



# ASSET MANAGEMENT STRATEGY

With support from



icINFRASTRUCTURE

May 15, 2019

#### ACKNOWLEDGEMENTS:

The District of Summerland worked collaboratively with Infrastructure to develop this strategy which aligns with the Federation of Canadian Municipalities' Asset Management Policy, Strategy and Governance Handbook. The team also used other municipal examples including the City of Revelstoke and City of Airdrie to support the creation of this strategy.

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

## I. Executive Summary

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Local governments provide a wide range of services that are essential to our communities' quality of life, such as clean drinking water, electrical distribution, transportation systems, waste management, drainage and flood protection, public art, parks, and recreation services. The services the District delivers depend on physical infrastructure assets such as water treatment plants, sewers, roads, heavy equipment, buildings, and emergency vehicles as well as natural assets such as trees and waterways. These assets are the foundation that enables communities to thrive. However, local governments face significant social, economic, and environmental challenges that affect their ability to manage their assets and deliver services sustainably over the long term. The way local governments manage and invest in infrastructure assets, including natural assets, will therefore have a significant impact on whether communities move toward becoming sustainable and resilient.

Asset management is an integrated approach, involving all municipal departments, to choosing and managing existing and new assets. The intent is to maximize benefits, reduce risks, and provide satisfactory levels of service to the community in a sustainable manner. Good asset management practices are fundamental to achieving sustainable and resilient communities. The District is already doing elements of asset management across functions and departments, and this strategy will better connect these components and fill missing gaps, as aligned with industry best practice. The District will apply asset management principles to all departments that manage or influence service-providing assets or asset systems.

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*The District's asset management strategy will help improve decision making through better alignment with council objectives and organizational priorities, a structured needs identification and prioritization process, and by leveraging information and quality data from across the organization.*

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How the District's assets are managed and operated plays a key role in achieving the District's strategic goals and objectives. Many of these goals and objectives are reliant on the long-term sustainability of the District's infrastructure; therefore, one of the aims of this Asset Management Strategy is to put in place a clear line of sight between those high-level objectives and the day-to-day service delivery activities carried out utilizing the assets. Asset management will take organizational objectives and translate them into technical and/or financial objectives, decisions, plans, and asset management related activities. Asset management will ensure that organizational objectives can be achieved sustainably over a reasonable, realistic, or appropriate amount of time.

This Asset Management Strategy is a core competent of the District's Management System for Asset Management, and describes the key practices, processes, tools, and documents that staff will use to implement the principles in the council-approved Asset Management Policy. The Asset Management Strategy will drive real and tangible improvements in evidence-based decision-making and will enable more reliable financial forecasting and planning for the District.

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## 1. Intent

### a. About the District of Summerland

The District of Summerland (the District) is located within the Regional District of Okanagan Similkameen and delivers municipal services to a growing population of approximately 11,700. The District boasts a small-town atmosphere, beautiful outdoor environment and a great quality of life, making Summerland a desirable place to work and play, and a popular vacation destination. These fluctuating forces cause unique demands on the District's services and are important factors in analyzing how they manage and prioritize their asset management (AM) and service delivery efforts.

### b. Municipal Services and Asset Management<sup>1</sup>

Local governments provide a wide range of services that are essential to our communities' quality of life, such as clean drinking water, electrical distribution, transportation systems, waste management, drainage and flood protection, public art, parks, and recreation services. The services they deliver depend on physical infrastructure assets like water treatment plants, sewers, roads, heavy equipment, buildings, and emergency vehicles as well as natural assets such as trees and waterways.

In Canada, local governments are the stewards of about 60 per cent of all public infrastructure assets.

These assets are the foundation that enables our communities to thrive. However, local governments face significant social, economic, and environmental challenges that affect their ability to manage their assets and deliver services sustainably over the long term. The way local governments manage and invest in infrastructure assets, including natural assets, will therefore have a significant impact on whether communities move toward becoming sustainable and resilient.

The traditional view of AM was focused on maintenance activities. It gradually evolved into a much broader discipline, leading to the publication of the ISO 55000 international standard for asset management in 2014<sup>2</sup>. Today's AM practices focus on how municipalities can best manage their assets to balance service levels and costs to the community at an acceptable level of risk.

The District's AM efforts - including this Strategy - are aligned with industry best practices, including;

- The Federation of Canadian Municipalities (FCM)'s Leadership in Asset Management Program - a program funded and facilitated by the Green Municipal Fund, as part of the FCM that brought together 17 municipalities in Canada to develop best practice, resulting in an Asset Management Policy, Strategy and Governance Handbook.<sup>3</sup>
- ISO 55000 - an international standard covering management of assets, and the development of a management system for asset management.

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*Asset Management is an integrated approach, involving all municipal departments, to choosing and managing existing and new assets. The intent is to maximize benefits, reduce risks, and provide satisfactory levels of service to the community in a sustainable manner. Good AM practices are fundamental to achieving sustainable and resilient communities.*

*Source: Federation of Canadian Municipalities*

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<sup>1</sup> Adapted from the Federation of Canadian Municipalities' Policy, Strategy and Governance Handbook

<sup>2</sup> The ISO committee behind ISO 55000, Technical Committee #251, published a paper entitled, "Managing Assets in the context of Asset Management," that explains the bigger picture and outlines the benefits that asset management provides an organization.

<sup>3</sup> <https://fcm.ca/en/resources/mamp/guidebook-how-develop-asset-management-policy-and-strategy>

- Institute of Asset Management (IAM) - a professional body for those involved in acquisition, operation, and care of physical assets. IAM is recognized worldwide and is dedicated to furthering knowledge and understanding of asset management.
- Asset Management BC: Sustainable Service Delivery - the asset management regional community of practice for BC published a framework that establishes a high-level, systematic approach that supports local governments in moving toward service, asset, and financial sustainability through an asset management process. This document represents the Asset Management Strategy under the Plan section in Figure 1 below.



**Figure 1: Asset Management for Sustainable Service Delivery: A BC Framework**

This AM Strategy was prepared with support from icInfrastructure - a local consulting firm specializing in infrastructure asset management - and with financial assistance from FCM and Government of Canada.

### c. Purpose of the Strategy

The AM Strategy is a core competent of the District’s AM System, and describes the key practices, processes, tools, and documents that staff will use to implement the AM Policy and ensure adherence to its principles across the organization. The strategy can drive real and tangible improvements in evidence-based decision-making and will enable more reliable financial forecasting and planning.

This strategy is a high-level document that describes how the principles in the council-approved policy will be implemented, and provides documentation on how the goals and objectives of the District’s AM System (the Management System<sup>4</sup> for Asset Management) will be achieved by:

1. describing the key asset management processes, tools, and documents that the District’s staff will use to implement the Asset Management Policy, forming the AM System;

<sup>4</sup> The Asset Management System is not specifically an IT system. It is the municipality’s broad collection of interconnected processes and documentation designed to effectively direct and deliver the discipline of asset management. This system may be supported by various tools and IT systems.

2. defining roles and responsibilities for the implementation and management of the AM System and for service delivery;
3. documenting AM objectives and how they are linked to the organizational objectives;
4. defining the scope of the AM System;
5. providing a framework for the implementation, operation, and maintenance of the AM System and implementation of specific AM practices; and
6. describing the role of AM in achieving organizational objectives within the scope of the mandated principles and requirements as stated in the AM policy.

#### d. Scope of Applicable Services and Assets

As outlined in the Asset Management Policy, the District will apply asset management principles to all departments that manage or influence service-providing assets or asset systems. Figure 2 below lists the service areas and associated assets to assist in understanding the scope of the District’s asset management efforts, but it is not intended to be a complete list.

Service Area	Supporting Assets
Water	<ul style="list-style-type: none"> <li>• Reservoirs ☼</li> <li>• Dams</li> <li>• Water Treatment Plant</li> <li>• Water mains</li> <li>• Service pipes</li> <li>• Pumphouses &amp; pumps</li> <li>• Valves</li> <li>• Hydrants</li> <li>• Pressure reducing valve stations</li> <li>• Treated water storage tanks</li> </ul>
Wastewater / Sanitary	<ul style="list-style-type: none"> <li>• Wastewater Treatment Plant</li> <li>• Sanitary Mains: Gravity, low pressure and force mains</li> <li>• Service pipes</li> <li>• Sani-dump station</li> <li>• Lift stations &amp; pumps</li> <li>• Manholes</li> </ul>
Stormwater / Drainage	<ul style="list-style-type: none"> <li>• Storm Mains</li> <li>• Manholes</li> <li>• Culverts</li> <li>• Drywells</li> <li>• Catch Basins</li> <li>• Waterways (Prairie Creek, Eneas Creek &amp; Trout Creek) ☼</li> <li>• Stormwater ponds ☼</li> </ul>
Parks	<ul style="list-style-type: none"> <li>• Trails</li> <li>• Parklands ☼</li> <li>• Playgrounds</li> <li>• Sports fields</li> <li>• Bandshell</li> <li>• Beaches ☼</li> <li>• Docks &amp; Boat launches</li> <li>• Washroom facilities</li> <li>• Waterpark</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• Aquatic centre</li> <li>• Arena &amp; curling rinks</li> <li>• Arts &amp; culture centre</li> <li>• Museum</li> <li>• Campground</li> <li>• Tennis / Pickleball courts</li> </ul>
Roads	<ul style="list-style-type: none"> <li>• Roads</li> <li>• Bike lanes</li> <li>• Sidewalks</li> <li>• Street signs</li> <li>• Parking lots</li> </ul>
Buildings	<ul style="list-style-type: none"> <li>• Municipal hall</li> <li>• Works &amp; Utilities office</li> <li>• Electrical warehouse</li> <li>• RCMP station</li> <li>• Fire hall</li> <li>• Rental properties</li> </ul>
Fleet	<ul style="list-style-type: none"> <li>• Light Duty Vehicles</li> <li>• Heavy Duty Vehicles</li> <li>• Heavy Equipment</li> <li>• Off-road vehicles</li> <li>• Electrical utility vehicles</li> </ul>
Solid Waste	<ul style="list-style-type: none"> <li>• Landfill</li> <li>• Scale</li> <li>• Recycling depot</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Information system (IS) Infrastructure</li> <li>• IS peripherals &amp; software</li> </ul>
Fire Services	<ul style="list-style-type: none"> <li>• Fire trucks</li> <li>• Aerial truck</li> <li>• Specialty tools &amp; equipment</li> </ul>
Electrical	<ul style="list-style-type: none"> <li>• Substations</li> <li>• Street lights</li> <li>• Poles</li> <li>• Conductor: overhead &amp; underground</li> <li>• Conduits</li> <li>• Transformers</li> <li>• Vaults</li> <li>• Electric vehicle charging stations</li> </ul>

Figure 2: List of the District’s service areas and associated assets

Each of these service areas operates within unique environments. Asset Management Plans will be developed for each service area which will provide greater asset type detail by the various functions.



The period of responsibility for the assets and services that are owned and managed by the District are indefinite. The District will manage all assets throughout their reasonable lifespans and will provide the service that the assets support indefinitely, unless alternative methods are employed or the service is no longer required.

### **Incorporating Natural Assets ☼**

The District recognizes the value of natural assets in supporting service delivery and reducing the need for engineered assets, and will strive to make advances in integrating natural assets into asset management practices. The below table highlights the District’s multi-phase approach to integrate natural assets.

Strategize	Assess	Act	Systematic Improvement
<ul style="list-style-type: none"> <li>• Develop a formal document that guides staff on how to incorporate natural assets into strategy &amp; planning efforts</li> <li>• Outline service dependencies (what engineered assets are they replacing or supporting)</li> </ul>	<ul style="list-style-type: none"> <li>• Determine Inventory</li> <li>• Calculate the worth</li> <li>• Assess the condition</li> <li>• Assess changes in future demand</li> <li>• Determine objectives</li> <li>• Develop operation &amp; maintenance plans</li> <li>• Develop a financial plan</li> </ul>	<ul style="list-style-type: none"> <li>• Business Case Options consideration</li> <li>• Project Prioritization weightings</li> </ul>	<ul style="list-style-type: none"> <li>• Incorporate into Annual AM Review</li> <li>• Conduct ongoing assessments</li> </ul>

*Figure 3: Incorporating Natural Assets through a phased approach<sup>5</sup>*

More information on incorporating natural assets into municipal asset management efforts is provided by the Municipal Natural Assets Initiative [www.mnai.ca](http://www.mnai.ca).

