. The following is a general list of parameters that are often used for POF:

- Condition data
- % of asset life consumed
- Known operational issues
- Other parameters contributing to asset deterioration (e.g. traffic counts, soil types)

Consequence of Failure (COF)

The consequence of failure relates to the magnitude, or overall effect, that an asset's failure will cause. For instance, a small diameter water main break in a sub division may cause a few customers to have no water service for a few hours, whereby a large trunk water main break outside a hospital could have disastrous effects and would be a front-page news item. The COF parameters should address the economic, social and environmental impacts of asset failure in order to fully quantify the overall risk to the organization. PSD will help develop possible consequence of failure parameters that will help the Town identify things like:

- Economic – impact of the asset's failure on financial resources
- Social – impact of the asset's failure to the general population & society
- Environmental – impact of the asset's failure on the environment.

The following is a general list of parameters that are often used for COF:

Economic (cost of rehabilitation or replacement)

- Asset type (e.g. road or pipe material)
- Asset size (e.g. number of road lanes or pipe diameter)
- Overall replacement cost

Social (number of people or critical services affected)

- Land Use (e.g. industrial, commercial, residential)
- Bus / truck / emergency route
- Asset carrying capacity (e.g. traffic counts, pipe diameter)

Environmental (impact to environment)

- Proximity to water bodies
- Proximity to environmentally sensitive areas
- Asset carrying capacity (e.g. traffic counts, pipe diameter)

Risk Ranking

A risk value is derived once a consequence of failure and probability of failure value is computed. PSD will use a risk matrix to group the assets in their respective risk groups.

Any collected data from assets will be loaded into the CityWide system, to make use of the probability of failure and consequence of failure parameters to create Risk Ratings for each asset category.

P A G E | **20**

Project Prioritization

The above techniques and processes will supply a significant listing of potential projects. Typically, infrastructure needs exceed available resources and therefore project prioritization parameters must be developed to ensure the right projects come forward into the budget through a combination of risk and benefit analysis.

Benefit Factors

Another important factor in project prioritization is the project's overall benefit to the Municipality. Typically, within the strategic plan, a municipality will allocate resources, ensuring alignment to strategic priorities and objectives. For instance, downtown revitalization, waterfront development, or addressing storm flooding issues may be strategic priorities. These projects should therefore be prioritized within the asset management strategy and plan. Other types of project benefits may be simple. For instance, with all else being equal, the road with a higher traffic volume will be reconstructed before the road with a lower traffic volume.

Deliverable: Each asset will e assigned a rating for condition, risk, proposed service levels and an overall priority level.

Risk Profiles

During Phase 1 PSD began to develop the Risk Profiles for the categories of Roads, Facilities and Water networks. The following stage for this project will involve finalizing these frameworks to ensure that they are applied to all assets that correspond to each framework using the Town's data. PSD will consult with the Town to ensure that the data included is satisfactory.

Below are screenshots of examples of what the risk framework will consider. PSD will build a risk framework for each asset category.

CityWide Data Work and Uploads

Advancements in knowledge and facilitative technologies have made infrastructure planning less ominous, and internal and external communications more effective. With more persuasive infrastructure data sets, the impetus on council and senior management to make necessary changes will be stronger.

The Data Work will centralize and synchronize existing Asset Management data with the Town's current asset inventories that are housed in both CityWide and Excel formats. An ID will be populated within CityWide to facilitate and support future data uploads.

Data Structure

PSD will provide the Town with an updated Data Structure, which will standardize classifications, asset details and it will ensure that asset attributes, user defined attributes are set up correctly throughout all asset categories.

Financial Discrepancy Report

This report highlights important missing information such as Estimated Useful Life, in-service-date, or any other financial data that is required. This report, in conjunction with the previous reports, allows the Data Analysts to identify information that may be missing from the assets.

P A G E | **21**

PSD will deliver an updated database to include updated amortization information of assets and update overrides for Amortization amounts to create amortization reports in the CityWide Asset Manager module. This will allow better and more accurate reporting for the Town on its Asset Management System.