<sup>5</sup> Majority of content derived from the Town of Gibsons eco-asset strategy, and supported by the Municipal Natural Asset Initiative (MNAI) [https://mnai.ca/media/2018/01/EcoAsset\\_Strategy.pdf](https://mnai.ca/media/2018/01/EcoAsset_Strategy.pdf)

## 2. Strategic Alignment

How the District’s assets are managed and operated plays a key role in achieving the District’s strategic goals and objectives. Many of these goals and objectives are reliant on the long-term sustainability of the District’s infrastructure; therefore, one of the aims of this AM Strategy is to put in place a clear line of sight between those high-level objectives and the day-to-day service delivery activities carried out utilizing the assets. Asset management will take organizational objectives and translate them into technical and/or financial objectives, decisions, plans, and asset management related activities. Asset management will ensure that organizational objectives can be achieved sustainably over a reasonable, realistic, or appropriate amount of time. Figure 4 below shows the concept of line of sight from the council Strategic Plans through the Asset Management Policy, Asset Management Strategy, and Asset Management Plans, and illustrates how the Asset Management Objectives are aligned to the District’s Strategic Plan.

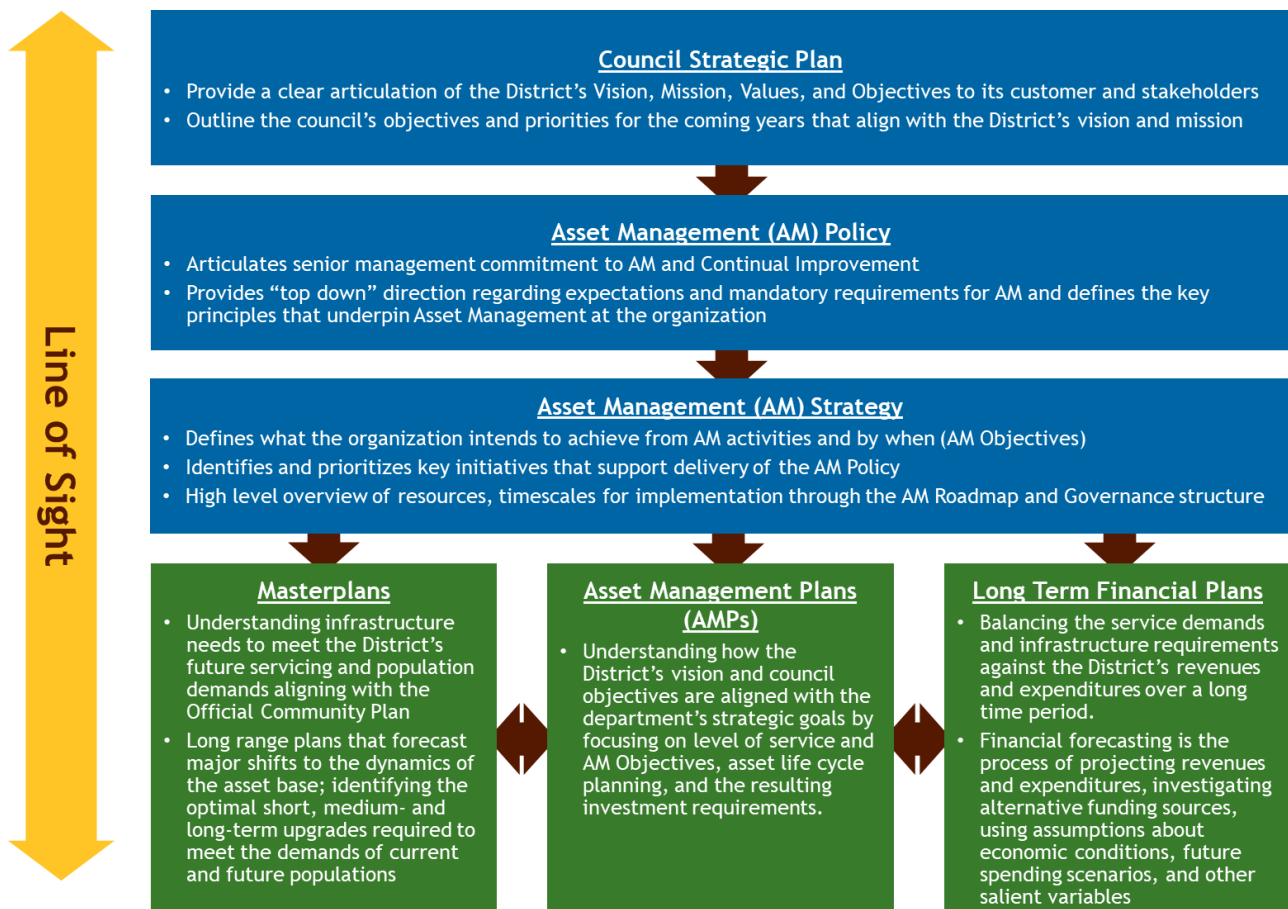


Figure 4: Line of sight through the District’s asset management efforts<sup>6</sup>

The alignment between the Asset Management Objectives and the District’s Strategic Plan is maintained through an iterative process. Realistic and achievable organizational objectives are not developed in isolation; therefore, future revisions of the organizational objectives will use asset capabilities and performance as key inputs.

The District’s AM system and AM objectives do not replace existing corporate strategies, business planning, and budget management systems and processes. Rather, the AM system and objectives are meant to align with these initiatives and to provide guidance for future changes. AM objectives do

<sup>6</sup> Adapted from FCM’s Asset Management Policy, Strategy and Governance Handbook

not supersede existing or future legislative requirements. The integration of AM objectives throughout the District's service areas is reinforced through links and references to corporate documents. In cases where documentation was created prior to the District formalizing its AM System, it will take time for wording and content to be revised to match AM terminology. Where possible, council and staff will consider the AM policy and this AM Strategy and integrate AM objectives and intent when updating and developing corporate documents, including but not limited to:

- The Official Community Plan
- Service-specific strategies
- Asset-specific Masterplans
- Information and Data Management strategies

### 3. Needs and Expectations of Stakeholders

#### a. External Stakeholders

The following are primary examples of people or groups that use or participate in the provision of services:

- Citizens / Residents
- Local Business Owners
- Regulators
- Developers
- Visitors

While not direct stakeholders, it is recognized that all levels of government and associated agencies can influence asset management practices and decisions.

Currently the District engages external stakeholders in an informal manner, with significant reports being shared publicly. Although there is not currently a formalized process for engaging with external stakeholder groups, this is identified in the District's long-term goals and is highlighted on the AM Roadmap.

#### b. Internal Stakeholders

The following stakeholders are considered participants in the District's asset management efforts:

- Mayor and Council
- CAO
- Asset Management Steering Committee
- Management Team
- Staff

#### Supporting Cultural Change in the District

The District recognizes that staff will need support in adopting the new processes and ways of working that will be embedded in the organization through the implementation of asset management practices. Having a properly structured and well-implemented approach to Change Management, guiding the organization from its current state to a desired future state, will support the District in meeting the AM objectives outlined in this Strategy. An effective change management strategy is crucial when trying to establish organization-wide buy-in. The goal is to establish alignment ranging from senior planners down to frontline staff. Facilitating AM buy-in assists the organization in realizing the full value of tools and processes capable of leading the organization into a sustainable

future. The District has included the development of a Change Management Framework in their AM Roadmap, that can also be leveraged for other initiatives at the District.

## 4. Business Context and Analysis

### a. Current State Assessment

In order to measure where the District is in terms of utilizing AM practices, a Maturity Assessment was conducted. An assessment was conducted by icInfrastructure - a local asset management consultant - in the form of a workshop with a broad cross-section of leaders and staff from across the organization. The assessment followed the Institute of Asset Management (IAM)’s self-assessment tool, 121 questions aligned with the PAS55 asset management standard with the staff reaching consensus on their current level. A score of “3” indicated that the concept or practice referenced in question was complete and fully implemented, while decreasing scores, with “0” being the minimum, demonstrating an absence of this feature. Level “4” was removed from the assessment as it corresponds to achieving PAS55 certification, which is not appropriate for the District.

IAM Level 0	IAM Level 2	IAM Level 2	IAM Level 3
<ul style="list-style-type: none"> <li>Complete absence for any degree of awareness, understanding, or integration regarding that category</li> </ul>	<ul style="list-style-type: none"> <li>Entry level or very basic understanding for the given category</li> </ul>	<ul style="list-style-type: none"> <li>Proven to understand and act according to best practice guidelines</li> <li>Lack of formal procedures and tendency to be applied inconsistently or on an ad-hoc basis</li> </ul>	<ul style="list-style-type: none"> <li>Clearly articulated tools and operating procedures aligned with best practice</li> <li>Demonstrates a high proficiency and ability to optimize their results</li> </ul>

Figure 6: A legend describing the rating levels of the District’s gap assessment scores

There were several assessment tools and methodologies available to the District; it was decided to use the IAM’s PAS55 based assessment tool as it provided an appropriate level of detail on the different areas of the District’s AM effort, with a manageable number of questions, whilst maintaining an infrastructure focus - something the District felt was not provided with the IAM ISO55000 or FCM Readiness Scale tools. Figure 7 below provides the summary results of the current state assessment.

PAS55 Clause No.	
4.1	General Requirements
4.2	Asset Management Policy
4.3.1	Asset Management Strategy
4.3.2	Asset Management Objectives
4.3.3	Asset Management Plan(s)
4.3.4	Contingency Planning
4.4.1	Structure, Authority, and Responsibilities
4.4.2	Outsourcing of Asset Management Activities
4.4.3	Training, Awareness, and Competency
4.4.4	Communication, Participation, and Consultation
4.4.5	Asset Management Documentation
4.4.6	Information Management
4.4.7.1	Rick Management Process(es)
4.4.7.2	Risk Management Methodology
4.4.7.3	Risk Identification and Assessment
4.4.7.4	Use and Maintenance of Asset Management Information
4.4.8	Legal and Other Requirements
4.4.9	Management of Change
4.5.1	Life Cycle Activities
4.5.2	Tools, Facilities, and Equipment
4.6.1	Performance and Condition Monitoring
4.6.2	Investigation of Asset-Related Failures, Incidents, and nonconformities
4.6.3	Evaluation of Compliance
4.6.4	Audit
4.6.5.1	Corrective and Preventative Action
4.6.5.2	Continual Improvement
4.6.6	Records
4.7	Management Review

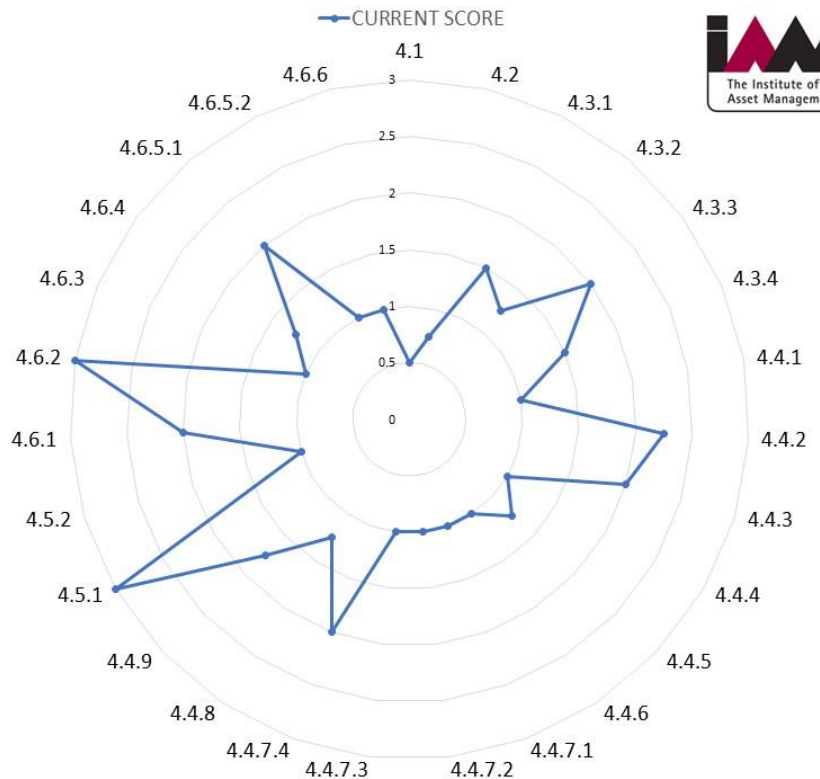


Figure 7: The District’s Current State Assessment, using the Institute of Asset Management Self Assessment Tool

### b. Future State Goals

The District’s AM Steering Committee identified short, medium, and long term goals that support the District’s objectives. The Steering Committee conducted a future state assessment aligned with these goals, using the same tool at the current state assessment. The AM Roadmap outlines the initiatives that should be deployed to deliver these goals and is explained in the roadmap section.

Short Term Priorities Achieved in Year 1 (2020)	Medium Term Goals Achieved in Year 3 (2022)	Long Term Goals Achieved in Year 5 (2024)
<ul style="list-style-type: none"> <li>Decision-Making Framework</li> <li>Governance Roles and Responsibilities</li> <li>Information Systems Strategy</li> </ul>	<ul style="list-style-type: none"> <li>Long Term Financial Plans</li> <li>Risk and Condition Assessments</li> <li>Data and Information Improvement</li> </ul>	<ul style="list-style-type: none"> <li>Customer Service Levels</li> <li>Public Consultation</li> <li>Scenario Modelling</li> </ul>

Figure 8: The District’s 5-year Short, Medium, and Long Term Goals for Asset Management

Figure 9 (A, B, C) below provides the summary results of the future state assessment.

PAS55 Clause No.

4.1	General Requirements
4.2	Asset Management Policy
4.3.1	Asset Management Strategy
4.3.2	Asset Management Objectives
4.3.3	Asset Management Plan(s)
4.3.4	Contingency Planning
4.4.1	Structure, Authority, and Responsibilities
4.4.2	Outsourcing of Asset Management Activities
4.4.3	Training, Awareness, and Competency
4.4.4	Communication, Participation, and Consultation
4.4.5	Asset Management Documentation
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4.4.7.2	Risk Management Methodology
4.4.7.3	Risk Identification and Assessment
4.4.7.4	Use and Maintenance of Asset Management Information
4.4.8	Legal and Other Requirements
4.4.9	Management of Change
4.5.1	Life Cycle Activities
4.5.2	Tools, Facilities, and Equipment
4.6.1	Performance and Condition Monitoring
4.6.2	Investigation of Asset-Related Failures, Incidents, and nonconformities
4.6.3	Evaluation of Compliance
4.6.4	Audit
4.6.5.1	Corrective and Preventative Action
4.6.5.2	Continual Improvement
4.6.6	Records
4.7	Management Review

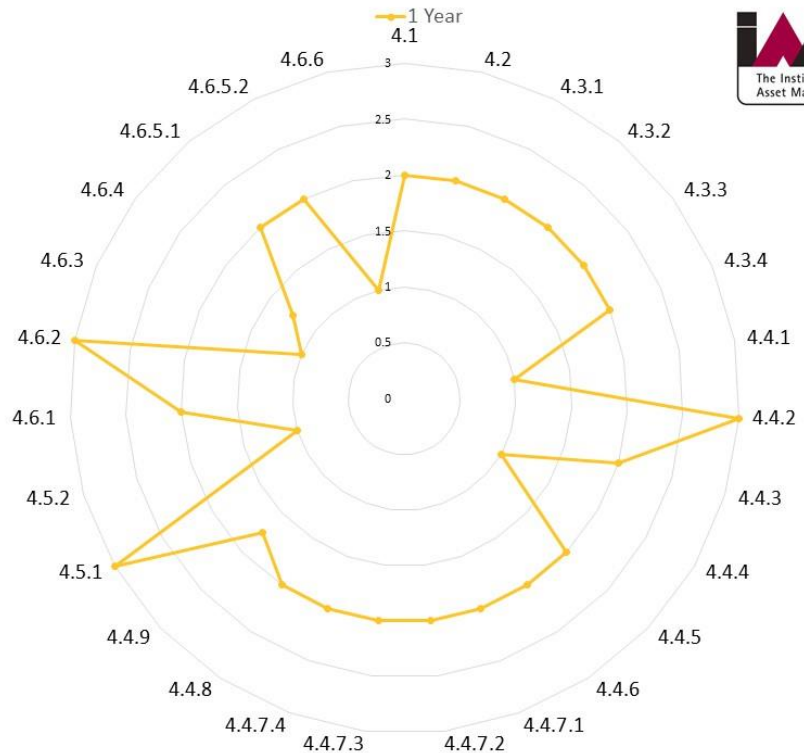


Figure 9A: The District's 1 year AM advancement objectives, using the Institute of Asset Management Self Assessment Tool

PAS55 Clause No.

4.1	General Requirements
4.2	Asset Management Policy
4.3.1	Asset Management Strategy
4.3.2	Asset Management Objectives
4.3.3	Asset Management Plan(s)
4.3.4	Contingency Planning
4.4.1	Structure, Authority, and Responsibilities
4.4.2	Outsourcing of Asset Management Activities
4.4.3	Training, Awareness, and Competency
4.4.4	Communication, Participation, and Consultation
4.4.5	Asset Management Documentation
4.4.6	Information Management
4.4.7.1	Rick Management Process(es)
4.4.7.2	Risk Management Methodology
4.4.7.3	Risk Identification and Assessment
4.4.7.4	Use and Maintenance of Asset Management Information
4.4.8	Legal and Other Requirements
4.4.9	Management of Change
4.5.1	Life Cycle Activities
4.5.2	Tools, Facilities, and Equipment
4.6.1	Performance and Condition Monitoring
4.6.2	Investigation of Asset-Related Failures, Incidents, and nonconformities
4.6.3	Evaluation of Compliance
4.6.4	Audit
4.6.5.1	Corrective and Preventative Action
4.6.5.2	Continual Improvement
4.6.6	Records
4.7	Management Review

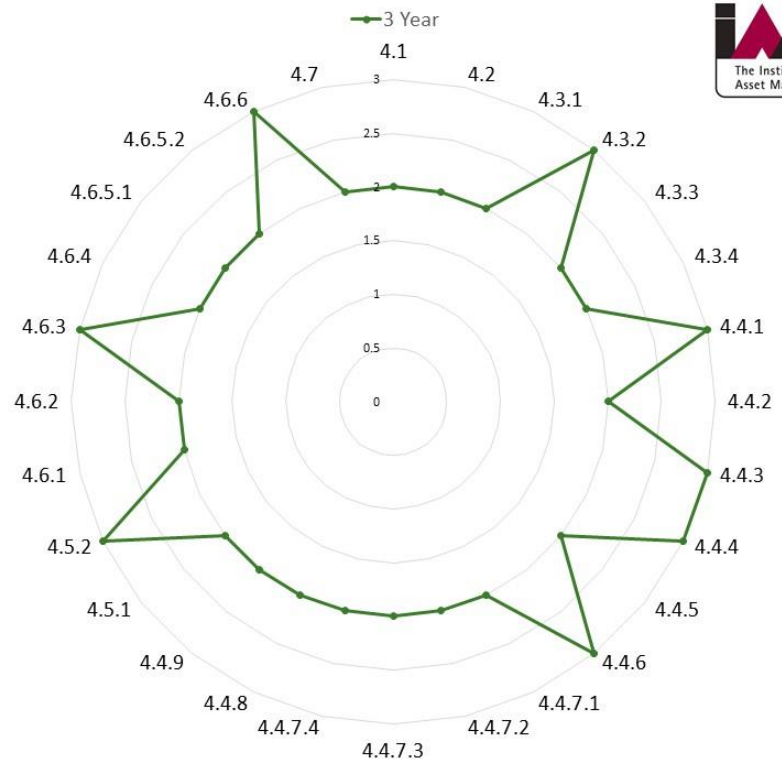


Figure 9B: The District's 3 year AM advancement objectives, using the Institute of Asset Management Self Assessment Tool

PAS55 Clause No.

4.1	General Requirements
4.2	Asset Management Policy
4.3.1	Asset Management Strategy
4.3.2	Asset Management Objectives
4.3.3	Asset Management Plan(s)
4.3.4	Contingency Planning
4.4.1	Structure, Authority, and Responsibilities
4.4.2	Outsourcing of Asset Management Activities
4.4.3	Training, Awareness, and Competency
4.4.4	Communication, Participation, and Consultation
4.4.5	Asset Management Documentation
4.4.6	Information Management
4.4.7.1	Rick Management Process(es)
4.4.7.2	Risk Management Methodology
4.4.7.3	Risk Identification and Assessment
4.4.7.4	Use and Maintenance of Asset Management Information
4.4.8	Legal and Other Requirements
4.4.9	Management of Change
4.5.1	Life Cycle Activities
4.5.2	Tools, Facilities, and Equipment
4.6.1	Performance and Condition Monitoring
4.6.2	Investigation of Asset-Related Failures, Incidents, and nonconformities
4.6.3	Evaluation of Compliance
4.6.4	Audit
4.6.5.1	Corrective and Preventative Action
4.6.5.2	Continual Improvement
4.6.6	Records
4.7	Management Review

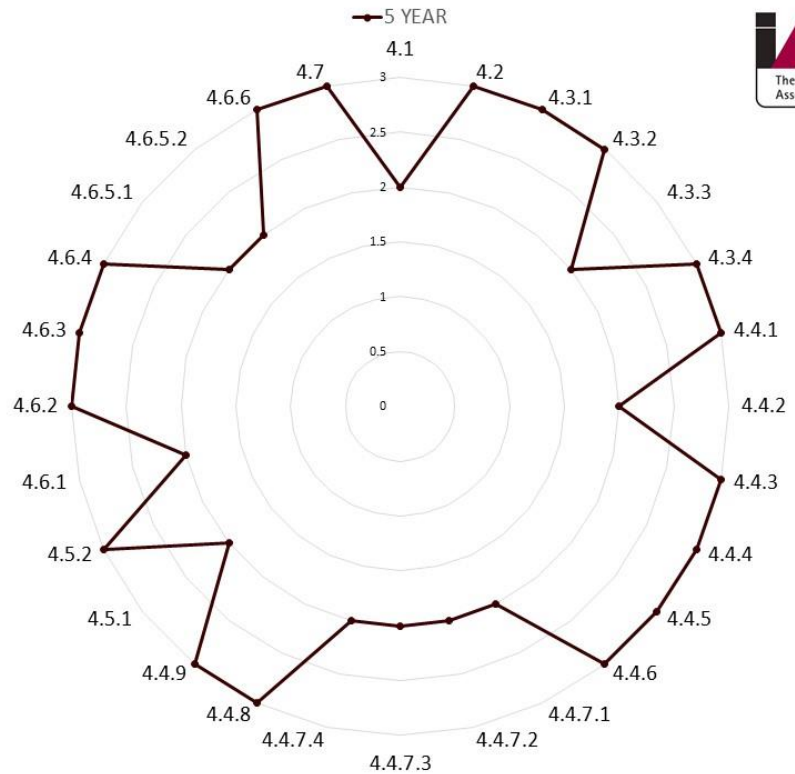


Figure 9C: The District’s 5 year AM advancement objectives, using the Institute of Asset Management Self Assessment Tool

Alignment with FCM AM Readiness Scale

Based on the District’s AM Roadmap and planned activities outlined in this AM Strategy being resourced and delivered, the District is forecasting the below improvement against FCM’s AM Readiness Scale.

Position:	Position in 2017	Current position 2019	Short Term Priorities Achieved in Year 1 (2020)	Medium Term Goals Achieved in Year 3 (2022)	Long Term Goals Achieved in Year 5 (2024)
Policy & Governance...	1	1	3	3	4
People & Leadership	1	1	2	4	5
Data & Information	1	2	2	3	3
Planning & Decision-Making	1	2	2	3	3
Contribution to AM Practice	1	2	2	3	3

Figure 10: The District’s Current and Future State Assessments aligned with FCM’s AM Readiness Scale (1= Awareness; 2 = Development; 3 = Competence; 4 = Optimization; 5 = Excellence)<sup>7</sup>

<sup>7</sup> Reference to FCM AM Readiness rating criteria: <https://data.fcm.ca/documents/tools/MAMP/mamp-asset-management-readiness-scale-en.pdf>

## 5. Asset Management Decision-Making

### a. Current Investment Planning Process

The District’s current investment planning process follows a traditional budgeting approach for many municipalities where projects are typically identified reactively, and budgets are set based on a mix of historic spending and anticipated short-term project demands.