O.Reg 588-17 Compliant Asset Management Plan

Asset Management Plan

Phase 1: Develop the State of the Infrastructure Report (SOTI)

To identify through an infrastructure lifecycle analysis, the current state of the Town's infrastructure and general capital, the projected state of current funding levels and management practices must remain status quo. PSD will review the Town's latest AMP, review new data the Town is currently collecting, and develop a comprehensive asset management plan which will incorporate the Building Together Guide and other applicable regulations.

This approach is based on key industry "State of the Infrastructure documents:"

- ☑ Canadian Infrastructure Report Card

The above report and many others were based on principles within key industry best practices including:

- ☑ The National Guide for Sustainable Municipal Infrastructure (Canada);
- ☑ The International Infrastructure Management Manual (Australia / New Zealand); and
- ☑ American Society of Civil Engineering Manuals (U.S.A).

The report will be based on the seven key questions of asset management as outlined within the National Guide for Sustainable Municipal Infrastructure:

1. What do you own and where is it? (inventory)
2. What is it worth? (valuation/replacement cost)
3. What is its condition/remaining service life? (function and performance)
4. What needs to be done? (maintenance, rehab, replace/capital and operating Plans)
5. When do you need to do it? (risk analysis/capital and operating Plans)
6. How much will it cost? (short/long-term financial plan)
7. How do you ensure sustainability? (short - and long-term financial plan)

Inventory Data

Infrastructure and general capital inventory data sources will be obtained from the Town to the highest level of detail available. Sources could include: CityWide Asset Manager module, PSAB asset registry, GIS, access or excel files, schematics, engineering drawings and plans. A summary of the assets in each category will be developed. Data pertaining to replacement costs, average age, and condition will be updated with the Town.

Data Maturity

Below is a sample maturity rating completed for a previous client.

Asset Class	Asset Attribute	% Completion in CityWide Database
Road Network (Road Surfaces)	Width (m)	95%
	Length (m)	98%
	Street Class	80%
	Surface Material	89%
	Roadside Environment	89%
Water System (Water Mains)	Length (m)	100%
	Pipe Diameter (mm)	100%
	Pipe Material	100%
Sanitary System (Sanitary Mains)	Length (m)	100%
	Pipe Material	100%
	Pipe Diameter (mm)	100%
Storm System (Storm Mains)	Length (m)	100%
	Pipe Diameter (mm)	100%
	Pipe Material	100%
Data Maturity Rating		**97%**

PSD will review the CityWide Asset Manager database alongside the Town to ensure completeness of data for each asset category.

Replacement Costs

Developing an asset investment strategy requires an estimation of the cost to replace assets that have reached the end of their service life. The replacement cost considers the replacement of an asset with a similar, but not necessarily identical asset available in the current marketplace.

There are a range of methods to determine asset replacement costs – some more accurate and reliable than others:

- ☑ **Cost/Unit** – Industry standard cost
- ☑ **User-Defined Cost** – Cost is based on user-defined data
- ☑ **CPI/NRBCPI** – Historical cost is inflated based on Consumer Price Index tables
- ☑ **Flat Rate Inflation** – Historical cost is inflated by the same percentage each year up to the current year

Below is a sample replacement costing for another client's road network.

Asset Type	Asset Component	Quantity	Useful Life (Years)	2017 Unit Replacement Cost	2017 Overall Replacement Cost
Road Network	Road Base	41,124.26m	80	NRBCPI (Toronto)	$15,046,671
	Road Surface - LCB (Surface Treated)	13,263.52m	20	$450/m	$5,968,583
	Road Surface - HCB (Paved)	29,402.04m	35	$450/m	$13,230,917
	Sidewalks	31,217m	35	NRBCPI (Toronto)	$4,224,425
	Street Lighting	930 units	30, 70	NRBCPI (Toronto)	$849,582
				Total:	$39,320,178

Average Age

Once the above asset data and condition information is entered into CityWide, the system will produce an average age for each asset category and the related components.