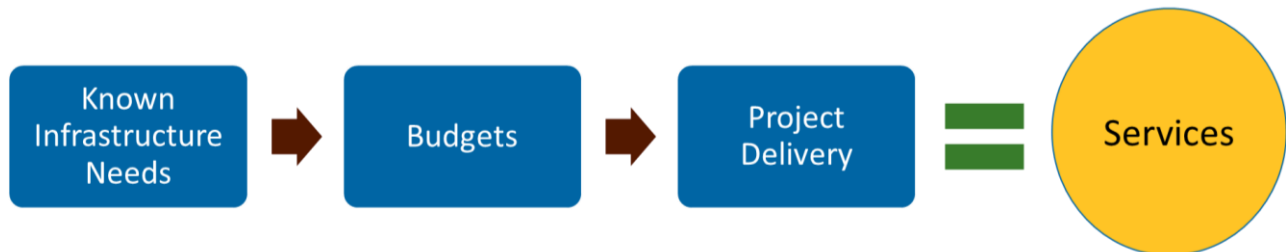


Figure 11: The District’s current decision-making process; service is reactively delivered at the end of the investment process

Strengths of the current process	Shortcomings with the current process
Staff observations and customer complaints are used to generate reactive projects	Service Levels is an unknown result that is reached at the end of the process
Masterplan information is used to generate project requirements for upcoming planned projects	Planned projects are often pushed off the budget due to reactive projects
Staff are considering risk when considering projects, and applying their judgement for prioritizing projects	Risk is not consistently applied across the organization
	Prioritization process lacks structure and consistency

Figure 12: The strengths and weaknesses associated with the current investment planning process

### b. Evolving the Investment Planning Process

As highlighted in the council-approved Asset Management Policy and shown in Figure 13 below, **responsible decision making** is a key principle for the District.

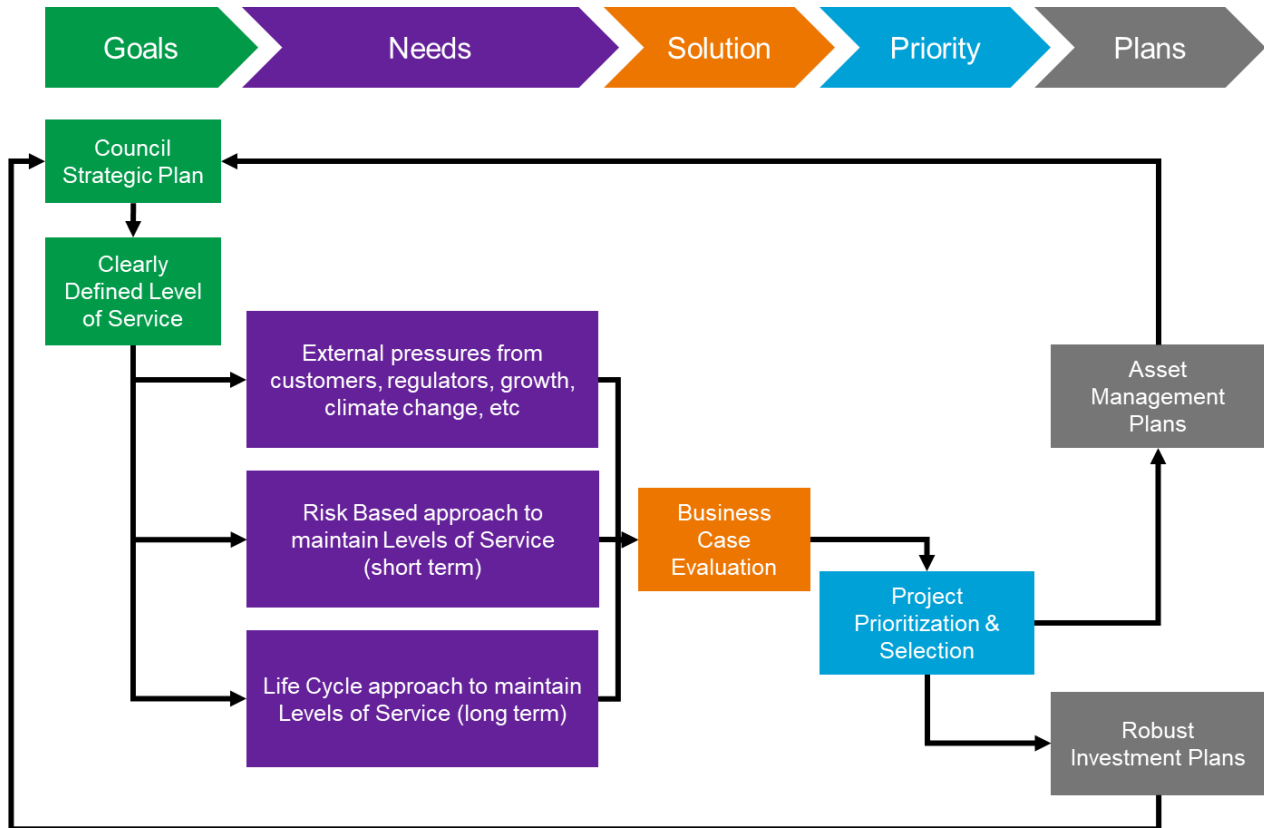
<p><b>4. Responsible Decision-Making.</b></p> <ul style="list-style-type: none"> <li>i. Make decisions on services and assets based on balancing level of service; risk; and whole-life cost - in alignment with the District’s vision, mission, values and objectives.</li> <li>ii. Integrate corporate, financial, risk, business, land-use, community, environmental, social, technical, and budgetary plans and perspectives, working across the organization’s departments.</li> <li>iii. Consider assets in their service-delivery context and interrelationships across the network and system to avoid isolated decisions.</li> <li>iv. Ensure that project business cases clearly identify the service need, considers options with appropriate whole-life costs and revenues (creation, operation, maintenance, replacement, decommissioning), and provides documented evidence for the final decision.</li> <li>v. Enable business processes and decision making by using service and asset data with supporting information systems.</li> <li>vi. Continually review and increase data quality to improve data-based decision making.</li> </ul>
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Figure 13: Extract of the District’s council-approved Asset Management Policy; Responsible Decision-Making.

The District’s AM effort will help improve decision making through better alignment with council objectives and organizational priorities (as defined by the Strategic Plan), a structured needs



identification and prioritization process, and by leveraging information and quality data from across the organization. Figure 14 below highlights the new decision-making process that the District is moving towards through the implementation of a several AM and other initiatives; the new process improves the connection between the District’s goals and needs, pushing projects through a structured investigation and prioritization process.



**Investment linked to Customer and Stakeholder outcomes**

Source: Adapted from Jacobs

*Figure 14: The District’s evolving Investment Planning Process*

**Goals:** The investment planning process begins with the clearly defined organizational goals and council priorities, as outlined in the Council Strategic Plan, that are directly tied to the AM objectives and Levels of Service (LOS) framework.

**Needs:** The next step of the process is to assess service needs against customer LOS to identify what improvements are required. The service needs are categorized in three groupings:

- external pressures on the District either directly from municipal customers or from the regulators that require a different LOS to be delivered;
- maintaining the existing asset base in the short term with an appropriate level of risk while delivering the existing LOS; and
- maintaining the existing asset base over the long term by planning for life cycle intervention and more significant capital maintenance projects on the assets.

**Solution:** The needs collected are then packaged into business cases which can be informed by additional feasibility studies.

**Priority:** Once all business cases are evaluated and preferred options are identified, they will be fed into a prioritization process. This will identify the relative priority of projects within budget constraints and in alignment with top level organizational priorities. The prioritization process will initially be focused on prioritizing capital projects. Operations and maintenance strategies and other non-capital options will be considered through various other work processes.

**Plan:** Following the review of the prioritized projects, an optimum affordable capital plan is prepared as well as planning other operational solutions that will be integrated into the budget process and included in the finance department's 5-year plan with funding sources being allocated. Through this structured and robust process, investment decisions will be directly linked to council priorities and LOS.

Regarding the budget allocation process, the District accounts for and budgets each utility (water, wastewater, electric) separately as well as the general fund. Each utility is looked upon as its own distinct operation with revenues and expenses being isolated within each utility budget and little-to-no cross utilization of funds.

**Execute:** Refers to implementing the interventions approved in the capital or operational plans and initiating the changes in the infrastructure, procedures, or service. As the process has maintained line of sight connection with LOS and service areas, these executed changes should have a direct positive impact on the LOS to which they are aligned.

### ***Decision-Making Criteria***

A key component of the evolving decision-making process and meeting the responsible-decision making policy statement is establishing criteria - points by which decisions can be judged and quantified. In establishing decision-making criteria, the District will integrate consistency and quantitative thinking into the decision-making process which can be standardized across the organization.

As part of the Business Case and Project Prioritization Process effort in the AM Roadmap, the District will establish a set of decision-making criteria. These criteria will consider:

1. Council's Strategic Plan - aligning with goals and principles set by the District's council;
2. Organizational Objectives - aligning with the future direction of the District; and
3. Best Practice Infrastructure Asset Management - aligning with other proven municipal efforts.

## **6. Asset Management Objectives and Performance Targets**

One of the fundamental components of AM is to "translate the organizational objectives into technical and financial decisions, plans and activities" (ISO 55000). Thus, the District's AM objectives are aligned with and support organizational objectives and priorities. AM objectives direct the development of the AM System, align with the strategies and plans for each service area and guide the allocation of AM resources.

### **Organizational Objectives in Council's Strategic Plan**

The council of 2018-2022 has compiled a list of key themes and supporting principles that they feel best address the expectations and concerns of the District, as noted in the 2019-2023 council Strategic Plan. These themes and principles will assist in the development and integration of AM activities (formulation of objectives, decision-making criteria, stakeholder engagement, etc.).

Council's Strategic Plan Elements	Connection with AM Objectives
<b>Infrastructure Investment</b> - ensuring stewardship of capital assets in a cost-effective manner through ongoing maintenance and replacement	Yes; AM is a key enabler to this element of council's Strategic Plan.
<b>Community Resilience</b> - utilizing resources to create and adapt programs and services that support a vibrant and liveable community	Yes; AM will factor resilience and optimal resource allocation into the decision-making process.
<b>Alternative Energy</b> - pursuing opportunities to generate energy that consider natural resources and the environment and provide revenue opportunities	Yes; AM will factor natural resources and the environment into business cases and the decision-making process.
<b>Good Governance</b> - enhancing processes and procedures that aid council in making decisions and resolutions on behalf of the community and its well being	Yes; AM will establish a management system across the organization that establishes standard processes and governance practices.
<b>Active Lifestyle</b> - ensuring community design and services that enhance inclusive, barrier free participation and promotion of physical activity and healthy lifestyles	Yes; AM will support the management of recreational assets, enabling the District to provide healthy and active living resources.
<b>Downtown Vibrancy</b> - collaborating to create a dynamic mix of residences, businesses, recreation, and culture as a community hub of Summerland	Yes; AM will support the investment and densification of the downtown hub, better leveraging the District's existing infrastructure.

Figure 15: The strategic themes outlined by the District's 2019-2023 Council Strategic Plan

### Asset Management Objectives

AM objectives have been developed based on the District's council objectives, council strategic themes, and industry best practice. To ensure AM objectives continue to align with council objectives, as it is recognized they will evolve as priorities of the organization and community change, the District will regularly monitor achievement of the AM objectives and performance of the AM System.

AM Policy Principles	Asset Management Objectives
Responsible Decision-Making	<ul style="list-style-type: none"> <li>• % of projects in capital plan that have a business case</li> <li>• % of business cases that have good quality data (to be defined by IS Strategy)</li> </ul>
Service Delivery	<ul style="list-style-type: none"> <li>• % of departments that have a defined LOS Framework</li> <li>• % of departments that have engaged in public consultation on LOS</li> </ul>
Long-Term Sustainability	<ul style="list-style-type: none"> <li>• % of asset base with life cycle costing information captured in an information system</li> <li>• % of asset base that features in the long-term financial plan</li> <li>• % of business cases that feature financial, social, cultural, and environmental aspects</li> </ul>
Risk Considerations	<ul style="list-style-type: none"> <li>• % of services and assets evaluated through a risk assessment</li> <li>• % of critical assets with comprehensive engineering-based condition assessments completed (frequency, scope, and level of detail will be relative to each asset)</li> <li>• % of overall asset base with condition estimate (actual or aged based)</li> <li>• Preventative - reactive comparison: aggregate &amp; monitor % of maintenance budget that is for preventative maintenance vs. % of maintenance budget that is allocated to reactive maintenance</li> </ul>
Change and Resiliency Preparations	<ul style="list-style-type: none"> <li>• % of business cases that have:               <ol style="list-style-type: none"> <li>A. considered climate change impacts (forecasts on service levels);</li> <li>B. climate adaptation methods; and</li> <li>C. forecast future growth and demands</li> </ol> </li> </ul>

Systematic Improvement	<ul style="list-style-type: none"> <li>• % of data sets/layers that have clear &amp; defined roles &amp; responsibilities</li> <li>• (Yes/No) AM Steering Committee conducting annual review of AM roadmap and implementation of the AM system</li> <li>• (Yes/No) Staff periodically reporting to council on AM System</li> </ul>
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*Figure 16: The Asset Management Objectives developed by the AM Steering Committee*

The District has strived to make these objectives Specific, Measurable, Achievable, Realistic and Timebound (SMART). These objectives can be used to gain an indication of the effectiveness and success of the AM System throughout the implementation of the AM Roadmap. Given this is the first time this is being done at the District, it is recognized that the objectives might need to be adjusted and time will be needed to baseline the measures and set appropriate targets as highlighted in the AM Roadmap section and in Figure 17 below, and this should work be furthered during the Annual AM Review process.

Phase 1	Phase 2	Phase 3
Draft AM objectives	Adjust AM objectives if necessary  Baseline data in AM objectives  Set target levels for AM objectives  Adjust AM Roadmap as required	Evaluate progress against AM objectives  Adjust AM Roadmap as required  Adjust AM objectives and/or targets if necessary

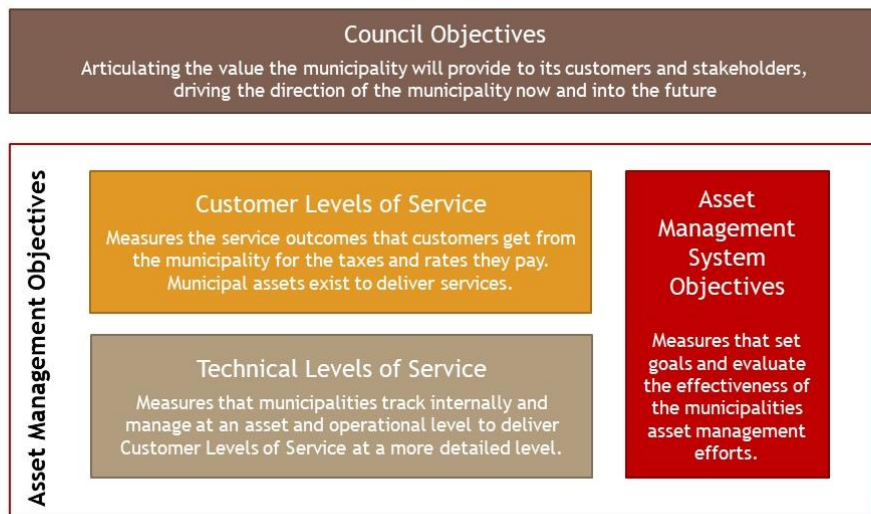
*Figure 17: Process to progress the AM objectives during the Annual AM Review*

### a. Levels of Service

Assets exist to deliver value to customers and communities. In the municipal context, this value to the community is referred to as Levels of Service (LOS). LOS frameworks help the organization measure what the community is receiving and how effective they are at delivering those services. The key is understanding the difference between the Customer Levels of Service that the community directly experiences, and the Technical Levels of Service measures that are important to manage the District’s services internally as an organization but are too detailed for the community to understand and connect with. Armed with this information, along with the cost of delivering service, the District can get into more informed discussions with the community about what they really want from their services and more importantly what they are willing to pay for.<sup>8</sup>

<sup>8</sup> Source: Canadian Network of Asset Managers AM101 Booklet, 2019

## Level of Service Framework and AM Objectives for Municipalities



Source: icInfrastructure

Figure 18: The District’s Level of Service Framework

As noted in the AM Roadmap section, the District will progress their LOS Framework as part of their long-term goals. The District recognizes that to do this effectively, they will need better data and information on their services and assets. Detailed objectives in relation to the performance of individual assets and services will be described in the LOS section of service area asset management plans (AMPs).

## 7. Asset Management System

The Asset Management System (as defined in ISO 55000) is a “management system for asset management” - a set of interrelated and interacting elements of an organization, whose elements include the AM policy and AM objectives, and the processes needed to achieve those objectives. In this context, the elements of the AM System should be viewed as a set of tools, including policies, plans, business processes, and information systems, which are integrated to ensure that the AM activities will be delivered.

*“The asset management system is not specifically an IT system. It is the municipality’s broad collection of interconnected processes and documentation designed to effectively direct and deliver the discipline of asset management. This system may be supported by various tools and IT systems.” -FCM Handbook*

### a. Asset Management Framework Overview

The AM Framework shows how the various parts of the AM System interconnect and work together to achieve municipal goals through the management of infrastructure. The District has adapted the IAM’s AM Framework as illustrated in Figure 19 below. The graphic illustrates how external factors influence the development of council’s strategic plan, which drives AM strategy and planning. The dotted-box indicates the scope of the District’s AM efforts, with the boxes highlighting the components of the AM System that are being developed.

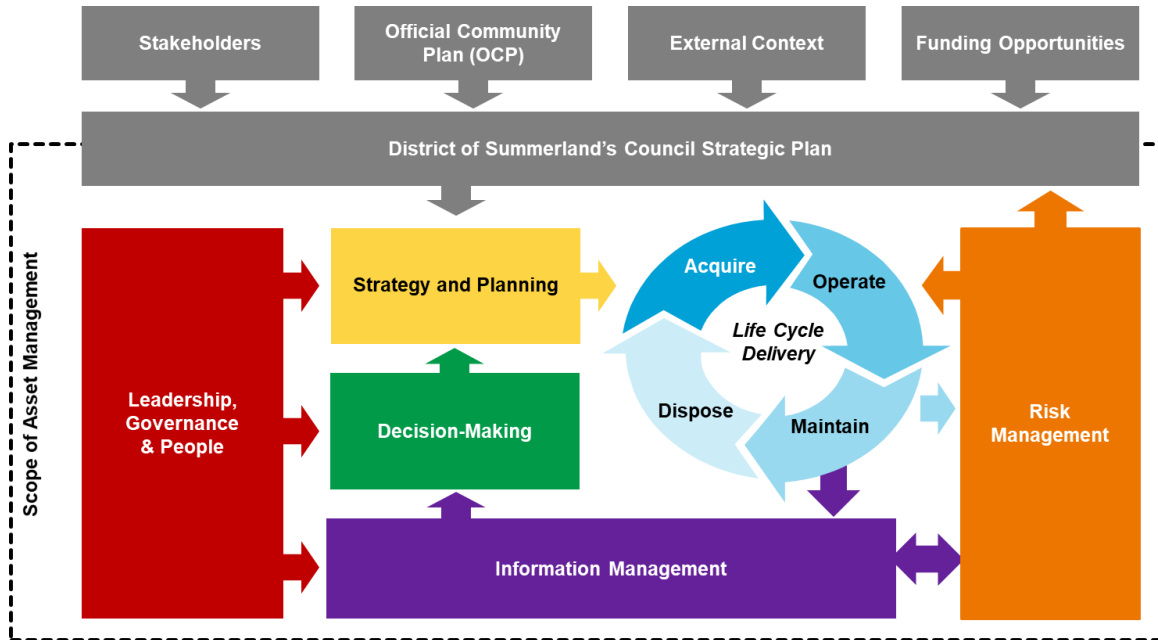


Figure 19: The District of Summerland’s Asset Management Framework (adapted from the Institute of Asset Management’s AM Anatomy 2012 Framework)

### b. Asset Management Processes

As part of developing the District’s AM system, several key processes and initiatives need to be progressed within the framework diagram as listed in Figure 20 below. These are plotted out in the AM Roadmap later in the strategy.

Theme	Process / Practice	Description / Scope	Status / Timeline
Leadership, Governance & People	AM Assessment, Policy, Strategy, Governance, Roadmap	The District has developed these key elements of AM - including this Strategy and the AM System - that outline the District’s AM efforts and direction for the future.	Completed 2019
	Annual AM Review	The AM Steering Committee will conduct an annual AM review, facilitated by the AM Champion and AM Program Manager, scheduled for July each year. The review will form the input of report submitted to council prior to the budget process on the District’s AM efforts.	Starting 2020
	Change Management Framework	The District will establish a Change Management Framework that will support initiatives to develop a Change Management Plan as part of their planning to understand the organization and staff’s readiness for Change, and establish a Stakeholder Map and Internal Communications Plan.	2020
	AM Training	The District has already undertaken AM training at different levels with several staff groups and council, and this is to continue as required. In the future, the District may consider utilizing a competency framework.	Starting 2021, Ongoing
Strategy and Planning	AM Investment Plan (Life Cycle Planning)	The District is completing life cycle plans and models to forecast long-term maintenance and renewal needs of the existing asset base.	To be Completed 2019
	AM Financial Plan	The District is completing several scenarios on how to approach and manage the infrastructure deficit.  In the future, these will be incorporated into the Long Term Financial Plans.	To be Completed 2019

	Department Masterplans	These are long range plans that determine short, medium, and long term upgrades required to meet the demands of current and future populations. They identify the cost and priority of capital upgrades projects. The District already has Masterplans, and they are updated every 5-10 years for each department.	Ongoing
	Investment Planning Process	Following the structure outlined in the Decision-Making section of the AM Strategy, the investment planning process will be evolved to better integrate long-term and short-term needs into the budget process.	Pending 2019
	Asset Management Plans	Following the structure outlined in the AMP section of the AM Strategy, service area departments will development AMPs that collate asset information, service targets, improvement plans, and financing strategies.	2021 ongoing
	Tangible Capital Asset Restructuring	Rebuild the Tangible Capital Asset register based on the latest asset inventory, estimating historical values and updating financial statements.	2021 / 2022
	Long Term Financial Plans	Combines financial forecasting and strategizing to adjust to future demand and infrastructure needs. Financial forecasting is the process of projecting revenues and expenditures, using assumptions about economic conditions, future spending scenarios, and other salient variables.	2022 ongoing
	Scenario Modelling	Establish scenario models for the District that incorporate growth, infrastructure, climate change, and financial challenges for the organization. This analysis will be used for the Public Consultation work in 2024.	2023
<b>Decision-Making</b>	Business Case Template	Inline with the evolving Investment Planning Process, the Project Business Casing process will be improved. This will involve reviewing the current process and template, improving the process and template, and training staff on how to use it. This will be an input to the Project Prioritization process.	Pending 2019
	Project Prioritization	Inline with the evolving Investment Planning Process, a Project Prioritization mechanism will be developed. This will include developing a process and prioritization model/tool. This will be an input to the Investment Planning / budgeting process.	Pending 2019
	Customer Level of Service	LOS frameworks help the organization measure what the community is receiving and how effective they are at delivering those services. The District will establish Customer Level of Service measures which align with council and AM objectives across all the service areas. This will connect with the future Technical Level of Service framework to be developed.	2022
	Integrating Risk Framework	Once the Corporate Risk Framework (outlined below) is developed, the District will need to formally integrate it into the Decision-Making process. This could involve updating the Business Case process/template and Project Prioritization process/model.	2023
	LOS Public Consultation	Once the Customer Level of Service and Scenario Modelling initiatives are completed, the District can engage the public in a consultation exercise to better understand the services and priorities they are willing to pay for. This will help refine the District's Project Prioritization efforts.	2024
<b>Risk Management</b>	Condition Assessment Framework	Following the structure outlined in the Condition Assessment section of the AM Strategy, the District will develop a Condition Assessment Framework that will enable improved communication with stakeholders, and comparisons between different asset classes. This will include developing a mapping tool to convert accurate engineering and industry standard assessments for specific asset classes into the higher level one-to-five scale. It should be noted current condition assessment approaches should be continued as per the status quo until adjustments are put forward.	2020 / 2021
	Condition Assessment Program	Following the Condition Assessment Framework, service areas will conduct condition assessments inline with the framework, on	2021 onwards

		a timeline and frequency that is appropriate for the assets and departments.	
	Root Cause Analysis Process	Root cause analysis (RCA) is a method of problem solving used for identifying the root causes of faults or problems. The District will develop a basic RCA process and tracking system that can be integrated into the work management process for operations and maintenance. This will include training staff with the new process to support implementation.	2021 / 2022
	Corporate Risk Framework	Following best practice in the municipal sector and ISO 31000 (the international risk management standard), develop a Corporate Risk Framework that will enable risk to be applied consistently at different levels and in different departments across the District.	2023
<b>Life-Cycle Delivery</b>	Upload Asset Life-Cycle Data	From the AM Investment Plan (Life Cycle Planning), the District has a high-level asset inventory with remaining service life estimates. The data must be revisited and refined in order to extrapolate inferences used to identify the future life cycle activities for the asset base.	2020
	Work Management Process Review	Through the AM Assessment it was highlighted the District needs to review their work management processes to be able to better plan and track maintenance activities, both for reactive and planned maintenance. This initiative is to review the current process and develop a future process, which may include a software/hardware solution.	2021
	Work Management Process Improvement Implementation	From the Work Management Process Review, carry out the improvement implementations identified in developing the future process, currently unknown. The time frame could be longer if a larger software/hardware solution is being considered.	2021 / 2022
	Technical Level of Service	Connecting with the Customer Level of Service framework, identify Technical measures that relate to the assets and operations side of the District that drive the customer facing measures.	2023
	Maintenance Optimization	Through the implementation of improved Work Management processes, AMPs, and Root Cause Analysis, the District will have an opportunity to optimize maintenance activities across the departments - understanding what the optimum maintenance schedules should be for assets is important for long term sustainable service.	2024
<b>Information Management</b>	Asset Inventory	Through the AM Investment Plan, the District validated and updated the Asset Inventory for the organization.	Pending 2019
	Information Systems Strategy	Aligning with the Information Management section of the AM Strategy, the District is developing an IS Strategy to collate and articulate the organization's IS requirements and roadmap for the future. This will include AM information requirements, data quality considerations, and data standards, and will establish clear data owners.	2020
	Implement Information and Systems Improvements	From the IS Strategy, carry out the improvement implementations identified, currently unknown.	2020 ongoing