Infrastructure Report Card

The infrastructure report card is based on a simple A – F scale and an average of the three ratings will be applied to one overall blended rating for each asset category. The outputs for all Municipal assets will be consolidated to produce one overall Infrastructure Report Card showing current condition and future projections for all municipal Infrastructure.

To rate the overall health of each asset category, a combination of available information and staff expertise will be used. If physical condition information is known to assets within the Town, PSD will incorporate this data once it has been identified to which asset each belongs. Key information will include asset condition data and indexes, growth projections, transportation master plans, water/wastewater master plans, and staff surveys and interviews. Each asset category will be rated using three primary categories:

1. **Condition and Performance**
   ☑ What is the condition of the asset today and how well does it perform its function?
2. **Capacity versus Need**
   ☑ What was the design capacity of the asset versus the needed capacity today to meet current demand?
3. **Funding versus Need**
   ☑ To be based on the actual investment requirements to properly maintain, rehabilitate and replace the asset at the right time versus current spending levels for each asset group. Below is a suggested guideline – this can be tailored to suit individual needs as required

Overall Grade **C**	Infrastructure Report Card — The Town			
Asset Class	Asset Health (Condition)	Financial Capacity	Overall Grade	Comments
Road Network	C	C	C	While more than 48% of the municipality's road network is in good to very good condition, 21% are in poor to very poor condition. The average annual revenue required to sustain the Town's road network – including lifecycle activities – totals approximately **$657,000**. Based on the Town's current annual funding of **$440,000**, there is an annual **deficit of $217,000**.
Water System	C	A	B	With nearly 64% of the municipality's water system is in good to very good condition The Town received an Asset Health grade of 'C'. The average annual revenue required to sustain the Town's water system – replacement only – totals approximately **$559,000**. Based on the Town's current annual funding of **$524,000**, there is an annual **deficit of $35,000**.
Sanitary System	C	A	B	Nearly 44% of the municipality's sanitary system is in good to very good condition. The average annual revenue required to sustain the Town's sanitary system – including lifecycle activities – totals approximately **$509,000**. Based on the Town's current annual funding of **$565,000**, there is an annual **surplus of $56,000**.
Storm System	B	F	D	With 87% of all storm system assets in very good condition the municipality received an asset health rating of 'B'. The average annual revenue required to sustain the Town's storm system totals approximately **$264,000**. Based on the Town's current annual funding of **$0**, there is an annual **deficit of $264,000**.
Buildings	C	F	F	With 76% of all buildings assets in good to very good condition the municipality received an asset health rating of 'C'. The average annual revenue required to sustain the Town's buildings totals approximately **$851,000**. Based on the Town's current annual funding of **$204,000**, there is an annual **deficit of $647,000**.
Machinery & Equipment	D	A	C	While 42% of all machinery and equipment is in good to very good condition, 41% is in poor to very poor condition. The average annual revenue required to sustain the Town's machinery and equipment totals approximately **$387,000**. Based on the Town's current annual funding of **$358,000**, there is an annual **deficit of $29,000**.

Phase 2 - Desired Levels of Service

Desired levels of service provide the basis for lifecycle management strategies and tactical implementation processes identified within the asset management plan. They support the Town's strategic goals and are based on customer expectations, statutory requirements, standards and the financial capacity of the Town to deliver those levels of service.

A defined level of service is tracked through performance measures which supply targets and timeframes to establish progress. For instance, the sustainable financial target set within the State of the Infrastructure section for roads, could be based on the idea that all Town roads should be replaced on a 33-year lifecycle. In order to accomplish this, 3% of the road network must be replaced annually. Therefore, this would be a good performance measure to set. If the 3% replacement rate cannot be achieved, either the level of service must be reduced or the budget for road replacement must be increased.

Levels of Service are used:

- ☑ To inform customers of the proposed type and level of service to be offered;
- ☑ To identify the costs and benefits of the services offered;
- ☑ To assess suitability, affordability and equity of the services offered;
- ☑ As a measure of the effectiveness of the asset management plan; and
- ☑ As a focus for the asset management strategies developed to deliver the required level of service.