Figure 20: The District's key AM processes and initiatives to be progressed



### c. Risk Management

Risk is an important tool for helping the District to prioritize investments on its existing asset base. As per the ISO 31000 Risk Management standard, level of risk is defined as a function of likelihood (what are the chances that an event will happen) and consequence (if an event happens, how bad will the effects be). What is the risk of not repairing that bridge now? What is the risk of not upgrading the storm drains? What is the risk of delaying replacing the arena roof?<sup>9</sup>

$$\text{Risk} = \text{Likelihood} \times \text{Consequence}$$

As part of the longer-term AM Roadmap, the District plans to develop a comprehensive Corporate Risk Management Framework to govern the application of risk consistently across the organization. In the short term however, as an interim application, risk will be incorporated into the Project Business Case and Project Prioritization process.

Of note, Risk and Criticality are different, but often confused. High criticality assets are those with high ‘consequence’ of failure - criticality shouldn’t account for ‘likelihood’.

### d. Condition Assessments

Understanding the condition of the assets that the District is responsible for is an important component of AM, and municipalities across Canada are moving to utilize a consistent five-point scale when talking generally about their asset bases: very poor, poor, fair, good, and very good.<sup>10</sup>

Condition Grade		Description
1	Very Good	<b>Very Good Condition</b> Only normal maintenance required
2	Good	<b>Minor Defects Only</b> Minor maintenance required (5%)
3	Fair	<b>Maintenance Required to Return to Accepted Level of Service</b> Significant maintenance required (10-20%)
4	Poor	<b>Requires Renewal</b> Significant renewal/upgrade required (20-40%)
5	Very Poor	<b>Asset Unserviceable</b> Over 50% of asset requires replacement

Figure 21: International Infrastructure Management Manual, Condition Rating Model - (V3.0, 2006)<sup>11</sup>

It should be noted that this is not intended to replace specific industry or asset class condition scales - these should still be used. The Very Poor to Very Good five-point scale should be overlaid onto the asset specific scales for communication and comparison purposes for the benefit of stakeholders who would not be familiar with industry or engineering focused measures. For example, Pavement Condition Index (PCI) should still be used, but there should be a mapping table for a PCI score to be converted into the 1-to-5 score.

In the absence of actual condition assessment data (i.e., staff surveys or engineering assessments), the age of the asset against its expected service life can be used as a proxy for condition as per the reference table in Figure 22.<sup>12</sup>

<sup>9</sup> Canadian Network of Asset Managers, AM101 Booklet, 2019

<sup>10</sup> Canadian Network of Asset Managers, AM101 Booklet, 2019

<sup>11</sup> [http://openlibrary.org/books/OL21245688M/International\\_infrastructure\\_management\\_manual](http://openlibrary.org/books/OL21245688M/International_infrastructure_management_manual)

<sup>12</sup> Canadian Infrastructure Report Card (CIRC), 2006

Condition Grade	% Estimated Service Life remaining on Asset
Very Good (1)	80-100%
Good (2)	60-80%
Fair (3)	40-60%
Poor (4)	20-40%
Very Poor (5)	< 20%

Figure 22: Using Age as a proxy for Condition conversion scale

Understanding the estimated remaining life of an asset - in the District's infrastructure context this is captured in years - is important as this gives an understanding of when assets may have to be replaced, upgraded, and disposed of. This is different to the engineered design life, as it often doesn't take account of operating conditions, and the actual remaining life could be better or worse.

Of note, Condition is not the only factor that influences Likelihood. As the District's Risk maturity improves, additional factors will be incorporated in the asset management system and corporate risk effort.

### e. Information Management

Good information is necessary to make good decisions. The AM System not only includes people and processes, but also includes all software applications, templates, and analysis tools used by the District to support asset planning, delivery, monitoring, and improvement. Tools will vary according to need and may be updated and changed as new technology becomes available or as the District's needs change over time. Data and technology will be used to make better decisions about the District's assets and to meet the goals of the AM objectives.

The District recognizes that information management and data quality is a challenge for the organization and it is highlighted in the AM Roadmap as a key improvement initiative. The District already has a detailed inventory of its assets and is now considering through its AM efforts how best to leverage this data. The District is developing an Information Systems (IS) Strategy that will fully detail and explain the content highlighted in this section.

Some of the software used to support asset management at the District is provided in Figure 23 below. As part of the IS Strategy, the District is considering what additional information systems might need to be procured to support asset management efforts.

Software	Description
SQL Server	Stores data in multiple database instances by software or theme such as FDM (firehall), GIS (Geographic), and Vadim (Financial)
Vadim/iCity	Financial Software
ArcGIS Enterprise	A full-featured mapping and analytics platform that includes a powerful GIS server plus dedicated web-based GIS infrastructure to organize and share your work. <sup>13</sup>
Collector for ArcGIS	Allows for asset data to be collected and edited in the field (data based)
Survey 123	Allows for asset information (e.g., condition assessment data) to be collected in the field (form based)

<sup>13</sup> Definition from Esri: <https://www.esri.com/en-us/arcgis/products/arcgis-enterprise/overview>

Operations Dashboard	Visually displays asset attribute data
Workforce for ArcGIS	Ability to create and assign work orders to field staff
ArcGIS Pro/ArcMap	Desktop software used to create maps and map applications
Portal for ArcGIS	Stores mapping and mobile applications
AutoCAD	Drafting software used for base plans
Veeam	Backup software (subject to change)
Lansweeper	Help desk system
SharePoint Intranet (in early development)	A web interface to inform staff, provide knowledgebase articles, and provide an access location to view maps and apps with asset data

Figure 23: List of the District’s Information Systems that contribute to AM efforts

The District will manage and maintain information and systems by:

1. Establishing data standards that define what good data is for the District;
2. Establishing data governance and owners, clearly highlighting who is responsible for the different data sets and systems; and
3. Establishing data quality control and correction processes to continually improve data quality.

Adhering to these practices will allow for transparency, integration and accuracy to be present within the District’s Information System. This will benefit AM by allowing for more effective use of staff time, data confidence, and minimal technological disruptions.

### f. Asset Management Plans

An Asset Management Plan (AMP) is defined as “a plan developed for the management of one or more infrastructure asset classes with a view to operating, maintaining, and renewing the assets within the class in the most cost-effective manner possible, while providing a specific level of service.”

AMPs document a framework for achieving the strategic goals within each department, and ultimately the District’s strategic goals, by focusing on LOS, asset life cycle planning, and the resulting investment requirements. As highlighted in Figure 4 earlier in the document, AMPs, Masterplans, and Long Term Financial Plans need to be connected.

As of 2019, the District does not have any AMPs, with the focus having been on developing Masterplans, however as highlighted in the AM Roadmap, AMPs will be developed for the District’s service areas and aligned with the budgeting structure as per Figure 24 below. AMPs have evolved to become very useful planning and communication tools for communities - they bring together the components of service needs, infrastructure needs, and financial needs into a story that can be understood by staff, management, elected officials, and the community. Once developed, AMPs should be updated on a five-year cycle.

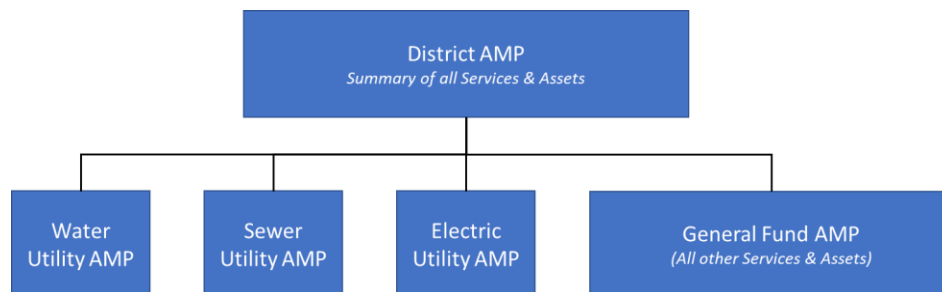


Figure 24: An overview of the District’s Asset Management Plans

It is important that the District’s various AMPs follow the same structure, provide the same key content, and provide data in a way that allows the different service areas to be compared. Figure 25 below outlines the District’s AMP template that all service areas will need to follow in developing their documents. As per the AM Governance structure outlined in this Strategy, it is the accountability of the service area manager to get the AMP written for their service area, with support from staff trained in asset management throughout the District.

#	Section Title	Content
1	Executive Summary	This section is typically the final section to be prepared, and provides a succinct overview of the plan.
2	Introduction	This section provides the context of the organization and the department. Clear connection between infrastructure, services, and stakeholders, as aligned with the organization’s objectives. Sets the scope of the plan including the services and assets included, and the timelines covered (at a minimum AMPs should be over a ten-year period, with best practice covering the lifecycle of the assets).
3	State of Local Infrastructure	This section provides a summary of the assets within the department and include as a minimum asset inventory, location, condition, and replacement value. This section should align with the District’s Condition Assessment and Risk Management frameworks.
4	Expected Level of Service	This section is supported by documentation that specifies which performance measures are associated with which assets, current performance, future demands, and expected performance over the planning period, as well as all assumptions. One way to link performance measures and current/expected performance to the relevant assets is through the asset inventory database. This section should align with the District’s LOS Framework. Both customer LOS and technical LOS will be identified.
5	Asset Strategy	This section covers the set of planned actions that will enable the assets to provide the desired LOS in a sustainable way, while managing risk, at the lowest lifecycle cost (e.g., through preventative action). Risk Management will include identifying critical assets, assessing risks and determining service and risk trade-offs. Lifecycle management will cover operations/maintenance, renewals/replacements, new/upgraded assets and asset disposal.
6	Financing Strategy	This section outlines the financing required to deliver the Asset Strategy outlined in the previous section. Having a financial plan is critical for putting an AMP into action. In addition, by having a strong financial plan, communities can demonstrate that they have made a concerted effort to integrate AM planning with financial planning and budgeting, and to make full use of all available infrastructure financing tools. It should also highlight constraints imposed by budget limits and explain the infrastructure deficit that the community might be exposed to.
7	Continual Improvement	This section highlights the department’s understanding of their current level of AM maturity and their next steps for improving their business practices and information to enable more effective decisions with regards to services, assets, and risk.

Figure 25: The District’s Table of Contents for Asset Management Plans<sup>14</sup>

### g. Department Masterplans

Masterplans are long range plans that forecast major shifts to the dynamics of the asset base; identifying the optimal short, medium- and long-term upgrades required to meet the demands of current and future populations. They contain the infrastructure requirements to meet the District’s

<sup>14</sup> Adapted from the Ministry of Ontario’s Building Together - Guide for Municipal Asset Management Plans;

More information on the contents and details of each section can be found in the Ministry of Ontario’s Building Together - Guide for Municipal Asset Management Plans.

<https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plan>

future population demands aligning with the Official Community Plan. Figure 26 outlines the District’s typical Masterplan content that each department develops.

#	Section Title	Content
1	Executive Summary	This section is typically the final section to be prepared and provides a succinct overview of the plan.
2	Introduction	This section provides the purpose and objective of the master plan along with an overview of the infrastructure assets for which the master plan is being prepared for and the services they provide.
3	Criteria	This section provides a summary of any issues, policies, guiding principles, design criteria or assumptions that influence how the infrastructure is operated, maintained or managed.
4	Existing State	This section outlines the existing infrastructure assets (location, condition, status, etc.) and describes any issues, shortfall or challenges currently experienced with the infrastructure assets and services.
5	Future State	This section estimates the future demands on the infrastructure assets and services, that are assumed to occur over the next 20 year timeframes. Typically these are divided into short (0-5 years). Medium (6-10 years) and long (11-20 years) term horizons. Future impacts and subsequent actions, improvements or upgrades to accommodate the future demands are identified.
6	Implementation Strategy	This section outlines the recommended projects, order of priorities, costs and possible funding strategies to implement the actions identified.
7	Summary	This section highlights the conclusions and recommendations.

Figure 26: The District’s Table of Contents for Masterplans

### h. Long Term Financial Plans

Long-term financial planning combines financial forecasting with strategizing - balancing the service demands and infrastructure requirements from the Masterplans and Asset Management Plans against the District’s revenues and expenditures over a long time period. It is a highly collaborative process that considers future scenarios and helps governments navigate challenges. Long-term financial planning works best as part of an overall strategic plan. Financial forecasting is the process of projecting revenues and expenditures over a long-term period, investigating alternative funding sources, using assumptions about economic conditions, future spending scenarios, and other salient variables. A Long Term Financial Plan should include an analysis of the financial environment, revenue and expenditure forecasts, debt position and affordability analysis, strategies for achieving and maintaining financial balance, and plan monitoring mechanisms, such as scorecards of key indicators of financial health. Figure 27 highlights the steps the District will take to develop Long-Term Financial Plans. For more information please review the Government Finance Officers Association’s Guide for Developing Long-Term Financial Plans.

#	Step	Description
1	Mobilization Phase	The mobilization phase prepares the organization for long-term planning by creating consensus on what the purpose and results of the planning process should be. This Section will include an alignment of resources, preliminary analysis, identification of service policies and priorities, validation of financial policies, defined purpose and scope of planning.
2	Analysis Phase	The analysis phase is designed to produce information that supports planning and strategizing. The analysis phase includes the projections and financial analysis commonly associated with long-term financial planning. This section will include a review of the Districts information gathering efforts, a comprehensive list of trends and their projections, and an analysis of barriers to financial stability.
3	Decision Phase	After the analysis phase is completed, the government must decide how to use the information provided. Key to the decision phase is a highly participative process that involves elected officials, staff, and the public. The decision phase also includes a culminating event where the stakeholders can assess the planning process to evaluate whether the purposes for the plan described in the

		mobilization phase were fulfilled and where a sense of closure and accomplishment can be generated. Finally, the decision phase should address the processes for executing the plan to ensure tangible results are realized.
4	Execution Phase	After the plan is officially adopted, strategies must be put into action (e.g. funding required in achieving goals). The execution phase is where the strategies become operational through the budget, financial performance measures, and action plans. Regular monitoring should be part of this phase.

Figure 27: Steps for the District to develop Long-Term Financial Plans<sup>15</sup>

## 8. Asset Management Roadmap

Building on the successes of the asset management efforts to date, the District has identified key initiatives in order to advance the AM System and deliver the District’s short, medium, and long-term AM goals over the next 5 years as outlined in Figure 28 below. This is a long-term journey for the District and changes will be made to the organization in a sustainable way.

**Roadmap acronym guide:**

- AM - Asset Management
- TCA - Tangible Capital Assets
- LOS - Level of Service
- RCA - Root Cause Analysis
- IS - Information Systems

As the implementation of these initiatives unfolds, the District will review progress against the AM Roadmap, considering the short, medium, and long term goals, as well as council objectives and AM objectives, and adjust the AM Roadmap as required. The District will ensure that these changes are effectively communicated and understood by the appropriate stakeholders.

<sup>15</sup> Adapted from the Government Finance Officers Association - Guide for Developing Long-Term Financial Plans

<https://www.gfoa.org/long-term-financial-planning-0>

## District of Summerland – Asset Management Roadmap

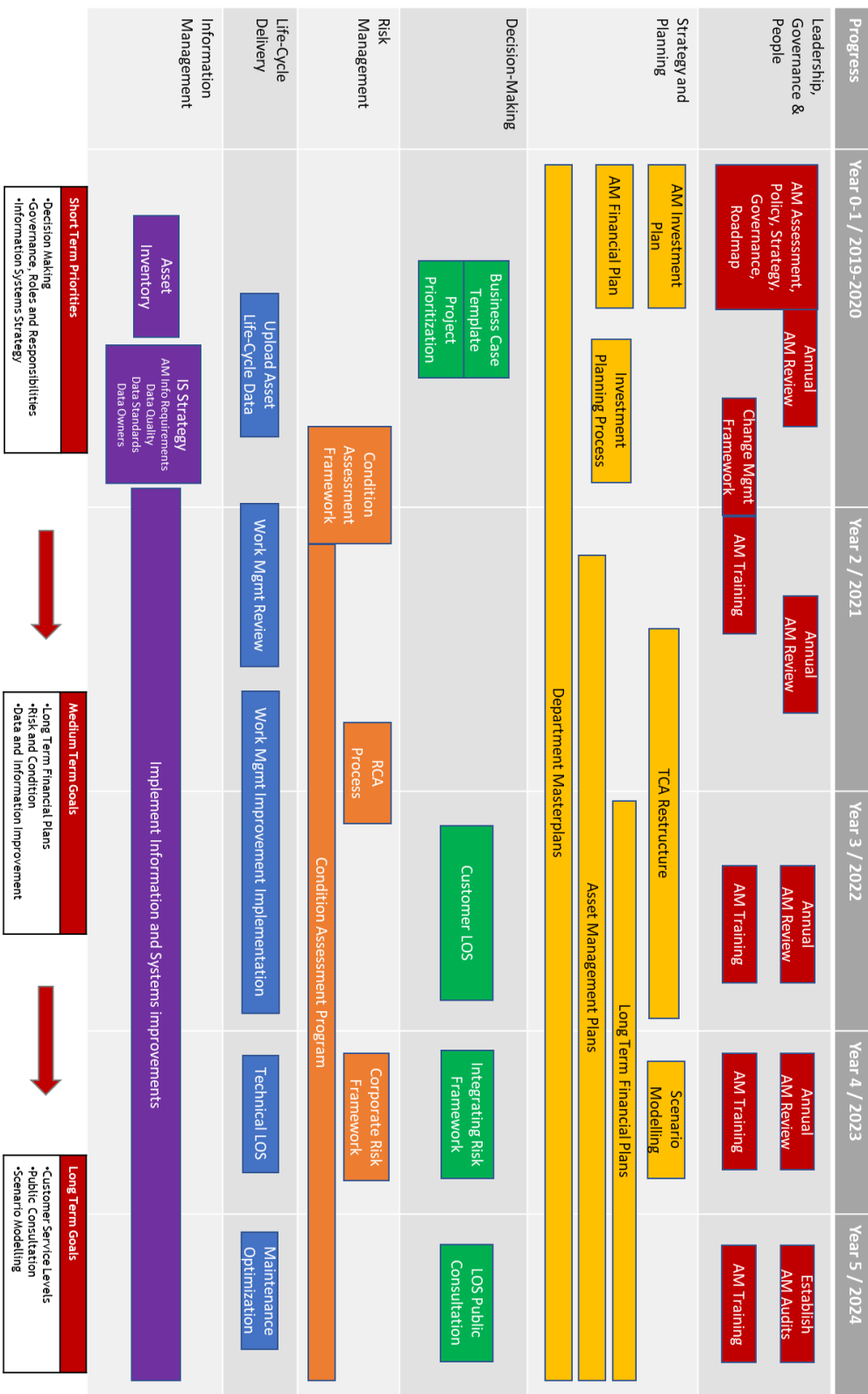


Figure 28: The District’s 5-year Asset Management Roadmap

## 9. Asset Management Governance

A suitable governance structure is a key element for the successful implementation, improvement, and sustainment of an AM System. Good governance will bring clarity to accountability and responsibility, provide leadership and direction, will empower staff, manage conflict resolution, as well as foster program advocacy. An effective structure will see progress, continuous improvement, and risk mitigation. Figure 29 below illustrates the District’s intended AM Governance Structure that will be implemented soon.

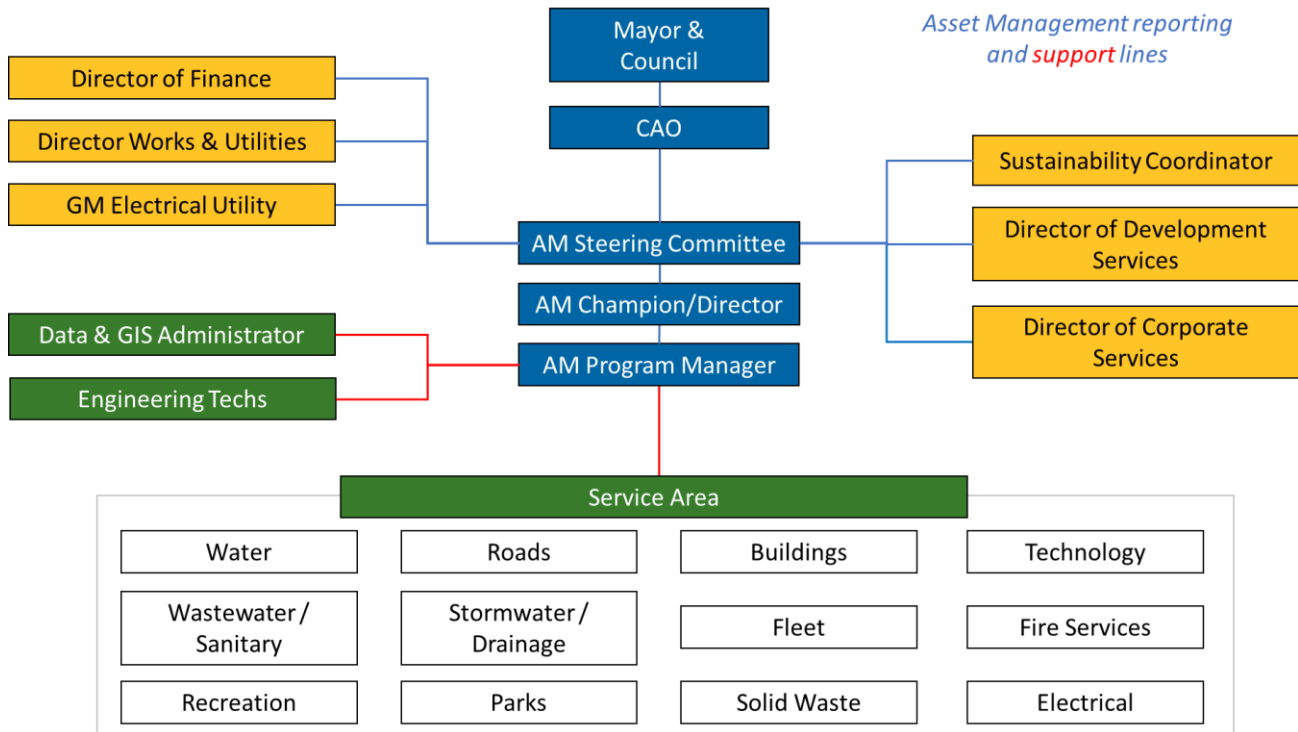


Figure 29: The District’s Asset Management Governance Structure



### a. Roles and Responsibilities

Figure 30 below provides an overview of the District's roles and responsibilities as they relate to the AM system.