Levels of Service are often based on:

- ☑ Community expectations;
- ☑ Strategic and corporate goals;
- ☑ Legislative requirements; and
- ☑ Design standards and codes of practice

Key Performance Indicators

Performance measures or key performance indicators (KPIs) that track levels of service should be specific, measurable, achievable, relevant, and time-bound (SMART). Many good performance measures can be established and tracked through a variety of software products. Through automation, results can be reviewed on an annual basis and adjustments can be made to the overall asset management plan, including the desired level of service targets.

In establishing metrics, a good rule of thumb to remember is that maintenance activities ensure the performance of an asset and prevent premature aging, whereas rehab activities extend the life of an asset and replacement activities, by definition, renew the life of an asset. In addition, these activities are constrained by resource availability (finances, labour, etc) and strategic plan objectives. Therefore, performance measures should not just be established for operating and maintenance activities, but also for the strategic, financial, tactical (overall asset health) levels of the asset management program as shown in the examples below. As a note, a caution should be raised over developing too many key performance indicators that may result in data overload and lack of clarity. It is better to develop a select few that focus in on the targets of the asset management plan.

Examples of Performance Measures

These measures will be explored in more detail and tailored to suit the needs of the Town:

Strategic Indicators

- ☑ Percentage of reinvestment vs. value of asset category
- ☑ Completion of strategic plan objectives (related to infrastructure)

Financial Indicators

- ☑ Annual revenues vs. annual expenditures
- ☑ Total cost of borrowing vs. total cost of service
- ☑ Annualized depreciation (replacement value) vs. annualized expenditures
- ☑ Lost revenue from system outages

Asset Health Indicators

- ☑ % of network rehabbed / reconstructed annually
- ☑ Annual overall condition index vs. desired condition index
- ☑ Annual adjustment in condition index (up or down)
- ☑ Annual number of large system outages
- ☑ % of asset value spent on operations and maintenance annually

Operational Indicators

- ☑ Number of water main breaks per km of pipe network
- ☑ % of network inspected
- ☑ % of pipes flushed and cleaned annually
- ☑ % of hydrants flow tested annually
- ☑ Cost of material for pothole patching annually
- ☑ Water main breaks will be repaired within *x* number of hours
- ☑ Customer requests will have a 24-hour response time
- ☑ Legislated requirements will be met

Benchmarking Initiatives

There are several industry benchmarking initiatives underway within Canada. Performance measures within these programs can serve as a resource in developing internal measures for the Town. It should be noted that these programs provide comparison information and targets between service providers and may not be ideal for an internal asset management plan.

Public Engagement and Levels of Service

It is a growing trend and best practice within the asset management industry to include public engagement processes to assist in setting levels of service. As infrastructure costs increase dramatically in the future, it is essential that the public not only be consulted, but also be educated and ultimately make choices with respect to the service levels that they wish to pay for. It all comes down to public expectations, which should be realistic and ultimately be tied to a level of service and a cost. (See diagram below).
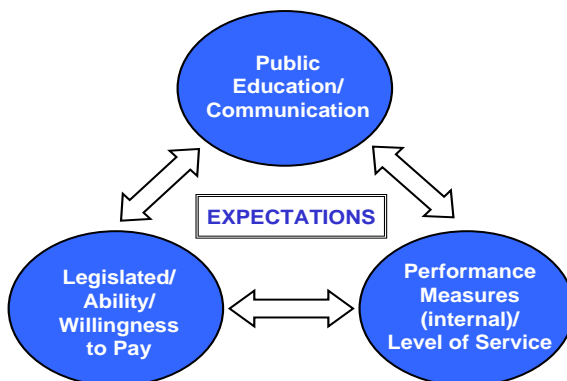
Phase 3 - Asset Management Strategy

The asset management strategy is a developed process of planned actions that will enable the Town's assets to provide the desired level of service in a sustainable way, while managing risk and benefit, at the lowest lifecycle cost. At a tactical level, it will develop an implementation plan to be applied to the need's identification and prioritization of renewal, rehabilitation and maintenance activities, including growth projections, to produce a 10-year plan to ensure the best overall health and performance of the Town's infrastructure and general capital. This tactical process will influence and direct the short term, 1 to 3-year, infrastructure and general capital program and budget of the Town.

The asset management strategy will allow the Town to develop a long-term view of its program, and it will develop the strategies of how asset management objectives will be achieved. The details within the asset management strategy are tied to the sustainable lifecycle projections from the State of the Infrastructure section of this plan.

Priorities for the asset management strategy are to:

- ☑ Ensure sustainability of existing assets;
- ☑ Focus on options for each asset class to obtain the total lowest cost;
- ☑ Focus on growth and demand projections; and
- ☑ Prioritize projects based on risk and benefit analysis.

PSD will develop a long-term strategic plan for managing the Town's assets. The strategic plan will bring together all the needs and expectations of the stakeholders. The objectives of this asset management plan and how these can be delivered in a sustainable manner will be delineated by the activities needed to maintain assets. An asset management strategy is a key component of a Town's planning process linking multiple other corporate plans and documents. For example:

- ☑ **The Strategic Plan**
  - ✓ The Asset Management strategy/plan should link to key objectives outlined within the strategic plan
- ☑ **The Official Plan**
  - ✓ The Asset Management strategy/plan should utilize and influence the land use policy directions for long-term growth and development as provided through the Official Plan
- ☑ **Long-Term Financial Plan**
  - ✓ The Asset Management strategy/plan should utilize the financial forecasts within the long-term financial plan
- ☑ **Capital Budget**
  - ✓ The decision framework and works identified in the asset management plan form the basis on which future capital budgets are prepared
- ☑ **Infrastructure Master Plans**
  - ✓ The Asset Management strategy/plan will utilize goals and projections from infrastructure master plans and in turn will influence future master plan recommendations
- ☑ **By-Laws, standards and policies**
  - ✓ The Asset Management strategy/plan will influence and utilize policies and by-laws related to infrastructure management practices and standards

☑ **Regulations**
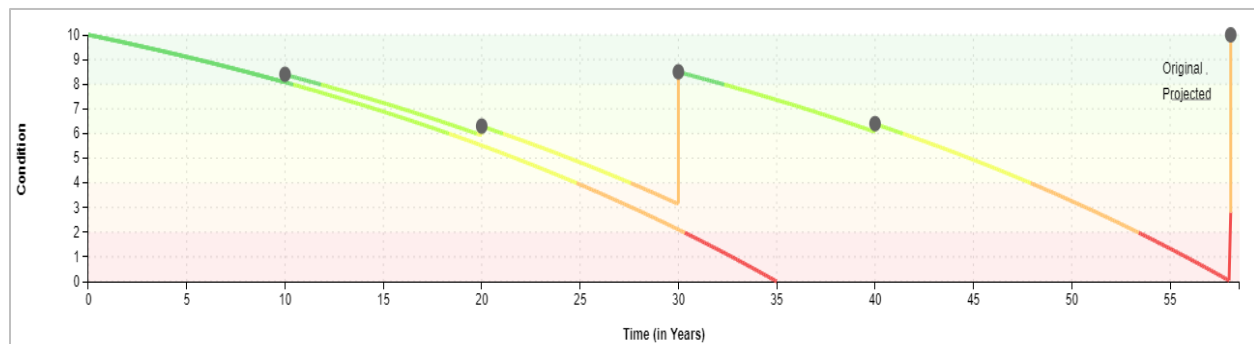 ✓ The Asset Management strategy/plan must recognize and abide by industry regulations

☑ **Business Plans**
  ✓ The service levels, policies, processes, and budgets defined in asset management plans are incorporated into business plans as activity budgets, management strategies, and performance measures
  ✓ Below is a diagram that illustrates how different aspects of asset management fit together within an organization