Role	Description
Council & Mayor	<ul style="list-style-type: none"> <li>• Approve the AM Policy.</li> <li>• Evaluate the annual AM review.</li> <li>• Provide support in meeting the AM objectives through budgeting, strategic planning, advocacy, and partnerships.</li> </ul>
Chief Administrative Officer (CAO)	<ul style="list-style-type: none"> <li>• Implement the AM Policy, AM Strategy, and support the AM System.</li> <li>• Establish an AM Steering Committee, with representation from across the District; and appoint an AM Champion to serve as chair of the Steering Committee.</li> <li>• Ensure that staff are provided with sufficient resourcing, financial support, training, and tools to manage risk and support the elements of sustainable service delivery.</li> <li>• Commit to the implementation and systematic improvement of AM practices, processes, and tools to support the achievement of the District's organizational objectives.</li> <li>• Report to Mayor and council on results of annual AM review.</li> </ul>
<b>AM Steering Committee</b> <ul style="list-style-type: none"> <li>○ CAO</li> <li>○ AM Champion</li> <li>○ AM Program Manager</li> <li>○ Sustainability/ Alternative Energy Coordinator</li> <li>○ Director of Finance</li> <li>○ Director of Corp Services</li> <li>○ Director of Works &amp; Utilities</li> <li>○ GM Electrical Utility</li> <li>○ Director Development Services</li> </ul>	<ul style="list-style-type: none"> <li>• Advocate for AM within the organization, leading by example and setting expectations.</li> <li>• Provide appropriate and timely support to the AM Champion.</li> <li>• Make recommendations on, and manage, the content of the AM Policy and AM Strategy, implementing the AM Roadmap</li> <li>• Take any appropriate action necessary to ensure a smooth integration within and between AM system implementation and improvement projects.</li> <li>• Connect AM and infrastructure challenges with development and land-use planning.</li> <li>• Manage the development of AM capacity and competency within the organization (i.e., increase the ability to do this work in-house).</li> <li>• Monitor the progress AM Roadmap, including line-of-sight between council and AM objectives.</li> <li>• Conduct management reviews and internal audits of the AM system.</li> </ul>
AM Champion	<ul style="list-style-type: none"> <li>• Chair the AM Steering Committee.</li> <li>• Sponsor of the AM program and passionately champion AM across the organization at a management level.</li> <li>• Report on the progress, capacity, effectiveness, and sustainability of the AM system to the CAO.</li> <li>• Schedule and complete periodic management reviews to assess the effectiveness of the AM System in achieving the AM objectives and supporting organizational objectives and council priorities.</li> </ul>
AM Program Manager	<ul style="list-style-type: none"> <li>• Manage the implementation of the AM Roadmap, coordinating with others across the organization, to build and maintain the AM System.</li> </ul>

	<ul style="list-style-type: none"> <li>• Reporting to the AM Champion who can provide support and oversight.</li> <li>• Coordinate and oversee corporate AM initiatives where integration across business units or service areas is desired, or where a standardized approach is required.</li> <li>• Ensure consistency of AM practices and processes across service areas, including adoption and application of common principles of sustainability and AM.</li> <li>• Generate solutions to organizational challenges related to the implementation of AM.</li> </ul>
Sustainability / Alternative Energy Coordinator	<ul style="list-style-type: none"> <li>• Promote creation and adoption of AM Systems that incorporate climate action considerations.</li> <li>• Provide resources and support to the Steering Committee regarding lowering the environmental impact of decisions, and adapting to changes in the environment related to climate change.</li> <li>• Coordinate the inclusion of natural assets in the AM System.</li> <li>• Report on the GHG emissions related to the District's infrastructure.</li> </ul>
Service Areas Managers	<ul style="list-style-type: none"> <li>• Accountable for implementing the AM system and AM practices within their service area and department.</li> <li>• Work with the AM Program Manager to ensure AM processes are deployed consistently across the organization.</li> <li>• Provide feedback to the AM Program Manager on AM implementation to drive systematic improvement.</li> </ul>
Data & GIS Administrator	<ul style="list-style-type: none"> <li>• Assist in the development of the District's IS Strategy, reviewing information requirements to support the AM system.</li> <li>• Establish data standards that define what good data means for the District.</li> <li>• Establishing data governance and owners, clearly highlighting who is responsible for the different data sets and systems.</li> <li>• Establishing data quality control and correction processes to continually improve data quality.</li> </ul>

*Figure 30: The District's AM Roles & Responsibilities*

## 10. Risks to the District’s Asset Management Strategy

Figure 31 below highlights risk to the District’s AM efforts - specifically implementation of this AM Strategy and the AM System through the work outlined in the AM Roadmap.

Event	Consequence	Likelihood	Mitigation & Response
Staffing availability / capacity results in lack of development and uptake of the AM System	High	High	Fund the AM Roadmap, including internal staffing costs  Delegate tasks to other staff or increase staff if necessary and possible
Staff skills/knowledge results in lack of development and uptake of the AM System	Medium	Low	Increase training and mentorship  Change Management and communications
Lack of focused AM implementation resource to make the AM Roadmap happen	High	High	Fund and/or reallocate a dedicated Asset Program Manager position
Buy-in from staff and cultural change on technology changes, mostly affecting front-line staff	High	Medium	Change Management  Show purpose/rationale  Increase training and support for staff on adapting new technology
Buy-in from staff and cultural change on adjusted business processes and project management, mostly affecting middle managers	Medium	Low	Change Management  Show purpose/rationale
Council turnover or a change in council priorities could reduce buy-in and affect resourcing and implementation	High	Low	Continuously educate council on benefits of AM  Educate the community on the District’s infrastructure and service challenges  Advance the AM System to lock in practices and processes
Program timescale slips due to challenges with different parts of the AM Roadmap, impacting implementation	Medium	Medium	Stretch the AM Roadmap over a longer period of time
Funding for AM Roadmap implementation becomes constrained, e.g., lack of grant funding	Low	Medium	Investigate other funding sources  Stretch the AM Roadmap over a longer period of time and self-fund
AM processes and tools do not meet stakeholder needs & expected outcomes	Low	High	Involve stakeholders early in the development of AM processes and tools to better align with needs and expected outcomes Systematic improvement with regular monitoring will identify issues that can be resolved

Figure 31: Risks to the District’s AM Strategy

## 11. Systematic Improvement

As highlighted in the council approved Asset Management Policy and shown in Figure 32 below, **systematic improvement** is a key principle for the District, and is also a key component of good practice asset management. This section of the strategy outlines the District's approach to systematic improvement.

<p><b>4.6 Systematic Improvement</b></p> <p>4.6.1 Operate with a clear structure of organizational accountability.</p> <p>4.6.2 Have clear roles and responsibilities for the collection and maintenance of data and information related to service delivery, risk management, and the inventory, use, and performance of assets.</p> <p>4.6.3 Measure and report to council periodically on the opportunities, effectiveness, and challenges of the District's Asset Management System.</p>
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*Figure 32: Extract of the District's council-approved Asset Management Policy; Systematic Improvement*

### a. AM Steering Committee Meetings

The AM Steering Committee meets regularly to:

- Progress the District's asset management efforts in line with the AM Roadmap, AM Strategy, and AM Policy to deliver the AM objectives; and
- Discuss barriers to progress and identify resolutions or mitigating actions.

During 2019, the AM Steering Committee meets bi-weekly to accelerate AM progress in Year 1 of the AM Roadmap, appropriate given the ongoing development of resources for the AM Governance structure. From 2020 onwards, the AM Steering Committee meetings will move to a monthly frequency.

### b. AM Annual Review and Council Report

The AM Steering Committee will conduct an annual AM review, facilitated by the AM Champion and AM Program Manager, scheduled for July each year. The review will be conducted over two workshops, with time in between to allow for additional investigation. The review will form the input of report submitted to council prior to the budget process on the District's AM efforts. The review will be documented and will include consideration of the following:

- Status of actions from previous AM reviews
- Changes in external and internal operating environments that are relevant to AM
- Progress on implementing the initiatives in the AM Roadmap
- Progress against the AM objectives
- AM system performance including trends and progress on improvement action plans
- Changes in the profile of risks and opportunities to the District's AM efforts
- Reviewing the AM Governance structure, and staff competency, skills, resources, and support
- Refining the AM Roadmap and agreeing clear next steps

### c. AM Audits

As indicated in the longer-term goals in the AM Roadmap, the District is interested in implementing a formal audit review process.

### III. Terms and Definitions

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**Asset** is an item, thing or entity that has potential or actual value to an organization. The value can be tangible or intangible, and financial or non-financial. An organization may choose to manage its assets as a group, rather than individually, to accommodate its needs and achieve additional benefits. Such groupings of assets may be organized by asset type, asset system, or asset portfolio.

**Asset management (AM)** is an integrated approach, involving all municipal departments, to choosing and managing existing and new assets. The intent is to maximize benefits, reduce risks, and provide satisfactory levels of service to the community in a sustainable manner. Good AM practices are fundamental to achieving sustainable and resilient communities.

**Asset management (AM) system** (the management system for asset management) is a set of interrelated and interacting elements of an organization, whose elements include the AM policy and AM objectives, and the processes needed to achieve those objectives. In this context, the elements of the AM system should be viewed as a set of tools, including policies, plans, business processes, and information systems, which are integrated to ensure that the AM activities will be delivered.

**Asset management (AM) policy** articulates the intentions and direction of an organization as formally expressed by its top management. The principles by which the organization intends to apply AM to achieve its council objectives should be set out in an AM policy.

**Asset management (AM) strategy**, also referred to as a strategic asset management plan (SAMP), is documentation that specifies: how council objectives are to be translated into AM objectives; the approach for developing AM plans; and the role of the AM system in supporting achievement of the AM objectives. The approach to implementing the principles from the AM policy should be documented in the AM strategy. An organization's AM strategy should be used to guide the setting of its AM objectives, and to describe the role of the AM system in meeting these objectives. This includes identifying the structures, roles and responsibilities necessary to establish the AM system and to operate it effectively.

**Asset management (AM) framework** is a basic structure underlying a system, concept or text. Many municipalities used the term "AM framework" to refer to a high-level overview of their AM system, often in the form of a graphic showing how the different components connected to each other.

**Asset management (AM) governance**, in the context of a municipality, refers to how the municipality organizes itself to make decisions on its AM objectives, AM system, and application of AM practices. Governance in general refers to how society, or groups, organize to make decisions.

**Asset management plan (AMP)** is documentation that specifies the activities, Resources, and time scales required for an individual asset, or a grouping of assets, to achieve the organization's asset management objectives. An AMP should define the activities to be undertaken with regard to assets, and should have specific and measurable objectives (e.g., time frames and the resources to be used). The asset management system provides information to support the development of AMPs and the evaluation of their effectiveness.

**Geographic Information System (GIS)** is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The key word to this technology is Geography - this means that some portion of the data is spatial. In other words, data that is in some way referenced to locations on the earth. Coupled with this data is usually tabular data known as attribute data. Attribute data can be generally defined as additional information about each of the spatial features. It is the partnership of these two data types that enables GIS to be such an effective

problem-solving tool through spatial analysis. People and methods are combined with geospatial software and tools, to enable spatial analysis, manage large datasets, and display information in a map/graphical form.

**Information System (IS)** is an integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products. GIS is included under IS.

**Levels of service (LOS)** are the parameters, or combination of parameters, that reflect the social, political, environmental, and economic outcomes that the organization delivers. The parameters can include safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost, and availability.

**Long Term Financial Plans (LTFP)** - Long Term Financial Plans provide a framework for longer-term financial decision-making, including strategic and key actions to facilitate multi-year, integrated strategic decision making.

**Masterplans** - Long range plans that determine short, medium and long term upgrades required to meet the demands of current and future populations. Identifies the cost and priority of capital upgrades projects.

**Maintenance** is the process of preserving a condition or situation or the state of being preserved. Maintenance can be planned/scheduled or reactive.

**Natural assets** are the stock of natural resources or ecosystems that are relied upon, managed, or could be managed by a municipality, regional district, or other form of local government for the sustainable provision of one or more municipal services.

**Root Cause Analysis** is problem solving technique used for identifying the root causes of faults or problems.

**Sustainability** in the context of asset management means that infrastructure assets shall be managed using a balanced approach to meet the long-term economic, social and cultural, physical, and environmental needs of the community.

**Tangible Capital Assets (TCA)** are a significant economic resource managed by the Government and a key component in the delivery of many programs and services. TCAs include such diverse items as roads, buildings, vehicles, equipment, land, aircraft, computer systems, water systems and bridges. Public Sector Accounting Board (PSAB) requires municipalities to report on their TCA through PSAB Initiative 3150.

**Whole-life cost (WLC)**, also sometimes referred to as life cycle cost, is the total cost of owning an asset over its entire life. Whole-life cost includes all costs such as design and building costs, operating costs, associated financing costs, depreciation, and disposal costs. Whole-life cost also factors in certain costs that are usually overlooked, such as environmental impact and social costs.