Deterioration Curve – LCB/Surface Treated Roads example

| Original Estimated Useful Life: 20 years | Extended Useful Life: 46 years | Difference: +26 years |
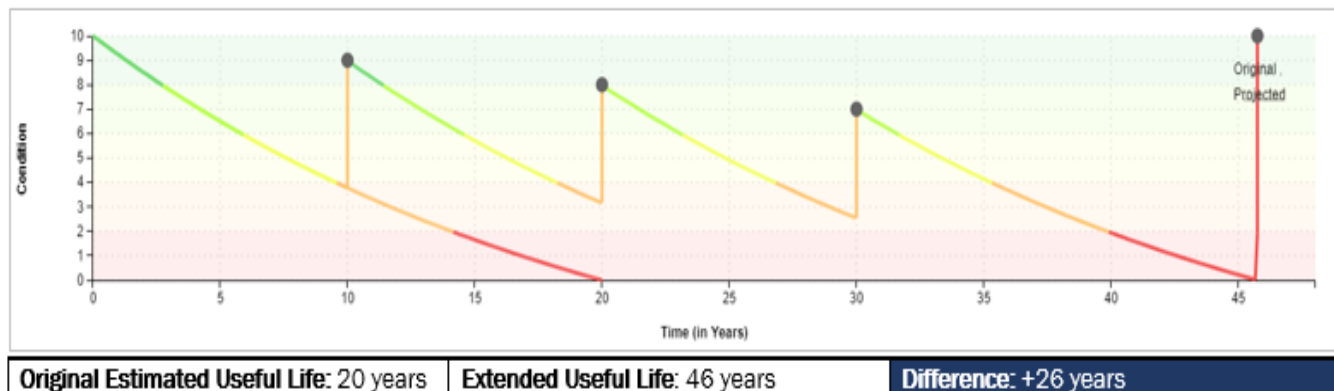
Deterioration Curve – HCB/Paved Road Surface example

Risk/Criticality Assessment

Risk within the infrastructure industry is often defined as the probability (likelihood) of failure multiplied by the consequence of that failure. Risk can never be eliminated but can be managed. The probability of failure can be analyzed through a combination of current condition and life cycle projection information. However, the consequence of failure still needs to be determined. A good method to use is a triple bottom line approach, whereby, the social, environmental, and economic impacts of an asset's failure are quantified.

As part of the asset management strategy, a risk matrix will be developed, and a risk score will be applied to infrastructure and general capital components to aid in project prioritization. Each asset in the

inventory will have a probability of failure, consequence of failure, and overall risk score associated with it. See example below from CityWide Asset Manager:

Consequence	1	2	3	4	5	Other
5	0 Assets - $0.00	0 Assets - $0.00	0 Assets - $0.00	0 Assets - $0.00	0 Assets - $0.00	
4	2 Assets - m2 $1,145,432.00	1 Asset 11,475.30 m2 $639,147.00	0 Assets - $0.00	0 Assets - $0.00	1 Asset - m2 $637,360.00	
3	6 Assets 30,643.51 m2 $2,232,018.00	1 Asset 14,386.29 m2 $483,898.00	0 Assets - $0.00	0 Assets - $0.00	2 Assets 21,860.53 m2 $1,064,650.00	
2	20 Assets 92,089.80 m2 $3,982,320.00	6 Assets 54,447.87 m2 $899,233.00	0 Assets - $0.00	0 Assets - $0.00	9 Assets 64,677.98 m2 $2,144,455.00	
1	508 Assets 642,046.14 m2 $21,417,357.00	202 Assets 288,471.15 m2 $7,606,602.00	1 Asset 916.18 m2 $23,417.00	1 Asset 1,004.58 m2 $55,528.00	101 Assets 104,621.65 m2 $3,368,683.00	

Probability

Future Trends

For any single asset category there may be specific items that negatively or positively affect the future asset grade projection within the State of the Infrastructure report card. Such items could be a lack of maintenance resources, extent of the back log, effects of climate change, significant funding from grants no longer available, etc. These items must also be accounted for and brought forward as recommended adjustments to the short and long-term budget.

The International Institute for Sustainable Development identified the following impacts of climate change on municipal infrastructure in Canada.

	Greater frequency of freeze-thaw cycles leading to thermal cracking, rutting, frost heave and thaw weakening
	Soil instability, ground movement and slope instability
	Triggered instability of embankments and pavement structures
	Shortened life expectancy of highways, roads and rail
	Drier conditions affecting the lifecycle of bridges and culverts
	Reduced structural integrity of building components through mechanical, chemical and biological degradation
	Increased corrosion and mold growth
	Damaged or flooded structures
	Reduced service life and functionality of components and systems
	Increased repair, maintenance, reserve fund contingencies and energy costs
	Increased water demand and pressure on infrastructure
	Loss of potable water
	Increased risk of flooding; stormwater infrastructure more frequently exceeded
	Rupture of drinking water lines, sewage lines and sewage storage tanks
	Saltwater intrusion in groundwater aquifers

Phase 4 - Financial Strategy

PSD will develop a financial strategy and plan that fully integrates into the asset management strategy and asset management plan, including expenditures and revenue forecasts for the delivery of a 20-year infrastructure and general capital budget.

Yearly expenditures forecasts will be broken down as per the asset management strategy into:

- Non-infrastructure projects;
- Maintenance activities;
- Renewal/Rehabilitation projects;
- Replacement projects;
- Disposal projects; and
- Growth related projects.

The financial strategy and plan will include:

- A breakdown of yearly revenues by confirmed source;
- Key assumptions and alternate scenarios where appropriate;
- Identifies any funding shortfall (infrastructure deficit) relative to financial requirements (long term replacement needs) that cannot be eliminated by revising service levels, asset management and/or financial strategies; and
- Discusses the impact of shortfalls and how the impact will be managed.

The two main risks to financial sustainability for the Town are providing levels of service that do not reflect fiscal capacity and the cost of infrastructure. As a result, for an asset management program to be effectively implemented, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan is critical to identifying the financial resources required for sustainable asset management based on existing asset inventories, desired levels of service, and projected growth requirements. The financial strategy should define the relationships between maintenance/capital requirements, debt strategy, reserve strategy and annual revenue opportunities/strategies. The result is recommendations on the necessary short-term steps that need to be taken to manage the long-term budget requirements. Town council will be engaged as the financial strategy is developed for review.

At a high-level, the financial strategy will include:

- An understanding of the various costs associated with investing in assets: new, renewal, maintenance and operations for a minimum of 20 years;
- An understanding of the various costs associated with accounting for assets: historical, replacement and depreciated;
- Metrics to track assets and costs for both operational and management purposes;
- The ability of asset management plan financial requirements to be based on replacement costs and desired levels of service;
- An analysis of the Town's financial capacity;
- A comparison of how a Town's numbers relate to its comparators (existing and trends);

- Development of scenarios for consideration;
- Development of two scenarios that would enable the Town to achieve full funding within 5-20 years; and
  - ✓ Tax-funded assets: Road Network, Storm System, Buildings, Bridges, Culverts, Sidewalks/Curbs, Parking Lots, Equipment, Fleet, Streetlights, Land Improvements
  - ✓ Rate-funded assets: Water and Wastewater Systems
- Final recommendations.

Financial Data

Financial information will be obtained from the Town. Key information will include current spending on capital and maintenance for each asset program, capital and operations budgets, and the cost of high-level field activities and works (maintenance, rehabilitation and replacement). All information will be analyzed, and a gap analysis will be produced showing actual investment requirements versus current spending levels for each asset group.

Cost Breakdown

Pricing with MAMCF Funding

SERVICE	TOTAL
ASSET MANAGEMENT STRATEGY	$28,500.00
LIFECYCLE FRAMEWORK DEVELOPMENT (Roads, Water, Bridges and Culverts)	$20,500.00
CONDITION ASSESSMENT PROTOCOLS AND DATA COLLECTION TEMPLATES	$12,500.00
LEVELS OF SERVICE FRAMEWORK	$25,000.00
RISK FRAMEWORK DEVELOPMENT	$20,500.00
O.Reg. AMP Compliant with 2021 Regulations	$22,500.00
TOTAL	$129,500.00
FCM – MAMCF FUNDING	**($50,000.00)**
Approx. TOTAL TOWN'S CONTRIBUTION	**$79,500.00**

P a g e | **33**